



Cover image – The statue of Atlas by Lee Lawrie and Rene Paul Chambellan at Rockefeller Center, New York. Photograph by the author.

RECONCILING ARCHITECTURAL AESTHETICS AND ECONOMIC IMPERATIVES THROUGH COMPLEX, INTERDEPENDENT AND CONTINGENT BUILDING DESIGN PROCESSES

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CONTINGENT BUILDING DESIGN PROCESSES

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ABSTRACT

This dissertation explores how architectural aesthetics and economic imperatives are reconciled. It draws from observations, interviews and documentation assembled during a six-month ethnographic study within a large property development organisation during the detailed design phase for a 54-storey commercial skyscraper in an Australian capital city. By focusing on the architectural aesthetics and economic imperatives at stake as a competition winning design was subjected to intense scrutiny, debate and rationalisation in anticipation of planning approval, the dissertation identifies how the scheme's architect, engineer, development manager and main works contractor worked to reconcile the forces at play to enable design decisions to be made. These decisions were often complex, interdependent and contingent upon of the nature of the development: its small site, the aspirational nature of the architectural competition design brief, the imposition of severe budgetary limitations and time constraints, together with ongoing uncertainties around leasing opportunities, planning regulations and organisational tensions.

Key moments of reconciliation are presented as a series of thematically assembled vignettes, which consider the types of logic (and illogical formulations) employed in specific moments. These vignettes consider the design of the scheme's structural bracing system; its environmental and sustainability credentials; design of public benefits spaces; the value engineering process; the opposing financial metrics, which the scheme's legal structure established for its development manager and main works contractor; and, finally the scheme's public reception. The close consideration of the interplay between the forces of architectural aesthetics and economic imperatives leads to an identification of 10 modes of reconciliation operationalised to resolve a multitude of design issues.

STATEMENT OF ORIGINALITY

This is to certify that to the best of my knowledge, the content of this dissertation is my own work. This dissertation has not been submitted for any degree or other purposes.

I certify that the intellectual content of this dissertation is the product of my own work and that all the assistance received in preparing this dissertation and sources have been acknowledged.

Robert Mawson Morley

5 March 2024

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1 INTRODUCTION

1.1 Introduction

This introduction provides an overview of the ethnographic research presented in this dissertation. It commences with an outline of the aim of the research, which is to explore and understand how architectural aesthetics and economic imperatives are reconciled, together with the objectives of the research and its scope. Following this, I set out my interests in conducting the research, which are related to a lifelong interest in architecture, and a background as a chartered accountant. These somewhat disparate interests are considered by Rem Koolhaas in *Delirious New York* (1994), wherein he describes them as ‘incompatibles’.¹ The point of intersection of the forces of architectural aesthetics and economic imperatives is something I attempt to highlight in this dissertation, together with an exploration of how particular reconciliations were effected. In 2015–16, a pilot study was conducted to determine whether research in this area was of interest to the architecture and property development industry and the results of this short study are considered. Following an overview of relevant literature, the ethnographic methodologies adopted in conducting the larger research project are outlined. I was fortunate to have been provided with the opportunity to be embedded within a project management team within a large property development organisation to observe how they worked with architects, engineers and other consultants to reconcile the architectural aesthetics and economic imperatives which were at stake for a proposed skyscraper development. At the end of this introduction, a glossary of the key terms and abbreviations used throughout this dissertation, together with a summary of its structure, is provided.

¹ Rem Koolhaas, *Delirious New York* (New York: Monacelli Press, 1994), 162.

1.2 Aim

The aim of this dissertation is to explore and understand how architectural aesthetics and economic imperatives are reconciled through complex, interdependent and contingent building design processes. The question is posed: how are the architectural aesthetics and economic imperatives at stake in the development of a commercial skyscraper reconciled during the detailed design phase? Drawing from observations, it reveals how key design decisions were made as a competition winning scheme was subjected to rigorous design development and value engineering in anticipation of planning approval.

1.3 Objectives

To fulfil the aim of this research, a series of research objectives were determined and are outlined below. Each objective is designed to address a distinct aspect of the research aim.

1. To consider what might be understood by 'architectural aesthetics'. The concept of aesthetics and its relationship with architecture has been the subject of debate amongst scholars for centuries. Developing an understanding of the evolution of the term together with its contemporary interpretation will inform how the concept will be used in this dissertation.
2. To consider what might be understood by 'economic imperatives'. Economics is a social science which studies how people make decisions between scarce resources to satisfy their needs. As this research project focuses on a particular development scheme, developing an understanding of microeconomics and what might be considered as imperative in a capitalist society will inform how the concept will be used in this dissertation.
3. To understand how a reconciliation is effected between architectural aesthetics and economic imperatives. This will require the identification of the particular architectural aesthetics and economic imperatives at stake at the key moments when design decisions are made and an analysis of how team members responded to these forces at play, often in the frame of 'design excellence'. For the purposes of this dissertation, 'design excellence' refers to a process approved by the (anonymised) relevant planning authority requiring that an architectural design competition be conducted. It also requires that following detailed design development, the winning architect provides a statement that the scheme continues to exhibit equivalent 'design excellence' to the original winning design.
4. To consider the outcome of each of these objectives, and identify themes which might emerge from the interpretation and analysis of the reconciliations.
5. To identify opportunities for future research.

By addressing these objectives, it is hoped a positive contribution will be made to relevant literature in architecture, property development, project management and the study of organisations.

1.4 Scope of the dissertation

In this section I provide an overview of the scope of my research. This commences with an outline of my research interests, which are attributable to a life-long passion and previous study of architecture, together with a background working as a chartered accountant. Informed by these disparate interests (and the pleasure experienced from visits to New York City) I focus on Koolhaas' theory of Manhattanism. In *Delirious New York* Koolhaas posits that notions of the sublime and the economic, at least in terms of property development, are 'irreconcilable'.² Following this, a description of the Pilot Study I commenced in 2015, which aimed to consider the tension between aesthetics and economics (in terms of cost) in building design, reconcilable or otherwise, is provided. The Pilot Study helped to sharpen the focus for this more extensive research project, and was informative in how, and where, it might be ideally pursued. Following a lengthy period in which I thought I might need to change my approach, to my delight, access was granted to a research site within a large property development organisation to study a significant development scheme they were proposing. This enabled the long-term ethnographic study, which this dissertation presents. In this section I also consider literature relevant to the tension between architectural aesthetics and economic imperatives, and the practice of architecture itself.

1.4.1 Research interests

In early 2007, I enrolled to study architecture in the Bachelor of Design in Architecture degree at The University of Sydney. This was a very significant moment: interest in architecture and urban planning commenced at primary school, and despite many years having since passed, this interest was as strong as ever. The study of architecture as a mature-age student provided a somewhat unusual perspective, for up to that point, my career had been predominantly in accounting and assurance. Embarking on the study of architecture I was most aware (and as my friends often quipped) that the chartered accounting profession was seemingly diametrically opposed to the architectural profession. Indeed, an architect's creativity is something desirable and praiseworthy, but in the heavily regulated world of accounting creativity is an anathema, often leading to lengthy jail sentences for its perpetrators.

² Koolhaas, *Delirious New York*, 162.

Over the course of five years of architecture studies, I found it somewhat perplexing that university design-studio projects totally ignored the impact of budget. Whilst a lecturer explained this as a deliberate strategy to not impede student creativity, other constraints were introduced into studio projects, involving, for example: those relating to engineering, use of materials and the need for portability. Some projects required a detailed study of learning pedagogies for a primary school, the process of cremation, the functioning of a fire station and floorplans for a high-rise apartment building, yet constraints from a financial perspective were ignored. A learned understanding from studying the process of design was that—in general terms—constraints often work to enrich design outcomes, rather than simply act as inhibitor. In ‘Managing as Designing: Lessons for Organization Leaders from the Design Practice of Frank O. Gehry’ (2007), Richard Boland et al highlight how design constraints are utilised in the design practice of architect Frank Gehry:

[C]onstraints are what make a design problem unique and worthy of their best efforts. Embracing constraints helps to overcome the temptation to fall in love with an idea too quickly, since only a truly great idea can “solve” a strong set of constraints [...] The embracing of constraints not only ma[kes] the design problem more interesting, it also allows for serendipitously inventing new and valuable elements in the design.³

Given the absence of any imposed financial constraints in university studio projects, I wondered how in practice an architect’s design, and its aesthetic qualities, might be reconciled with the particular economic circumstances of their client, and indeed whether this might bring about innovation as highlighted by Boland et al. Perhaps a reconciliation is effected, as described by the preeminent architect Ludwig Mies van der Rohe: ‘When two bricks were put together well’.⁴ In *Why Architecture Matters* (2009), Paul Goldberger explains van der Rohe’s conjecture that this ‘put[ting] together well’ is the very origin of architecture. However, in considering this further, Goldberger poses the question of why some buildings work to ‘lift the spirit’ and others ‘depress it’. In response, he suggests architecture achieves ‘meaning’ from the:

[B]alance between aesthetics and other concerns [...] understood as a complex and often contradictory set of conditions.⁵

The concept of ‘well’ to an architect might translate as the aesthetic quality or innovation they are able to achieve through their work: a design award and the resulting publicity generating a pipeline of commissions. ‘Well’ to a property developer might translate as a building constructed within its budgeted cost, having been subject to a rigorous process of ‘value engineering’ and able

³ Richard Boland et al, ‘Managing as Designing: Lessons for Organisational Leaders from the Design Practice of Frank O. Gehry’, *Massachusetts Institute of Technology Design Issues* 24, no. 1 (2008): 21-22. <https://doi.org/10.1162/desi.2008.24.1.10>.

⁴ Paul Goldberger, *Why Architecture Matters* (New Haven: Yale University Press, 2009), x.

⁵ Goldberger, *Why Architecture Matters*, xv.

to generate its forecasted revenues through sale or leasing activity, thereby making a positive contribution to profit. 'Well' to a contractor (builder) might translate as a detailed set of plans, drawings and specifications attentively addressing potential difficulties with buildability. 'Well' to the public might translate as a building responding sensitively to its environment and its immediate neighbours, thereby adding to the cultural richness of its location through appearance and amenity. In *The Eyes of the Skin: Architecture and the Senses* (2012) Juhani Pallasmaa highlights the artistic and spiritual nature of good design:

Good architecture offers shapes and surfaces moulded for the pleasurable touches of the eye.⁶

However, in light of limited budgets and development programs, how does a developer achieve the right 'balance', as Goldberger suggests, to deliver Pallasmaa's 'pleasurable touches', whilst at the same time justifying the significant expenditures in order to achieve them? Indeed, how might an appealing, pleasurable and profitable scheme be designed in which 'two bricks [come to be] put together well'? How might aesthetics, with its inherently qualitative notions of artistic beauty, sense and spirit, be appraised alongside a more quantifiable development budget and forecasts of leasing income, which the architecture might generate?

During study of architectural theory in 2009, I read Koolhaas' extremely thought-provoking *Delirious New York*. This seemed to explain much about the development of New York City in a way which differed from other literary works that tend to describe the City's history and the evolution of its built environment building-by-building. The chapter which considered the development of Rockefeller Center was of particular interest, as the Center embodied the reconciliation of what Koolhaas described as 'incompatibles', that is the contradictory set of qualitative and quantitative conditions. At the commencement of this dissertation, I reacquainted myself with *Delirious New York's* underlying theory, *Manhattanism*.

1.4.2 Incompatibles

In what he describes as a 'retroactive manifesto'⁷ for the development of New York City, in *Delirious New York* Koolhaas posits the unformulated architectural theory of 'Manhattanism', in which humankind exists in a fabricated world where a culture of congestion/hyper-density is exploited:

⁶ Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (Chichester: Wiley, 2012), 48, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=896076>.

⁷ Koolhaas, *Delirious New York*, 9.

Manhattanism is the urbanistic doctrine that suspends irreconcilable differences between mutually exclusive positions.⁸

Manhattanism is the only program where the efficiency intersects with the sublime.⁹

The irreconcilable differences Koolhaas refers to, between forces of 'creativity'¹⁰ and 'philistinism',¹¹ (which we might associate with an extreme reading of architectural aesthetics, and economic imperatives, respectively) are suspended in what he describes as 'an elaborate *compromise*, an example of "architecture by committee"¹² as depicted in Figure 1.1. But this is not criticism; on the contrary, he believes the 'essence and strength'¹³ of Manhattan is that 'all its architecture'¹⁴ is conceived of in this manner, and this process of collective thought is exemplified in the development of Rockefeller Center. He describes the complex, which occupies a significant section of Midtown Manhattan, as 'a masterpiece without a genius',¹⁵ for it successfully reconciles the incompatibles inherent in its brief. This required it to, according to *Fortune* magazine:

Combine the maximum of congestion with the maximum of light and space, and all planning ... should be based upon a commercial centre as beautiful as possible consistent with a maximum income that should be developed.¹⁶

Koolhaas refers to these incompatibles as a 'double paradox that only Manhattanism could transcend'.¹⁷ But, he also identifies Manhattanism's human representative. He refers to this person as an 'architectural Scheherazade',¹⁸ (a city-dweller); someone capable of simultaneously conceiving of these mutually exclusive positions 'without unbearable strains developing in his psyche'.¹⁹ This person, according to Koolhaas was an architect by the name of Raymond Hood, who with John Mead Howells had won the architectural design competition for the Chicago Tribune Tower in 1922 and was, according to Koolhaas, adept at reconciling the efficient with the sublime. Describing his own personality, Hood states:

The architect of aesthetically acceptable buildings must possess an analytical and logical type of mind; have a knowledge of all the elements of a building and of its purpose and function; possess a lively imagination and a cultivated inherent sense of form, proportion, appropriateness and colour; possess a spirit of creation, adventure,

⁸ Koolhaas, *Delirious New York*, 162.

⁹ Koolhaas, *Delirious New York*, 174.

¹⁰ Koolhaas, *Delirious New York*, 195.

¹¹ Koolhaas, *Delirious New York*, 195.

¹² Koolhaas, *Delirious New York*, 178.

¹³ Koolhaas, *Delirious New York*, 178.

¹⁴ Koolhaas, *Delirious New York*, 178.

¹⁵ Koolhaas, *Delirious New York*, 178.

¹⁶ *Fortune* cited in Koolhaas, *Delirious New York*, 178.

¹⁷ Koolhaas, *Delirious New York*, 178.

¹⁸ Koolhaas, *Delirious New York*, 173.

¹⁹ Koolhaas, *Delirious New York*, 162.

independence, determination and bravery, and also, a large measure of humanistic instincts and ordinary common sense.²⁰

Koolhaas adds to this description of Hood's personality, as one which:

[C]an exploit the overlap between the businessmen's fantasies of practicality and the architects' dreams of a culture of congestion.²¹

In this sense, Hood would, quite possibly, have been an intriguing person to meet. Moreover, these (self) characterisations allude to someone with the capacity to mediate between business and its calculative interests, and architecture with its multitude of functional requirements and aspirational ideals.



Figure 1.1 – Architecture by committee. This image shows Rockefeller Center's architects and developers using models to consider the placement of towers proposed for the site. Raymond Hood is the fourth committee member from the left (seated).²²

²⁰ Hood cited in Koolhaas, *Delirious New York*, 174.

²¹ Koolhaas, *Delirious New York*, 173.

²² Koolhaas, *Delirious New York*, 179.

In the image shown in Figure 1.1, which depicts ‘architecture by committee’, Hood is seen seated and without, (at this stage) any visible signs of unbearable strain. The image itself is a fascinating study, presenting a group of men making their moves, which Koolhaas suggests are akin to playing a game of chess, with models of the buildings proposed for Rockefeller Center as the chess pieces. Hood explains this design process:

It would be impossible to estimate the number of official minds that have engaged in untangling the complexities of the problem, and certainly the number of unofficial minds that have pondered over it is even a more meaningless guess. Architects, builders, engineers, real estate experts, financiers, lawyers – all have contributed something from their experience and even from their imagination.²³

It is this process of the ‘untangling of complexities’ that my research seeks to identify and make sense of, to understand how the disparate ‘experience’ and ‘imagination’ of the committee members, itself a ‘forced marriage between capital and art’, helps to effect a reconciliation of the incompatibles and bring about architecture.²⁴ Indeed, how:

Each invisible fragment [of a development site’s zoning envelope...] will have to be made concrete in terms of activity, form, materials, servicing, structure, decoration, symbolism, finance.²⁵

Whilst Rockefeller Center’s final incarnation, as Koolhaas describes, was the result of all of these factors, perhaps the most significant effect was the financial uncertainty created by the stock market ‘Crash’ of 1929. This resulted in the scheme having no identifiable tenant, and its design continuing to proceed in an economic environment characterised by decreasing labour and materials costs. There was, as Koolhaas writes, no impediment in the ‘purity of [...] conception’.²⁶ Hood described this circumstance as:

Far from being a handicap, this discipline, I am convinced, of being obliged to make a project stand on its own financial feet and to submit its details and materials to a constant critical analysis leads to honesty and integrity of design. Under this stimulation, the cobwebs of whimsy, taste, fashion and vanity are brushed aside, and the architect finds himself face to face with the essentials and elements that make real architecture and real beauty.²⁷

Leaving aside Koolhaas’ seemingly pertinent writing for the moment, and what it is that ‘real architecture’ and ‘real beauty’ might entail for later sections of this dissertation, I now turn my attention to the Pilot Study I conducted in 2015–16. This Study was designed to identify key

²³ Hood cited in Koolhaas, *Delirious New York*, 178.

²⁴ Koolhaas, *Delirious New York*, 195.

²⁵ Koolhaas, *Delirious New York*, 185.

²⁶ Koolhaas, *Delirious New York*, 184.

²⁷ Hood cited in Koolhaas, *Delirious New York*, 195.

themes for me to consider further and was particularly instructive in suggesting how a larger research project might be conducted.

1.4.3 Pilot Study

In late 2015 I commenced exploratory research, being a Pilot Study with the broad aim of determining whether tension between design and cost was a real phenomenon, and if so, would a study of it be of interest to the architectural profession and the property industry. For the purposes of the Pilot Study, the terms ‘design’ and ‘cost’ were used in an exploratory capacity, in the hope that research participants would provide the necessary definition. A total of nine interviews were conducted, including eight with principals/staff of medium to large architectural practices in Australia and one interview with the CEO and Head of Excellence of the Design & Construction business (‘D&C’) within a large Australian property development organisation (‘PropertyCo’). This organisation subsequently became the host research site for the larger study, and more detail regarding how I arranged to meet with PropertyCo’s D&C CEO (‘D&C-CEO’) is included in the description of the main research project, from Section 1.4.4 onwards. Several themes quickly emerged from the Pilot Study, including that there is a definite tension between design and cost; that procurement of architectural services is an area of particular concern for architects; and, according to PropertyCo’s D&C Head of Excellence (‘D&C-HoE’), that architects might ‘gold-plate’, when they select materials considered as excessive relative to the function they are intended to perform. Each of these themes is considered below.

1.4.3.1 *Tension between design and cost*

Interviewees participating in the Pilot Study confirmed the existence and/or perception of tension between design and cost. Interestingly, when the idea of tension was raised, interviewees assumed the question related only to cost. One architect responded to the question immediately with: ‘Tension. Oh, you bet!’²⁸ Another interviewee, D&C-CEO demonstrated the tension between design and cost physically, by punching his clenched fist, into his other hand, with force.²⁹ In other interviews, whilst this tension was demonstrated with less enthusiasm, the message was explicit nonetheless: design and cost present a real tension, which must be addressed.

²⁸ Architect, interview transcript (3 May 2016).

²⁹ An explanation of how anonymised study participants are referred to in this dissertation is included in Section 1.5.3.4. The gender of the relevant participant is consistent with the use of the pronouns of the actual figures involved.

One of the study's participants, a highly awarded architect who might have the luxury of declining unfavourable commissions, still referred to a tension when interviewed:

Every project hits the reef, every single project hits the reef. They're not always cost but they are often cost, and you never know when the reef is going to crop up in your path [...] Once everybody sorts out their expectations and the budget, and the two align [...] it will go relatively ok.³⁰

In each interview, whilst the idea of tension as a phenomenon was not challenged, interviewees differed in the level of emphasis they placed on difficulties, which arise from it. During an interview with a principal of a large architectural practice, experienced with design of 'Premium Grade' high-rise office buildings, tension was explained as the result of inconsistent aspirations for the building:

I think the biggest problems happen when there is a real mismatch between the client expectations and maybe what the brief was. So, if the building is designed in a certain way and then you are trying to value manage it down to a number, that is quite a difficult process, whereas, if you just say on day one: "Actually, we haven't got very much money, so let's just start from that point of view". Rather than trying to cut something down to a price, it's better trying to build something up to a price. You just get a better result.³¹

Curiously, whilst each interviewee confirmed that tension is most likely to arise, the architects participating in the Pilot Study appeared to have difficulty in articulating, with any precision, how they actively manage the situation. This was particularly instructive in helping me develop the scope of the larger research project, namely that questions would need to be posed that focus future interviewees on what it is, specifically, they do to manage the tension. This is not to suggest, however, that architects lack the necessary ability to manage these tensions as and when they arise. During an interview one of the architects asserted, when relating a design project with a budget which exceeded \$100m:

There's always multiple agendas running [...] The [...] skill of the architect (who is also running multiple agendas) [is] trying to deliver a decent building that will have some longevity and look good for as long as possible, I suppose. And obviously the client, particularly if they're an end user: they have an agenda. But everyone else is in there, in a sense, to make as much money as they can out of the project, which is fine. But our issue with architects is that nobody ever remembers the guy that saved \$50,000, but they absolutely remember who the architect was when it [the finished building] looks like a heap of rubbish.³²

The focus of the architect, therefore, is to ensure a certain quality in design despite the pressure to reduce cost. Thomas Fisher, writing in *In the Scheme of Things* (2000) identifies that value engineering processes, which are designed to reduce cost, typically involve elimination of 'some

³⁰ Architect, interview transcript (3 May 2016).

³¹ Architect, interview transcript (29 August 2016).

³² Architect, interview transcript (29 August 2016).

of the very things that added value in the first place, such as long-term durability',³³ thereby affording a building a very limited life cycle, rendering it no different to any other mass-produced item or a 'heap of rubbish'. On the other hand, one interviewee alluded to his skill in managing tension by thinking of budgetary limitations as a positive influence in the design process, aligning his practice, on this basis at least, with that of Frank Gehry (as described in section 1.4.1):

I think budget is one aspect of a project that's a constraint, and every project is a result of a whole lot of constraints, and often the more constraints there are, the better the project, usually [...] So there's a lot more rigour around projects. The more rigour around a project, whether it's from a cost point of view, or from the way it's reviewed, or the way the [design] brief's built, the more rigorous: the better the project. And I think architects are quite bad at working on projects with few constraints.³⁴

According to this view, the constraints of cost may prompt a more rigorous and perhaps more interesting design response.

1.4.3.2 Procurement arrangements

In several of the Pilot Study interviews, the subject of procurement was raised without my prompting. Participants highlighted their frustration towards the increasingly commonplace 'novation of contracts', where contractual arrangements between client and architect are novated in favour of the managing contractor (builder). Novation, they explained, typically follows completion of their design work to a standard sufficient to enable an application to be made for development approval from the relevant planning authority. Once this process is complete, the architects' direct relationship with their client is subordinated to the managing contractor, and design changes are effected typically to reduce cost. One of the interviewees related:

They ended up sticking with the original design, but not the original architect. So, the contractor's brought in their own architect. So that's not a good process [...] It's not a great building. Look, conceptually it's okay, I think. I just think it hasn't been detailed really well, and it probably hasn't been developed beyond the conceptual framework. It is a bit clunky.³⁵

This potentially exploitative situation typically involves a value engineering exercise, as described in the previous section. The danger of novation as described in the quotation immediately above, is that the desired level of building functionality as originally required by the client, and designed by the architect, is no longer achieved and the cost reduction exercise ultimately suits only the contractor. Another interviewee described the 'package' mentality which

³³ Thomas Fisher, *In the Scheme of Things: Alternative Thinking on the Practice of Architecture* (Minneapolis: University of Minnesota Press, 2000), 28.

³⁴ Architect, interview transcript (29 August 2016).

³⁵ Architect, interview transcript (29 August 2016).

managing contractors tend to adopt post-contract novation. This involves the setting of budgets for specific design aspects, for example, the facade, thereby forsaking a more holistic vision:

It's just the package mentality [...] They go out on packages [of individual aspects of the design]. So we'd kind of be a bit reticent about identifying a saving, because we kind of knew [...] that we couldn't take some of that saving and put it somewhere else; that they'd just take the saving. So, say you identified a \$300,000 saving, and you go: "Well look, we want to take \$200,000 of that [saving] over here, but we've got a net saving" [...] You should be able to shift money around the pie to prioritise what's very important about a design.³⁶

A second impact of contract novation identified by participants was the potential for an architect's reputation to be sullied. An interviewee advised that it is becoming increasingly common in the marketing of proposed apartment developments for the name (and reputation) of an architect, together with their design vision, to be used in promotional material designed to entice purchasers to buy 'off the plan', that is, before construction has commenced. The problem arises following contract novation, where the main works contractor conducts a value engineering exercise to reduce cost, removing the very aspects upon which the architect's design vision was originally marketed.³⁷ This has the potential to adversely affect the architect's reputation as the finished product does not correspond with what the purchaser believed they were buying.

The process of novation, at its most extreme, results in an architect losing their commission, with design work either abandoned altogether or significantly modified to the extent it is essentially a new design. Related recollections of the architect and D&C-CEO illustrate this well:

[The architect] wasn't very rigorous in their approach. [The client] went to the market, they went to the contractors, and one of the contractors went off and did a completely different design, and gave it back to [the client] with a number [construction cost], and they said: "Great, we'll do that." The original design was gone.³⁸

It could be very easy for a manipulative developer to go: "Please give me your vision. Your vision will help me get through planning and get my development approved, your vision will help me sell [my scheme]". But then if I go: "Great, I've got planning, I've got sale, I don't need you. And now I'm going to turn this, squeeze this and turn it into something dumbed down, cheap, nasty". You could do that, and you could get away with that once. But you see that happen, and that tension then occurs, and that is when [the] developer is being, the developer is not playing right. Now, you also have architects who go: "You know what, I'm starting with this vision. But this is going to be my monument" [...] "I want this gold-plated and I want it [to be] this and that, and let me at this, and at that". And as it gets progressed it becomes much grander and bigger and more expensive.³⁹

³⁶ Architect, interview transcript (10 February 2016).

³⁷ Architect, interview transcript (15 April 2016).

³⁸ Architect, interview transcript (29 August 2016).

³⁹ PropertyCo D&C-CEO, interview transcript (29 February 2016).

It is likely that aspects of the situations described above are being played out in the development of 'off the plan' apartments, as outlined earlier. There is also the possibility that architects, as a profession, have not responded adequately to this unfortunate practice. This is a significant issue given the associated risk of their brand being tarnished and the ongoing consequences for future commissions.

1.4.3.3 Gold-plating

During the interview with D&C-CEO referred to in the Section immediately above, a targeted discussion of cost control quickly led to references to architectural 'gold-plating', in which an architect is suspected of using the client's funds to further their own reputation by 'over designing', or selecting materials which might be considered as excessive relative to the function they are intended to perform. D&C-HoE stated that where the developer does:

[N]ot have the project management expertise to actually manage that architect, they will end up with buildings that are 30% over budget. They don't know how to manage those hard conversations to say: "Well, we know you would really like that, but here is the commercial equation, here is the planning equation. I can give you that, but I can't give you that. It's a bit of give-and-take throughout the whole process."⁴⁰

The implication is that, in the absence of rigorous cost control through project management, developers believe that architects will simply gold-plate to further their design credentials. But on a more favourable note, D&C-CEO did relate the significant value that architecture can deliver:

Make no mistake. Architects, the very, very good architects, will come up with something that is innovative, is aesthetic, does actually attract the best out of the market. So, we are looking for an architect to come up with an answer to a [design] brief [as stated] in words, and turn it into something that gives real-life and will attract those [investors] that are coming to buy, or rent or lease, or do something to that space. See, while looking for an architect who can answer, and in many ways the perfect architect understands the commercial imperatives but comes up with something that public and government and other architects, who are probably working for government or being asked by government to comment on the scheme, will go: "This is world-class. This gets the tick. This is what this city is looking for, or what this site is looking for". If an architect can excite government, excite public, and attract the commerce that makes the thing work, and does it in a way that as a builder we go: "This is sufficient to build, effective to build, safe to build, then: happy days, we'll pay lots of money".⁴¹

This is fascinating, as it is a description of the 'perfect architect' from the perspective of a property developer: the architect who 'understands the commercial imperatives' and at the same time responds with a 'world-class' design that 'excites'. This is probably the type of architect, which Simon Bole and Richard Reed referred to in 'The Value of Design: A Discussion Paper' (2009) as

⁴⁰ PropertyCo D&C-HoE, interview transcript (29 February 2016).

⁴¹ PropertyCo D&C-CEO, interview transcript (29 February 2016).

'being creative to order, and within very tight and physical constraints'.⁴² It is the architectural Scheherazade as described by Koolhaas, that is: Raymond Hood (refer to Section 1.4.2). However, the extent to which an architect is able to deliver creativity in their design work, and provide the developer with the excitement they are seeking, and with a cost saving to boot, is potentially an impossibility. Franz Fuerst et al, in 'Designer Buildings: Estimating the Economic Value of 'Signature' Architecture' (2011) refers to the letter which architect Frank Lloyd Wright wrote to a client in 1936, in which he extolled the commercial benefits of his reputation. To his client's questioning of the value of his design work, he responded that it was worth 'thousands of thousands [of dollars]'.⁴³ In a more contemporary setting, this is potentially even harder; the challenge of the task to which the perfect architect must aspire needs to perhaps be considered in light of what Fredric Jameson describes in *Postmodernism, or, The Cultural Logic of Late Capitalism* (1991) as aesthetic production:

What has happened is that aesthetic production today has become integrated into commodity production generally: the frantic economic urgency of producing fresh waves of ever more novel-seeming goods (from clothing to aeroplanes) at ever greater rates of turnover, now assigns an increasingly essential structural function and position to aesthetic innovation in experimentation. Such economic necessities then find recognition in the varied kinds of institutional support available.⁴⁴

Jameson is inferring that buildings need to be designed to order, to meet a frantic economic urgency. Accordingly, the process of design offers only limited opportunities for innovation beyond the required 'structural function' of necessity to create something which might be considered different. Perhaps 'gold-plating' is less about the application of gold, and more about the time required for unconstrained creativity, despite it potentially adding to cost.

1.4.3.4 Summary

The Pilot Study was a most informative exercise in that it provided confirmation that there does indeed exist a tension between design and cost, and that there are usually multiple agendas running in the relationship between architect and client and accordingly, the situation is not something that might be easily managed, particularly where the developer suspects an architect of 'gold-plating'. As such, this presents as something quite fascinating to study in further detail. The Pilot Study also highlighted that procurement arrangements, particularly those involving novation of contracts, were something of a sore point for the architectural profession. This too, is

⁴² Simon Bole and Richard Reed, 'The Value of Design: A Discussion Paper', *Architectural Science Review* 52, no. 3 (2009): 173, <https://doi.org/10.3763/asre.2008.0039>.

⁴³ Fuerst et al, 'Designer Buildings: Estimating the Economic Value of 'Signature' Architecture', *Environment and Planning* 43, no.1 (2011): 166, <https://doi.org/10.1068/a43270>.

⁴⁴ Fredric Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism* (London: Verso, 1991), 4-5.

potentially an area where further research might be undertaken, but it is considered to be beyond the scope of this dissertation. Several of the participants in the Pilot Study suggested that the tension between design and cost might be best ‘witnessed’ at a large property developer, where all parties involved in the design process would assemble, including the architect, engineer, developer, main works contractor and other consultants. Participants suggested I approach several large property developers to see if they might be interested in hosting this larger research project.

1.4.4 Main research project

Without wishing to lose momentum, as I completed the Pilot Study I set about planning for the larger research project. The idea of ‘design’ was broadened to encompass the notion of ‘architectural aesthetics’, as it was the appearance, emotional experience and the intangible nature of architectural design that Pilot Study participant’s had focused on. Similarly, the idea of ‘cost’ was broadened to the notion of ‘economic imperatives’, as cost addresses only one element of the property development equation, failing to consider the income a development will generate and therefore its capitalised value on completion.

In early 2016, a newspaper article describing the aspirations of the newly appointed CEO of PropertyCo’s D&C business was published.⁴⁵ Not having any contacts at large property development organisations, I contacted his office, to inquire whether he might be interested in my research, which at that time, comprised the Pilot Study. A meeting for Monday, 29 February 2016 was arranged, and my former supervisor and I met with him, and D&C-HoE. At this meeting I discussed the Pilot Study and my aspirations for conducting a larger piece of research. D&C-CEO confirmed that there is indeed a tension between design and cost and that it is something, which must be carefully managed through a process to ensure his organisation ends up with a:

[S]trong result of design aesthetic, function, performance, and the hard-nosed: let’s just build it.⁴⁶

At the conclusion of the meeting, he expressed interest in exploring the potential for my research to be conducted within PropertyCo, and what it might identify. I met again with D&C-HoE on Monday, 27 June 2016 to attempt to define the research in more detail and discuss the access to PropertyCo that would likely be required. He posited that the tension between architectural aesthetics and economic imperatives were typically strongest during the initial ‘detailed design

⁴⁵ For the purposes of anonymisation, this newspaper article is not referenced.

⁴⁶ PropertyCo D&C-CEO, interview transcript (29 February 2016).

phase' of a project, when his organisation's project managers work with the relevant scheme's architects, engineers, cost planners and other consultants to develop a preliminary architectural scheme into a set of drawings and associated documentation suitable for submission for development approval by the relevant local planning authority. He stated:

Most of the dynamic conversations will be at the earliest part of design, where you're converting commercial assessment. So, a development equation which will just say: "I want to create a 30,000m² office building and I'm going to generate \$x rent out of that, and that's going to cost me, I don't know, \$4,000m² to build". OK, so if all that theory works, some robustness [is needed] around those figures: how do you take 30,000m² to cost you \$4,000m²? [...] But then you've got to break down that \$4,000m²: so where am I going to get best value and where do I have to spend money to build 30,000m², and how much of that actually goes into the architectural flair of that building?⁴⁷

Interestingly, it was the facade that was singled out by D&C-HoE as the component that will determine the money that is available for the architect to spend. In many ways, this might be seen as the residual amount after the 'essential' elements of materials, labour costs, mechanical systems, electrical systems and other requirements particular tenants might seek. He stated:

From a tenant's perspective [...] internals are] far more important [...] and what that's going to do to their workforce being efficient, than potentially what the facade would be. Albeit everyone likes to work in a nice building. I mean, that's all the balancing.⁴⁸

Therefore, managing the process is the act of carefully breaking-down that '\$4,000m²' to its constituent components so that it balances the competing demands of providing tenants with a building that helps to improve their efficiency/productivity; generates a particular return for its developer; is buildable within the cost parameters specified but also has the necessary amount of, albeit residual, architectural flair.

There then followed a period of some nine-months during which repeated contact failed to make any significant progress in securing access. Just as I was beginning to explore other possible research sites, my former supervisor and I were invited to a meeting on Wednesday, 5 April 2017 with senior executives of the D&C business to discuss my research proposal. By this stage we thought that we could at most seek permission to conduct interviews with several of their project managers and consultants (architects, engineers, cost planners, etc). However, when we proposed this approach, much to our surprise and delight, the D&C Project Director ('D&C-Director') who was at the meeting and was to become the primary contact for the research, suggested that without physically observing the design process, including being present at design workshops, meetings with consultants, and shadowing the project management teams' activities, the study would miss the key interactions and tensions, which might arise in the design process.

⁴⁷ PropertyCo D&C-HoE, interview transcript (27 June 2016).

⁴⁸ PropertyCo D&C-HoE, interview transcript (27 June 2016).

In the meeting we were informed that PropertyCo was about to embark on the detailed design phase for a major new project—the New Building Development (‘NBD’) tower in the CBD of an anonymised Australian capital city—and the meeting concluded with an invitation to observe this process. Following a period of close to four months, on Monday, 31 July 2017, I was invited to meet again with D&C-Director to discuss the research in more detail, including how it would unfold on a practical level. In this meeting the key attributes of the NBD development were summarised on a whiteboard, including its ownership by a joint venture (the ‘NBDJV’) in which PropertyCo had an equity stake, the public benefits the scheme was designed to deliver and a description of how PropertyCo had structured the development within its own businesses. D&C-Director informed me that PropertyCo’s other major business involved in the project, Development Management (‘DM’), were responsible for managing NBD’s leasing and marketing, as well as the financial arrangements for the NBDJV.

In this meeting, D&C-Director described the role of the D&C business as responsible for managing the scheme’s design and construction, and the preparation of three Guaranteed Maximum Price (‘GMP’) contractual arrangements for demolition works, excavation works and main works, with respective delivery dates being mid-August 2017, October/November 2017 and April/May 2018. Development Applications (‘DA’s) for the demolition and early works were to be submitted to the City (the anonymised regulatory authority) by 29 August 2017, and by 2 November 2017 for Main Works (comprising the construction of the tower and public realm). The D&C team he would lead to accomplish these requirements included his immediate team of design and construction project managers, each of them employees of PropertyCo, the international architectural practice which had won the design competition conducted in late 2016 to design the tower (‘GlobalArchitect’), the consulting structural engineer (‘GlobalEngineer’), PropertyCo’s internal structural, mechanical, electrical and sustainability engineering teams together with a number of other external consultants in respect of civil, fire and other engineering requirements. The meeting concluded with the suggestion by D&C-Director that I kick-off my period of immersion within the NBD D&C project management team (‘D&C-Team’) by attending the later part of their team meeting the following day, on Tuesday, 1 August 2017, at 9:30am. At this meeting I was introduced to D&C-Team members and I provided them with an overview of my background, research aims and some practicalities of how the research project would be managed. I was to remain embedded within D&C-Team for five days each week until the end of the detailed design phase.

D&C-Team initially comprised some eight project managers, each with responsibility for managing a particular aspect of the design and construction of the scheme, including management of key relationships with the project’s architects, engineers and cost planners. Over

the course of the detailed design phase the team was to grow to 15 members with the addition of further project managers and a team of construction managers. As relationships developed during my fieldwork, I was invited to spend several weeks immersed within PropertyCo's NBD DM team. This provided me with the opportunity to understand their role in the NBD project in relation to both its financing and leasing. Such access had not been anticipated during the research design phase or earlier discussions with PropertyCo and it provided me with a much richer set of data. Of particular interest was that in the NBD scheme, PropertyCo was both an equity participant in the NBDJV and its preferred main contractor. This created an additional set of tensions that would need to be managed: that is, the opposing interests of owner and main contractor would be played out by members of staff employed by the same organisation, and under the same roof. Indeed, at the meeting with senior executives of the D&C business on Wednesday, 5 April 2017 (which I described earlier) I was advised that PropertyCo was keen for their D&C and DM teams to work more closely together; that this particular project was a 'test' case and a dedicated project office space had been established for this purpose. I was specifically requested to provide my observations and feedback in regard to this co-location of the teams.

After six months of immersion within PropertyCo, I concluded field research in January 2018, shortly after the Main Works DA had been submitted to the relevant planning authority (the 'City') for approval. I have since maintained contact with key members of the teams to follow the evolution of the project. This dissertation only reflects data gathered during the detailed design phase from August 2017 to January 2018. Subsequent changes to the design, that is, post-January 2018, are not reflected in this research project. I now turn my attention to literature related to the tension between architectural aesthetics and economic imperatives, and the practice of architecture.

1.4.5 Related literature

Review of literature which considers the tension between architectural aesthetics and economic imperatives indicates that seemingly little has been written in this space. Whilst much has been written about 'iconic' architecture, scholarly attention has tended to focus on the architecture itself, together with its legacy economic and social effects in the cities where it has been developed. Literature relating to the practice of architecture suggests that design processes are contingent on a multiplicity of factors, including the impact of economic considerations driven by corporations and property developers, but this too is a research area where little work has been conducted. In this section I provide an overview of this literature.

1.4.5.1 'Iconic' architecture

In 1997, the Guggenheim Museum was completed in the Spanish city of Bilbao, designed by the 'star' architect Frank Gehry. The unusual nature of the Museum's design together with its cladding in titanium, rendered the building as something of a spectacle and created significant publicity for Bilbao, a phenomenon now commonly referred to as the 'Bilbao effect'. In 'The Circulation of News and Images: Star Architecture and Its Media Effects' (2020) Nadia Alaily-Mattar and Alain Thierstein state the notation of an architect and his or her architecture as 'star' is derived from the award of the Pritzker Prize as 'a badge of approval',⁴⁹ providing them a type of celebrity status.

In *The Iconic Building* (2005) Charles Jencks considers the development of iconic architecture, providing both a historical overview and examples of successful and unsuccessful projects. He defines the iconic building as something:

[D]riven by social forces, the demand for instant fame and economic growth [... an] expressive landmark [that] has challenged the previous tradition of the architectural monument.⁵⁰

Jencks argues that when such buildings are successful they may be considered on a par with the 'best contemporary art',⁵¹ and identifies the first iconic building as Le Corbusier's Notre-Dame du Haut at Ronchamp, built in 1955. Whilst referring to mistakes as 'pretentious nonsense and [a] waste of money',⁵² he notes the strong desire for corporates and property developers alike to tap into the favourable economics which such landmark developments might deliver for them:

Now every new corporate headquarters seeks to be an icon, has to have a nickname that sums it up, a one-liner, a bullet point that journalists love to hate, love to spice up their workday prose – "erotic gherkin", or "shard", or "crystal beacon". Tall buildings are no longer content to be concealed phallic symbols, they have to come out of the closet, declare their sex, strut their stuff. Office workers are no longer corporate drones; they are Gordon Gekko's, scoring millions in their high-flying missiles. Normal Foster's Swiss Re headquarters challenges the dome of St. Paul's, and every previous symbol in the City of London: the other skyscrapers around, especially the taller ones. It is simply better, more interesting, cooler, more convincingly built, more ecological, more inventive, more optical... and more iconic.⁵³

Focusing on several iconic buildings including Foster's Swiss Re headquarters in London, Enric Miralles' Scottish Parliament in Edinburgh and Daniel Libeskind's masterplan for New York's Ground Zero site, Jencks considers the genre from three perspectives. Firstly, to understand them

⁴⁹ Nadia Alaily-Mattar and Alain Thierstein, 'The Circulation of News and Images: Star Architecture and Its Media Effects', in *About Star Architecture: Reflecting in Cities in Europe*, ed. Nadia Alaily-Mattar, Davide Ponzini and Alain Thierstein (Cham: Springer, 2020), 98.

⁵⁰ Charles Jencks, *The Iconic Building* (New York: Rizzoli International Publications, 2005), 7.

⁵¹ Jencks, *The Iconic Building*, 7.

⁵² Jencks, *The Iconic Building*, 7-8.

⁵³ Jencks, *The Iconic Building*, 13.

as 'enigmatic signifiers'; secondly, to appreciate how the architect negotiated the line between 'vacuity or bombast'; and thirdly, through the more traditional judgment of architectural quality.⁵⁴ He concluded that the current trend of architects pursuing biomimicry as a design tool is very strong: 'scratch any iconic building hard today and it will bleed nature metaphors'.⁵⁵ He also noted that architecture can 'refer to anything today, including nothing and its own abstract systems, [a] profligate pluralism',⁵⁶ so buildings can be both extravagant and at the same time loaded with multiple meanings.

The economic value of iconic architecture was considered by Matt Patterson in 'Revitalization, transformation and the "Bilbao effect": testing the local area impact of iconic architectural developments in North America, 2000–2009' (2020). This study focused primarily on cultural buildings, identifying that their development lead to land use intensification and growth in the cultural sector. Similarly, Jencks (2005) notes that in the two years following the opening of the Guggenheim Museum in Bilbao, tourism spending there increased by US\$400million, and 87% of Museum visitors were from outside the Basque region.⁵⁷ In their quantitative study 'Designer buildings: estimating the economic value of "signature" architecture' (2011) Franz Fuerst, Patrick McAllister and Claudia Murray considered whether the 'marketing weight' of a 'star' architect's design generated premium rentals and sales proceeds relative to buildings designed by non-signature architects. They noted commercial office buildings located in the United States, when designed by signature architects achieved a 5%–7% premium in rentals and 12%–17% premium in sales proceeds.⁵⁸ They also noted the difficulty in measuring the economic effects of design due to its multidimensional nature, and were surprised at how little research had been conducted linking design characteristics of buildings with their exchange value.⁵⁹ This is something which is particularly relevant to this dissertation. Focusing on how the tensions between architectural aesthetics and economic imperatives in relation to individual design characteristics will highlight how the multidimensional nature of design is reconciled in practice with the aim of increasing exchange values.

In 'Iconic Architecture as a hegemonic project of the transnational capitalist class' (2012) Leslie Sklair and Laura Gherardi write:

⁵⁴ Jencks, *The Iconic Building*, 22.

⁵⁵ Jencks, *The Iconic Building*, 208.

⁵⁶ Jencks, *The Iconic Building*, 209.

⁵⁷ Jencks, *The Iconic Building*, 19.

⁵⁸ Fuerst et al, 'Designer Buildings: Estimating the Economic Value of "Signature" Architecture', 180.

⁵⁹ Fuerst et al, 'Designer Buildings: Estimating the Economic Value of "Signature" Architecture', 169.

[I]conicity in architecture [...] can best be conceptualised as a resource in struggles for meaning and, by implication, for power [...] by those who control the corporate sector and the centralist institutions of capitalist globalisation.⁶⁰

This transnational capitalist class, they argue, comprises four factions: ‘transnational corporates’ (including architectural firms, architectural-engineering and architectural-developer-real estate firms and their clients), ‘globalising politicians and bureaucrats, [...] globalising professionals [and] merchants, media and advertising’.⁶¹ The desire of this class to express dominance, they argue, has usurped state and religious institutions in the pre-global era (prior to the 1960s). Sklair and Gherardi consider how the notion of iconicity is manufactured by architects and other members of the class through media releases. They conclude that iconicity of both architect and architecture is the result of their participation in ‘the hegemonic project of the transnational capitalist class in an increasingly celebrity-based-culture-ideology of consumerism’.⁶² In doing so, they recommend scholarly attention should be directed towards the members of the class:

[To] explain how the dominant forms of contemporary iconic architecture arise and how they serve the interests of globalising capitalists.⁶³

Whilst a consideration of the role of iconic architecture as a tool for exerting dominance is beyond the scope of this dissertation, a study of the interaction of architects, engineers and the property developer during the detailed design phase will provide an understanding of how iconic architecture comes into existence and how it is designed to suit the requirements global capitalist investors.

1.4.5.2 Architectural practice

In this section I consider literature related to architectural practice: in particular, the contingent nature of design and the interaction of architects with their clients.

1.4.5.2.1 Contingency

In ‘Star Architecture as Social-Material Assemblage’ (2020) Laura Lieto argues that star architecture is the result of a ‘multiplicity’, posing the question of what might happen when a star architect, and their architecture, are no longer considered unique; rather as part of a ‘broader

⁶⁰ Leslie Sklair and Laura Gherardi, ‘Iconic architecture as a hegemonic project of the transnational capitalist class’, *City* 16, no. 1–2 (2012): 59, <https://doi.org/10.1080/13604813.2012.662366>.

⁶¹ Sklair et al, ‘Iconic architecture as a hegemonic project of the transnational capitalist class’, 59.

⁶² Sklair et al, ‘Iconic architecture as a hegemonic project of the transnational capitalist class’, 59.

⁶³ Sklair et al, ‘Iconic architecture as a hegemonic project of the transnational capitalist class’, 59.

assemblage of actors and practices'.⁶⁴ In considering this question, Lieto draws on Anne Marie Mol's (2002) notion of the "body multiple", which :

[E]mphasises the multiple planes of experience through which a reality comes [...] into being and is apprehended through its practical effects.⁶⁵

Lieto argues that star architects and their iconic buildings are 'enacted in practice' in a socio-material assemblage: a 'multiplicity of collaborations'.⁶⁶ Indeed, one of the metaphors that philosopher Bruno Latour offers to illustrate Actor-Network-Theory's focus on the interplay between multiple agencies is indeed the work of the architect:

Even if some architects see themselves as God, none would be foolish enough to believe they create ex nihilo. On the contrary, architects' stories of their own achievements are full of little words to explain how they are 'led' to a solution, 'constrained' by other buildings, 'limited' by other interests, 'guided by the inner logic of the material', 'forced to obey' the necessity of the place, 'influenced' by the choices of their colleagues, 'held up' by the state of the art, and so on... If we become attentive to humbler ways of speaking, this agency shifts from the all-powerful master to the many 'things', 'agents', 'actants' with which they have to share the action.⁶⁷

Lieto identifies these actants as 'quantity surveyors, project managers and structural engineers [... and] clients, those who actually pay for and commission buildings'.⁶⁸ The socio-spatial setting in which these actors are engaged is 'fostered by ties of trust and collaboration; ongoing confrontations between actors, ideas, styles and business opportunities'.⁶⁹ In this sense, architecture is contingent upon a multiplicity of actors and their interaction, and the ways in which confrontations are resolved. The effects of these collaborative interactions in the resolution of design issues is a key focus of this research project.

In *Architecture Depends* (2009) Jeremy Till focuses on this dependency. He writes: 'my hunch is that architecture is the contingent discipline par excellence'.⁷⁰ In the section of his book titled: 'A balance of colossal forces' he states:

[A]rchitecture is not only contingent as a discipline, but irredeemably contingent: no amount of rational will can affect the passage from the reality to the metaphor, from the

⁶⁴ Laura Lieto, 'Star Architecture as Socio-Material Assemblage', in *About Star Architecture: Reflecting in Cities in Europe*, ed. Nadia Alaily-Mattar, Davide Ponzini and Alain Thierstein (Cham: Springer, 2020), 25.

⁶⁵ Lieto, 'Star Architecture as Socio-Material Assemblage', 25.

⁶⁶ Lieto, 'Star Architecture as Socio-Material Assemblage', 26.

⁶⁷ Latour cited in Kjetil Fallan, 'Architecture in action: traveling with actor-network theory in the land of architectural research', *Architectural Theory Review* 13, no. 1 (2008): 91, <https://doi.org/10.1080/13264820801918306>.

⁶⁸ Lieto, 'Star Architecture as Socio-Material Assemblage', 27.

⁶⁹ Lieto, 'Star Architecture as Socio-Material Assemblage', 29.

⁷⁰ Jeremy Till, *Architecture depends* (Cambridge: Massachusetts Institute of Technology, 2009), 61.

contingent to the pure [...] Architecture is dependent on others at every stage of its journey from initial sketch to inhabitation.⁷¹

The architecture profession, Till argues, is distinctively exposed to external dependencies, thus contrasting it with other professions. He refers, by way of example, to an accountant who 'may place the fluid finances of a company into the order of a standardised system of measurement' and the artist, who 'may block the world out during moments of creative conception'.⁷² Indeed, Till argues that once an architect's initial sketches are completed, the:

[W]hole design process is opened up to the input and control of others – clients, other architects come, consultants, potential users, regulators, and so on [and] once the design is handed over to the contractor, the building industry inflicts its own set of uncertainties.⁷³

This phenomenon, he argues, is most problematic for the architectural profession in its pursuit of a type of purity, quoting the Brazilian artist Hélio Oiticica, who describes purity as a 'myth'.⁷⁴ He believes the profession needs to come down from its 'detached heights', away from its position of 'authority and certainty',⁷⁵ as it has allowed architects to detach themselves as humans and see the world as an abstraction.⁷⁶ Once reformed, Till argues, the profession needs to comprise of:

[A]ngels with dirty faces [...] The] dependent and contingent architect – has to be light enough on his or her feet, and modest enough, to allow that intent to be shaped by other events and desires.⁷⁷

Achieving this position, however, might be difficult to execute in practice. Individual architects are known for their particular design philosophies and styles. By way of example, in *Le Corbusier in Detail* (2007) Flora Samuel refers to Le Corbusier's design philosophy, and quotes his explanation that architecture is a:

[S]eries of successive events that the spirit tries to transmute by the creation of relations so precise and so overwhelming that deep physiological sensations result from them, that a real spiritual delectation is felt at reading the solution, that a perception of harmony comes to us from the clear-cut mathematical quality uniting each element of the work.⁷⁸

⁷¹ Till, *Architecture depends*, 45.

⁷² Till, *Architecture depends*, 45.

⁷³ Till, *Architecture depends*, 46.

⁷⁴ Till, *Architecture depends*, 25.

⁷⁵ Till, *Architecture depends*, 165.

⁷⁶ Till, *Architecture depends*, 25.

⁷⁷ Till, *Architecture depends*, 194.

⁷⁸ Le Corbusier cited in Flora Samuel, *Le Corbusier in Detail* (London: Routledge, 2007), 39, <https://doi.org/10.4324/9780080550626>.

Samuel states that Le Corbusier believed the primary means to influence thought was by influencing the body at a subconscious level.⁷⁹ With this in mind, reaching an accord with Till's recommendation that the architectural profession abandon its lofty and puritanical abstractionisms might be a tall order. This is particularly relevant to this dissertation; developing an understanding of how such compromises are achieved in practice is something that this research project will focus upon.

1.4.5.2.2 *Interactions with clients: corporates and property developers*

In *The Honeywood File* (1929 [1983]) Harry Creswell sets out in a humorous manner the 'file' of correspondence (albeit fictitious) between an architect, client, builder, planning authority representatives and other relevant parties concerned with the design and construction of a large house. Intended as an expose of the day-to-day professional practice of an architect, it highlights the multitude of issues that are likely to arise during the long period of design and construction. Perhaps apposite to this research project is the dialogue between architect and client regarding cost, very early in the design process. 'Spinlove' (the architect) writes to 'Brash' (his client) following receipt of a letter from Brash questioning the anticipated construction cost of the house. In his response to Brash, Spinlove states:

I am sorry my letter caused you disappointment. That would not have happened had I known the sum you wish to spend, for I should then have cut the coat according to the cloth, as the saying is.⁸⁰

Spinlove continues by explaining that cost is a factor dependent on choice of materials, the style of the house and its size. A few days later Brash responds to Spinlove, stating:

I appreciate your theory of the dimensions of the house influencing the cost, but apprehend there must be an erroneous misconception and that a residence of the character you indicate could not possibly involve an expenditure of £14,000. If this is so I shall either have to disperse a larger sum or relinquish the ambition of building altogether.⁸¹

Not surprisingly, cost is a key aspect of the interaction between architect and client, and one might anticipate that the likely interactions between architect and project manager in this research project might recount aspects of the correspondence between Spinlove and Brash. In *Breaking ground: adventures in life and architecture* (2004) Daniel Libeskind describes the effect that changes in budget have on architectural design. When the budget for his design of Manchester's Imperial War Museum was halved, Libeskind described how he set to work

⁷⁹ Flora Samuel, *Le Corbusier in Detail*, 39.

⁸⁰ Harry Creswell, *The Honeywood File: an adventure in building* (London: The Architectural Press Ltd, 1983), 16.

⁸¹ Creswell, *The Honeywood File: an adventure in building*, 17.

changing materials and structure, forgoing 'extras' and simplifying the construction 'without compromising the essential ideas and meaning' of the design.⁸² Celebrating the result, he writes:

We ended up with a building that satisfied the accountants, pleased the critics, and most important, fascinated visitors, who came in droves and made the museum an instant success. The moral of the story is that reduced budgets can sometimes be the impetus to greater creativity.⁸³

Seemingly less easy was his involvement with the Ground Zero site in New York, in particular the political game playing with the architectural firm SOM during the design process for the Freedom Tower. Libeskind writes:

People say [...] "Well, you must hate it that you had to compromise so much". I must make this clear: there have been far fewer compromises than people imagine, and besides, compromise is an integral part of the architectural process.⁸⁴

But negotiating design work with property developers not only involves compromise; indeed it requires the architect to be mindful of a higher purpose. Libeskind writes:

Working with developers can be tricky. It means fulfilling two opposite goals, giving the developer his maximum profits whilst making sure that the resulting building goes beyond private interests. The worth of the marketplace is enhanced by buildings that add to the cultural and economic success of a place. Industrialists like Carnegie and Rockefeller became immortal because they invested in an architecture with a civic grandeur. They didn't turn their backs on the city but contributed to it.⁸⁵

Design of the Freedom Tower required Libeskind to give in to the demands of developer Larry Silverstein. Satisfying the demand for 2.6 million square feet of lettable space resulted in the tower's lower twenty floors needing to comprise of larger floorplates than what would typically be expected in a standard skyscraper, resulting in space earmarked for a civic park being subsumed. Less civic grandeur perhaps than might have eventuated from the involvement of those who looked the city in the face. In light of the significance of the civic spaces in the development scheme considered in this dissertation, this compromise is particularly instructive. Jencks (2005) alludes to a similar tension at play regarding Foster's plans for the apex of the Swiss Re tower. Foster stated:

In recent meetings I've had with the client, we've been concentrating energies at improving the bottom of the building – which has been under a lot of threat in terms of subleases for commercial space. We have fought those battles successfully and I think we've generally calmed that down.⁸⁶

⁸² Daniel Libeskind, *Breaking ground: adventures in life and architecture* (New York: Riverhead Books, 2004), 233.

⁸³ Libeskind, *Breaking ground: adventures in life and architecture*, 233.

⁸⁴ Libeskind, *Breaking ground: adventures in life and architecture*, 270.

⁸⁵ Libeskind, *Breaking ground: adventures in life and architecture*, 262-263.

⁸⁶ Jencks, *The Iconic Building*, 189.

Jencks attributes the aesthetic quality of the Swiss Re tower to the way it swells at the middle and tapers at the top, likening it to the aesthetic enjoyment one derives from the entasis of the columns of the Parthenon.⁸⁷ But, considerations of aesthetics were not alone in influencing the shape of the tower:

[R]efinements were carefully correlated by computer for their multiple implications in terms of cost, wind pressure, and visual delicacy.⁸⁸

Put this way, aesthetics might be seen as something more serendipitous than intended. In 'Office buildings and the signature architect: Piano and Foster in Sydney' (2007) Donald McNeill focuses on the design of two commercial office buildings by 'star' architects, noting that the architect's engagement was concentrated mostly on the:

[P]ublic nature of the building [...] but most importantly—especially in the case of tall buildings— [he/she] will consider how the immediate urban context and the skyline will be affected by the design [considering] the particular form, genre, favoured materials and colours.⁸⁹

Referring to the particular economics at stake in the developments, McNeill emphasises that the 'global architectural firm must give value added economically'⁹⁰ and writes instructively:

[M]arketing weight [of a global architect] is not quantifiable, which in property development terms means that design is only relevant if unequivocal gains to profitability are added⁹¹ [and] for premium developments to be successful, developers require an understanding of how potential anchor tenants see their operational efficiencies to be best achieved.⁹²

This reduces design and potentially aesthetics to something contingent on the achievement of a certain level of profitability of both developer and tenant, but seemingly contradicts Till (2007) who writes:

The uncanny thing about architectural creativity is that, despite many attempts, it resists complete explanation. It is exactly this enigmatic quality that raises its value on the external market.⁹³

Perhaps creativity is at its most valuable when it is explainable as developer's profit, and in this research project, which considered how architectural aesthetics and economic imperatives are reconciled, is particularly pertinent. In 'Architecture, Economic Imaginaries and Urban Politics:

⁸⁷ Jencks, *The Iconic Building*, 192.

⁸⁸ Jencks, *The Iconic Building*, 193.

⁸⁹ Donald McNeill, 'Office buildings and the signature architect: Piano and Foster in Sydney', *Environment and Planning A* 39 (2007): 499, <https://doi.org/10.1068/a3720>.

⁹⁰ McNeill, 'Office buildings and the signature architect: Piano and Foster in Sydney', 499.

⁹¹ McNeill, 'Office buildings and the signature architect: Piano and Foster in Sydney', 499.

⁹² McNeill, 'Office buildings and the signature architect: Piano and Foster in Sydney', 497.

⁹³ Till, *Architecture depends*, 160.

The Office Tower as Socially Classifying Device' (2013) Monika Grubbauer focused on the economic imagery of non-iconic office buildings in understanding the role of architecture as a socially classifying device: as an aid to urban regeneration and associated economic activity. Research focusing only on iconic buildings, she argues:

[T]ends to disregard the majority of more everyday buildings [and] fails to address the more fundamental way in which architecture is able to embody and refer to social and economic functions.⁹⁴

Grubbauer noted that visual typification of buildings as decontextualised commercial office architecture, rather than as iconic, has made Vienna (the city on which her research centred) more comparable with other cities which are competing for interest from multinational investors. She states:

[U]niform, unremarkable, repetitive images that draw on the truly global architecture of today (the banal and everyday office tower) might be just as efficient as shaping public discourse as our era's greatest architectural icons.⁹⁵

But this study is of less relevance to this dissertation, as this research project focuses on the design of, what its' developer hopes will be an iconic commercial building.

1.4.5.3 Summary

The literature relating to iconic architecture, the transnational capitalist monument, highlights the desire of cities, corporates and property developers to assert their power to avail of the favourable economics associated with the development of landmark buildings, as designed by celebrity architects. Whilst research indicates that iconic architecture has the potential to substantially elevate economic activity, rental yields and property valuations (the 'Bilbao effect'), it also highlights the difficulty with linking the particular design characteristics of these buildings to their exchange value. Seemingly, only limited research has been conducted in respect of commercial buildings in this space, and studies focusing on how such buildings arise and serve the interests of global capitalists are equally scarce.

Nevertheless, scholars highlight that design of iconic buildings is the result of a multiplicity, dependent on the interactions of a range of professionals. Stemming less from the actions of a god-like 'star' architect; design is instead irredeemably contingent on the input and control of others, from the moment of the architect's initial sketch. In this sense, the pursuit of architectural

⁹⁴ Monika Grubbauer, 'Architecture, Economic Imaginaries and Urban Politics: The Office Tower as Socially Classifying Device', *International Journal of Urban and Regional Research* 38, no.1 (2014): 337, <https://doi.org/10.1111/1468-2427.12110>.

⁹⁵ Grubbauer, 'Architecture, Economic Imaginaries and Urban Politics: The Office Tower as Socially Classifying Device', 355.

purity in a detached world of architectural abstraction is at odds with the dirty faced reality of architectural practice. The matter of cost, for example, is a key aspect in architect-client interactions. Whilst this might initially be viewed as something of a negative, reduced budgets potentially provide the necessary incentive for greater creativity in design. But maximisation of developers' profit will often require compromise: the need to maximise lettable space as a key design criterion having the potentially negative effect of reducing civic grandeur. Perhaps instructively, in a study of two development schemes, architectural design was described as being relevant only when it provided unequivocal gains to profitability. This rendered design secondary to economic considerations. Indeed, the architect's engagement concentrated on each of the scheme's urban contexts, their impact on the skyline and with the choice of materials. That said, scholars argue that the enigmatic quality of architecture, despite it being difficult to explain, still renders it valuable.

In the next section the ethnographic methodologies employed in this research are outlined.

1.5 Methodology

In this section, I outline the ethnographic methodology adopted in undertaking this research. I commence with an overview of ethnographic research practices and their application in architectural research. Following this, I describe the particular techniques which I employed on a day-to-day basis whilst embedded within the NBD D&C and DM teams at PropertyCo's premises, together with the methodologies used in interpreting the extensive research data collected, and in writing this dissertation. The relative merits and limitations of the ethnographic research approach adopted have also been outlined.

1.5.1 Ethnography

Ethnography is a research technique, as John Creswell explains in *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (2007), in which researchers immerse themselves within a particular group of people to observe, understand and interpret their behaviours, beliefs and interactions together with the language they use.⁹⁶ Ethnographic data is usually gathered over a long period of time from participation in the day-to-day work life of a group of people, and by conducting follow-up interviews. Ethnographic accounts utilise extensive use of verbatim quotations which provide an intricate and thorough description of the observed behaviours. In *Interpretive Ethnography: Ethnographic Practices for the 21st Century* (1997), Norman Denzin states:

Ethnography is that form of inquiry and writing that produces description and accounts about the ways of life of the writer and those written about.⁹⁷

An ethnography begins with the researcher highlighting the particular anxieties they faced when contemplating the research participants together with any generalisations they have drawn.⁹⁸ As David Fetterman explains in *Ethnography: Step-by-Step* (2010), as immersion in a group commences, observations of the people studied are made from a broad perspective, then the scale is changed to examine this group on a more granular level of detail. Later this perspective is expanded by drawing on the insights gathered from studying the group's behaviours at the more

⁹⁶ John Creswell, *Qualitative Inquiry & Research Design: Choosing Among Five Approaches* (Los Angeles: Sage Publications, 2013).

⁹⁷ Norman Denzin, *Interpretive Ethnography: Ethnographic Practices for the 21st Century* (Los Angeles: Sage Publications, 1997), xi.

⁹⁸ I have set out these anxieties and generalisations in Section 1.5.5.

detailed scale.⁹⁹ This approach allows the researcher to, as Ray Lucas outlines in *Research Methods in Architecture* (2016) ‘cut through the differences between what people say and what they actually do’.¹⁰⁰ Data is collected which might otherwise be missed, where research participants either avoid something they feel uncomfortable with or believe to be of little interest. In *The Interpretation of Cultures: Selected Essays* (1973) Clifford Geertz uses the term ‘thick description’ to describe the thorough account of culture which ethnography provides, borrowing from Gilbert Ryle, encompassing ‘Thinking and Reflecting’ and ‘The Thinking of Thoughts’.¹⁰¹ In highlighting how ‘extraordinarily thick it is’ Geertz writes: ‘finished anthropological writings, including those collected here, this fact [...] that what we call our data are really our own constructions of other people’s constructions of what they and their compatriots are up to’.¹⁰² In the following sections, I set out how the research fieldwork was conducted, but before I do this, I have considered the fairly limited application of ethnographic scholarship in architecture.

1.5.1.1 Ethnography in architecture

Despite its limited application in architectural research, Albena Yaneva posits in ‘Editorial. New Voices in Architectural Ethnography’ (2018), that ethnography is one of only a few social research methodologies adapted to the work of architects, holding ‘remarkable potential to investigate new research and design questions’.¹⁰³ Yaneva highlights that the work of Donald Schon (1987) and Dana Cuff helped to shift research scholarship to a more qualitative focus. Cuff’s work in particular, *Architecture: the story of practice* (1992) considered how architectural practices function, focusing on architecture as a process. She shadowed architects, attended and made notes of dialogue at client meetings, visited sites and attended social activities. Referencing these dialogues, she identified the significance of ‘constraints and preferences [in] divulg[ing] the values [...] architects and their clients uphold in design collaborations’.¹⁰⁴ She also raised the question of when design decisions occur, noting:

An architect will likely say that this uncertainty only confirms the fact that design decisions take place at the architect’s drawing board, away from clients and consultants, but this view is too simplistic.¹⁰⁵

⁹⁹ David Fetterman, *Ethnography: Step-by-Step* (Los Angeles: Sage Publications, 2010), 39.

¹⁰⁰ Ray Lucas, *Research Methods for Architecture* (London: Lawrence King Publishing, 2016), 165.

¹⁰¹ Clifford Geertz, *The Interpretation of Cultures: Selected Essays* (New York: Basic Books, 1973), 6.

¹⁰² Geertz, *The Interpretation of Cultures: Selected Essays*, 9.

¹⁰³ Albena Yaneva, ‘Editorial. New Voices in Architectural Ethnography’, *Ardeth* 2 (2018): 17. <https://journals.openedition.org/ardeth/739>.

¹⁰⁴ Dana Cuff, *Architecture: the story of practice* (Cambridge: Massachusetts Institute of Technology, 1992), 181.

¹⁰⁵ Cuff, *Architecture: the story of practice*, 192.

But her research observations suggested otherwise:

Instead, there is a subtle yet powerful structuring of relations between people who work together to create the building within the architect's own office, and between architect and client. The constellation of individuals, as they make sense of each others' requirements and desires, moves towards a specific scheme that will be mutually agreeable.¹⁰⁶

Yaneva (2018) considers this 'ethnographic turn' as viewing the practice of architecture as a 'collective process of negotiation', an assemblage of elements, including both human and non-human such as 'materials, models, software, renderings' (in reference to studies by Houdart and Minato (2009); Loukisass (2012) and Yaneva (2009)).¹⁰⁷ The 'ethnographic turn' she attributes to reflexivity in research, architecture being seen as a social practice, a realisation that the outcomes of architectural practice have social agency and that the process of design is a collective endeavour.

Yaneva's own 2009 ethnographic study *Made by the Office for Metropolitan Architecture: An Ethnography of Design* (2009) took place (coincidentally) in Koolhaas's architectural practice OMA (Office for Metropolitan Architecture), in Rotterdam. Yaneva observed architects working in this practice over a period of two years and her ethnographic account comprises a series of short stories, which she states: 'remain self-exemplifying – they 'just' offer the world lived in the office, and depict it, deploy it, whenever the story allows'.¹⁰⁸ From undertaking this research, Yaneva was of the view that more traditional, critical based studies did not provide 'realistic accounts of contemporary architectural practice'.¹⁰⁹ Indeed, in attempting to understand a particular design by focusing on 'vague notions of society, culture, imagination, creativity', researchers, she argues, try to attribute design to the style or philosophy of the architect, thereby overlooking the collaborative process that might be at play within that architect's studio. Focusing on these vagaries, she writes, does 'not explain anything but need[s] explanation'.¹¹⁰ In the conclusion to her ethnographic study, Yaneva posits:

You can still appreciate a building, like it or dislike it, praise or discuss it, without knowing anything about the design experience that made it happen; but you cannot *understand* a building without taking these design experiences into account.¹¹¹

¹⁰⁶ Cuff, *Architecture: the story of practice*, 194.

¹⁰⁷ Yaneva, 'Editorial. New Voices in Architectural Ethnography', 18.

¹⁰⁸ Albena Yaneva, *Made by the Office for Metropolitan Architecture: An Ethnography of Design* (Rotterdam: 010 Publishers, 2009), 16.

¹⁰⁹ Yaneva, *Made by the Office for Metropolitan Architecture: An Ethnography of Design*, 12.

¹¹⁰ Yaneva, *Made by the Office for Metropolitan Architecture: An Ethnography of Design*, 28.

¹¹¹ Yaneva, *Made by the Office for Metropolitan Architecture: An Ethnography of Design*, 104.

Ethnography allows the researcher to provide that understanding to their audience, through a long and detailed description based on their period of immersion.

Leaving her own study aside, in her 2018 Editorial, Yaneva refers to a number of ethnographies including Brett Mommersteeg's: 'Approximations: On Some Ways to Listen to a Building "in the making"' (2022), which draws from ethnographic research in which he shadowed the work of an architect during the design development and construction phase for a factory development in Manchester. This study had a particular focus on understanding the building's acoustic qualities.¹¹² More recent ethnographic research projects include 'Deep Layers of 'Flatland': Scaling Up Nanomaterials' (2023), in which Benjamin Blackwell describes a study exploring the production of 2D material membranes. His observations of how engineers considered the scaling up of production to satisfy the demands of both academia and industry provided an understanding of how a building might be capable of 'bringing together scales but simultaneously facilitating their continued separation'.¹¹³ These ethnographies focus less on the practice of architecture and more on the social effects of architectural design.

In 'What buildings do' (2002) Thomas Gieryn argues that buildings 'stabilise social life', through providing 'structure to social institutions, durability to social networks [and] persistence to behaviour patterns'.¹¹⁴ Building design, he states, is heterogenous in two respects. Firstly, it requires the 'resolution of sometimes competing social interests' and to this end the 'interests of powerful voices in the design process are etched into the artifact itself';¹¹⁵ and secondly, 'to some degree, every design is a blueprint for human behaviour and social structure, as well as a schematic for the "thing" itself'.¹¹⁶ The design process requires enrolment of a multitude of actors to turn ideas into a built form, and once built, that form has a stabilising effect on user's behaviour, until of course, changes are made. To see these effects at play, Gieryn studied the design, occupation and reinterpretation of the Cornell Biotechnology Building, which was completed in 1988.

It is these types of understanding of design processes which I seek to impart through my own research project. By immersion within a property development organisation, observing how its project managers interact with the architect's and engineer's teams will provide an arguably

¹¹² Brett Mommersteeg, 'Approximations: On Some Ways to Listen to a Building "in the Making"', *Science, Technology, & Human Values* (2022): 1–25. <https://doi.org/10.1177/01622439221116964>.

¹¹³ Benjamin Blackwell, 'Deep layers of Flatland', *Metode 1* (2023): 10. <https://metode.r-o-m.no/artikler/essay/deep-layers-of-flatland-scaling-up-nanomaterials>.

¹¹⁴ Thomas Gieryn, 'What buildings do', *Theory and Society* 31, no. 1 (2002): 35.

¹¹⁵ Gieryn, 'What buildings do', 41–42.

¹¹⁶ Gieryn, 'What buildings do', 42.

unique lens through which to consider architectural design practices for a significant development, and thus contribute to this somewhat rarefied literature. Yaneva relates:

As these stages are rarely explored in design studies, we know little about the ‘tribulations’ of a project on that unknown terrain, and we seldom witness how well it responds to ‘turbulence’ of different kinds.¹¹⁷

In the next section I focus on the methodologies adopted for the day-to-day research field work I conducted.

1.5.1.2 Research fieldwork

During my period of immersion within the project management teams at PropertyCo I applied ethnographic methodology to gather research data, focusing on the development project and the key interactions between team members. This was a very intense period of engagement: I was following multiple team members and dozens of design related issues that emerged, whilst trying to ensure as much data as possible was captured. In the next sections I set out how research was conducted on a day-to-day basis. Following this, an outline is provided of how the data collected has been interpreted and presented in this dissertation.

1.5.1.2.1 Participant observations

At design workshops, meetings, and on a day-to-day basis in the project office space, I observed and listened carefully to interactions between approximately 130 project participants, noting individual reactions where possible. Formal discussions were usually mediated by an agenda, although many of the interactions I observed were ad-hoc. I was not permitted to make audio recordings of the proceedings, so I made hand-written notes including lengthy verbatim dialogue between participants, which enabled later analysis of the key interactions. On these hand-written notes I included the title, date, time and location of each workshop/meeting I attended, and annotated them with diary-type comments to help characterise the phenomena I observed. A rough diagram was made to note where each participant was seated, together with the arrival and departure times of senior team members. Voice recognition software was later used to convert the hand-written notes into an electronic record. Photographs were taken of images displayed on meeting room video screens to assist with my recollection of proceedings.

¹¹⁷ Yaneva, ‘Editorial. New Voices in Architectural Ethnography’, 20.

1.5.1.2.2 Interviews

To supplement research data gathered through participant observations, semi-structured follow-up interviews were conducted with 26 key team members involved in the design process. Each interview lasted between 60-120 minutes. These interviews allowed me to target specific areas of interest, to understand participant motivations and follow-up on matters which needed further clarification, or where some of the necessary detail was missing. Interviews were mostly of a conversational style, with questions sufficiently probing yet readily adaptable to the reflections provided by participants, informed by my on-going familiarity with the project. Interviews were digitally recorded and later transcribed. A copy of the semi-structured interview template is included in Appendix A.

1.5.1.2.3 Documentation review

During times when interactions were minimal, detailed design documentation was made available for me to review, including the Architectural Design Brief ('ADB'), planning agreements, detailed architectural plans and sections, and other documentation. Digital artefacts such as the Project Viability Model ('PVM'), which contained the detailed calculations made in determining the initial and on-going viability of the project, were displayed a computer screen. Documentation reviews were conducted to supplement participant observations and interviews, and to gather additional data.

1.5.1.2.4 Recording

Data gathered from the field research was documented as a series of transcripts, file notes, diagrams and photographic evidence. Where possible, collection techniques were used to triangulate the veracity of the data, and to help develop a deep understanding of the context in which it was gathered. As Fetterman explains: 'The trick is to compare comparable items and levels during analysis'.¹¹⁸ This often necessitated that, during interviews, specific questions be asked to clarify my understanding of what had been said during workshops and meetings, and inquiries made regarding technical matters, as required.

¹¹⁸ Fetterman, *Ethnography: Step-by-Step*, 95.

1.5.2 Interpretation and output

The nature of ethnographic study is that it is both a research process and a research outcome. An ethnography is written in a literary story-type style; complete with a plot, a set of actors and a dialogue. The ethnographic text presented within this dissertation contains a detailed description of the research setting and the proposed development scheme, and then provides a very detailed description of the culture observed. As Fetterman describes, this is presented from ‘within the group’s view of reality’.¹¹⁹

Interpretation of the significant, and at times overwhelming, amount of data collected commenced with the writing of three empirical ‘chapters’, each trying to make sense of the separate effects that financial metrics, architecture and the project management practices observed seemingly had on the design process. These empirical chapters were not easy to write as they relied upon selection of certain aspects of the design process to focus on, and as such they did not adequately capture the extent of what I had witnessed, but they were a start. Indeed, in *Laboratory Life: The Social Construction of Scientific Facts* (1979) Bruno Latour writes:

In order to make sense of his observations, the observer normally adopts some kind of scheme by which he hopes to be able to construct a pattern. If he can successfully use a theme to convince others of the existence of a pattern, he can be said, at least according to relatively weak criteria, to have “explained” his observations. Of course, the selection and adoption of “themes” is highly problematic. For example, the way in which the theme is selected can be held to bear upon the validity of his explanation; the observer’s selection of a theme constitutes his method for which he is accountable.¹²⁰

With this very much in mind, I presented the ‘financial metrics’ empirical chapter as a very preliminary paper at an emerging scholars’ colloquium at the Interdisciplinary Perspectives in Accounting conference at The University of Edinburgh in July 2018 and received helpful feedback from a number of scholars. The ‘architecture’ empirical chapter was presented as a conference paper at the Asia Pacific Interdisciplinary Perspectives in Accounting conference in Auckland in July 2019. The ‘financial metrics’ empirical chapter was subsequently revised and presented as a conference paper at the Accounting and Finance Association of Australia and New Zealand conference in Melbourne in July 2022. Feedback received from participants at these events helped me to contemplate the larger dissertation, highlighting that development of the ‘themes’ was something I needed to focus on very carefully. Whilst writing the ‘financial metrics’ and ‘architecture’ papers helped to identify the effects of the key financial metrics and architectural

¹¹⁹ Fetterman, *Ethnography: Step-by-Step*, 17.

¹²⁰ Bruno Latour, *Laboratory Life: The Social Construction of Scientific Facts* (Beverly Hills: Sage Publications, 1979), 37.

elements which both the project managers and architects considered as fundamental to the design, they were essentially only summaries of the data collected, lacking analysis.

It was challenging when writing an empirical chapter to separately identify and describe the effect of project management practices on the design. This, I believe, was due to the sheer complexity and interdependency of the phenomena observed. It was particularly challenging identifying themes suitably disconnected from each other, and I was distracted by conflicting thoughts, which constantly suggested that the data might be better presented on a more temporaneous basis, through the use of metaphor, or in some other way. Nevertheless, after considerable time, and thought, a suitable writing structure was determined, which aims to illustrate the complexities, interdependencies and complexities observed as small stories or vignettes.

On reflection, development of the 'project management' chapter, despite the challenges I experienced, was particularly instructive. It helped determine an appropriate structure for this dissertation and it indicated that the effects of the financial metrics and architecture in the design process I observed could not be separated in the manner originally anticipated, and highlighted the inherent problems in the 'financial metrics' and 'architecture' conference papers. Despite its initial clumsy structure, the 'project management' empirical chapter formed the basis for much of this dissertation. The chapter was significantly restructured and expanded so that a compelling narrative could be developed to identify the architectural aesthetics and economic imperatives at stake in the situations observed, and to consider how they were reconciled. The chapter was divided into a series of vignettes, each of which captured an important source and quality of the complexities and uncertainties observed. Individual vignettes were then grouped as sections where they addressed a particular theme or key activity identified within the detailed design phase. Vignettes have been arranged in a temporal logic within each section, and also within the dissertation. Each of the vignettes provided a suitable analytical focal point for interpretation and analysis, allowing me to draw on suitable literature and philosophy. As Kleinman relates:

In order to build the scaffolding of scholarly materials that makes cultural analysis convincing and authorises the ethnographer to apply that analysis to different problems and special themes, the author composes an iterative process that goes back and forth across ethnographic context, social theory, and key issues [...] becom[ing] absorbed in the intricacies of thought and experience that represent an alternative way of being-in-the-world.¹²¹

Within each vignette I focused on the dialogue between team members, in order to understand how the architectural aesthetics and economic imperatives at stake were considered, debated,

¹²¹ Kleinman cited in Wolcott, *Ethnography: A Way of Seeing* (Lanham: AltaMira Press, 2008), 86-87.

and reconciled, or how no reconciliation was effected. This involved being attentive to the particular aesthetic and economic forces at play, together with the nuances of individual team members and the businesses/organisations they represented. It was important that my interpretation and analysis of the dialogue contained within the vignettes provided clear descriptions, statements and insights in relation to what took place, so that I correctly characterised the culture which I observed. To this end, I analysed the logic that team members applied in their arguments. At times, fallacious premises were used by team members, and at other times particular strategies were enacted in the hope of achieving a desired outcome. Either way, this provided me with a deeper understanding of the dialogue and the manner in which reconciliations were effected, or deferred. In addition to focusing on how arguments were constructed, I drew from a number of philosophers to help make sense of the situations I encountered. The empirical vignettes are presented in Chapter 5.

I now turn my attention to explain certain aspects of the writing style employed in this dissertation. This is in response to the large volume of verbatim dialogue collected and the need for anonymity.

1.5.3 Writing style

Over the period of my immersion within PropertyCo, research data was collected from attending design workshops and meetings, comprising the verbatim dialogue of many people. Interviews were conducted with key team members and informal conversations were ongoing with these people. I was also privy to conversations overheard, simply by being present. Whilst I have attempted to keep the dialogue presented in this dissertation as unadulterated as possible, there are a number of caveats to note, as set out in the sections below.

1.5.3.1 Quotations

Ethnographic writing is intended to provide a ‘thick’ description, with extensive use of verbatim quotations which characterise the research participants. In this dissertation short quotations comprising less than one line appear in-text so that the flow of text is not unnecessarily broken. Where a quotation is longer than one line of text it has been included as a distinct, indented paragraph without the use of quotation marks. This is consistent with the methodology outlined by Lucas.¹²² Where research participants have spoken from the perspective of the first person,

¹²² Ray Lucas, *Research Methods for Architecture*, 98.

double quotation marks have been used. In all other instances, single quotation marks have been used.

1.5.3.2 Contextualisation

In light of the story-type style that characterises ethnographic writing, it is important that fragments of text are properly contextualised: words/phrases consistent with the context have been added and placed in square brackets. By way of example, an architect may have been talking about the shape of the building and said: 'It's like a crystal'. In this dissertation, for context I will note: 'It [the shape] is like a crystal'.

1.5.3.3 Anonymisation

The research site, PropertyCo, requested that in order for me to be privileged to attend core workshops and meetings, etc, data collected be anonymised. I have therefore anonymised data, which I believe would identify PropertyCo and the development project I studied. By way of example, an architect might have said: 'I have placed the orchid garden lobby on Swanston Street'. In this dissertation I will write: 'I have placed the [garden] lobby on [*First Street*]'. Thus, matters of context are included within square brackets, and matters of anonymity that involve replacement of key descriptors, that would otherwise allow for the identification of a location are included within square brackets and have been italicised. Notwithstanding this approach, anonymisation of data has not been without its challenges. Specific references which might identify PropertyCo or the NBD development, such as mentions of its public profile and history have been deleted. In a similar way, references, which might identify the key consultants appointed have been deliberately obscured. This has been achieved by changing locations, not providing diagrams that might otherwise have been helpful in providing site context or those showing a typical floorplate to help explain the location of the core, etc., not making any reference to specific views or neighbouring buildings, and altering the commonly known titles of documentation. To assist with this process, extensive use has been made of internet searches to test and ensure terminology used does not subvert the goal of anonymisation.

1.5.3.4 Proper nouns

Where a core proper noun is referenced, such as the name of the principal architect, key terms will be adopted. By way of example, were I to be talking about 'Le Corbusier', I will instead use the key term 'GlobalArchitect', and where I refer to one of GlobalArchitect's principals or staff, I will use the term 'GlobalArchitect Principal-1' or 'GlobalArchitect Associate', as applicable. The use of gender in the relevant text is consistent for the anonymised figures, for example, DM-

Director is always referred to using female-identifying pronouns: 'she/her'. This identification is consistent with the use of the pronouns of the actual persons involved. In light of the extensive use of verbatim quotations used, for the purposes of readability core anonymised terms have not been included in square brackets, nor have they been italicised. This is a departure from the method of anonymisation outlined in the previous section. An example of this is the use of the term PropertyCo.

1.5.3.5 Image of architecture

Throughout this dissertation images relating to particular aspects of the architecture are described. If the image is already generalised and not conclusively identifying, I have described the image. For example, where the overall envelope of the architecture is described, the architects have referred to it as 'crystalline'. This is quite a general description that might relate to any number of buildings, and as such it will be used as it was originally stated. However, where a far more specific descriptor is introduced such as: 'The building has five bright yellow star-shaped balconies on levels 8 and 10', such a descriptor will be altered in a manner that anonymises the architecture but does not compromise the content. For example, I might say: 'The building has [distinctive colourful shapes on some of the balconies]'.

1.5.3.6 Overheard conversations

During my period of immersion at PropertyCo I was privy to a number of conversations between team members in workshops, meetings and in the project office space, simply by being present. As team members were aware of the research and methodology employed, these conversations have been considered in the same manner as all other data collected.

1.5.3.7 Sarcasm/slight

In particular circumstances, sarcasm/slight was utilised by team members in their interactions with one another. Where this is included in the quoted dialogue, it has been italicised.

1.5.3.8 Photographic images

During a number of workshops and meetings, I took photographs of images displayed on meeting room screens, primarily to act as a reminder of proceedings. Where these are considered to be helpful in explaining the circumstances at play in a particular vignette (and are sufficiently anonymised) they have been reproduced in this dissertation. The quality of the images is quite poor, as they were taken a considerable distance from the screen at an angle, and using a mobile phone.

1.5.4 Merits/limitations of ethnographic research methodology

The use of ethnography as a research methodology has a number of merits and limitations. Whilst ethnography allows a researcher to experience and document an in-depth study of an organisational culture over a long period of time, providing the opportunity to add a level of richness and meaning to the behaviours observed, there is the risk that the researcher, might become so immersed that they, inadvertently, form part of the observed data. I have been very mindful of this risk, particularly considering my keen interest in architecture and my background as a graduate architect. Naturally, I had my own views on the design itself, together with the processes observed and at times research participants asked: 'What do you think'? I was mindful not to allow my opinions be known, or to comment on observed behaviours. At no point did I want my presence to become part of the studied culture, or for my personal interest to affect the choice of workshop or meeting to attend when they ran concurrently. Nevertheless, D&C-Director asked me to take-part in the Value Engineering Session, (described in Section 5.5.2) not to merely observe it. As a member of one of the table groups, I made suggestions relating to the orientation of the lift core, and that a section of the southern facade might remain unclad. The architects in my table group responded that these ideas had been considered previously.

Following the publication of Margaret Mead's *Coming of Age in Samoa: A Psychological Study of Primitive Youth for Western Civilization* (1973), there has been considerable debate about certain problematic aspects of ethnographic studies. Mead was, in particular, criticised for having overlooked the effect of outside influences on the youth she studied. In the present 'post-truth' context, in 'Problems of Evidence in Ethnography: A Methodological Reflection on the Goffman/Mead Controversies (with a proposal for rules of thumb)' (2021), Joost Beuving poses a question in respect to ethnographic methodology: in requiring a literary style, does ethnography have the effect of crafting the observations made by the researcher in a way that might be different to the dry ethnographic findings? Furthermore, he questions the ethnographic here-and-now or 'present' as represented in the culture: might it be difficult to replicate or corroborate this data and what should be made of the non-observed phenomena?¹²³ Indeed, I am most conscious that the interpretations and analysis of day-to-day experiences as presented in the vignettes, might be considered subjective, contextualised only by reference to the extent of access I was provided to workshops, meetings and other events. I was not, for example, copied into or provided with access to emails sent between team members and as such was not aware of

¹²³ Joost Beuving, 'Problems of Evidence in Ethnography: A Methodological Reflection on the Goffman/ Mead Controversies (with a proposal for rules of thumb)', *Forum: Qualitative Social Research* 22, no. 2, art. 1 (2021). <https://doi.org/10.17169/fqs-22.1.3567>.

discussions, which might have taken place via this medium. In addition, whilst PropertyCo made project related documentation available for me to review, I was not provided with access to the digital document database 'Aconex'. Accordingly, there might well have been other documentation relevant to this study that has not been considered.

1.5.5 Anxieties and generalisations in contemplating the research setting

In this section, I highlight the anxieties and generalisations made in contemplating my period of immersion within the project management teams at PropertyCo. In undertaking fieldwork, I was able to draw on a career as a chartered accountant and in particular the many years of experience as an assurance practitioner, which involved interviewing people within organisations about their particular roles and the work processes they were engaged in. I supplemented this background with my recent study of architecture to help make sense of the design related phenomena observed. It was most important that I should not make assumptions about what I was observing based on my studies of architecture, or indeed my background in accounting: I was the researcher, not the researched and I needed to listen carefully to what I was hearing. In addition, I was also conscious of the privilege which had been afforded to me by the research site. PropertyCo is a leader in property development and project management, as too, the architects, engineers and other consultants involved in the development are leaders in their respective fields. This was, in my mind, as good as it could possibly get, and I initially felt intimidated, then excited, in contemplating the research fieldwork. I kept thinking, how could my research possibly provide insight in this context? I was also concerned about what it was that I might be missing; for I was not privy to certain forms of communications including emails, the Aconex database and discussions at PGC meetings, so it was important that I probed as deeply as possible when conducting participant interviews.

Also of concern was the need to be mindful of my passion for architecture, to avoid becoming distracted by particular aspects of the design which were of more personal interest. This would have had the effect of limiting the data collected in respect of areas which I considered to be of less interest. My 'muzzle' also needed to remain tightly in place so that I kept my opinions to myself, and I needed to be very careful to ensure that my level of immersion did not have the effect of polluting the research data. I was particularly conscious of the request that the research data be anonymised and how this might work in a practical sense: accidental 'slippage' of information relating to the research site, its staff, their consultants and in relation to the development scheme itself needed to be avoided. The particular strategies employed in anonymisation of research data are described in Section 1.5.3.3. It was important to ensure that

information gathered from team members was not shared between them, as this might have impacted the ongoing interactions and relations they had with each other, and of course their trust in me. Perhaps not surprisingly, I was also concerned about the ‘gap’ in my professional life after the period of my immersion finished. It would be the most wonderful experience to observe people working in a field I was so passionate about, and on such a grand scale. It was to be mesmerising.

1.5.6 Finalisation of this dissertation

There is a gap of six years between the conclusion of research fieldwork and the publication of this dissertation. This is attributable to commercial-in-confidence requirements relating to the research project, delays to construction of the NBD tower (which was not completed until 2023), and general disruptions between 2020–22 due to the COVID pandemic.

1.6 Glossary

A number of key terms are used throughout this dissertation. These are explained where they are first introduced in each Chapter, and in the list below. Where applicable, this includes the relevant assigned acronym.

Architectural aesthetics:

The notion of architectural aesthetics is explored in Chapter 2.

Architectural Design Brief (ADB):

The architectural design brief prepared for firms of architects invited to submit designs to the NBD architectural design competition. The brief, dated 29 September 2016, sets-out the NBDJV's design aspirations for the NBD scheme and is further considered in Section 4.2.2.6.

Architectural Roof Feature (ARF):

An aesthetic feature situated atop the tower designed to help the apex of the tower transition to the sky.

Biophilia:

In *The Anatomy of Human Destructiveness* (1973 [1977]), Erich Fromm defines biophilia as 'the passionate love of life and of all that is alive; it is the wish to further growth, whether in a person, a plant, an idea, or a social group.'¹²⁴ Its meaning in the context of architectural design references the connection to nature and therefore most commonly refers to, buildings adorned with plants.

Core:

The 'core' is the section of a tall building, which contains lifts, staircases, bathroom facilities and building services. It is often set within the building towards the centre of floor plates, furthest from the external walls. The core frequently has important load-bearing functions.

Date of Practical Completion (PC):

The date at which a development is deemed to be ready for occupation.

Design and Construction (D&C):

PropertyCo's Design & Construction business. The D&C business is considered further in Section 4.2.1.

¹²⁴ Erich Fromm, *The Anatomy of Human Destructiveness* (Ringwood: Penguin Books, 1977), 485.

Design and Construction Team (D&C-Team):

PropertyCo's NBD Design & Construction team, as defined in Section 4.3.1.

Design excellence:

'Design excellence' refers to a process approved by the anonymised relevant planning authority requiring that an architectural design competition be conducted. It also requires that following detailed design development, the winning architect provides a statement that the scheme continues to exhibit equivalent 'design excellence' to the original winning design. For the NBD scheme, the architectural design competition is outlined in Section 4.2.2.5.

Detailed design phase:

The period following an architectural design competition during which the design of the winning scheme is developed by the scheme's architects, engineers, cost planners and other consultants, into a set of drawings and associated documentation suitable for submission for development approval by the relevant local planning authority.

Development Budget:

The budget determined for the NBD scheme, based on the Reference Scheme design. The Development Budget is further considered in Section 4.2.2.4.1.

Development Management (DM):

PropertyCo's Development Management business. The DM business is considered further in Section 4.2.1.

Development Management Team (DM-Team):

PropertyCo's NBD Development Management team, as defined in Section 4.3.4.

Design Schemes:

References to the NBD 'design scheme' are complicated due to the evolution of the design during the ethnographic study, and in the period preceding the study. As such, a number of design schemes are referenced in this dissertation. Each reference is to a particular scheme proposed at a key moment in the design evolution, as outlined below.

'Reference Scheme' (construction in concrete), June 2016: The Reference Scheme is prepared for the purposes of an architectural design competition and in order to simultaneously make a business case for a development scheme. It's the most paired-back version of the program and scheme. For the NBD development, the Reference Scheme was also used by PropertyCo during its attempt to sell the NBD site in early 2016.

'Competition Submission Steel Scheme' (construction in steel), December 2016: The scheme submitted by GlobalArchitect to the NBD architectural design competition.

'Rationalised Concrete Scheme' (construction in concrete), February 2017: The scheme announced as winner of the NBD architectural design competition. This scheme consisted of a rationalisation of the Competition Submission Steel Scheme, to be constructed using reinforced concrete.

'Design Developed Scheme' (construction in concrete), November 2017: The scheme submitted in the Main Works Development Application in November 2017, following design development of the Rationalised Concrete Scheme during the detailed design phase.

'Rationalised Steel Scheme' (construction in steel), December 2017: The scheme developed in parallel with the Design Developed Scheme during the detailed design phase, utilising construction in steel and with a rationalised form of structural bracing system.

'Organic Steel Scheme' (construction in steel), December 2017: The scheme developed in parallel with the Design Developed Scheme during the detailed design phase, utilising construction in steel and with an organic form of structural bracing system.

Economic imperatives:

The notion of economic imperatives is explored in Chapter 3.

First Street:

The primary street boundary of the NBD site, and the primary address of the proposed NBD tower.

Gross Floor Area (GFA):

Gross floor area is determined by aggregating the floor area of each floor of a building by taking measurements from the internal face of external walls, measured at a height of 1.4m above the floor. It excludes lifts and stairs, basement and storage spaces, vehicular access and loading areas, plant/motor rooms, terraces with outer walls less than 1.4m in height and voids/atria between consecutive floors.

GlobalArchitect:

The architect appointed to the NBD scheme, and winner of the NBD architectural design competition. GlobalArchitect comprises teams drawn from a firm based in Europe and a firm based in Australia and is referred to in the plural sense. GlobalArchitect is considered further in Section 4.3.3.1.

GlobalEngineer:

The consulting engineering firm appointed to the NBD scheme. GlobalEngineer is considered further in Section 4.3.3.2

Heat load:

The heat of the sun on the facade of the tower. This might be mitigated by the installation of internal blinds, spandrels or the use of external shades.

Internal Rate of Return (IRR):

The Internal Rate of Return is a measure of the inherent contribution of the future cash flows in the NBD scheme relative to the initial investment outlay. This metric is used by PropertyCo to assess the financial viability of the scheme. IRR is considered further in Section 4.2.2.4.3.

Main works:

Main works comprise construction of the NBD tower and surrounding public realm.

Margin on Cost (MoC):

The Margin on cost is a measure of profit in the NBD scheme expressed as a percentage of total project cost outlays. MoC is considered further in Section 4.2.2.4.2.

NBD Teams:

PropertyCo's D&C-Team and DM-Team, together with GlobalArchitect's and GlobalEngineer's teams appointed to the NBD project.

New Building Development (NBD):

The scheme PropertyCo together with its partners in the NBDJV are proposing to develop in an Australian capital city. This development scheme is the focus of this research and is further considered in Section 4.2.2.

New Building Development Joint Venture (NBDJV):

The joint venture developing the NBD scheme. This comprises PropertyCo together with two other equity partners. The NBDJV is considered further in Section 4.2.2.3.

Net Lettable Area (NLA):

Net Lettable Area is calculated in accordance with the Property Council of Australia '*Method of Measurement for Lettable Area*' (2008). This equates to the sum of the lettable areas for each whole floor, which are individually measured by: 'Taking measurements from the internal finished surfaces of permanent internal walls and internal finished surfaces of dominant portions of the permanent outer building walls'.¹²⁵ This excludes certain areas such as: lift lobbies, services areas, car parking, access ramps and delivery areas, stairs, toilets, lift shafts, plant/motor rooms.

Pilot Study:

The study conducted in 2015–16 to guide the scope of a research project that forms the basis of this dissertation. The Pilot Study is considered in Section 1.4.3.

¹²⁵ Property Council of Australia, *Method of Measurement for Lettable Area* (Sydney, 2008), 24.

Project Governance Committee (PGC):

The Project Governance Committee is the formal governing body for the NBD project, comprising representatives from the NBDJV partners, and is considered further in Section 4.3.8.3.

Project Viability Model (PVM):

The Project Viability model comprises a complex spreadsheet model adapted to suit the NBD project and is primarily used to model and compare alternative leasing scenarios, and therefore, project viability. The Project Viability Model is considered further in Section 4.3.5.

Private Planning Instrument (PPI):

The Private Planning Instrument is an agreement with the City which grants the NBD site owner the right to develop a commercial office tower capped at a height of [245m], comprising a maximum Gross Floor Area of [59,000]m², provided the scheme delivers 'design excellence', together with the provision of a series of public spaces and public art installations. The PPI is considered further in Section 4.2.2.2.

Review Panel Meeting (RPM):

Review Panel meetings are convened to provide guidance and approval from the NBDJV representative (DM-Director) in respect of ongoing design development work. Review Panel meetings are considered further in Section 4.3.8.2.

Second Street:

The secondary street boundary of the NBD site.

Thermal comfort:

The SafeWork NSW website refers to this as 'a person's state of mind in terms of whether they feel too hot or too cold'.¹²⁶

Third Lane:

The third laneway boundary of the NBD site.

Tower:

The NBD scheme 54-storey commercial skyscraper, which is the focus of this dissertation.

Value Engineering (VE):

The process of cutting costs in a development by identifying efficiencies, and therefore value.

¹²⁶ "Maintaining thermal comfort in indoor work environments", 6 July 2020, SafeWork NSW, accessed on 16 September 2023, <https://www.safework.nsw.gov.au/resource-library/heat-and-environment/maintaining-thermal-comfort-in-indoor-work-environments>.

Zoning envelope:

The zoning envelope is the outer extent or limit of the site to which the tower might extend.

1.7 Dissertation structure

In this section I set out the structure of this dissertation. So far, I have identified the aim and objectives of this research, and provided a detailed description of the motivations for undertaking it. I have presented Koolhaas' theory of *Manhattanism*, as I believe it is of particular relevance to this research project, and have outlined the results of the Pilot Study conducted prior to embarking on this project. The Pilot Study identified several themes relating to the tension between design and cost, the procurement of architectural services and architectural 'gold-plating' and was particularly instructive as it helped to clarify the overall aim and research objectives for this larger research project. It also identified how, and where, it might best be conducted. Following this, I have provided an overview of relevant literature relating to the tension between architectural aesthetics and economic imperatives and the practice of architecture. In the Methodology section within this Chapter I have provided a detailed explanation of the ethnographic methodologies employed in conducting the research, together with an overview of where ethnography has been used in architectural scholarship. Immersion within PropertyCo lasted for a long period of time and in this section I have described the techniques used to identify and record the large volume of research data I was privy to, and explain how this data has been interpreted, analysed and presented as a written narrative within this dissertation. Key terms and acronyms used in this dissertation have also been defined.

In the following Chapter (2), I consider what might be understood by the term 'architectural aesthetics'. This is a subject which has been debated over many centuries. To develop an understanding of the term for the purposes of this dissertation I provide a chronological overview of aesthetics, in relation to architecture, from Vitruvius through to Kant, Schelling, Schopenhauer (amongst others) and then to Rancière's more recent idea of the 'aesthetic dimension', in which an aesthetic quality is considered as an 'excess' or 'supplement'. In Chapter 3, I consider what might be understood by the term 'economic imperative'. In particular, I focus on the concept of microeconomics, as this research relates to an individual development scheme, proposed by an individual organisation. I also discuss what we might consider to be the primary imperative of business in a capitalist economy: the generation of profit. This is followed in Chapter 4 by a detailed description of the research setting. This commences with an overview of PropertyCo, the large property development organisation which facilitated this research project, followed by a description of the development scheme, which became the focus: the New Building Development ('NBD'), including its historic context, financial metrics and relevant documentation including the Private Planning Instrument and Architectural Design Brief. This Chapter also includes an outline

of PropertyCo's 'model' project management approach, which was employed in managing the NBD scheme.

In Chapter 5, I present the results of the research through a series of empirical vignettes. These have been grouped thematically within six sections and contain a description of the particular design issue, the architectural aesthetics and economic imperatives at stake, and the type of reconciliation which was effected. In Chapter 6, I conclude this dissertation by addressing how the aim of this research has been achieved. This highlights 10 modes of reconciliation through which design decisions were enacted. The conclusion includes suggestions for future research.

2 ARCHITECTURAL AESTHETICS

2.1 Introduction

The aim of this dissertation is to explore and understand how architectural aesthetics and economic imperatives are reconciled through complex, interdependent and contingent building design processes. Thus, it is important in this Chapter to outline what we might understand by the term *architectural aesthetics*, and develop a working definition for the study to come. Marcus Vitruvius Pollio, the acclaimed ‘first theorist of architecture’ suggested that all buildings must possess ‘firmitas, utilitas and venustas’ that is, durability, convenience and beauty.¹ Immanuel Kant’s hypothesis relating to the ‘free play’ of imagination,² Friedrich Schelling’s proposition that buildings should be expressive of their purpose³ (something akin to a much later modernist ideal), and more recently Jacques Rancière’s framing of the ‘aesthetic dimension’ as something supplementary to, or in excess, of its individual constituents,⁴ highlight the evolution of what might be understood by architectural aesthetics, and the multitude of ideas it might embody. In the next section I provide a chronological overview of the development of the term, beginning with the Vitruvian paradigm of utility and beauty, before focusing on how it is discussed in more contemporary literature. This is followed by a consideration of how the term architectural aesthetics will be used for the purposes of this dissertation, but first, I turn to the ways in which ‘architecture’ and ‘aesthetics’, and therefore ‘architectural aesthetics’, are defined.

¹ Marcus Vitruvius, *The Ten Books of Architecture*, trans. Morris Morgan (Cambridge: Harvard University Press, 1914), 17. <https://www.gutenberg.org/cache/epub/20239/pg20239-images.html>.

² Immanuel Kant, *Critique of Judgment*, trans. Werner Pluhar (Indianapolis: Hackett Publishing Company, 1987), 62.

³ Friedrich Schelling, *The Philosophy of Art*, ed. Douglas Stott (Minneapolis: University of Minnesota Press, 1985), 168. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=316641>.

⁴ Jacques Rancière, ‘The Aesthetic Dimension: Aesthetics, Politics, Knowledge’, *Critical Inquiry* 36, no. 1 (2009): 3. <https://doi.org/10.1086/606120>.

2.2 'Architecture' and 'Aesthetics'

Before embarking on a detailed exploration of what is currently understood by the term *architectural aesthetics*, it is instructive to consider how each of the constituent words might be defined. The *Macquarie Concise Dictionary* defines 'architecture' as 'the art or science of building, including plan, design, construction and decorative treatment'.⁵ It defines 'aesthetics' in philosophy as 'the science which deduces from nature and taste the rules and principles of art; the theory of the fine arts; the science of the beautiful, or the branch of philosophy that deals with its principles or effects; the doctrines of taste'.⁶

As such, when the term *architectural aesthetics* is used, it relates to how buildings are designed and constructed and within that process how they might be adorned or embellished or styled, together with a determination of whether the resulting built form is something that might be considered as beautiful or otherwise; and how such a determination might be reached and the effects of such a conclusion. It is arguable that the planning, design and construction of buildings has been a day-to-day occurrence from the time humankind was in need of shelter. But whether the building itself was something that might also be considered beautiful, in addition to providing shelter, is something less easy to determine.

⁵ *The Macquarie Concise Dictionary*, ed. Arthur Delbridge and John Bernard, Third Edition, (Macquarie University: The Macquarie Library, 1998).

⁶ *The Macquarie Concise Dictionary*.

2.3 Historical overview

In this section I provide a historical overview of what has been understood by architectural aesthetics, commencing with the ancient writings of Vitruvius. As Paul Guyer argues in 'Kant and the Philosophy of Architecture' (2011), the Vitruvian paradigm prevailed until a significant shift in thinking in the late eighteenth century promoted the idea that fine art is capable of expressing and communicating abstract ideas.⁷ Whilst I have referred to the original canonical texts in preparing this overview, Guyer's reading and interpretation of these has been particularly instructive for me.

2.3.1 Vitruvius

The *Ten Books of Architecture*, written by Vitruvius between 33BC and 20BC, address the design and construction of public buildings in Ancient Rome. In the first of these books, he states architecture is fundamentally dependent upon 'order, arrangement, eurythmy, symmetry, propriety and economy'. 'Order', he argues, refers to the proportioning of both the individual members and those of the whole; 'arrangement' to the elegance achieved through their proper placement; 'eurythmy' to their symmetrical correspondence; 'symmetry' to the relation of individual members with the that of the whole, according to a pre-determined standard; 'propriety' to the employment of suitable stylistic principles; 'economy' to the prudent balancing of cost and common sense in construction.⁸ He also states that *all* buildings must be constructed with durability, convenience and beauty, from which the well-known Vitruvian paradigm of 'beauty and utility' is derived.⁹ According to Vitruvius, therefore, it is essential that all buildings possess measures of beauty *and* utility.

The Vitruvian concept of 'beauty', Guyer contends, comprises the values of order, eurythmy and symmetry, and to a lesser extent the values of arrangement and propriety. These values, he argues, comprise the Vitruvian concept of 'utility', relating to that of function.¹⁰ In respect to 'durability' and 'economy', Guyer writes that Vitruvius did not view these as necessary and

⁷ Paul Guyer, 'Kant and the Philosophy of Architecture', *The Journal of Aesthetics and Art Criticism* 69, no. 1 (2011): 7–19. <https://doi.org/10.1111/j.1540-6245.2010.01442.x>.

⁸ Vitruvius, *The Ten Books of Architecture*, 13–16.

⁹ Vitruvius, *The Ten Books of Architecture*, 17.

¹⁰ Guyer, 'Kant and the Philosophy of Architecture', 8.

independent attributes in a building: ‘durability’ is considered as a physical or historical quality which allows for the intrinsic values of convenience and beauty to endure, and ‘economy’ is considered as the requirement that the other intrinsic values be realised efficiently.¹¹ Accordingly, Vitruvius’s fundamental requirement that all buildings possess beauty and utility establishes the conundrum of how it is that these attributes might be achieved in an economical, that is, efficient manner, the reconciliation and therefore resolution of which is the focus of this study.

Vitruvius’s ‘firmitas, utilitas and venustas’ prevailed as core logics in architecture for just short of two millennia, with authors as late as Christian von Wolff and Henry Home, Lord Kames further developing, but not necessarily departing from, his underlying notions (as highlighted in the next section). It was not until Kant’s thesis—which claimed that beautiful art, that is fine art, is expressive of ‘aesthetic ideas’—that a significant point of departure from the Vitruvian paradigm was reached.¹² Most instructively perhaps, under Kant’s definition of beautiful art, architecture too falls.¹³

2.3.2 Wolff and Home

Among the chief voices of the German and Scottish Enlightenments, Wolff and Home respectively, developed treatises which considered architectural aesthetics, each emphasising Vitruvius’s ideas of beauty and utility, and by way of example, how they might be achieved. In *The Principles of Architecture* (1750–1757), Wolff defines a building’s perfection in beauty and utility as ‘a space enclosed by art in order that certain functions can proceed there securely and unhindered’.¹⁴ He considers beauty as that which provides us with pleasure, and as such for Wolff, perfection in architectural aesthetics might be considered as an artwork in which people can go about their affairs in a congenial manner.

In *Elements of Criticism* (1761 [2005]) Home, whilst departing from the Vitruvian paradigm by arguing that not all buildings require beauty and utility simultaneously, nevertheless reiterates that these constitute architecture’s key qualities:

¹¹ Guyer, ‘Kant and the Philosophy of Architecture’, 8.

¹² Kant, *Critique of Judgment*, 182.

¹³ Kant, *Critique of Judgment*, 191.

¹⁴ Guyer, ‘Kant and the Philosophy of Architecture’, 9.

Architecture, being a useful as well as a fine art, leads us to distinguish buildings and parts of buildings into three kinds, namely, what are intended for utility solely, what for ornament solely, and what for both.¹⁵

Home argues that intrinsic beauty requires attention to the use of appropriate proportioning and regularity in design, referring also to grandeur:

Of all the emotions that can be raised by architecture, grandeur is that which has the greatest influence on the mind; and it ought therefore to be the chief study of the artist, to raise this emotion in great buildings destined to please the eye.¹⁶

Whilst separating the ideas of grandeur and beauty, Home seemingly goes further. Guyer argues Home goes beyond both Vitruvius and Wolff in arguing that buildings need to produce a certain 'mood', or a particular congruity, commensurate with their intended function as an essential element of utility. Indeed, the most complex architecture, Home argues, combines such utility with aesthetics, that is, beauty and grandeur.¹⁷

2.3.3 Kant

In his seminal work *Critique of Judgment* (1790 [1987]), Kant provides a detailed assessment of taste. He asserts that the pleasure we experience from an object's beauty, as a judgment of taste, is 'disinterested', that is, separate from any judgment we might have of whether that object is capable of fulfilling the function it was designed to perform.¹⁸ Such judgment, he states, must be universal and as such cannot be independent of our cognitive faculties:

When this happens, the cognitive powers brought into play by this presentation are in free play, because no determinate concept restricts them to a particular rule of cognition. Hence the mental state in this presentation must be a feeling, accompanying the given presentation, of a free play of the presentational powers directed to cognition in general. Now if a presentation by which an object is given is, in general, to become cognition, we need imagination to combine the manifold of intuition, and understanding to provide the unity of the concept uniting the [component] presentations. This state of free play of the cognitive powers, accompanying a presentation by which an object is given, must be universally communicable; for cognition, the determination of the object with which given presentations are to harmonize (in any subject whatever) is the only way of presenting that holds for everyone.¹⁹

Such 'manifold of intuition', when it lasts for more than just a moment in time, involves the 'free play' of imagination, and therefore our cognition of the beauty of an object. It is, according to Kant,

¹⁵ Henry Home, Lord Kames, *Elements of Criticism*, ed. Peter Jones (Indianapolis: Liberty Fund, Inc, 2005), 699. <https://ebookcentral-proquest.com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=3327286>.

¹⁶ Home, *Elements of Criticism*, 709.

¹⁷ Guyer, 'Kant and the Philosophy of Architecture', 10.

¹⁸ Kant, *Critique of Judgment*, 191.

¹⁹ Kant, *Critique of Judgment*, 62.

the 'mere form of purposiveness' which induces the necessary 'free play' of imagination, and therefore for it to be thought of as beautiful.²⁰ Guyer refers to this purposiveness as simply the object's spatial or temporal structure. But, in what seems to undermine his own theory, Kant explains that beauty might be considered as either 'free' or 'conditioned', with the later relating to the object's intended function.²¹ Referencing architecture, and in particular a church building, he states:

Much that would be liked directly in intuition could be added to a building, if only the building were not [meant] to be a church.²²

It is in this way, Guyer argues that Kant is aligned with Vitruvius, that is, architecture must have beauty and utility²³. As Guyer contends, it is only much later in Kant's *Critique* that Kant explains his theory of 'aesthetic ideas', or of fine art (including architecture), in which he states there must be a 'spirit'²⁴. This animating principle is itself drawn from an 'aesthetic idea':

A presentation of the imagination which prompts much thought, but to which no determinate thought whatsoever, i.e., no [determinate] *concept*, can be adequate, so that no language can express it completely and allow us to grasp it. It is easy to see that an aesthetic idea is the counterpart (pendant) of a *rational idea*, which is, conversely, a concept to which no *intuition* (presentation of the imagination) can be adequate.²⁵

Accordingly, Kant's proposition is that art (and architecture) such as this, is the work of genius for it is incapable of reduction to a particular rule or limitation of ideas. Guyer argues it represents an intellectual and moral idea which:

[A]lways suggests some profound intellectual content, but does so by means of form and matter so rich that it cannot be reduced to any rule but instead triggers inexhaustible and pleasurable "motion" or free play in the mind of the audience.²⁶

In comparing and contrasting the various arts, Kant concludes that due to the purposiveness or functionality architecture must perform, its ability to express aesthetic ideas is ultimately restricted:

Architecture is the art of exhibiting concepts of things that are possible only through art, things whose form does not have nature as its determining basis but instead has a chosen purpose, and of doing so in order to carry out that aim and yet also with aesthetic

²⁰ Kant, *Critique of Judgment*, 66.

²¹ Kant, *Critique of Judgment*, 76.

²² Kant, *Critique of Judgment*, 77.

²³ Guyer, 'Kant and the Philosophy of Architecture', 15.

²⁴ Guyer, 'Kant and the Philosophy of Architecture', 15.

²⁵ Kant, *Critique of Judgment*, 182.

²⁶ Guyer, 'Kant and the Philosophy of Architecture', 16.

purposiveness. In architecture the main concern is what use is to be made of the artistic object, and this use is a condition to which the aesthetic ideas are confined.²⁷

Indeed, a work of architecture must function as intended as a shelter, perhaps as a place for gathering or for the conduct of industry and commerce, amongst other things. Such purposiveness places a limit upon the full resolution of aesthetic ideas, or spirit. Kant refers to a building's 'adequacy for a certain use [as] essential', if it is to be considered a work of architecture.²⁸ Accordingly, Kant's theory of aesthetic ideas broke with the Vitruvian paradigm that utility and 'formal' beauty were fundamental in architecture. Rather, he argues that whilst utility is always essential, beauty involves the expression of unrestricted intellectual ideas. This seemingly opened the door for Schelling, Arthur Schopenhauer, Georg Hegel, John Ruskin, Eugene Viollet-le-Duc, Louis Sullivan and modernists such as Mies van der Rohe and Le Corbusier to promote particular types of expressionism. For the purposes of this study, I have focused on Schelling, Schopenhauer and the modernists in establishing a workable definition of architectural aesthetics. This is partly because the modern definition rests in a discourse that carefully treads between aesthetics and functional utility (the core concepts with which this dissertation is concerned). It is noted that this definition is the commencing definition for the dissertation, but does not preclude the enfolding of other formulations of 'architectural aesthetics' that will be noted henceforth.

2.3.4 Schelling

In 1802 and 1803, Schelling gave a series of lectures, *The Philosophy of Art* (1859 [1985]), in which he stated that, contrary to the Vitruvian paradigm in architecture, 'utility' should only be considered as a mere condition of beauty, not be an aim in its own right:

Architecture... would not be fine art if it addressed *merely* need and utility. For architecture as fine art, however, utility and the reference to need are themselves only *condition*, not principle. Every mode of art is bound to a specific form of appearance existing more or less independently of it, and only the fact *that* art puts into this form the impression an image of beauty elevates it to fine art. Hence, as regards architecture, precisely the *expediency* is the *form* of the appearance, but not the essence.²⁹

Perhaps unsurprisingly, he posited the idea that the primary purpose of architecture is intellectual:

²⁷ Kant, *Critique of Judgment*, 191.

²⁸ Kant, *Critique of Judgment*, 192.

²⁹ Schelling, *The Philosophy of Art*, 165.

Architecture, in order to be fine art, must portray the purposiveness within itself as an objective purposiveness, that is, as the objective identity between concept and thing, the subjective and objective.³⁰

In response to this statement, Guyer argues that for Schelling the expression of the function a building is intended to perform is the source of beauty in architecture, rather than the underlying function of the architecture itself.³¹ This is akin to the argument architect Louis Sullivan made nearly 100 years later in *'The Tall Office Building Artistically Considered'* (1896), in which he posited his famous maxim: 'Form ever follows function', and which he justifies on the basis that:

[T]he heart is ever gladdened by the beauty, the exquisite spontaneity, with which life seeks and takes on its forms in an accord perfectly responsive to its needs. It seems ever as though the life and the form were absolutely one and inseparable, so adequate is the sense of fulfilment.³²

To Sullivan, therefore, a tall office building should consist of three divisions: ground floor retail spaces, followed by floor-after-floor of office spaces, then an attic space for mechanical services. This, he argues is the natural order of things. As such, both Schelling and Sullivan are claiming that a beautiful parliamentary building, for example, is one which expresses its function as a place of assemblage and governance, rather than one, which merely accommodates assemblage and the performance of governance, and a beautiful hospital building is one, which expresses its function to heal the sick, rather than one which creates a space in which health care might occur. An instance of the former might be Mitchell, Giurgola & Thorp's Parliament House in Canberra (1988), which, prior to installation of security screens, encouraged citizens to engage with the Australian democratic system of government by walking on the elevated grassed ramparts of the parliament building, serving as a reminder to its political inhabitants of the agency of the citizens. An instance of the latter might be Alvar Aalto's Sanatorium in Paimio in Finland (1932), which focused on direct penetration of sunlight and air ventilation to aid in the treatment of tuberculosis and give a sense of care.

2.3.5 Schopenhauer

In *The World as Will and Representation* (1819 [1966]), Schopenhauer, like Schelling, argued that the goal of architecture is not mere utility, and that as an art it should work to emancipate our

³⁰ Schelling, *The Philosophy of Art*, 168.

³¹ Guyer, 'Kant and the Philosophy of Architecture', 11.

³² Louis Sullivan, 'The Tall Office Building Artistically Considered. I. II. III'. *Lippincott's Monthly Magazine*, no. 3 (1896): 403. <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/magazines/tall-office-building-artistically-considered/docview/135759955/se-2>.

practical concerns. In contrast to Schelling, however, he stated it is not the purposiveness of architecture that should be expressed, rather its construction and structure. He writes:

The conflict between gravity and rigidity is the sole aesthetic material of architecture [...] From what has been said, it is absolutely necessary for an understanding and aesthetic enjoyment of a work of architecture to have direct knowledge through perception of its matter as regards its weight, rigidity, and cohesion.³³

This is akin to the structural expressionist ideas of Viollet-le-Duc, Ruskin, and forms of modernism espoused by Walter Gropius, van der Rohe and many others, each of whom in the period following the publication of Kant's *Critique*, seemingly promulgated their own particular forms of expressionism. More recently, the French philosopher Rancière has written extensively on the politics of aesthetics and the aesthetics of politics. His work provides us with a more contemporary understanding of what *architectural aesthetics* might embody.

³³ Arthur Schopenhauer, *The World as Will and Representation*, vol 1. trans. E. Payne (Newburyport: Dover Publications, 1966), 368 and 370. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=1894850>.

2.4 Rancière

In 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge' (2009) Rancière outlines his concept of aesthetics, cautiously describing it as being more comprehensive than Kant's 1790 *Critique*. Rancière refers to the three basic elements of Kant's theory as a 'distribution of the sensible' by describing: firstly, the *order of knowledge*, which considers whether the object is suitable for its purpose; secondly, the *law of desire* which places a judgment upon the same object, and thirdly, a *neutralization* of the hierarchy between the order of knowledge and the law of desire when appreciating the object.³⁴ Referencing the example of the palace in Kant's *Critique*, Rancière explains that *order of knowledge* refers to the suitability of the palace's architectural plan and the *law of desire* refers to the sensation provided by the palace (which he argues might range from pride to jealousy, or even disdain). Rancière attributes the aesthetic experience as a neutralizing of the tension between the *order of knowledge* and the *law of desire*, that is, between the faculty which considers suitability for purpose and that which makes a judgment of the object.³⁵ Neutralisation, according to Rancière: 'Is the staging of an excess, a supplement that brings about more radical ways of seeing the conflict'.³⁶ Indeed, this is a key aspect of what he refers to as the *aesthetic dimension*:

What I call the aesthetic dimension is this: the count of a supplement to the parts that cannot be described as a part itself. It is another kind of relation between sense and sense, a supplement that both reveals and neutralizes the division at the heart of the sensible. Let us call it a *dissensus*. A dissensus is not a conflict; it is a perturbation of the normal relation between sense and sense. The normal relation, in Platonic terms, is the domination of the better over the worse. Within the game it is the distribution of two complimentary and opposite powers in such a way that the only possible perturbation is the struggle of the worse against the better – for instance, the rebellion of the democratic class of desire against the aristocratic class of intelligence. In this case there is no dissensus, no perturbation of the game. There is a dissensus only when the opposition itself is neutralized.³⁷

In this description of the *aesthetic dimension*, Rancière provides us with a way to consider the aesthetic quality of art, and therefore architecture, referring to it as something which is both in excess of its parts and at the same time not a part. It is, therefore, something additional, multiplying or other. This 'supplement', or excess, is something he refers to as both revealing and neutralizing the senses. It is revealing of the senses as it forces us to consider both the *order of*

³⁴ Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', 1.

³⁵ Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', 3.

³⁶ Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', 3.

³⁷ Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', 3.

knowledge and the *law of desire* that are (or were) in play and then as *dissensus*, the radical neutralization of the divisive hierarchy between these faculties. Rancière defines dissensus in *Politics of Aesthetics* (2013):

A dissensus is not a quarrel over personal interests or opinions. It is a political process that resists juridical litigation and creates a fissure in the sensible order by confronting the established framework of perception, thought, and action with the 'inadmissible', i.e. a political subject.³⁸

Indeed, if we were to revisit the palace in Kant's *Critique*, we would not be concerned with either the suitability of its architectural plan, nor the sensations of pride, jealousy or disdain, which might arise. Instead, aesthetics would constitute an excess of these parts that sweeps the order of one or the other away entirely. It would be like the awe of Philibert de L'Orme's Chenonceau in the Loire as it storms across a river, Louis Kahn's parliamentary complex in Dhaka slowly rising from the moat, and William Van Alen's Chrysler Building in New York City, soaring from the grid with its stainless steel ziggurat crown.

³⁸ Jacques Rancière, *Politics of Aesthetics*, ed. Gabriel Rockhill (London: Bloomsbury, 2013), 88-89. ProQuest Ebook Central, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=1224249>.

2.5 Summary

In this chapter I have outlined what we might understand by the term *architectural aesthetics*. Our working definition suggests it relates to how buildings are designed and constructed and whether this results in a built form which might be considered as beautiful or otherwise. Chronologically, our understanding of architectural aesthetics has evolved from the writings of Vitruvius and his claim that buildings should possess 'firmitas, utilitas and venustas' which bring together the concepts of durability, convenience and beauty. Following Vitruvius, certain figures of the enlightenment including Wolff and Home developed treatises which further emphasised the Vitruvian paradigm with examples for how the ideas might be realised. Wolff defined perfection in beauty as a facade which, as a work of art, enwraps a building in which functions proceed without interference. Home relates beauty to appropriateness of proportioning and regularity in design, and claims that 'grandeur' should be the chief study of the artist-architect as this has the greatest emotive influence on the mind. In his *Critique*, Kant refers to the 'free play' of imagination which we experience when considering the beauty of an object. However, Kant also refers to the intended function of the item and therefore beauty and function are entwined, either 'free', or 'conditioned' by function. Much later in his *Critique*, Kant explains his theory of 'aesthetic ideas' claiming that there must be the animating principle of 'spirit', that beauty is the work of genius, an unrestricted intellectual idea. But he is mindful that architecture must, by necessity, perform a function, and as such the expression of aesthetic ideas is restricted. The expressionist, Schelling considered the function a building performs as the source of its beauty, in contrast Schopenhauer considered the expression of the construction and structure of a building as the source of its beauty.

The more contemporary philosopher Rancière describes his concept of aesthetics, the 'aesthetic dimension', as attributable to a neutralising of the tension between one's consideration of an object's suitability for purpose and a judgment of the object. This he describes as the 'staging of an excess', in which aesthetic quality is something in excess of, or additional to, itself. Aesthetics to Rancière is not about whether a building expresses its purpose, its structure or anything else, but rather the feeling of awe that one feels.

In the next Chapter I provide an outline of what is meant by the term 'economic imperative' and how it has been used in this dissertation.

3 ECONOMIC IMPERATIVES

3.1 Introduction

An exploration of how architectural aesthetics and economic imperatives are reconciled necessitates an outline of what we might understand by the term *economic imperative*. When we think of the '*economic*', a number of notions are brought to mind. These range from macroeconomic or economy/nation-wide matters, such as the effects of changing levels of inflation, the rate of price changes in an economy or perhaps its Gross Domestic Product. We might also contemplate microeconomic matters, those which are more attributable to individuals, such as the effect on organisations of changes in the pricing and availability of resources together with methods of production. Economics, encompassing both these components, is a social science, which studies how people make decisions, or choices, between scarce resources to satisfy their needs. Patrick and Gerry Welch describe the underlying assumption as whilst people's needs are unlimited, the resources available to satisfy them are not unlimited.¹ Debate about the specific social effects on the individual (and the collective) of the relative merits of differing economic policies which impact the distribution of scarce resources, is on-going.²

Whilst macroeconomic factors may, indeed, be significant in helping to explain how particular reconciliations between architectural aesthetics and economic imperatives were effected, the focus in this dissertation is on an individual organisation. Accordingly, *economic*, in this context, references mostly microeconomic phenomena (despite the effect of macroeconomic factors). In the next section I provide an overview of the nature of microeconomics and consider what we might think of as *imperative* in a capitalist economy.

¹ Patrick Welch and Gerry Welch, *Economics: Theory & Practice* (Hoboken: Wiley, 2016), 2-3. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=5106492>.

² Welch, P and Welch, G, *Economics: Theory & Practice*, 6.

3.2 Microeconomics and capitalism

The branch of economics which focuses on how individuals, including businesses, make choices about the utilisation of scarce resources is referred to in *Economics* (2016) by Welch and Welch as microeconomics.³ How an individual business chooses to utilise scarce resources, including assessment of the relative benefits, costs, and therefore profits which might be expected to arise from such decisions, and how this type of surplus might be maximised, is the focus of this particular social science. Another of the chief voices of the Scottish Enlightenment,⁴ philosopher and economist Adam Smith wrote in *The Wealth of Nations* (1776 [2012]):

The consideration of his own private profit is the sole motive which determines the owner of any capital to employ it either in agriculture, in manufactures, or in some particular branch of the wholesale or retail trade.⁵

Indeed, by investigating the causes of a nation's wealth, Smith was the first to argue that profit is the sole motivator of business in a capitalist economy.

This prevailing view of capitalism has been reinforced over time, perhaps most famously by Milton Friedman in an article published in *The New York Times Magazine* in 1970, titled 'The Social Responsibility of Business is to Increase its Profits'.⁶ In this article he argued that an organisation's managers are responsible to their shareholders; it is profit that their shareholders have employed them to generate on their behalf, and when an organisation's management decides to forego profit by investing in social activities, that this is akin to a type of taxation imposed on the shareholders. Considering these comments with the views espoused by Smith nearly two centuries earlier, together with our understanding of the focus of microeconomics, it is difficult to conclude, therefore, that something other than profit is the *economic imperative* on which we should focus this study. The definition of imperative itself is something: 'Not to be avoided or evaded [...] commanding [...] anything which must be done',⁷ akin arguably, to Smith's 'sole motive'. But increasing social and environmental awareness in the period following Friedman's article has mounted a significant challenge to the argument he makes, or has it?

³ Welch, P and Welch, G, *Economics: Theory & Practice*, 19.

⁴ Refer also to the work of Henry Homes, Lord Kames, in Section 2.3.2.

⁵ Adam Smith, *The Wealth of Nations* (Ware: Wordsworth, 2012), 369.

⁶ Milton Friedman, 'The Social Responsibility of business is to increase its profits', *The New York Times Magazine*, 13 September 1970, 32-33. <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/newspapers/social-responsibility-business-is-increase/docview/2441921739/se-2>.

⁷ *The Macquarie Concise Dictionary*, ed. Arthur Delbridge and John Bernard, Third Edition, (Macquarie University: The Macquarie Library, 1998).

In recent years, many organisations have added to their annual reports (in which the organisation's results for a period are presented), disclosures of their relevant corporate and social responsibilities, including those directed towards the environment. Reporting frameworks, such as the Global Reporting Initiative, provide guidance on the types of disclosures an organisation might consider making. In 2019, 'Business Roundtable', consisting of the CEOs of 183 prominent American organisations such as JP Morgan Chase, Amazon, Apple, and Walmart, announced that it will no longer give special consideration to shareholders, instead committing to all stakeholders.⁸ This represents a substantial broadening of the responsibilities of businesses, requiring them to balance their need to be profitable with a range of social and environmental concerns. Instead of focusing on profit alone, business should look after all stakeholders as part of long-term *value* generation. Stakeholders identified by Business Roundtable include an organisation's customers, employees, suppliers and the communities with which it interacts in addition to its shareholders.⁹ There is also an explicit reference to environmental protection and adoption of sustainable practices in businesses.¹⁰

However, in the absence of regulation, profit as economic imperative is likely to prevail in any balancing act conducted by business. Indeed, a caveat in Business Roundtable's announcement acknowledges that individual organisations will continue to serve their own purposes.¹¹ Lamenting the social and environmental effects of capitalism, and specifically that of profit, in 'Social, environmental and sustainability reporting and organisational value creation? Whose value? Whose creation?' (2006) Rob Gray wrote:

No matter how the bottle is spun our current versions of international capitalism reward and punish, admire and chastise, on the basis of the profit figure, whether in the short or long-run (where the long-run is unlikely to be beyond the next stock market upsurge and the next merger/takeover talks). This single focus may, we are led to believe, be tempered by anxieties over the riskiness of the organization's performance which, in essence, means: is there anything observable which may put the longer-than-next-year's-profit into jeopardy? So, when we try and cut through the verbiage, when we concern ourselves with "organization performance" and/or "value creation", we are really only concerning ourselves with variations on the profit figure.¹²

⁸ Business Roundtable, 'Business Roundtable redefines the purpose of a corporation to promote an economy that serves all Americans', 19 August 2019, accessed 5 May 2023. <https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans>.

⁹ Business Roundtable, 'Business Roundtable redefines the purpose of a corporation to promote an economy that serves all Americans'.

¹⁰ Business Roundtable, 'Business Roundtable redefines the purpose of a corporation to promote an economy that serves all Americans'.

¹¹ Business Roundtable, 'Business Roundtable redefines the purpose of a corporation to promote an economy that serves all Americans'.

¹² Rob Gray, 'Social, environmental and sustainability reporting and organisational value creation? Whose value? Whose creation?', *Accounting, Auditing & Accountability Journal* 19, no. 6 (2006): 805. <https://doi.org/10.1108/09513570610709872>.

Whilst this was written 13 years prior to Business Roundtable's 2019 announcement, it remains something of an anathema, regrettably, to conceive of value creation in any organisation operating in a capitalist economy as distinct, or detached from, profit generation. Indeed, Gray argues that the addition of social, environmental and sustainability reporting and accounting to the organisational pursuit of profit is 'very small'.¹³ With this in mind, it is important to consider what we mean by the *economic imperative* of profit.

¹³ Gray, 'Social, environmental and sustainability reporting and organisational value creation? Whose value? Whose creation?', 805.

3.3 Measurement and recognition of profit

In microeconomic theory, opinions have differed on the definition of 'profit'. In his writings on profit theory, in *Profit Theory and Capitalism* (1983) Mark Obrinsky states that 'profit' ranges from the notions of implicit rent, interest and wages, the reward for innovation, a payment for bearing risk to the Marxist idea of exploitation of labour by those that own the processes of production (who invariably profit).¹⁴ Whilst a detailed exploration of profit theory is beyond the scope of this dissertation, Obrinsky's claim that the essential nature of profit as 'lone residual income' is particularly instructive.¹⁵ This claim aligns it with the accounting notion of profit, that is, the difference between income and expense, a measure which organisations are required to determine in accordance with accounting standards and therefore, regulation. The accounting standards referred to in this dissertation comprise the Australian Accounting Standards as issued by the Accounting Standards Review Board ('AASB'), an Australian Government agency, and are based on International Financial Reporting Standards.¹⁶

For a definition of profit in an accounting sense we must refer to AASB 101 – *Presentation of Financial Statements*. This standard defines profit (or loss) as 'the total of income less expenses, excluding the components of other comprehensive income'.¹⁷ Other comprehensive income includes items which have not been realised in the particular period in which profit (or loss) is reported, and might be thought of as those which are separate from an organisation's ordinary course of business, such as gains or losses arising from movements in exchange rates between financial reporting periods. In order, therefore, to understand profit, we must consider the meaning of its key constituents: income and expense. These are defined in the AASB Conceptual Framework as:

Income is increases in assets, or decreases in liabilities, that result in increases in equity, other than those relating to contributions from holders of equity claims.¹⁸

¹⁴ Mark Obrinsky, *Profit Theory and Capitalism* (Philadelphia: University of Pennsylvania Press, 1983), 2.

¹⁵ Obrinsky, *Profit Theory and Capitalism*, 7.

¹⁶ Australian Accounting Standards Board, 'Accounting Standards'. <https://aasb.gov.au/pronouncements/accounting-standards/>.

¹⁷ Australian Accounting Standards Board, 'Presentation of Financial Statements (AASB 101)' (2020): para 7. https://aasb.gov.au/admin/file/content105/c9/AASB101_07-15_ACOMPdec21_01-22.pdf.

¹⁸ Australian Accounting Standards Board, 'Conceptual Framework' (2022): para 4.68. https://aasb.gov.au/admin/file/content105/c9/Conceptual_Framework_05-19_COMPdec21_01-22.pdf.

Expenses are decreases in assets, or increases in liabilities, that result in decreases in equity, other than those relating to distributions to holders of equity claims.¹⁹

Based on these definitions, accounting standard setters have developed individual standards which more fully consider the measurement and disclosure of particular items of income and expense. AASB 15 – *Revenue from Contracts with Customers*, the accounting standard which covers items such as income arising from an organisation's sale of inventory, or fees charged for the provision of services to its customers, requires that revenue be recognised when a contracted performance obligation has been satisfied.²⁰ On this basis, revenue arising from the sale of a good, or the provision of a service, is recognised as income when the promised good or service is transferred to the customer, and the customer has obtained control of that asset. To maximise its profit, an organisation will seek to sell its inventory, or provide its services, to its customers for the maximum dollar amount, whilst incurring the least amount of expense in doing so. Expenses might include those costs in purchasing or producing the inventories that are sold, the wages and salaries of employees, lease payments made for premises, interest costs payable on borrowings and a charge which recognises depreciation: the partial using-up of the organisation's property, plant and equipment required to generate the income.

Australian Accounting Standard AASB 15 – *Revenue from Contracts with Customers*, is also relevant to the development of property, on which this dissertation is focused. Following the completion of a development and its occupation by tenants, income is generated in the form of lease payments received from tenants in respect of the space they occupy. Lease income is recognised over the period of the lease, adjusted for any lease incentives which might have been paid to secure a tenancy. Tenants are usually required to pay a percentage of the outgoings, or expenses, for areas of common property. In the event of the sale of whole or part of the development, a gain or loss would be recognised in respect of the consideration received, less the development costs (relating to construction) attributable to the component of the development sold. This may require the apportionment of development costs.

Organisations have the option of recording their developed asset, an 'investment property' in accordance with the cost model outlined in Australian Accounting Standard AASB 116 – *Property, Plant and Equipment*²¹ or at fair value, in accordance with AASB 140 – *Investment Properties*.²² If

¹⁹ Australian Accounting Standards Board, 'Conceptual Framework', para 4.69.

²⁰ Australian Accounting Standards Board, 'Revenues from contracts with customers (AASB 15)' (2022): para 31. https://aasb.gov.au/admin/file/content105/c9/AASB15_12-14_COMPdec22_01-23.pdf.

²¹ Australian Accounting Standards Board, 'Property, plant and equipment (AASB 116)' (2022). https://aasb.gov.au/admin/file/content105/c9/AASB116_08-15_COMPdec22_01-23.pdf.

²² Australian Accounting Standards Board, 'Investment Property (AASB 140)' (2021). https://aasb.gov.au/admin/file/content105/c9/AASB140_08-15_COMPdec21_01-22.pdf.

an investment property is recorded using the cost model, the cost of developing the asset is initially capitalised as an asset and subsequently written-off over the period of its useful life to the organisation, resulting in a charge against profit. If an investment property is recorded at fair value, gains or losses arising in the fair value of the property are included within income, either contributing to, or reducing profit. Under this method, investment properties are revalued from time-to-time to fair value, which might be considered as an approximation of market value. AASB 140 states that this value reflects ‘among other things, rental income from current leases and other assumptions that market participants would use when pricing investment property under current market conditions’.²³ The preparation of such valuations is likely to require extensive knowledge of the relevant property market, and have the potential to significantly impact an organisation’s profitability. In the next section, an outline is provided of the techniques for determining how profitability might be considered in respect of future development opportunities.

²³ Australian Accounting Standards Board, ‘Investment Property (AASB 140)’, para. 40.

3.4 Investment appraisal

Whilst accounting standards prescribe how transactions and events are accounted for, and therefore how profit is determined, when organisations consider future investments of capital, techniques are required to help determine how that capital should be allocated. An organisation considering an investment in a new product or service will make an estimate of the revenues and expenses which might be expected to arise, so that the likely contribution the investment will make to profit can be determined. This enables the organisation to make appropriate investment decisions. In respect of a potential property development, conducting this exercise requires detailed information regarding the relevant property market, including capitalisation and leasing rates, the costs of construction materials, construction labour and other necessary consultants such as architects and engineers, together with an idea of their phasing. Several measures are utilised in the property development industry to assist organisations make investment decisions between competing investments, including the calculation of the Margin-on-Cost ('MoC'), Payback Period and the Internal Rate of Return ('IRR'). Whilst each of these measures is considered below, they are dependent on the quality of the underlying cash flows used in the calculations.

The MoC measures profit as a percentage of total project cost outlays and is a relatively simplistic calculation which does not consider the time value of money. It might also be thought of as somewhat misleading, as it assumes the inflows and outflows of cash will be uniform over the life of a project. However, in property development there are likely to be very large 'lumpy' cash outflows relating to land acquisition, consultants and construction costs. Despite this drawback, when deciding between competing investments, an organisation would select the development providing the highest MoC. A second measure, Payback Period, is an estimate of the time it takes for an organisation's initial investment outlay to be recouped. This measure is similarly simplistic and also fails to consider the time value of money. Nevertheless, when deciding between competing investments, an organisation would select the development providing the shortest payback period.

The more sophisticated measure used by organisations to decide between competing investments is the IRR. This is a measure of the discount rate which equates the initial investment outlay to the discounted future net cash flows expected to arise on the project, that is, the break-even discount rate, or inherent contribution of the future net cash flows when compared to the initial investment outlay. Compared to MoC and Payback Period, IRR more accurately reflects the risk in the project by considering the anticipated cash flow profile and the time value of money.

To determine between competing investments, an organisation would invariably select the development providing the highest IRR.

3.5 Summary

In this chapter I have outlined a working definition for the term *economic imperatives*. Economics, and in particular *microeconomics*, is relevant to this research as it focuses on the effect that price changes and resource availability have on organisations. In his investigation of the causes of a nation's wealth, Adam Smith was the first to argue that the 'sole motive' of business, in a capitalist economy, is to produce 'profit'.²⁴ This has been reinforced over time as an imperative—that is, something not to be avoided, which must be done—by notable economists including Milton Friedman. Despite the more recent focus on social and environmental awareness by individuals and businesses, profit remains the key measure of focus in financial reporting and as such, I have restricted what I consider to be the economic imperative for the purpose of this dissertation, to profit.

Whilst opinions differ on what might be considered profit, Obrinsky's claim that profit is 'lone residual income' aligns with the notion of accounting profit—which is derived by the netting of income earned and expense incurred—and is a universal measure based on the widespread adoption of accounting standards. When applied to a property developer, profit maximisation involves maximising lease income and the potential sale price it might achieve at the point of sale of the developed property, while minimising outgoings including the amount incurred in the construction of that asset.

Australian Accounting Standards provide the necessary guidance in recording such transactions, but determination of whether a particular development is a worthwhile investment requires detailed knowledge of the relevant property market, together with construction cost data and the likely phasing of the expenditure. Several methods are utilised for investment appraisal including MoC, Payback Period and IRR. The more sophisticated measure of IRR, which determines a percentage return for a project by equating the initial cash outlays to the discounted value of future net cash flows, is considered by developers as the more reliable method.

In the next Chapter I outline the context in which this research was conducted by providing a description of both PropertyCo, the organisation which hosted this research, and the New Building Development ('NBD'), the development scheme they proposed to build.

²⁴ Adam Smith, *The Wealth of Nations*, 369.

4 COMPLEX,
INTERDEPENDENT
AND CONTINGENT
BUILDING DESIGN
PROCESSES: THE
PROPERTYCO CASE
STUDY

4.1 Introduction

The aim of the dissertation is to explore and understand how architectural aesthetics and economic imperatives are reconciled through complex, interdependent and contingent building design processes. To this end, in Chapter 5, vignettes are presented which seek to identify the key architectural aesthetics and economic imperatives which were at stake at particular moments during the detailed design phase for the NBD scheme. Before this ethnographic account is presented, it is necessary to place the project within its urban, organisational, financial and historical contexts. For it is these contextual elements which, gradually revealing themselves, seemed to crystallise as a series of ongoing preoccupations through which the scheme's architects, engineers and project managers, seemingly, responded. This 'context' is presented in the following section. Following this, I set out the 'model' project management approach PropertyCo, the research site adopted for their proposed development scheme.

4.2 PropertyCo and the New Building Development

In this section I outline the context within which this research was conducted. I commence with an overview of PropertyCo, the organisation which hosted the research, and following this, provide a detailed description of the commercial skyscraper they sought to develop: the New Building Development ('NBD'). I highlight how, in the period prior to my research fieldwork, PropertyCo came to be associated with the NBD, how it progressed plans for the site including negotiation of development rights with the City (the local regulatory authority), and its subsequent sale to a joint venture, in which it retained an equity interest (I remind the reader that much is done to anonymise the organisation and the development scheme involved for the purposes of commercial-in-confidence).

4.2.1 PropertyCo

The organisation 'PropertyCo' which, very kindly, hosted my research, is a large Australian property developer and contractor, involved in development and construction of commercial property. Its business includes two main divisions: Development Management ('DM') and Design & Construction ('D&C'). The former is concerned with development origination, which includes the acquisition and subsequent development of property for sale or lease; and the latter is involved with contracting, where it provides construction services for its in-house developments and on behalf of external clients. PropertyCo's staff comprise specialists including development managers, leasing specialists, finance managers, project managers, construction and mechanical services' engineers, cost planners, architects and facilities managers together with administrative staff as support. PropertyCo has a history of completing large scale developments and is headquartered in an Australian capital city.

4.2.2 New Building Development

In early 2013 PropertyCo entered into an agreement to purchase the NBD site as part of a broader commercial arrangement to secure a pre-commitment tenant, and thereby funding, for another large development opportunity it was pursuing ('Other Development'). Construction funding arrangements for Other Development were dependent on a tenant pre-committing to lease at least 15% of the developed space. The vendor of the NBD site agreed to lease a significant portion of Other Development from PropertyCo at the date of its practical completion ('PC'), that is, the

date at which a development is deemed to be ready for occupation, and an agreement was made to this effect requiring that PropertyCo pay an upfront premium. The agreement specified that, on PC, PropertyCo would acquire the vacant NBD site for a specified price. PC for Other Development was achieved in 2015, at which time the NBD site was vacated and the sale to PropertyCo executed.

4.2.2.1 A challenging site

The NBD site comprised some 4,500m² located in a dense urban precinct within the City's Central Business District and was occupied by buildings which straddled several small lanes. Due to a lack of sunlight and the visually unappealing nature of the pre-existing buildings, the lanes were largely underutilised by pedestrians. This was despite the lack of intra-block connectivity within the precinct. The City's Masterplan for the precinct required that future developments be of mixed-use and provide significant improvements to the public domain. This was to be achieved, principally, by the reactivation of the small laneways crossing the precinct to encourage pedestrian movement, together with the creation of public squares. As an incentive for developers, realisation of such improvements would result in additional developable floorspace being awarded by the City.

Despite the NBD site's prestigious address and the views to be afforded by a suitably tall development, PropertyCo's DM business initially believed the site was too small to support a commercially efficient development. The site's street frontages were considered too narrow and the City's pre-existing development approvals for neighbouring properties required certain view corridors be maintained; the combination of which resulted in an unusually shaped and therefore potentially inefficient floorplate. In addition, the development height was capped at a maximum of [220m]. Nevertheless, PropertyCo attempted to sell the site in early 2016 and commissioned its in-house design team to prepare and market a 'Reference Scheme' design which is a paired-back version of the program and scheme. Marketing efforts were significantly hampered as they coincided with submission of a separate development application that proposed the replacement of a neighbouring building with a taller structure. PropertyCo believed this proposal would significantly reduce the potential for views and natural light in its development. Despite their best efforts, PropertyCo were unable to secure an appropriate yield for the NBD site and retained it, with a view to selling or developing it at a later date.

4.2.2.2 Private Planning Instrument

To address the constraints hampering development of the NBD site, PropertyCo's planning specialists set about revising pre-existing planning approvals. It proposed to the City that the

development height restriction imposed on the site be increased by 10%, in exchange for development of a tower which promised 'design excellence', and incorporated a series of public spaces and facilities for the local community. In mid-2016 a Private Planning Instrument ('PPI') was executed with the City which granted PropertyCo the right to develop a commercial office tower capped at a height of [245m], comprising a maximum Gross Floor Area ('GFA') of [59,000]m². In effect, this allowed an extra five levels of office space to be constructed, each with unobstructed views and abundant natural light. To achieve its promise of 'design excellence', PropertyCo's scheme was subject to an architectural design competition which sought the input of Australian and internationally renowned architects, including the provision of a series of public spaces and public art installations, designated facilities for the local community together with a financial contribution to the City. The requirements of the PPI are summarised below:

- Innovative scheme to enhance skyline dominance at night via internal, facade and external lighting making it a premier attraction in the City.
- Consider view corridors of neighbouring developments to avoid significant objections during DA phase.
- Be mindful that development is in close proximity to an under-utilised transport interchange.
- [Community Space] to occupy the three lowest floors of the tower with GFA of 3,900 sqm, to Property Council of Australia ('PCA') 'A Grade' standard with ceiling heights of 3.85m. Separate [Community Space] lobby to be provided from [Third Lane].
- Development consent for [245m] tower height dependent upon provision of Community benefits: plazas, laneways, public artwork, [Public Leisure Facility], [Community Space], [Public Events Space]. Every square metre of GFA developed for these spaces to be awarded with an extra two square metres of GFA in the tower.
- [Public Events Space] to be constructed by PropertyCo.
- Development dependent upon transfer of laneways and a designated portion of the site to the City.
- Provide long-term lease to the City for [the Community Space].
- Provide monetary contribution to the City for fit-out of [the Community Space].
- Public art spending of 1% of capital investment value.
- Land cannot be developed for residential or serviced apartments.
- Provide through-site link.
- Conduct competitive design process including design competition.
- Documentation of Community benefits to be submitted at certain milestones together with delivery of Milestone Reports to the City.

- Net Lettable Area ('NLA') to be determined in accordance with the method outlined by the Property Council of Australia.
- GFA may be awarded an additional 10% on basis the tower demonstrates 'design excellence'.
- GFA of not more than [59,000]sqm.¹

4.2.2.3 Sale to joint venture

PropertyCo believed the development rights encapsulated in the PPI underwrote the NBD as a desirable investment: the scheme's prestigious address and revised height limit were factors it expected would appeal to prospective tenants and generate premium lease rentals. To capitalise on these rights and reduce its exposure to the risks inherent in property development, including changes in property market sentiment and high levels of debt financing, PropertyCo sought involvement from additional equity participants. In December 2016, the site, together with its development rights were sold, to the NBD Joint Venture ('NBDJV') realising a significant profit to PropertyCo on its initial investment. Participants in the newly constituted NBDJV consisted of several large corporates together with PropertyCo, which retained a minor interest.

4.2.2.4 Financial requirements

Funding agreements executed at the time of the sale of the NBD site and its development rights to the NBDJV specified a number of financial requirements/metrics with which the development would need to comply. The aim of these requirements was to reduce the risk exposure of the scheme's participants and its financiers. Whilst I have considered each of these requirements below, I was not provided with access to the funding agreements and as such this information has been gathered during interviews with members of DM-Team. This team was appointed by the NBDJV as the on-going development manager, to manage the scheme's financial requirements and the NBDJV's legal and operating affairs. PropertyCo's D&C business remained as NBDJV's preferred main works contractor. In addition to the financial requirements described in this section, PropertyCo, as a property development organisation, has its own specific financial reporting requirements which also bear upon the scheme. These are also considered below.

4.2.2.4.1 Total funding cap

In an interview in November 2017, PropertyCo's NBD DM Commercial Analyst ('DM-Commercial Analyst') advised that a funding cap was established to limit total capital outlays by the NBDJV,

¹ PropertyCo and the City, Private Planning Instrument, summary (2016).

with maximum capital investment not to exceed \$1.3bn. This cap was based on a calculus which included the budgeted costs determined for the 2015 Reference Scheme (the 'Development Budget').² At a Cost Planning Workshop convened on Friday, 11 August 2017, at which D&C-Team informed GlobalArchitect of the budgetary limitations for the scheme, PropertyCo's NBD D&C Cost Planner ('D&C-Cost Planner-1') stated that the Development Budget was developed for a very 'dumbed-down' version of the NBD scheme:

The budgeted rates used I'm not very comfortable with. For PropertyCo, we're running a very dumbed down version [of the design] and this was probably because we were going to sell the site. A very vanilla design: every time there was a choice between low or high [rates], low was taken. And some rates are 18 months old. We do have a bucket of money for escalation which we will manage; you'll see big numbers in there but that's nearly all gone. There's lots of [building] activity out there, so costs have risen. There are no form-workers out there: cost might be \$200 by the time we get going. The market will be very heated, there are only so many large tier-1 subcontractors. Also, there are minimum wage issues. That's part of value engineering: if the market heats-up we might have an issue.³

The implication of the funding cap for the design was made more apparent by PropertyCo's D&C project director for the NBD scheme ('D&C-Director'), in his dialogue with GlobalArchitect Principal-2:

We're working to \$565 million. We are already behind the eight-ball at \$579 million. We have pluses and minuses—we keep a money sheet. For everything which is a plus, I must find a negative, and this could come from the contingency, which is low at 3% for this stage. Any savings we find have to come out of the design. For you, what is more important? It doesn't mean we can't accommodate a lot, but we need to find some money [...] This is just what we're going to have to manage. We can sit here and say this is too low. But we want to do this [development], we don't want crap, so we have to work to this. The client has already put in more dollars [on the basis that they] can get more rent and save on running costs, so that's it.⁴

To this, GlobalArchitect Principal-2 suggested the need for: 'A balance: we trade-off poor quality finishes versus rent. We need to make sure things are not falling apart'.⁵ The limited Development Budget set the scene for many of the discussions that would ensue throughout the detailed design phase; cost savings would be required as the scheme was, seemingly, over budget from the outset.

² PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

³ PropertyCo D&C-Cost Planner-1, workshop transcript (11 August 2017).

⁴ PropertyCo D&C-Director, workshop transcript (11 August 2017).

⁵ GlobalArchitect Principal-2, workshop transcript (11 August 2017).

4.2.2.4.2 *Margin on Cost*

Margin on Cost is a measure of profit expressed as a percentage of total project cost outlays. A target rate of Margin on Cost ('MoC') of 30%–40% was set for the scheme, and only used for initial financial assessments.⁶

4.2.2.4.3 *Internal Rate of Return*

Internal Rate of Return ('IRR') is a measure of the break-even discount rate, or inherent contribution of the future cash flows in the scheme relative to the initial investment outlay. The IRR hurdle rate which the NBD scheme must achieve was set at 17%. DM-Commercial Analyst advised that PropertyCo places more reliance on IRR than MoC when assessing the financial viability of a development scheme, as it considers both the anticipated cash flow profile and takes into account the time value of money, therefore reflecting project risk more accurately.⁷ She also highlighted the surprising mathematical effect of matters which might ordinarily be considered as minor:

One is always amazed as to how much impact [a] one-month delay is. [On the NBD project it] is 0.5% [of the] IRR.⁸

Indeed, the IRR remained marginal throughout the detailed design phase and as such DM-Team was most cognisant of identifying potential cost savings.

4.2.2.4.4 *Pre-commitment tenants*

Before financing was made available, and consent granted for construction works to commence (including early works such as demolition of pre-existing buildings and excavation of the site), pre-commitment tenants were required to lease not less than 15% of the NLA of the tower.⁹ Despite this requirement, and the endeavours of DM-Team to secure appropriate tenants, the NBD scheme remained speculative throughout the detailed design phase, for no tenants had pre-committed to lease space. During an interview in October 2017, PropertyCo's DM development director for the NBD scheme ('DM-Director') explained that the inability of the tower to practically accommodate a large tenant unless it was located across many floors made obtaining

⁶ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁷ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁸ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁹ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

pre-commitment tenants, and therefore construction finance, extremely challenging during the detailed design phase, (four-years ahead of PC):

Because we've got smaller floorplates and the way that workplace trends are sort of moving at the moment, we're more likely to have smaller tenants, which will be 2-3 floor tenants. There's a couple that are big that we are pursuing at the moment, but they're not quite ready to engage with us at the level we'd like them to engage with us, but the smaller one's [...] [commitment] is probably 12 months out from completion to 24 months out from completion [...] So, it is a bit more challenging. So the deal we struck with the NBDJV and with the Banks, I guess (well I don't know I didn't strike that initial deal), but I'm assuming that somebody was either very optimistic about the leasing market and that we would find a big tenant for that [size] floorplate; maybe it was somebody who didn't have the understanding around the fact that they are few and far between on that size floorplate, or they just assumed that we get the project moving and we renegotiate [funding agreements].¹⁰

Indeed, renegotiation was the strategy that DM-Team pursued. They were successful in changes being made to funding arrangements, enabling demolition works to commence in the absence of pre-commitment tenants, thereby helping to ensure the scheme achieved PC as scheduled. But, despite this favourable outcome, the absence of a large pre-commitment tenant continued to hamper on-going detailed design work; for there were no specific tenant requirements to help inform, and provide the necessary clarity.

4.2.2.4.5 PropertyCo's financial reporting requirements

As a property development organisation, PropertyCo needs to anticipate its revenues many years in advance. This requirement reflects the length of time it can take for individual development projects, within its pipeline of projects, to reach PC or sale, that is, the point at which significant revenues are recognised. This was highlighted in an interview in October 2017 with DM-Director:

Timing is really critical because obviously [PropertyCo's] CFO and the finance gurus are booking out several years in advance. They would already have all of our profits scheduled in for this project, so if we push anything out that's a disaster.¹¹

Critically, this requires PropertyCo's accountants to plan many years ahead, sometimes in excess of five years. From the anticipated PC date, DM work back in time to identify the critical path required to reach PC and determine the detailed development phase timings. According to DM-Director:

It's very, very critical [...] Literally that's really an intense period, particularly in that structure [...] we are taking. We are realising that profit at that time [on reaching PC] and it has to be on our books for end of year results.¹²

¹⁰ PropertyCo DM-Director, interview transcript (11 October 2017).

¹¹ PropertyCo DM-Director, interview transcript (11 October 2017).

¹² PropertyCo DM-Director, interview transcript (11 October 2017).

Accordingly, the need to satisfy profitability anticipated in future financial reporting periods has a direct bearing on both program durations and the dates of construction commencements, factors which place considerable pressure on managers within its DM and D&C businesses to meet the relevant PC dates. During informal conversations with D&C team members, ‘war’ stories were relayed such as paint drying on walls as tenant’s effects were delivered and installed. Such stories were told with a mixture of bravado, fondness and amusement, with the sense that PropertyCo would do whatever it took to meet a PC deadline.

Another factor which significantly impacts the timing of individual developments relates to commercial lease expiry dates. DM-Director advised that PropertyCo is privy to commercial lease information, and it uses this data to anticipate the optimal time for its developments to reach PC. In respect of the NBD scheme, DM-Director noted:

There are a lot of tenancy expiries lined-up at our PC date, it’s just that they [tenants] don’t commit out as far as this, they will be committing in [*the relevant year*], so we’ve got maybe a year and a half before those smaller tenants will start to engage with us. We need to draw them out now, through this fear of missing out.¹³

There is, it seems, an optimal time for PropertyCo to ‘draw out’ these tenants so that when the NBD tower reaches PC, it is tenanted. This would, in turn, translate into a favourable market capitalisation value, reflected in the determination of profit in the relevant financial reporting period.

4.2.2.5 Architectural design competition

To achieve its promise of ‘design excellence’ in accordance with the PPI, PropertyCo convened a closed architectural design competition, inviting high-profile global and local architectural firms to submit designs. The selection of such high-profile firms, PropertyCo’s D&C business CEO (‘D&C-CEO’) believes, add a certain brand cachet to their developments. In an interview in February 2016, as part of the Pilot Study, D&C-CEO stated that engaging high-profile architects allows PropertyCo to ‘put a stamp on it [a development...] So instead of being a [PropertyCo] design [...] it just sounds better’,¹⁴ equating (arguably) with higher lease yields. PropertyCo detailed its expectations for the submission of a ‘commercially feasible and highly meritorious commercial design proposal’ in the Architectural Design Brief (‘ADB’).¹⁵ Competition submissions were assessed by an adjudicating panel consisting of three high profile local architects selected by the City, and one high profile local architect selected by PropertyCo together with two senior

¹³ PropertyCo DM-Director, interview transcript (11 October 2017).

¹⁴ PropertyCo D&C-CEO, interview transcript (29 February 2016).

¹⁵ PropertyCo, NBD Architectural Design Brief (29 September 2016).

PropertyCo executives. This panel was effectively dominated by PropertyCo, for it held the casting vote if, and when, it was required. Nevertheless, final approval of PropertyCo's development application ('DA') remained with the City. The winning scheme was proposed by Europe-based 'GlobalArchitect'.

4.2.2.6 Architectural Design Brief

The Architectural Design Brief ('ADB'), dated 29 September 2016, required participants in the closed architectural design competition to submit designs for a scheme with the attributes/specifications as set out in the summary below. Due to the length of the ADB and to comply with the need for anonymisation, this summary has been prepared by selecting key words and phrases. The full (redacted) version of the ADB is included in Appendix B.

- Beautifully suited, classic and timeless architectural design.
- Utilise Vertical villages concept to provide opportunity to assist with articulated facade design.
- Suitable entry statement and arrival experiences required for both [*First Street*] and [*Second Street*] entrances.
- Ideas for future flexibility for tenant requirements.
- Smart building IT vision: integrated connectivity; a globally connected building, mobility [sic] internet of things, tenant experience and engagement, operational excellence, environmental sustainability, automated workplace optimisation.
- Commands institutional recognition with clearly identifiable image and high appeal for tenants, world class, enhance the city's reputation as a global city.
- Workplace community on the inside mirroring connected precinct on the outside, movement showcased, diverse groups connect and interact, collaborative workplace, clear sightlines that permit an exemplar of modern collaborative workplace.
- Incorporate/enable voids/future potential voids for atria/interconnecting stairs to enhance interconnectivity, attract multi-floor corporate organisations such as investment banks, law firms, professional services who demand connected and collaborative workspaces, zones for intertenancy stairs that create meeting hubs that avoid impact to work zone.
- Where adjacent buildings are in close proximity, privacy of tower occupants to be considered.
- Generally conform to Property Council of Australia ('PCA') 'A Guide to Office Building Quality' (PCA-2012) Premium Grade designation, create a design capable of attracting high end/premium multi-floor corporate organisations such as investment banks, law firms, professional services who demand connected and collaborative workspaces.
- Maximise outward view and outlook opportunities from all floor levels.

- Maximisation of floorspace above the approved development height of [an adjoining property] via design initiatives and floor-to-floor heights at retail, lobby, services, and other low-rise spaces: above 112.5m RL AHD 3.95m with 150mm raised access floors and 3m ceiling height above this. Minimum acceptable ceiling height 2.7m; below 112.5m RL AHD maximum 4.35m; minimum 6.4m plant room floor-to-floor; [*Community Space*] internal ceiling height 3.85m; maximise ground level retail and through site link floor to ceiling heights; generous and prestigious upper ground floor lobby with internal height up to 14m, client floor opportunities to be investigated at the floors coinciding with the top of each lift rise.
- Creation of vertical villages to be possible adjacent to prominent viewpoints as this enhances leasing opportunities for smaller floorplates thereby improving likelihood of securing pre-commitment leases.
- Maximisation of Net Lettable Area ('NLA') of office floors within approved envelope with expected PCA NLA as percentage of Gross Floor Area ('GFA') exceeding 90%. Participants should closely study relevant definitions of statutory GFA and PCA NLA to ensure efficiency of design and resultant maximisation of PCA NLA.
- Provision for flexibility of sub-division of individual floorplates into smaller tenancies (a maximum of three).
- Occupancy rates 1:10 sqm.
- Commercial tenant end of trip facilities.
- Primary business address for commercial tower to be [*First Street*] with lobby at an upper ground floor, accessed from [*First Street*] by plaza and link bridge with secondary access from [*Second Street*] via escalator/disabled lift.
- Technically enabled, functionally efficient, rational, flexible, vertically integrated/connected.
- Typical office floors designed for architectural and structural flexibility for changing tenancy tenure and future tenant needs, easily adaptable to accept change and advancements in technology and ways of working collaboratively.
- Structural frame to be efficient and configured to minimise detrimental impacts on views.
- Core to be situated against southern facade, encompass three lift risers (low, medium and high-rise) with transfer floors. Core configuration to coordinate with base driveway access and through site link. Core to minimise GFA (as this is not PCA NLA) to maximise efficiency and commercial viability. Minimise/eliminate riser and cupboard doors opening to NLA.
- Lift provision: 1 person per 12 sqm (PCA 'Premium Grade') and optimised to avoid erosion of floor plate areas by providing surplus lifts. Destination control lift technology to be utilised. Commercial tower lifts to terminate at lobby level with separate carpark/basement lift to service lobby and all levels below. [*Community Space*] levels to share basement levels goods lift. Dedicated Goods lift in addition to a shared goods/passenger lift to serve all levels to satisfy PCA 'Premium Grade'.
- Singular vehicle entry/exit provided from [*Third Lane*] to service tower tenancies, loading dock and retail tenancies to accommodate required service vehicles.

- Buildability will be a key factor in assessment of competition submissions: desire for rational structural grid, maximisation of prefabricated and repetitious elements, consideration of construction methodology including buildability and staging.
- Next generation sustainability credentials focussed on the well-being of occupants.
- Passive solar shading to control glare and enhance sustainability, but not to the detriment of views. Maximisation of light whilst managing internal glare for occupants and achieving required sustainability performance. Passive solar shading methods encouraged to control glare and enhance sustainability.
- Building to be sustainable, functionally efficient to operate and maintain to keep running and maintenance costs at a minimum over its lifecycle. Flood mitigation to be considered. To achieve 6-star Green Star rating (As Built Office (v3)), minimum 5-star base rating in building NABERS Energy scheme, 4-star base building rating in NABERS Water scheme, minimum Gold Well Building standard for base building.
- Consideration of biophilia.¹⁶

Biophilia was defined by Erich Fromm in *The Anatomy of Human Destructiveness* (1973 [1977]) as ‘the passionate love of life and of all that is alive; it is the wish to further growth, whether in a person, a plant, an idea, or a social group.’¹⁷ Its meaning in the context of architectural design references the connection to nature and therefore most commonly refers to, buildings adorned with plants.

The ADB also stated that the winning architect would be required to:

[W]ork with [PropertyCo’s] appointed consultancy team to design develop and value engineer the winning design competition scheme to a point suitable for the lodgement of a development application. The winning design competition competitor will be required to design and develop the scheme to ensure the development commercial objectives are achieved, including the development scheme’s conformance to the [PropertyCo] approved development design and construct budget as well as design feedback from the City.¹⁸

Whilst the ADB sought a beautiful design, it also stressed the importance of commercial imperatives. Furthermore, the multitude of performance requirements it contained might well be considered as a list of PropertyCo’s pre-determined architectural design decisions. As indicated above, the winning architect would also need to engage with what would turn out to be a rigorous value engineering exercise during the detailed design phase.

Together, the PPI, ADB and Joint Venture financial requirements established an extensive list of design, performance and financial hurdles the scheme was required to satisfy, providing

¹⁶ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

¹⁷ Erich Fromm, *The Anatomy of Human Destructiveness* (Ringwood: Penguin Books, 1977), 485.

¹⁸ PropertyCo, NBD Architectural Design Brief (29 September 2016).

significant legacies for the DM, D&C, GlobalArchitect and appointed engineer ('GlobalEngineer') teams: at the outset of the detailed design work and construction planning there was a restriction as to the amount of capital that may be invested in the scheme, an ongoing hurdle in the form of a minimum IRR and Development Budget, an extensive list of pre-determined design elements and a set of community focused planning requirements to comply with. In the remainder of this Chapter I describe the 'model' approach PropertyCo employed to manage the NBD project.

4.3 PropertyCo's 'Model' approach to project management

In this Section I describe how PropertyCo planned to manage the NBD development. This 'model' approach, which PropertyCo believe to be best practice, might be seen as embodying the knowledge and project management expertise that it had accumulated through its many years as a developer. I have identified this 'model' approach from interviews and conversations conducted with key project team personnel. Indeed, my entrée to the process of project management commenced in an interview in February 2016 with D&C-CEO and Head of Excellence ('D&C-HoE') as part of the Pilot Study (refer to Section 1.4.3) in which I questioned how they manage tensions that might be expected to arise between aesthetics and cost in building design. This was the situation I described earlier in Section 1.4.3.1, when jokingly, D&C-CEO clenched one of his hands in a fist and hit it into the other hand. He laughed, smiled, and stated:

In terms of design and construction, I think there is a fundamental piece that we attach ourselves to as an organisation: it is we respect project management, in what we call project management, which is sitting over design and construction, and we feel that it is important to end up with a strong result of design aesthetic, function, performance, and the hard-nosed: let's just build it.¹⁹

In the mind of D&C-CEO, it is only the close management of all the parties, from start to finish which ensures the correct mix of aesthetics, function, performance and engineering/construction that will coalesce in the desired built form, and therefore a successful outcome. This can be related to the same coalescence, which Carol Willis describes in *Form Follows Finance* (1995) where she states: 'Skyscrapers are shaped by program, profit, technology, taste, and, especially during the vernacular period, nature and place'.²⁰ Leaving aside the vernacular period, which she attributes to the particular economic logics and land uses at play in New York City and Chicago in the later part of the nineteenth century and first half of the twentieth century, Willis' description resonates with D&C-CEO's articulation of the correct mix of 'design, aesthetic function, performance, and the hard-nosed: let's just build it'. Nevertheless, as D&C-HoE said in an interview in June 2016, the project manager's most important skill is in 'utilising the resources around [them]' admitting they will never know everything required to build a 54-storey skyscraper.²¹ D&C-HoE described this as:

The art of asking—especially a design team, well why do you think that? Tell me why you've proposed that? And actually understanding and listening to what they're actually

¹⁹ PropertyCo D&C-CEO, interview transcript (29 February 2016).

²⁰ Carol Willis, *Form Follows Finance* (New York: Princeton Architectural Press, 1995), 143.

²¹ PropertyCo D&C-HoE, interview transcript (27 June 2016).

going to say when you ask them why? So, you get all the information in and then you've asked all the 'why' questions, now you've got to make some decisions around that [...] It's a discipline that's a balance between being entrepreneurial, trying to service that client but being disciplined in how you're going to manage that process [...] It is] the piece in the middle that welds [the discipline of] construction to the [entrepreneurship of] development, [it] has to be a balance, [...] utilising] technical skills [...] commercial acumen skills [and] stakeholder engagement skills.²²

To achieve this outcome, project managers will not only need to rely on their own experience but use it to identify and seek the input of professionals with the most appropriate skills and experience when required. D&C-HoE used the metaphor of a machine to describe the potential perils of the process:

You've got all these cogs: could be the engineer, it could be the architect, it could be the services engineer, could be all the stakeholders, and occasionally those cogs would actually just get locked [...] with...]: "No, I want this; no I want that" or they don't work together.²³

D&C-HoE described project management as the grease that keeps the machine turning:

The project manager's actually saying: we really need to achieve that, and that means you need to give up this, and you'll get that, but you get that, and they all start working. It's greasing all those cogs, but with the aim being a valued outcome for the client. So, you're not allowed to grease the wheels and just come up with anything, it's got to be in tune with what your client wants.²⁴

The art of 'bringing everything together'²⁵ is what PropertyCo's D&C Project Manager for Structures ('D&C-Structure') described as the hallmark of a 'model' project manager in an interview in October 2017:

You've really got to listen to people, pay attention to what they're saying, let them speak up and try and not shut people down [or] massage the conversation in the direction that you need it to go.²⁶

He described the key attributes required in achieving this as charisma, intelligence; being capable of managing different personalities in a team and the ability to drive people quite hard, to be the leader who 'does not take no for an answer, [instead] asking: why not?', again highlighting the importance of asking questions.²⁷ D&C-Director, however, highlighted in an interview in August 2017 that he believes 'vision' is the key attribute of the project manager:

The importance he places on design, as opposed to just building a cheap building [...] It's got to be the right product, and it's got to be the right design, before we start talking about dollars. Because anyone can design a cheap building. As far as I'm concerned it's

²² PropertyCo D&C-HoE, interview transcript (27 June 2016).

²³ PropertyCo D&C-HoE, interview transcript (27 June 2016).

²⁴ PropertyCo D&C-HoE, interview transcript (27 June 2016).

²⁵ PropertyCo D&C-Structure, interview transcript (19 October 2017).

²⁶ PropertyCo D&C-Structure, interview transcript (19 October 2017).

²⁷ PropertyCo D&C-Structure, interview transcript (19 October 2017).

more about: what's the vision? What's the outcome that we're looking for? Then, can we afford it? And if we can't afford it, what can we work through to afford it? What are the compromises?²⁸

Interestingly, this suggests that PropertyCo has learned from prior experience that design, that is, the 'right design' must come before consideration of costs, and only then be subjected to the test of affordability. This test, he suggested, requires them 'to push all the time to make things as efficient as possible'.²⁹

In the following section, I outline the teams PropertyCo employed to manage the NBD project, and their responsibilities. PropertyCo established two project management teams, each drawn from their respective D&C and DM businesses, however, in a departure from their usual approach, the teams were co-located in a dedicated project space. The D&C and DM teams had access to in-house functional specialists whose skills and expertise they could draw upon; these included experts in structural, mechanical and electrical services, vertical transportation, environmental/sustainability issues, retail design, urban planning, community engagement and legal matters. Each of the teams is considered in turn below, together with an outline of the co-location experiment.

4.3.1 Design & Construction Project Team

The NBD Design & Construction Project Management Team ('D&C-Team') has responsibility for managing the detailed design and physical delivery of the NBD project, with activities focused on detailed architectural design, cost and construction planning. D&C-Director leads the team, which at December 2017, comprised 14 project managers, each with responsibility for a distinct component of the development. D&C-Director described the D&C-Team as not hierarchical, nevertheless, D&C-Facade, D&C-Early Works and D&C-Construction Manager had more experience than the remaining team members and appeared to be more senior to the other D&C-Team members. D&C-Director reports to PropertyCo's D&C's General Manager and ultimately to D&C-CEO. The responsibilities of each D&C-Team member are set out in Figure 4.1 below:

²⁸ PropertyCo D&C-Director, interview transcript (30 August 2017).

²⁹ PropertyCo D&C-Director, interview transcript (30 August 2017).

D&C-Team member	Design & Construction project management responsibilities (determined from interviews and observations)
D&C-Director	Coordination of all aspects of the design, construction and cost management for the NBD project; ensuring the design adheres to the ADB; management of relationships with internal PropertyCo parties to achieve the above: NBD DM project team, design and engineering consultants including structural, services, environmental and sustainability, cost planners, planning consultants, legal counsel; management of relationships with external parties to achieve the above: architect, structural engineer, geotechnical engineer, lighting engineer, wind engineer; leadership of the D&C-Team including staff recruitment.
D&C-Facade	Design, construction and cost management for the facade, wind mitigation and Building Maintenance Unit ('BMU') for the NBD project; conduct of weekly team meetings including keeping of minutes.
D&C-Early Works	Design and cost management for early works including demolition and site excavation, and the basement for the NBD project.
D&C-Program	Coordination of architectural program, drawings and associated documentation for the NBD project, including the design competition, planning application and tender packages; scheduling of project deliverables and monitoring of compliance with program.
D&C-Services	Design and cost management for services including the environmental and sustainability requirements of the NBD project.
D&C-Structure	Design and cost management for the structural engineering aspects of the NBD project.
D&C-Urban	Design and cost planning for the urban design of the NBD project, including public spaces, laneways and art.
D&C-Basement	Design and cost management for the basement of the NBD project.
D&C-Leisure	Design and cost management for the leisure spaces of the NBD project.
D&C-Cost Planner-1	Monitoring compliance of the design with the NBD budget; providing detailed cost information relating to the individual aspects of the design on request.
D&C-Cost Planner-2	Provision of detailed cost information relating to the Urban design aspects of the NBD project.
D&C-Construction Manager	Coordination of the scheduling of construction works; monitoring of construction works to ensure compliance with design, regulatory, budget and safety requirements; management of cashflow.
D&C-Construction Assistant Manager	D&C-Construction is assisted by a team of individual Construction Assistant Managers to fulfil his responsibilities.
D&C-Team Assistant	Scheduling of workshops and meetings; ad-hoc administrative matters to assist the team.

Figure 4.1 – Responsibilities of D&C project management team members.

4.3.2 Key internal consultants to Design & Construction Project Team

Assisting the D&C-Team were several internal PropertyCo consultants, including:

- D&C-Senior Structural Engineer: responsible for providing technical structural engineering support for the scheme, working most closely with D&C-Structure and GlobalEngineer Principal (the principal of the firm of consulting engineers appointed to the NBD project – refer to Section 4.3.3.2) and his staff.
- D&C-Sustainability Manager: responsible for ensuring the scheme's compliance with the sustainability criteria specified in the ADB, working most closely with D&C-Services.
- National Planning Manager: responsible for ensuring the scheme complied with the City's regulatory requirements.

4.3.3 Key external consultants to Design & Construction Project Team

A number of external consulting firms were appointed to provide advice to PropertyCo on matters such as wind, fire and flood mitigation, urban planning and compliance with the Building Code of Australia. The key external consultants for the purposes of this research were the scheme's competition winning architectural practice and structural engineering firm. These are considered below.

4.3.3.1 *'GlobalArchitect'*

Reporting separately to D&C-Team was the scheme's competition winning architect ('GlobalArchitect'), with teams comprising architects drawn from two architectural firms: a firm based in Europe and a firm based in Australia. The firm based in Europe, or 'Lead' architect is a large international and highly awarded architectural firm, responsible for the design of the overall scheme. The firm based in Australia, referred to as the 'Executive' architect, is a large Australian architectural practice, and reported to the Lead architect. The 'Executive' architect was responsible for aspects of the design requiring more detailed knowledge of local planning and building regulations. GlobalArchitect's team comprised four principals, with three drawn from the Lead architect and one from the Executive architect. During the detailed design phase, Lead architect's principals spent several weeks in Australia, and together with the Australian based principal from the Executive architect, were supported by architectural staff drawn from both the

Lead and Executive architect's firms. During the period of my immersion at PropertyCo, GlobalArchitect appeared to operate as one combined firm.

4.3.3.2 *'GlobalEngineer'*

A large international engineering firm, 'GlobalEngineer', was responsible for structural aspects of the design and reported separately to D&C-Team. The firm was appointed as a replacement to the engineering firm which had worked with GlobalArchitect for the purposes of the architectural design competition. GlobalEngineer's team comprised a principal ('GlobalEngineer Principal'), together with a small team of staff drawn from both GlobalEngineer and PropertyCo's in-house structural engineering staff, who worked on secondment to GlobalEngineer.

4.3.4 Development Management Project Team

The NBD Development Management Team ('DM-Team') has responsibility for managing the NBDJV on behalf of its equity partners (including PropertyCo) and is focused on the project's leasing and financing. DM-Director leads the team, which at December 2017 comprised five development managers, three finance specialists and a part-time leasing executive. The more experienced members of the team include DM-Commercial Tenants-1 and DM-Commercial Manager. DM-Director reports to PropertyCo's DM's General Manager and ultimately to DM's CEO. The responsibilities of each DM-team member are set out in Figure 4.2 below:

DM-Team member	Development Management responsibilities (determined from interviews and observations)
DM-Director	Coordination of all aspects of feasibility for the NBD project on behalf of the NBDJV including identification and targeting of suitable tenants, consideration of their requirements, and financing arrangements; negotiation with planning authorities in respect of compliance with planning regulations; management of the NBDJV including governance, financial and compliance matters; management of relationships with internal PropertyCo parties to achieve the above: D&C-Team, planning consultants, legal counsel; management of relationships with external parties to achieve the above: potential tenants, commercial estate agents, banks; leadership of the DM-Team including staff recruitment.
DM-Commercial Tenants-1	Consideration of commercial tenant requirements and targeting of suitable tenants.
DM-Commercial Tenants-2	Consideration of commercial tenant requirements and targeting of suitable tenants.
DM-Retail Tenants	Consideration of retail tenant requirements and targeting of suitable tenants.
DM-Leisure	Consideration of leisure tenant requirements and targeting of suitable tenants, monitoring the design of public spaces, laneways and art.
DM-Leasing	Identification and targeting of suitable commercial tenants directly and via commercial estate agents.
DM-Commercial Manager	Preparation and ongoing maintenance of the Project Viability Model ('PVM') for the NBD project, including conducting sensitivity analysis to model proposed tenancy leasing arrangements and incentives; coordination of financing arrangements; coordination of accounting, regulatory and compliance matters for the NBDJV.
DM-Commercial Analyst	Ongoing maintenance of the PVM for the NBD project, including conducting sensitivity analysis to model proposed tenancy leasing arrangements and incentives; coordination of financing arrangements.
DM-Finance Manager	Accounting, regulatory and compliance matters for the NBDJV.

Figure 4.2 – Responsibilities of DM team members.

4.3.5 Project Viability Model

On-going project viability is monitored using PropertyCo's Project Viability Model ('PVM'). This comprises a complex spreadsheet model adapted to suit the NBD project by DM-Commercial Manager and DM-Commercial Analyst. Measures of IRR, and initially MoC, are calculated by the PVM based on the cash inflows and cash outflows anticipated on a monthly basis over the project duration. Cash inflows include the sales proceeds anticipated to arise on sale of the NBD scheme and lease income from tenants prior to sale. Cash outflows include costs relating to site acquisition and retention, design and construction costs and finance charges. The PVM is

primarily used by DM-Team to model and compare alternative leasing scenarios, and therefore, project viability. Lease income is considered separately for each proposed floor level of the NBD tower, and each retail unit. In contrast, costs relating to design and construction are only split between those relating to early works (demolition and excavation) and main works. Construction phasing is based on historical experience and is adjusted as detailed cost data becomes available. As such, the PVM is dynamic and is the key tool used by the DM-Team for monitoring project viability.

4.3.6 Co-location of the PropertyCo teams

As an experiment to foster collaboration amongst D&C and DM teams on its projects, PropertyCo co-located D&C-Team and DM-Team in a dedicated project office space. The D&C Business Finance Manager ('D&C-Finance Manager') stated that mistrust has existed between the D&C and DM businesses in the past and described how it results in much wasted effort.³⁰ Perhaps indicative of the importance of the co-location experiment within PropertyCo, D&C-Director highlighted:

This needs to be the exemplar project, and we need to showcase that we are working together, and we're not silos, and all that sort of stuff.³¹

4.3.7 Phasing of activities

The key outputs from the detailed design phase for D&C-Team were the submission of three DAs to the City, covering Demolition, Excavation and Main Works, together with submission of Guaranteed Maximum Prices ('GMP') to the NBDJV for demolition, excavation and main construction works to the NBDJV.³² Nevertheless, the key milestone for the team was submission of the Main Works DA to the City on 2 November 2017. In 2016 the team prepared a 'Design Program' which was based on the careful phasing of each of the activities necessary to achieve the required outputs. This plan was generated using Microsoft Project software and a Gantt chart was produced which visually depicted the programmed activities across time. Activities were grouped accordingly to the key project deliverables; for the detailed design phase these groupings included submission of the DAs, GMPs for demolition and excavation and in addition the ongoing

³⁰ PropertyCo D&C-Finance Manager, interview transcript (10 January 2018).

³¹ PropertyCo D&C-Director, interview transcript (30 August 2017).

³² The GMP for Main Works was due to be submitted to the NBDJV on 30 June 2018.

'Milestone Report' submissions to the City relating to ongoing urban design work (as required by the PPI). The Design Program did not identify the specific activities that would be conducted in the detailed design phase, rather, the process was explained to me in detail by D&C-Director to include a series of design workshops and presentations, a value engineering exercise followed by Main Works DA finalisation and submission. Each of these activities is described in the following sections.

The phasing of detailed design activities and key NBD project milestones are shown in the timeline in Figure 4.3 below. This timeline also shows activities which preceded the detailed design phase, including those related to PropertyCo's purchase of the NBD site, the execution of the PPI and the architectural design competition.

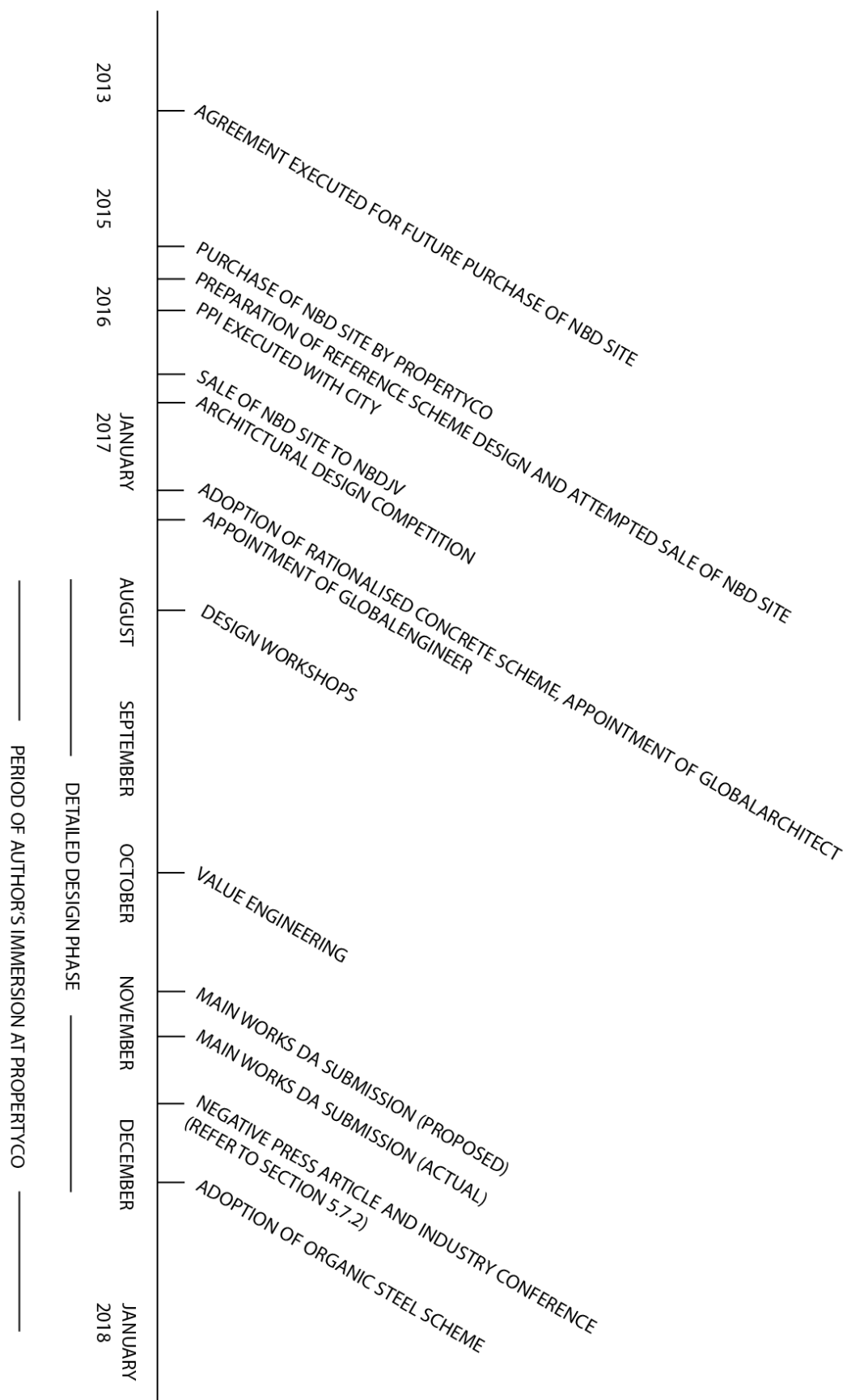


Figure 4.3 – Timeline showing NBD scheme development program from 2013 to 2017.

4.3.7.1 Design workshops and presentations

A series of two-hour design workshops was scheduled over a two-week period and commenced with a concept presentation by GlobalArchitect on Tuesday, 8 August 2017. The purpose of the workshops was for D&C-Team and DM-Team to understand GlobalArchitect's design intentions, and in doing so, to identify design issues which would be likely to require additional work. Workshops were conducted at PropertyCo's premises and were scheduled by D&C-Team to cover all aspects of the design, including: facade, structure, services, floor plates, basement, retail, urban realm, environmental/sustainable design, facade glazing, artwork, vertical transportation together with building code compliance, regulatory and cost planning, contractual arrangements and project logistics. Repeat workshops were scheduled for the facade, structure, services and basement. The schedule of workshops was displayed on the whiteboard adjacent to the office space occupied by D&C-Team.

Participants at workshops included members of D&C-Team, DM-Team, GlobalArchitect, GlobalEngineer and other specialist consultants as appropriate. Attendees were encouraged to question, discuss and debate the design in a collaborative manner to identify design issues which might include planning, spatial, aesthetic, functional, material, buildability and cost factors. This format, in which the necessary expertise was gathered, established a starting point from which sub-teams could progress the design issues identified. Individual workshops tended to follow the stacking plan of the proposed development, that is, floor-by-floor. At various points, design work would be presented to PropertyCo's Review Panel ('RP') meetings for guidance/approval (refer to Section 4.3.8.2 for more detail). Ongoing reiterations of the design would be shared amongst the teams via 'Aconex' construction management software. I was not provided with access to this software.

4.3.7.2 Value engineering

PropertyCo considered identification of value to be a key factor in ensuring their developments were efficient and value engineering was a specific requirement of the ADB. On 10 August 2017, PropertyCo's D&C-Senior Structural Engineer, early in the design workshop phase, said to me:

It's all about value, demonstrating value. We're controlled in Australia. We have a small client base and limited people. Europeans spend a lot more per square metre.³³

A Value Engineering ('VE') session was arranged by D&C-Team for 6 October 2017. At this session team members worked together to suggest design changes which might elicit cost savings. Given

³³ PropertyCo D&C-Senior Structural Engineer, workshop transcript (10 August 2017).

that several of the senior GlobalArchitect team were unable to attend the session (as they were in Europe), it was suggested prior to the session that they conduct their own VE session, which PropertyCo's European office offered to facilitate. At an RP meeting on 4 October 2017, PropertyCo's D&C project manager for facade ('D&C-Facade') provided guidance:

You have an opportunity to consider what value engineering we can adopt. You need to think about where we can pull out some money – services, facade, architectural.³⁴

D&C-Director stressed the importance PropertyCo placed on the session in helping them achieve budget, mindful of the potential for it to change the design:

Hopefully it will not change the look of the building. But it is something of a roadmap that we can use post-DA [Main Works] to get to budget.³⁵

Following the VE session, the potential cost savings which might be achieved from the suggested design changes were quantified by PropertyCo's in-house cost planner and then discussed with GlobalArchitect to determine which design changes would be pursued.

4.3.7.3 Submission of Development Applications

Some three months from the commencement of the design workshops, and just over three weeks following the VE session, the Main Works DA was due for submission to the City (on 2 November 2017). This submission would consist of a comprehensive package of information including detailed architectural plans, sections, renders and a comprehensive analysis of the design together with specialist consultant's reports. Prior to submission, the Main Works DA required approval by PropertyCo and the NBDJV.

Whilst the Main Works DA sought approval for design of the tower and the surrounding urban realm, D&C-Team were also required to submit DAs for the City's approval of demolition and excavation works. These DAs were scheduled to be submitted on 29 August 2017, ahead of the Main Works DA to enable demolition, excavation and archaeological works to commence on site. Delays to each of these works would likely result in delays to construction of the tower.

Following submission of the DA, D&C-Team would then focus on tender packages. GlobalArchitect would divide the design into a series of trade packages for the purpose of obtaining quotations from tenderers. Examples of such packages include those for facade elements, vertical transportation and concrete. These packages would help inform the GMP which D&C-Team were required to submit as part of the Main Works contract to the NBDJV by 30 June 2018.

³⁴ PropertyCo D&C-Facade, meeting transcript (4 October 2017).

³⁵ PropertyCo D&C-Director, meeting transcript (4 October 2017).

4.3.8 Management reporting structures

In this section I briefly describe the reporting structure within PropertyCo and the NBDJV through which the design process was coordinated and approved. This consisted of weekly meetings of the D&C-Team and DM-Team, regular RP meetings which provided the necessary guidance and approval for ongoing design work and the monthly Project Governance Committee meeting which was the formal governing body for the project. The directors of D&C-Team and DM-Team also had reporting lines within their respective PropertyCo business units, although my research did not provide me with any insights into the form and content of those meetings.

4.3.8.1 *Team and Scrum meetings*

On Tuesday mornings of each week during the detailed design phase, D&C-Team met to discuss the status of the project's progress. D&C-Facade chaired the meetings which commenced with a review of the minutes of the previous meeting, which prompted the relevant project manager to detail the status of each deliverable and for follow-up actions to be assigned. The meeting also provided the forum for D&C-Director to update the team on broader project matters and disseminate feedback from senior PropertyCo executives. Minutes of the meetings were maintained by D&C-Facade, utilising a tabular format which highlighted the status of deliverables, to whom each deliverable was assigned, a colour-coded and percentage completed status indicator together with commentary on outstanding matters. Minutes were distributed by email to team members following the meeting. DM-Team also met on a weekly basis (though I did not attend those meetings).

In addition to the weekly D&C-Team meeting, a team 'Scrum' meeting was held adjacent to the team whiteboard each Monday morning, with the purpose of engaging the team for the forthcoming week. The scrum was a type of informal meeting, borrowing the term from the game of rugby, in which team players engaged to identify, in turn, their key areas of focus for the coming week. This format allowed them to demonstrate their understanding of their priorities and for D&C-Director and D&C-Facade to realign these as appropriate. Each team member's priorities were written on the whiteboard and were displayed for the remainder of the week.

4.3.8.2 *Review Panel*

Review Panel ('RP') meetings were convened by the D&C-Team to seek the guidance and approval from the NBDJV representative (in this case DM-Director) in respect of ongoing design work. Meetings were scheduled for the same components of the design covered by the preceding design workshops, with attendees including the appropriate team member from D&C-Team, DM-Team,

GlobalArchitect, GlobalEngineer and specialist consultants. On 14 August 2017, D&C-Director briefed GlobalArchitect on PropertyCo's expectations at RP meetings:

You should go through your design approach [...] and] present the options that are important to you [...] and make a recommendation. You need to articulate why you're recommending something, were you've thought [about the ADB and added [to it]].³⁶

PropertyCo's D&C-Team stressed that RP meetings are the formal process to document what has been agreed with their client. D&C-Director stated:

This is about having a record of what is approved: this is what we issued, this is what you [the client] agreed, this is what we're doing. The [purpose] is not to decide everything, just to [provide a] sign-off so we can continue to design for another month.³⁷

Whilst D&C-Team indicated the importance to them of RP meetings for documenting design decisions, they highlighted that RP meeting attendees are predominantly focused on the amount of NLA, that is, the amount of space that may be leased to tenants.

4.3.8.3 *Project Governance Committee*

The Project Governance Committee ('PGC') is the formal governing body for the development project, comprising representatives from the NBDJV partners. Senior D&C and DM executives, together with DM-Director, D&C-Director, Principals of GlobalArchitect and their team members (as appropriate) attend PGC meetings. D&C-CEO related:

We put a lot of faith into the PGC [...] It is a very formal process where every month that group comes together and the project team provides a status report: "Listen, here is where we are on design; here is where our costs are at; here is where our government approvals are at", so it is regimented reporting. So: "We said we would be here, and we are here on this issue, and there on that issue". So, it is disciplined reporting: status, positives, negatives.³⁸

The PGC Report to which D&C-CEO referred, provides updates on leasing and marketing activity, the program of works, financial status and matters requiring PGC's direction, consent and approval. D&C-CEO related:

The Report itself provides the discipline for people to understand where they are or where they are not, and then that has to be presented at a forum where leadership sits there and goes: "No, no, no that is not where I want you to go, I don't accept that. Go back and do this, or change that".³⁹

D&C-HoE added that the formal PGC process:

³⁶ PropertyCo D&C-Director, workshop transcript (14 August 2017).

³⁷ PropertyCo D&C-Director, workshop transcript (14 August 2017).

³⁸ PropertyCo D&C-CEO, interview transcript (29 February 2016).

³⁹ PropertyCo D&C-CEO, interview transcript (29 February 2016).

[D]rives the right level of decision at the right time [... so that the...] day-to-day decisions made by people keep [to] the aspirations [of the development], keeping it all nice and tight.⁴⁰

⁴⁰ PropertyCo D&C-HoE, interview transcript (27 June 2016).

4.4 Summary

In this Chapter I have outlined the urban, organisational, financial and historical context in which this research has been conducted. I commenced with an overview of PropertyCo, the large property development organisation which hosted this research, and the development scheme they were proposing. I have detailed the teams they appointed to manage the scheme on behalf of the NBDJV, including the appointed architect, engineer and other consultants. A number of key documents, including the PPI and ADB have been considered together with the NBDJV's financial requirements. In combination, these provide an extensive list of design, performance and financial hurdles which the scheme needed to satisfy, and establish significant legacies for the DM, D&C, GlobalArchitect and GlobalEngineer teams to consider during the detailed design phase. The second part of this Chapter provided a detailed description of the 'model' approach PropertyCo implemented for managing the project during this phase, including design workshops, the value engineering process and reporting structures. The next Chapter considers how the detailed design phase unfolded through a series of vignettes. These attempt to illustrate how the teams worked together to reconcile the architectural aesthetics and economic imperatives which were at stake.

5 RECONCILIATION OF ARCHITECTURAL AESTHETICS AND ECONOMIC IMPERATIVES

5.1 Introduction

In this Chapter I highlight, through six series of vignettes, how architectural aesthetics and economic imperatives were reconciled. These vignettes illustrate the sheer complexity, interdependency and contingency of the building design processes the New Building Development ('NBD') teams had to manage. These teams were drawn from PropertyCo's Design and Construction ('D&C') and Development Management ('DM') businesses, from the NBD architecture competition winning architect 'GlobalArchitect' and appointed consulting engineer 'GlobalEngineer'. As outlined in Section 4.3, PropertyCo believe project success requires the:

[S]trong result of design aesthetic, function, performance, and the hard-nosed: let's just build it'.¹

This confidence is most likely the result of investment in a process based on their accumulated experience of successful developments over many years. GlobalArchitect have a long history of designing buildings which are both highly respected and awarded, and instantly recognisable, located in many cities around the world. GlobalEngineer is a large, global consulting engineering firm specialising in complex building projects. The interactions between key personnel from these organisations provided me with a most compelling backdrop against which I observed the project. Within the somewhat linear parameters and reporting requirements of PropertyCo's 'model' process, (as described in Section 4.3) GlobalArchitect's, GlobalEngineer's and PropertyCo's teams (together, the 'NBD Teams') needed to realise both the multiple design objectives and satisfy the key project milestones (as set out in Section 4.3.7) to achieve success, despite facing multiple design complexities and uncertainties which constantly interacted with each other. In many cases, these threatened to overwhelm, unravel, and possibly defeat PropertyCo's carefully anticipated Design Program.

I have organised and considered the vignettes in six sections, each seeking to capture an important source and quality of these complexities and uncertainties. The first section focuses on the changing '*structural design*' highlighting the effect of the lengthy process to determine the most suitable method of construction: the use of steel or reinforced concrete. A second section looks at '*environmental and sustainable design*' aspects focusing on how PropertyCo's DM-Team attempted to satisfy sustainability criteria, which were seemingly at odds with maximisation of views. A third section considers '*urban design*', an aspect of the design process that was evidently beyond the direct control of PropertyCo, instead dependent on the City planning department

¹ PropertyCo D&C-CEO, interview transcript (29 February 2016).

upon whose approval the design of the entire project relied. A fourth section looks at the '*value engineering*' exercise; a process deliberately sequenced to follow design workshops, which resulted in the unravelling of many of the design decisions that had seemingly already been settled, threatening project deadlines. A fifth section, '*one team; one dream*' considers the tension between PropertyCo's D&C-Team and DM-Team, a dynamic established by the sale of the NBD site to the NBDJV in December 2016. A sixth and final section focuses on what PropertyCo's NBD DM-Director, the development manager responsible for the NBD project, described as '*politicking*' and how significant changes were required to the design shortly after the submission of the Main Works DA to the City. In each of the sections and the vignettes which they contain, consistent with ethnographic methodology, I have used extensive verbatim quotations and provided detailed explanations and analysis in an attempt to represent the culture I observed. I commence with the section containing a series of vignettes which focus on the design of the structural bracing system proposed for the NBD tower, henceforth referred to as the 'tower'.

5.2 First vignette series: Structural design

5.2.1 Introduction

In this section, I illustrate how architectural aesthetics were reconciled with economic imperatives in relation to the structural system proposed for the NBD tower. The Architectural Design Brief, dated 29 September 2017 (the 'ADB'), as outlined in Section 4.2.2.6, required participants in the architectural design competition to submit designs for a structural system that met the following set of criteria:

- Incorporates or enables voids/future potential voids for atria/interconnecting stairs.
- Typical office floors designed for architectural and structural flexibility.
- Structural frame to be efficient and configured to minimise detrimental impacts on views.
- Core to be situated against southern facade, encompassing three lift risers (low, medium and high-rise) with transfer floors. Core to minimise Gross Floor Area ('GFA').
- Use of a rational structural grid, maximisation of prefabricated and repetitious elements.
- Consideration of construction methodology including buildability and staging.²

Whilst these criteria provided specific guidelines for the design of the structural system during the architectural design competition and in later design development, the unusual shape of the NBD's allowable site development envelope (the outer extent or limit of the site to which the tower might extend) and escalations in the cost of concrete construction during the detailed design phase established a seemingly challenging set of circumstances for the scheme's architect 'GlobalArchitect' and consultant engineer 'GlobalEngineer', to address. In light of these difficulties, to understand how the architectural aesthetics and economic imperatives at stake were reconciled, I have focused on key changes proposed to the structural system for the tower through a series of vignettes. The first of these focuses on changes required by the competition adjudicating panel to the scheme initially submitted to the NBD architectural design competition by GlobalArchitect (in December 2016), and which would later be identified as the competition winning design. Following this, I turn my attention to structural issues identified during the

² PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

detailed design phase, (which commenced in August 2017) in relation to an internally situated column, and a mid-elevation column. I then consider, as a separate vignette, the reconciliation effected which in many ways, represented a 180-degree turn in design development.

5.2.2 The competition winning design

In this vignette I focus on the NBD architectural competition's winning design, proposed by GlobalArchitect, as outlined in Section 4.2.2.5. During an interview in July 2018, a principal of GlobalArchitect appointed to the NBD project ('GlobalArchitect Principal-1') described the key drivers, which informed their design response:

It's a small site. The [development] envelope is very constrained. It's a small floor plate [and] it's a tall building, so you're always going to get this massive core to get the lifting to work [providing for adequate elevators]. Which leaves you [with] a strange floor plate [...] How do you make something rational out of this crazy [development] envelope shape? And then meet the [required] areas? And the more we looked at it, quite quickly we established [...] You couldn't do it, right? So, you couldn't meet the area requirements and have rectangles, say, or any other shape. So, our conceptual approach was we'd build the [development] envelope model, and I actually quite liked the way it was looking, because it's quite an interesting shape: like a big crystal.³

By referring to 'areas', it is presumed that GlobalArchitect Principal-1 is referencing Gross Floor Area ('GFA') and Net Lettable Area ('NLA'). The 'core' is the section of a tall building which contains lifts, staircases, bathroom facilities and building services. GlobalArchitect Principal-1 then described the structural system required to address the 'crystalline shape':

The bracing design is secondary. The most important thing was column-free [floors]. Because it's an unusual floor plate, we thought in the interests in long-term performance of the building to the users and flexibility, we plan: don't have the columns in it. That's built up from years of experience with other buildings around the world [... We make it] super flexible. So that was the real driver.⁴

Having determined that there should be no internal columns, thereby maximising flexibility for tenant fit-outs, structural load-paths were determined. Another of GlobalArchitect's principals appointed to the NBD project ('GlobalArchitect Principal-4') explained this design process in an interview in October 2017:

What was interesting about this [design] is that incredibly amazing software actually predicted where the stress lines would be. That presented the opportunity to say: OK, well that's where the bracing should be, and the bracing should follow those paths: a representation of the most efficient structure.⁵

³ GlobalArchitect Principal-1, interview transcript (20 July 2018).

⁴ GlobalArchitect Principal-1, interview transcript (20 July 2018).

⁵ GlobalArchitect Principal-4, interview transcript (17 October 2017).

The underlying design concept was, therefore, derived from a detailed analysis of structural load paths, which resulted in a system of distinctive, folded bracing. GlobalArchitect Principal-4 further highlighted:

We are told that bracing, when it is running, [that] short, sharp lengths are more efficient than bracing that's [uniform]. So, each time it folds, it is actually more efficient.⁶

GlobalArchitect Principal-4 related that initial visualisations of the structural load paths reminded the competition design team of the paintings of H.R. Giger (as used in the film 'Alien' in 1979)⁷. However, ongoing design revisions helped the team develop a particular metaphor, ahead of their submission to the NBD architectural design competition:

Things happen in tandem, this [the structure] was never designed to look a tree. It just so happened that it ended up looking a little bit like a tree when you sort of trace the force-lines.⁸

Following their presentation to the NBD architectural design competition adjudicating panel in December 2016, GlobalArchitect received a letter from the panel's representative, who commended them for their tower design and other aspects of the NBD scheme. However, the adjudicating panel noted that they wished GlobalArchitect to consider the design submission further, (henceforth referred to as the 'Competition Submission Steel Scheme') and set-out several matters they required to be addressed, including those related to the structural bracing system:

It is acknowledged that the architectural language of the tower facade [...] is derived from structural stress diagrams. The jury questions whether this narrative has become too decorative and recommends considering closer adherence to the structural requirements of the tower. This comment relates to all facades and the top of the building [...] Confirmation should also be provided that the tower could be constructed utilising a cast in situ concrete core, frame and floor plates. The structural solution should be further reconsidered to identify opportunities that may reduce the reliance on external bracing.⁹

Despite the somewhat contradictory nature of this request, with the adjudicating panel noting that the language of the tower was derived from structural stress diagrams and at the same time requiring closer adherence to the structural requirements of the tower, GlobalArchitect were required to submit amended plans for a scheme utilising reinforced concrete construction within six weeks. This rationalised design (henceforth referred to as the 'Rationalised Concrete Scheme') would radically reduce the number of bracing elements and instances of their folding, resulting

⁶ GlobalArchitect Principal-4, interview transcript (17 October 2017).

⁷ GlobalArchitect Principal-4, interview transcript (17 October 2017).

⁸ GlobalArchitect Principal-4, interview transcript (17 October 2017).

⁹ Letter from representative of the NBD architectural design competition adjudicating panel to GlobalArchitect (16 December 2016)

in a much simplified and, arguably, a visually disappointing design aesthetic. Perhaps an Australian city was not ready for something arboreal, nor alien. In an interview in July 2018, another of GlobalArchitect's principals appointed to the NBD project ('GlobalArchitect Principal-2') stated:

It's true that it [the Rationalised Concrete Scheme] did lose quite a bit of richness in terms of what was the expression. Because at the end of the day, it's about making the building stand out a little bit amongst [its neighbours].¹⁰

But when PropertyCo's NBD D&C project manager for Services ('D&C-Services') was interviewed in October 2017, he was much more expressive in his disappointment with the Rationalised Concrete Scheme, suggesting that PropertyCo had made the wrong choice in selecting the design, as it was too expensive:

The reason it won (if you go back to the original competition): it [the Competition Submission Steel Scheme] was meant to be a super transparent thing; it was structural steel all the way through; it had glazed lift cores; it had glazed lifts. The idea was that you could look through it in any part and it would seem bigger than it was because it's a small floor plate. That's all gone. That kind of bracing has gone. I think clarity of glass is going to be really important, but we're probably going to scrap [expensive] glass because we can't afford it. We just chose something that I don't think we can afford.¹¹

Referring to the underlying reasons behind the switch to the Rationalised Concrete Scheme, GlobalArchitect Principal-1 stated, when interviewed in July 2018:

I think it was a lot of financial reasons really, being honest. Because every time we plucked out a diagonal [brace], it was less, less cost.¹²

Despite the apparent budgetary concern, it seems PropertyCo's D&C business had lobbied the architectural competition adjudicating panel so that the winning scheme would be constructed in reinforced concrete, thereby addressing a number of factors related to buildability. Indeed, PropertyCo historically built predominantly in reinforced concrete, which its D&C business senior structural engineer ('D&C-Senior Structural Engineer') attributed, during an interview in October 2017, to migration of Italian form workers skilled in concrete construction.¹³ Indeed, the perceived advantage of concrete was that it allowed a certain flexibility in the building process since changes could continue to be made during construction. In contrast, construction using pre-fabricated steel required the design to be fixed much earlier, and to be effective, depended on the accuracy of both the design specification and off-site fabrication process. Otherwise, steel construction would likely result in unavoidable and expensive delays to the total building

¹⁰ GlobalArchitect Principal-2, interview transcript (20 July 2018).

¹¹ PropertyCo D&C-Services, interview transcript (20 October 2017).

¹² GlobalArchitect Principal-1, interview transcript (20 July 2018).

¹³ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

program. In an interview in February 2018, a principal of GlobalEngineer appointed to the NBD project ('GlobalEngineer Principal') spoke of the flexibility that construction in reinforced concrete offers over construction in steel:

People like concrete. PropertyCo likes concrete because I could be pouring a slab tomorrow and I can make a change now [...] Concrete is so forgiving. A steel building is not; it forces you to plan. [To] go through the process of shop drawing, shop detailing, tweaking review, prefabrication. So, you've got to set the chain going a lot earlier and make decisions a lot earlier.¹⁴

During my time of immersion in D&C-Team, I noted that there was a certain inertia stemming from the team's attachment to concrete construction, for it seemed they simply lacked experience of building in steel. But PropertyCo's procurement manager responsible for steel procurement ('Procurement Manager'), identified, what he believed, as the team's real reluctance:

The real problem [of building in steel] is that it forces designers, builders, etc, to have precise details before you start, so they are fearful of errors, as you can't make changes during construction. You can always change the formwork for the concrete as you go; you can't make errors with steel. People are fearful of it. The real issue with steel is it forces you to have your shit together before you start. With concrete you can always make adjustments as you go.¹⁵

The architectural aesthetics at stake in this situation relate to the appearance of the tower as a beautiful work of architecture. GlobalArchitect's Competition Submission Steel Scheme was for a super transparent crystalline building (both in terms of its appearance and in plan), which would have the effect of seeming 'bigger than it was', an excess created by the extensive use of steel together with expensive glass. The core, something which might ordinarily be considered as the densest component of a skyscraper, would itself be transparent, with glazed walls containing glazed lifts. Column-free floorplates would provide occupants with flexibility in fit-out, working to provide them with unimpeded views. This early design was a competition-winner. It was the aesthetic that maximised floor space, and thus won. Here we have a sense of Friedrich Schelling's 'purposiveness within itself'¹⁶ as a component of subjective and objective rationales. The crystalline envelope allowed a 'full' occupation of the building site (in three-dimensions) and had a look that at once differentiated it from its neighbours, and one that might attract high lease yields. On the other hand, the economic imperatives at stake relate not only to the cost of construction utilising materials such as steel and glass, resulting in the Development Budget (the budget set for the tower and further considered in Section 4.2.2.4.1) being exceeded, but also to the potential cost implications of the inexperience of D&C-Team in utilising steel construction,

¹⁴ GlobalEngineer Principal, interview transcript (12 February 2018).

¹⁵ PropertyCo Procurement Manager, conversation transcript (27 November 2017).

¹⁶ Friedrich Schelling, *The Philosophy of Art*, ed. Douglas Stott (Minneapolis: University of Minnesota Press, 1985), 168. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=316641>.

and therefore the very real concern that should a mistake be made in the design or fabrication of the steel members, on-site rectification would not be possible. Delays to the construction program, which might be difficult to control, would be experienced.

Seemingly, PropertyCo's attempt at a reconciliation between the architectural aesthetics and economic imperatives at stake was fraught, with odd and even fallacious logics in play. To start with, an architecture was chosen, in part at least, for aesthetic reasons, in spite of any economic capacity to achieve the outcome. The aesthetic at stake in this situation was one of transparent crystallinity and a structural expression that followed lines of force. This original design answered so much of the ADB. It's aesthetic drivers were world-class, and all indications were that such a building would be distinct amongst its neighbours and would attract the most economically endowed of lessees. Once a decision was made as to 'who' would win the competition, GlobalArchitect were promptly asked to redesign the scheme before they had been announced as the winner. Thus, the Rationalised Concrete Scheme would be the winning design.

However, orchestrating this outcome required the use of a series of fallacious premises that undermined the key (competition-winning) aesthetic logic. This logic though, remained a type of 'strange attractor' or 'pole' that would run through all subsequent discourses and aesthetic manipulations that proceeded during the detailed design phase. The core language applied to the building would anchor itself: the 'tree' would be referenced as an absolute in all subsequent design work. Indeed, during the value engineering exercise, described in Section 5.5.2, the 'tree' was identified, together with 'design excellence' and 'Premium Grade' building by PropertyCo's D&C director responsible for the NBD project ('D&C-Director') as the only non-negotiable aspects of the design.¹⁷ Of these three elements, the tree was perhaps the only one with which the teams could readily identify, for it was the only element with definition.

In *The Book to Come* (1959 [2003]) the author Maurice Blanchot writes of the Sirens from Homer's *Odyssey*. He describes their songs as:

[I]mperfect songs that were only a song still to come, [for] they did lead the sailor toward that space where singing might truly begin.¹⁸

The song 'still to come' is that of desire; the sirens enticing sailors to steer their ship to crash upon the rocks, which Blanchot explains:

It has always been possible to think that those who approached [the song] did nothing but come near to it, and died because of impatience, because they prematurely asserted: here it is; here, here I will cast anchor. According to others, it was on the contrary too late: the goal had already been passed; the enchantment, by an enigmatic promise,

¹⁷ PropertyCo D&C-Director, meeting transcript (6 October 2017).

¹⁸ Maurice Blanchot, *The Book to Come*, trans. Charlotte Mandell (Stanford: Stanford University Press, 2003), 3.

exposed men to being unfaithful to themselves, to their human song and even to the essence of the song, by awakening the hope and desire for a wonderful beyond, and this beyond represented only a desert [that is, a casting of an anchor on the rocks].¹⁹

The idea expressed by Blanchot is that in art (as in architecture) an image often operates like a centre of gravity, toward which the artist strives, but can never achieve. The work of art or architecture becomes a type of object that heads in a certain direction. The tower would, like a ship drawn to the rocks, henceforth head toward the competition entry, (the Competition Submission Steel Scheme) which represented it at its aesthetic best, even though the adjudicating panel had backed away from it, casting their anchor, just as the journey commenced.

From this rockiest of starts, the first key logical fallacy in the reconciliation of architectural aesthetics and economic imperatives at stake in this situation, relates to the fallacy of '*irrelevant conclusion*', as outlined by Scott Pratt in *Logic: Inquiry, Argument, and Order* (2014).²⁰ In stating that that the scheme's architecture is 'too decorative', whilst at the same time referring to this decoration as having been informed by the structural stresses the tower needed to respond to, the 'decorative' is conflated with 'engineering'. The oddity here is that the aesthetic definition of decorative tends to relate to the superfluous. This might be seen as the added flourish or the light touch; the scatter cushions arranged on a chaise longue, whereas the structural stresses tend to be regarded as the accountancy of gravity, that is, force flows and it must flow through a structure. Force is never something 'decorative', but rather formative.

When the adjudicating panel required of GlobalArchitect a closer examination of the tower's structural requirements, they set a somewhat impossible task. The design had already fully considered the tower's structural requirements, and as such the request for closer examination is otiose. As Pratt explains of this logical fallacy, it 'fails to transform the original situation'²¹ and as such any revision to the architectural language proposed by GlobalArchitect is unlikely to result in the scheme's apparent decorativeness being reduced. A second fallacy, one of '*excluded possibilities*', is also utilised in this reconciliation. By requesting the tower be redesigned for construction in reinforced concrete, the adjudicating panel has assumed, as Pratt argues, 'the solution must take a certain form and so [has] block[ed] openness to other alternatives'.²² Indeed, the possibility of adopting a hybrid design which utilised both reinforced concrete and steel, or the potential for other construction techniques to be considered, was undermined.

¹⁹ Blanchot, *The Book to Come*, 5.

²⁰ Scott Pratt, *Logic: Inquiry, Argument, and Order*, (Hoboken: John Wiley & Sons, 2014), 84. ProQuest Ebook Central, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=7104348>.

²¹ Pratt, *Logic: Inquiry, Argument, and Order*, 84.

²² Pratt, *Logic: Inquiry, Argument, and Order*, 78.

Despite the announcement of the Rationalised Concrete Scheme as the competition winner, in which economic imperatives had potentially trumped the architectural aesthetics forcing a super transparent building to take on an opaque and somewhat austere appearance, cost was seemingly, still an issue. The correction in this case was not a correction at all, but more a diversion, akin to changing tact to avoid rocks and instead heading clearly toward an iceberg. Indeed, GlobalArchitect Principal-1 related (in an interview in July 2018) that at his very first meeting with D&C-Team in 2017, the unequivocal message from PropertyCo was:

Guys, this is too expensive. We're telling you: we really have to really [reduce cost ... The Development Budget] was based on the Reference Scheme, which was obviously different. It was more a kind of standard [design].²³

The Reference Scheme design was prepared by PropertyCo in 2015 as part of its attempts to sell the NBD site (Reference Scheme costings are described in Section 4.2.2.4.1). I now turn my attention to discussions regarding a column situated within the tower's high-rise floorplates.

5.2.3 Internally situated column

In this second vignette, I shift scale and focus on the placement of a column within the floorplate on the north-west side of the tower's high-rise floorplates. A key aspect of GlobalArchitect's competition winning design, as outlined in the previous vignette, was that it provide workspaces for tenants free of internal columns, (with all columns placed along the facade) thereby allowing for maximum flexibility with fit-outs. Indeed, PropertyCo began marketing the scheme to prospective tenants on this basis. But, the ADB's specification that the core be situated along the southern facade, (to maximise available views and penetration of natural light), resulted in very long floor spans in the north-south direction (reaching a maximum of 19.5m), requiring the support of deep beams. Such beams had the capacity to restrict ceiling heights, limit the location of where voids or atria might be situated within multiple floor tenancies (again, a specification of the ADB) and the efficient placement of service ducts, pipes and cables.

At a workshop convened on Thursday, 10 August 2017 to discuss the tower's floorplates, architectural plans for the high-rise floors (as prepared by GlobalEngineer) were displayed on the screen, which showed the internally situated column.²⁴ GlobalArchitect Principal-2

²³ GlobalArchitect Principal-1, interview transcript (20 July 2018).

²⁴ In attendance were: D&C-Director, D&C-Facade, D&C-Program, D&C-Services, DM-Director, DM-Commercial Tenants-1, GlobalArchitect Principal-2, GlobalArchitect Principal-4, GlobalArchitect Associate Principal, GlobalArchitect Associate, Building Code of Australia Consultant and the author.

immediately questioned: 'Column-free floors?',²⁵ to which DM-Director stated categorically: 'We can't have it!'²⁶ Discussion continued regarding the need for a deep beam to span the significant distance from the core to a column placed on the tower's northern facade. At a workshop convened a few days later (Monday, 14 August 2017) attendees discussed two alternatives for elimination of the internal column.²⁷ The first involved the use of a deep beam with a large depth-to-thickness ratio and therefore requiring a significant amount of ceiling space to accommodate it. The second was a nib wall, which would extend the north-south orientated wall of the core in a northerly direction at its western end. This would effectively reduce the span between the core and the northern facade. As architectural plans were displayed GlobalEngineer Principal stated: 'The nib wall looks stupid. Go with the column'.²⁸ But, GlobalArchitect Principal-2 disagreed, responding: 'I'd rather have a wall than the column [... as it would] compromise the space'.²⁹

At this moment, PropertyCo's D&C-Senior Structural Engineer advised that if a nib wall is used, the required beam:

[I]s 750mm deep. If [there is no nib] wall then the beam is 1,000mm deep. It sticks through the ceiling!³⁰

As the meeting concluded, attendees agreed to consider the matter further, ahead of an RP meeting scheduled for Thursday, 17 August 2017.³¹ At this RP meeting, D&C-Senior Structural Engineer outlined the options to DM-Director: either a nib wall or a column. A nib wall would need to:

[E]xtend [...] across [the floorplate] or [we] will need a column [...] Or the other option is a deeper beam. The beam will stick through the ceiling. We can't go [to a depth of] more than 750mm as services and lighting will be effected.³²

Somewhat surprised by how far the proposed nib wall would extend across the floorplate, DM-Director questioned: 'That far? Does it help if we strip the ceilings out of the high-rise floors?'³³ But, D&C-Senior Structural Engineer reminded her:

²⁵ GlobalArchitect Principal-2, workshop transcript (10 August 2017).

²⁶ PropertyCo DM-Director, workshop transcript (10 August 2017).

²⁷ In attendance were: D&C-Director, D&C-Facade, D&C-Early Works, D&C-Structure, D&C-Senior Structural Engineer, GlobalArchitect Principal-2, GlobalArchitect Associate Principal, GlobalEngineer Principal, GlobalEngineer Associate and the author.

²⁸ GlobalEngineer Principal, workshop transcript (14 August 2017).

²⁹ GlobalArchitect Principal-2, workshop transcript (14 August 2017).

³⁰ PropertyCo D&C-Senior Structural Engineer, workshop transcript (14 August 2017).

³¹ In attendance were: D&C-Director, D&C-Facade, D&C-Early Works, D&C-Structure, D&C-Program, D&C-Leisure, DM-Director, DM-Commercial Tenants-1, D&C-Senior Structural Engineer, GlobalArchitect Principal-2, GlobalArchitect Associate Principal, GlobalArchitect Associate, GlobalEngineer Associate and the author.

³² PropertyCo D&C-Senior Structural Engineer, meeting transcript (17 August 2017).

³³ PropertyCo DM-Director, meeting transcript (17 August 2017).

There are high cost tenancies [up] there. We've got to get services through [the beam]; we need to leave notches. [Otherwise there will be a] beam sticking through the ceiling, with service [pipes and cables located] below the beam! Sorry to be a nuisance, but it is a fact!³⁴

Neither option, it seems, was acceptable to DM-Director, as no decision was made in respect of the nib wall, or the internally situated column at the RP meeting. In 'Making Management Decisions: The Role of Intuition and Emotion' (1987), Herbert Simon refers to the common failure of managers to postpone making difficult decisions. He writes:

When people have to choose the lesser of two evils, they do not simply behave like Bayesian statisticians, weighing the bad against the worse in light of their respective possibilities. Instead, they avoid the decision, searching for alternatives that do not have negative outcomes. If such alternatives are not available, they are likely to continue to postpone making a choice. A choice between undesirables is a dilemma, something to be avoided or evaded.³⁵

Often, Simon argues, decisions are postponed because all of the alternate choices are likely to result in undesirable consequences. This is the case when you have to choose between a nib wall or a column.

The architectural aesthetics at stake in this situation relate to the appearance and functionality of the tower's high-rise commercial spaces. By providing spaces free of internally situated columns, or nib walls extending from the core into the space, tenants would experience enhanced flexibility in circulation and in the design of their fit-out. They would also be provided with unimpeded views when looking outwards. The economic imperatives at stake in this situation are seemingly closely aligned with the architectural aesthetics. By providing tenants with enhanced flexibility, the spaces are more desirable and therefore would generate premium lease yields. However, providing such space required a structural solution that at this time, was not forthcoming, a situation which had been foreseen by GlobalEngineer Principal earlier in August 2017. At a workshop to discuss the tower's structure on Thursday, 10 August 2017³⁶ he said:

[Deep] beams [are] tricky for services to work. You'll never get anyone to [...] agree on what to do.³⁷

With no reconciliation effected, this impasse resulted in the internally situated column being included in drawings provided by GlobalEngineer, and excluded in drawings provided by GlobalArchitect, despite the drawings being displayed side-by-side. This was both amusing and

³⁴ PropertyCo D&C-Senior Structural Engineer, meeting transcript (17 August 2017).

³⁵ Herbert Simon, 'Making Management Decisions: The Role of Intuition and Emotion', *The Academy of Management Executive* 1, no. 1 (1987): 62. <https://doi.org/10.5465/ame.1987.4275905>.

³⁶ In attendance were: D&C-Facade, DM-Commercial Tenants-1, D&C-Senior Structural Engineer, GlobalArchitect Principal-1, GlobalArchitect Senior Associate, GlobalEngineer Principal and the author.

³⁷ GlobalEngineer Principal, workshop transcript (10 August 2017).

frustrating to D&C-Team and DM-Team members, for no reconciliation had been effected and they believed the issue was taking too long to resolve. Indeed, at a D&C-Team meeting on Tuesday, 5 September 2017, some two weeks following the design workshops, D&C-Director displayed an email he had received from GlobalArchitect which listed all unresolved design issues, together with the D&C project manager responsible, and a suggested date for resolution.³⁸ He stated:

The pressure [is on] from [GlobalArchitect] on what we need to decide on. So, I said we are happy to make decisions based on what they present to us. We will go through [the] things in [GlobalArchitect's] email. It's not insurmountable but they need our input. [But] for me, where are we with the internal column?³⁹

To this, PropertyCo's D&C project manager responsible for the NBD tower's structure ('D&C-Structure') responded:

We can design it out with an 850mm deep beam, with services notches. We have decided on this.⁴⁰

Clearly infuriated, D&C-Director replied: 'How was this decision made? Is it costing me any more to do it?'⁴¹ D&C-Structure, referring to a conversation with PropertyCo's DM development manager responsible for the NBD tower's commercial leasing ('DM-Commercial Tenants-1') replied: 'His direction was to look at an 850mm beam'.⁴² Now very infuriated, D&C-Director stated:

We can't make decisions because [*DM-Commercial Tenants-1*] said so! I want to know [the] implications of making that decision! When we're \$20m over budget it's our issue! [...] They [GlobalArchitect] want decision on structure by [the] end of [the] week, as they need to do [a] Revit model for [Main Works] DA submission. We've been talking about fucking columns for more than two weeks and I'm not sure we've come anywhere!⁴³

Having received GlobalArchitect's email, D&C-Director was clearly frustrated by this set of circumstances. At this time it appeared to me, and no doubt to him, that GlobalArchitect had assumed his role, that of project manager. GlobalArchitect were pushing D&C-Team for a resolution of issues rather than, in what might seem to be the more natural order of things (at least in terms of recent project management practices), the reverse, in which GlobalArchitect were more likely to be pushed by a project manager. In 'Deskilling and skilling in architect

³⁸ In attendance were: D&C-Director, D&C-Early Works, D&C-Structure, D&C-Services, D&C-Program, D&C-Urban, D&C-Leisure, D&C-Construction Manager, D&C-Construction Assistant Manager-1, D&C-Construction Assistant Manager-2 and the author.

³⁹ PropertyCo D&C-Director, meeting transcript (5 September 2017).

⁴⁰ PropertyCo D&C-Structure, meeting transcript (5 September 2017).

⁴¹ PropertyCo D&C-Director, meeting transcript (5 September 2017).

⁴² PropertyCo D&C-Structure, meeting transcript (5 September 2017).

⁴³ PropertyCo D&C-Director, meeting transcript (5 September 2017).

profession – trust, fees and experience’ (2015), John Held and Richard Choy accounted for this change in the ordering of roles as having commenced in the 1970s with architects, subsequently, adopting more or less a ‘design only’ function:

Architects were seen as not being able to control cost and time, so the project manager was inserted between the architect and client to manage time and cost.⁴⁴

Nevertheless, the reconciliation at stake here, was parked. That is, it remained outstanding as an issue, and design work progressed on two fronts: a building with a column and a building with a nib wall, or indeed, a building with neither. The tension here was played out emotionally rather than through any design resolution.

5.2.4 Mid-elevation column

In this vignette I focus on the tower’s [*Second Street*] elevation. In their competition winning design (the Rationalised Concrete Scheme) GlobalArchitect proposed that a column situated at the centre of this elevation would commence five levels above ground level and the structural load it carried from levels 6 to 54 would be transferred to columns located at each adjacent corner of the tower. At the workshop convened to discuss structure on Thursday, 10 August 2017 this was met with considerable surprise by D&C-Senior Structural Engineer.⁴⁵ He stated:

I don’t understand why you want to transfer 50 levels of structure? [...] To transfer load is not trivial [... This is] not a little transfer structure, [it is] transferring the whole tower! [...] To me this does not make structural sense: avoid like the war!⁴⁶

In response, GlobalArchitect Principal-2 explained that their design diminished the heaviness of the tower situated above the entrance from [*Second Street*], and they ‘want[ed a] big open space [...] We don’t want the column there’.⁴⁷ But, D&C-Senior Structural Engineer continued to question the design, stating the:

[T]ransfer beam [needs] to support 50 levels of structure. [The required beam] is many metres wide and needs staged stressing [and] Macalloy bars [...] Do you want to spend \$1m or \$10m? [...] Why spend a lot of money on this? [...] Not a lot of value you’re getting.⁴⁸

⁴⁴ John Held and Richard Choy, ‘Deskilling and skilling in architect profession – trust, fees and experience’, *BPN* (January 2015). <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/trade-journals/deskilling-skilling-architect-profession-trust/docview/1650036595/se-2>.

⁴⁵ In attendance were: D&C-Facade, D&C-Structure, D&C-Senior Structural Engineer, DM-Commercial Tenants-1, GlobalArchitect Principal-2, GlobalArchitect Associate Principal, GlobalEngineer Principal and the author.

⁴⁶ PropertyCo D&C-Senior Structural Engineer, workshop transcript (10 August 2017).

⁴⁷ GlobalArchitect Principal-2, workshop transcript (10 August 2017).

⁴⁸ PropertyCo D&C-Senior Structural Engineer, workshop transcript (10 August 2017).

A render of the tower's [*Second Street*] entrance, demonstrating the effect of the mid-elevation column not being transferred to adjacent corner columns (resulting in the column continuing to the ground) is shown in Figure 5.1.

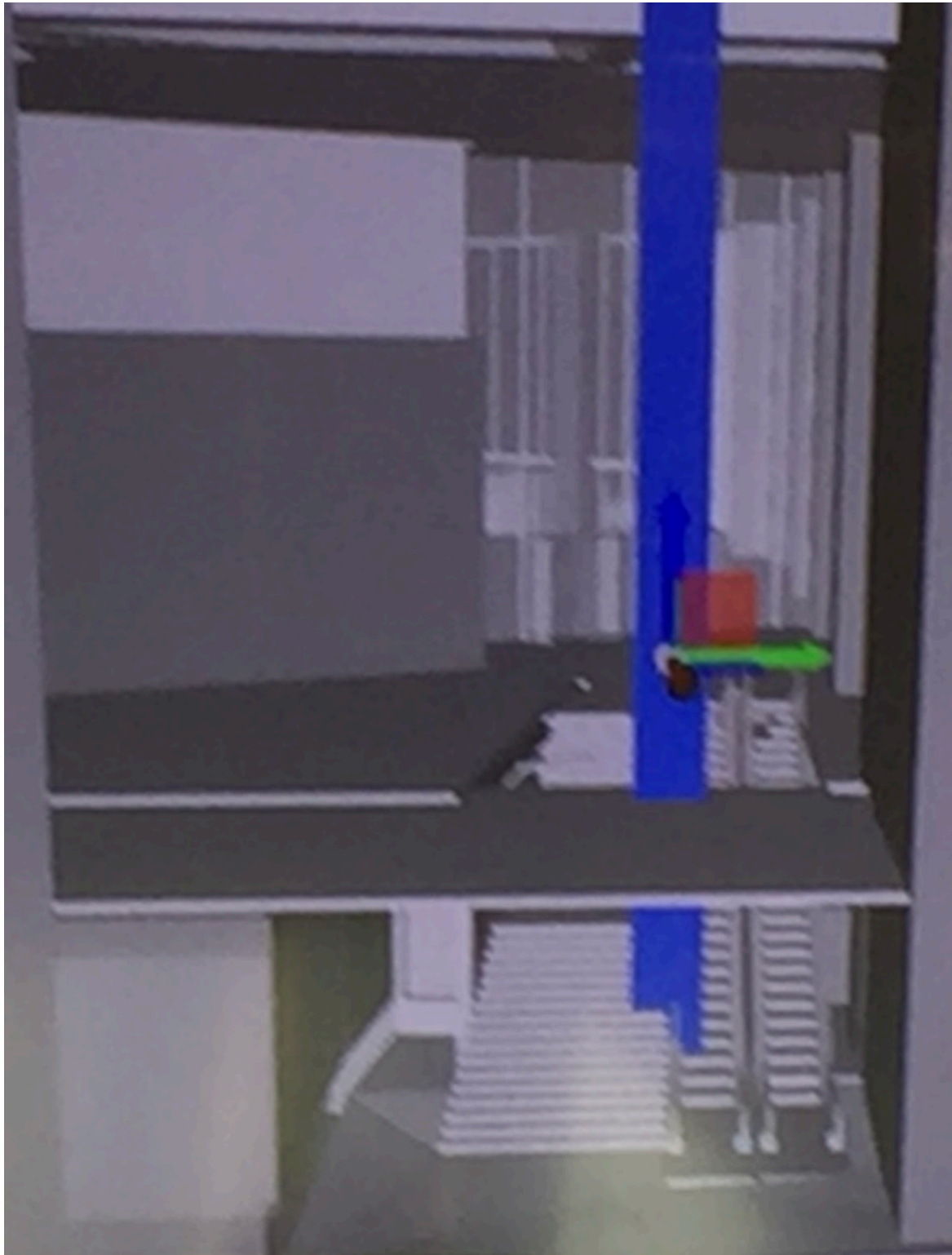


Figure 5.1 – Render of the tower's [*Second Street*] entrance, demonstrating the effect of the mid-elevation column not being transferred to adjacent corner columns. Photograph taken by the author of the image displayed during the workshop on 10 August 2017.

As the meeting progressed, it became apparent that GlobalArchitect were also not in favour of the column being situated at the middle of the elevation, stating their preference for it to be placed off-centre. GlobalArchitect Principal-2 explained:

Visually, it's not one we want to see architecturally. The column in the middle looks really wrong, especially with bracing [beside it, as it] makes the bracing look cosmetic [... If it is off-centre] you get more interesting intersections.⁴⁹

To GlobalArchitect Principal-2, the placement of the column worked against the aesthetics of the structural bracing system on the eastern elevation, rendering it as superficial in a visual sense. Placement of the column away from the centre of the elevation would, she believed, address such a perception, as the positions at which the column intersects with the structural bracing system would no longer be uniform, providing for more curiosity, and therefore, enhanced visual appeal. As a possible solution, GlobalEngineer Principal proposed to delete the mid-elevation column and replace it with a series of alternating hangers and props, highlighting that the 'purest'⁵⁰ structural form would involve the use of hangers. Indeed, the structural bracing system was not being utilised at the tower's eastern elevation to its full capacity, for individual floors could be suspended from the bracing system by the use of hangers, instead of being supported by a column. Where floors were situated above the structural bracing system, the use of small propping columns would be required to support them. GlobalArchitect Principal-2 supported this proposal, stating: 'We like to be purists at [*GlobalArchitect*]'.⁵¹

Indeed, GlobalArchitect have a longstanding reputation for the production of buildings with candid structural expression. At the RP meeting convened on Thursday, 17 August 2017, DM-Director questioned how the mid-elevation column had been resolved, in light of it not appearing on the plan displayed by GlobalArchitect.⁵² To this, GlobalArchitect Principal-2 responded, with much laughter: 'I deleted it! This puppy is gone!'⁵³ But, D&C-Structure provided more clarification: 'It is not fully deleted yet. [*GlobalEngineer*] are doing lots of work on this'.⁵⁴ Seemingly unconvinced, D&C-Senior Structural Engineer said:

How big is your chequebook? [...] All this has a lot of cost implication. [The column] is gone as one element, split into local propping and hanging elements. I'm going to put the facts on this as it [is] all going around in circles. This is not trivial. It supports 50 stories!

⁴⁹ GlobalArchitect Principal-2, workshop transcript (10 August 2017).

⁵⁰ GlobalEngineer Principal, workshop transcript (10 August 2017).

⁵¹ GlobalArchitect Principal-2, workshop transcript (10 August 2017).

⁵² In attendance were: D&C-Director, D&C-Facade, D&C-Early Works, D&C-Structure, D&C-Program, D&C-Leisure, DM-Director, DM-Commercial Tenants-1, D&C-Senior Structural Engineer, GlobalArchitect Principal-2, GlobalArchitect Associate Principal, GlobalArchitect Associate, GlobalEngineer Associate and the author.

⁵³ GlobalArchitect Principal-2, meeting transcript (17 August 2017).

⁵⁴ PropertyCo D&C-Structure, meeting transcript (17 August 2017).

There is a high aspiration to get rid of [the column]. But specific elements are required floor-by-floor to get rid of it.⁵⁵

D&C-Director, however, was less concerned about the structural implications, focusing more on the immediate financial effect. To GlobalEngineer Principal's comment that the replacement of the mid-elevation column with alternating hangers and props would eliminate a bracing node, he responded: 'As long as it doesn't cost me more'.⁵⁶ To this, GlobalArchitect Principal-2 quipped: 'As *always!*',⁵⁷ with D&C-Director reminding her: 'I'm sorry. *Someone* needs to be a keeper of the dollars'.⁵⁸

The architectural aesthetics at stake in this situation relate to the appearance of the tower's entrance from [*Second Street*], together with its eastern elevation. GlobalArchitect proposed to transfer the mid-elevation column, situated a few levels above the tower's [*Second Street*] entrance to the corner columns, to reduce the heaviness of the tower above and create their desired 'open' space, with the result that the tower would seemingly, float above the site. At stake here is the question of structural expression. If the tower was to simply become a simple, column and beam structure the aesthetic expression of the bracing would start to look trivial (decorative). To be 'decorative' is not to be 'pure' with structural expression. An alternative to this design, as proposed by GlobalEngineer, involved the replacement of the mid-elevation column with a series of alternating hangers and props, thereby utilising the tower's structural bracing system to support individual floors. This would, as GlobalArchitect Principal-2 indicated, provide a 'purist' response, with an aesthetic therefore determined by the expression of structure, in the sense explained by Schopenhauer (refer to Section 2.3.5):

The conflict between gravity and rigidity is the sole aesthetic material of architecture [...] From what has been said, it is absolutely necessary for an understanding and aesthetic enjoyment of a work of architecture to have direct knowledge through perception of its matter as regards its weight, rigidity, and cohesion.⁵⁹

The expression of the structure was, according to Schopenhauer and other later 'expressionists' and high-tech proponents of modernism, the 'sole' and therefore, the essential aspect of architectural aesthetics. For without it, our understanding and enjoyment of the architecture would be, seemingly, limited. On the other hand, the economic imperatives at stake relate to the labour and material cost of constructing the transfer beam required to transfer 50 levels of load

⁵⁵ PropertyCo D&C-Senior Structural Engineer, meeting transcript (17 August 2017).

⁵⁶ PropertyCo D&C-Director, meeting transcript (17 August 2017).

⁵⁷ GlobalArchitect Principal-2, meeting transcript (17 August 2017).

⁵⁸ PropertyCo D&C-Director, meeting transcript (17 August 2017).

⁵⁹ Arthur Schopenhauer, *The World as Will and Representation*, vol 1. trans. E. Payne (Newburyport: Dover Publications, 1966), 368 and 370. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=1894850>.

to the corner columns. This, D&C-Senior Structural Engineer argued, was an expensive design choice, and he questioned its necessity. Were GlobalEngineer Principal's proposal to replace the mid-elevation column with alternating hangers and props to be adopted, the economic imperatives at stake relate to the cost of constructing these individual structural members, relative to the cost of constructing the mid-elevation column, and transfer beam, which they would replace. But in this particular situation, though no immediate reconciliation was effected, we can start to see some of the core conceptual framing in play. Architectural aesthetics is posed as a question of 'purity', a spiritual relation or an intent without malice. On the other hand, the economic imperative is framed as a type of Dickensian fixation, and the one with the dollars would not only be 'a keeper of the dollars' but also the one with the last word on the matter. But, as design development work progressed, a whole variety of circumstances seemingly coalesced, requiring the re-working of the entire structural system. The reconciliation in this particular situation was deferred, but the key parameters of future discussions were starting to identify themselves. This is considered in the next vignette.

5.2.5 Return of the 'alien'

In this fourth vignette, I focus on a set of forces, which—gradually revealing themselves during the detailed design phase—seemingly necessitated a reconciliation between architectural aesthetics and economic imperatives involving a 180-degree turn in design development: that the NBD architectural competition winning Rationalised Concrete Scheme be reconsidered for construction in steel. These forces include GlobalEngineer's identification of structural inefficiencies, the difficulty in accommodating the insertion of voids or atria between floors in a contiguous multi-floor tenancy, the rising cost of construction in reinforced concrete coupled with the apparent time-saving available through steel construction and the desire for innovation. Whilst each of these forces is considered separately below, the difficulties experienced by the teams in attempting to reconcile the architectural aesthetics and economic imperatives at stake in relation to the placement of the internal column, and the mid-elevation column, as considered in the two immediately previous vignettes, should be seen as implicated in the 180-degree turn. I commence by focusing on structural inefficiencies identified in the Rationalised Concrete Scheme.

5.2.5.1 *Structural inefficiencies*

Despite the announcement that GlobalArchitect's design had been successful in winning the NBD architectural design competition, and that a Europe-based consulting engineer had assisted them

with the design of both the Competition Submission Steel Scheme, and the Rationalised Concrete Scheme, (its 'rationalised' successor) a different consultant engineer was appointed by PropertyCo for the detailed design and subsequent construction phases, 'GlobalEngineer'. In an interview in February 2018, GlobalEngineer Principal outlined the Rationalised Concrete Scheme's structural inefficiencies:

You've got this big concrete shaft [that is, the core ...] and this exoskeleton, and they're fighting each other! The building's not big enough to have both in their totality, and you're not getting the best out of one or the other. This one [the concrete shaft] wants to do something and this one [the exoskeleton] wants to resist it. So, you're actually creating a structural tension that you wouldn't otherwise have [...] Structurally, it's just not logical enough. It was a bit forced [...] You're paying for all this bracing that goes around the corners and connects to the core, but you don't need that [...] It was creating a lot of cost in the floors as well, because the braces want to fight the core [...] You are paying too much with all this stuff.⁶⁰

As GlobalEngineer Principal outlined, individual bracing and other structural components in the Rationalised Concrete Scheme would be required to work harder to resist the forces. The implication of this was that individual concrete members, including beams supporting each floor would need to be larger, and contain a higher volume of steel reinforcing rods, which would not only be more costly to build, but would reduce the towers' desired flexibility, which was a key design requirement of the ADB. Indeed, not only would these concrete beams limit the locations in which floor voids and atria might be inserted within contiguous multi-floor tenancies (which is considered further below) but they might also hinder the placement of service pipes and cables. Considerable workshop time during August 2017 was devoted to determining whether the structural bracing scheme should consist of steel *or* reinforced concrete members, with a multitude of diagrams produced showing different options in reinforced concrete or steel in an attempt to anticipate the complexities arising from the points of intersection of bracing members with columns, floorplates and the core, that is, the nodes. At a workshop on Tuesday, 10 August 2017,⁶¹ GlobalEngineer Principal stated, in respect of the use of reinforced concrete:

I suggest [you] don't do it, as [it's] not all in compression. We can get it to work [but] junctions are much simpler [in] steel [... Construction] is much faster [... with an] all steel frame [with] concrete filled [steel] columns. We have done really detailed modelling on this [in] Rhino. There are performance and buildability things we get bundled. This means we get optimisation of the core size and column size.⁶²

GlobalEngineer Principal's compelling argument against the construction in reinforced concrete may well have made sense from a structural efficiency perspective, but in August 2017 D&C-Team

⁶⁰ GlobalEngineer Principal, interview transcript (12 February 2018).

⁶¹ In attendance were: D&C-Facade, D&C-Senior Structural Engineer, DM-Commercial Tenants-1, GlobalArchitect Principal-2, GlobalArchitect Associate Principal, GlobalEngineer Principal and the author.

⁶² GlobalEngineer Principal, workshop transcript (10 August 2017).

still believed it would be more costly for the scheme to be constructed in steel rather than reinforced concrete. Despite this, D&C-Senior Structural Engineer had aligned himself with GlobalEngineer. In an interview in October 2017 he said:

[T]he geometry of the building and the structural solution go hand in hand. But, we've just got bracing that goes down [to earth] because it's a [...] visible element that the architect wants, but it's not the most efficient.⁶³

The idea of alignment between geometry and structure is an aesthetic one in this situation, and to suggest that the two go 'hand in hand' is to suggest a type of consistency, an aesthetic consistency of the relation. The idea of the 'efficient' is economic at this moment, in part the economics of engineering and the flow of force, and very much the economics of dollars. Whilst highlighting the need for structural efficiency, D&C-Senior Structural Engineer was also cognisant of the competition winning design, with its tree motif. Indeed, the structural design contained within the Competition Submission Steel Scheme, prior to it having been 'rationalised' and with the added proviso that it be constructed in reinforced concrete, might have been structurally efficient. But, in its post-rationalisation guise, it could no longer make this claim. Instructively, D&C-Senior Structural Engineer stated, during the interview in October 2017:

Well, they [GlobalArchitect] are churning out what [PropertyCo] is paying for. They get paid to churn out the design that was in the competition.⁶⁴

Perhaps, irrespective of changes proposed by GlobalEngineer to the structural bracing system in their pursuit of structural efficiency, there would remain an ongoing structural inefficiency, brought about by the structure itself as it attempted to resemble a tree. This was highlighted by D&C-Services in an interview in October 2017. He stated:

We're always focusing on this tree, but it's not really about the tree. It's about—the tree is part of it—but ultimately, it's about, you know, a structural bracing system that works around the whole thing [the tower]. It's [the tower] a tube with people on the inside as opposed to, you know, a building with some [tree] branch. So, we've tried to make this thing [the structural bracing system] still look like a tree but it's like: it looks like a twig now and if you're, you know, really [designing] shall we forget about the tree and just go back to, you know, what it's [the structural bracing system] trying to achieve, which is a column-free floor plate, and then work out what it looks like.⁶⁵

The complexity of the reconciliation here is fascinating. It is fascinating in that the term 'structure' plays itself into two discourses, that is, it is part of both an aesthetic discourse—in terms of consistency and the structure/geometry relation—and as a key measure in an economic discourse (that force is measured, and the associated cost of the construction required to resist

⁶³ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

⁶⁴ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

⁶⁵ PropertyCo D&C-Services, interview transcript (20 October 2017).

it). There is in science a suggestion that a good theory is a beautiful theory. That is, in something like a mathematical, engineering or accountancy solution, there will be beauty. The discourse on the alignment of structure and geometry is a case in point. In Richard Dawkins' account of the 'poetry of science' in *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder* (2006),⁶⁶ he notes a type of qualitative/quantitative [concurrency] in aesthetic beauty. Indeed Dawkins' chapter titled: 'Huge Cloudy Symbols of a High Romance' turned to Stephen Jay Gould and judged his science as 'bad poetic science', in that it consists of theories that were (in Dawkins' *humble* opinion) not aesthetically pleasing and therefore likely to be faulty. He quotes John Maynard Smith, who in 1995 wrote of Gould:

Because of the excellence of his essays, he has come to be seen by non-biologists as the preeminent evolutionary theorist.⁶⁷

Dawkins' book was the subject of mass critique, largely by those who felt the alignment of good poetic science with an aesthetic beauty was entirely unconvincing. Here too, one wonders whether the appeal of D&C-Senior Structural Engineer to a reconciliation that is at once engineering efficient, and aesthetically pleasing, relies on the idea that an efficient engineering solution will churn out an attractive building. Perhaps they should have, as D&C-Services suggested, gone back to what the structural bracing system was 'trying to achieve' and work out 'what it looks like'.

5.2.5.2 Accommodation of voids/atria

The ADB required that the tower's structure be able to accommodate the insertion of voids and atria within contiguous multi-floor tenancies, allowing for flexibility in a tenant's workspace and fit-out. Indeed, in an interview in September 2017, PropertyCo's DM development manager responsible for the NBD project's financial arrangements ('DM-Commercial Manager') stated in respect of lease incentives which might be offered to tenants:

[W]ith any tenant there will be things [...] that we need to offer them, and it will all be different based on different tenants: they might want to customise the building, they might want to put in some voids.⁶⁸

It was essential therefore, that the design provided for this type of flexibility, allowing for the customisation of workspaces. As mentioned in the previous section (5.2.5.1), the sizing of concrete members and limitations in the location of where floor voids and atria might be inserted

⁶⁶ Richard Dawkins, *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder* (London: Penguin Books, 2006).

⁶⁷ Smith cited in Dawkins, *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder*, 207.

⁶⁸ PropertyCo DM-Commercial Manager, interview transcript (26 September 2017).

was identified as problematic. At a workshop convened to discuss the tower's structure on Monday, 14 August 2017,⁶⁹ when responding to a question from GlobalArchitect Senior Associate regarding the possible placement of a three-storey atrium adjacent to the facade, GlobalEngineer Principal replied:

If it's where the braces are, then there is a diaphragm problem. We would need to set-up some rules.⁷⁰

A few days later, at an RP meeting convened on Thursday, 17 August 2017 to discuss the tower, GlobalArchitect displayed a floorplan which indicated 'soft spots', that is, where voids or atria could be inserted.⁷¹ To this a somewhat perplexed DM-Director asked: 'We can't do two next to each-other?'⁷² To this, D&C-Senior Structural Engineer clarified the limitations on the placement, sizing and shape of the structure on the 'soft spots': 'There is post-tensioning running one-way only'.⁷³

In post-tensioning systems, tendons are inserted into a concrete beam as it is constructed. As Bungale Taranath explains in *'Structural Analysis and Design of Tall Buildings'* (1988) 'tendons, which may consist of steel wires, strands or bars, are tensioned and anchored against the concrete after it has hardened'.⁷⁴ As the post-tensioned beams proposed for the NBD tower are running 'one-way only' in the north-south direction (between the northern facade and the core), it is only possible for voids or atria to be inserted in the 'soft spots' between these post-tensioned beams, and accordingly, there are no 'soft spots' running in the east-west direction. In light of these limitations, D&C-Senior Structural Engineer was becoming increasingly frustrated by the Rationalised Concrete Scheme and was in favour of it being replaced with a design for a scheme constructed in steel. In an interview conducted in October 2017, he stated:

You can't even fit a bloody stair from one level to the other without destroying the building!⁷⁵

The parameters for a reconciliation are established here: 'soft' starts to suggest an aesthetic possibility; 'hard' is no doubt an impossibility in the schema, the pliable becomes the zone for

⁶⁹ In attendance were: D&C-Director, D&C-Facade, D&C-Early Works, D&C-Structure, D&C-Senior Structural Engineer, GlobalArchitect Principal-2, GlobalArchitect Senior Associate, GlobalEngineer Principal, GlobalEngineer Associate and the author.

⁷⁰ GlobalEngineer Principal, workshop transcript (14 August 2017).

⁷¹ In attendance were: D&C-Director, D&C-Facade, D&C-Early Works, D&C-Structure, D&C-Program, D&C-Leisure, DM-Director, DM-Commercial Tenants-1, PropertyCo's D&C-Senior Structural Engineer, GlobalArchitect Principal-2, GlobalArchitect Senior Associate, GlobalArchitect Associate-1 and 2, GlobalEngineer Associate and the author.

⁷² PropertyCo DM-Director, meeting transcript (17 August 2017).

⁷³ PropertyCo D&C-Senior Structural Engineer, meeting transcript (17 August 2017).

⁷⁴ Bungale Taranath, *Structural Analysis and Design of tall Buildings* (New York: McGraw-Hill, 1988), 410.

⁷⁵ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

change, for possibility. When we talk of ‘soft politics’ as a type of backdoor, tertiary politics, or a politics of subterfuge there is implied both a power to the ‘soft’ and a weakness. This power and weakness is assigned to the architect. Although there is no resolution in this situation, the outcome is already forming in the very language brought to bear. Of course, the ‘hard’ wins over the ‘soft’.

5.2.5.3 Cost of construction in reinforced concrete/time savings in steel

For PropertyCo, the cost of construction in reinforced concrete had historically been lower than the cost of construction in steel, but as the detailed design phase progressed it became apparent that labour costs for concrete formworkers were increasing. In an interview in October 2017, D&C-Senior Structural Engineer stated:

I think we are getting to the point now, with all the infrastructure work [being pursued by the government] and the [increasing] cost of formwork, that maybe steel should be being pushed.⁷⁶

In October 2017, the cost of construction in reinforced concrete was on par with the cost of construction in steel. In an interview in November 2017, PropertyCo’s DM assistant development manager responsible for the NBD project’s financial arrangements (‘DM-Commercial Analyst’), stated that the initial cost analysis for GlobalArchitect’s Competition Submission Steel Scheme indicated that ‘it was going to cost you \$100m more’⁷⁷ than construction in reinforced concrete, but with cost escalations due to ‘the current [labour] supply [constraints] with concrete, steel and concrete are now almost going to cost the same, but steel has the benefit of being quicker’.⁷⁸

Construction in steel was particularly attractive to DM-Team, as it offered a time saving in the development program of somewhere between two and four months, largely attributable to savings in the time required in the construction of bracing nodes. Indeed, DM-Team had determined that saving one month in time translated to an improvement in the Internal Rate of Return (‘IRR’) for the project of 0.5%, which had remained marginal throughout the detailed design phase, that is, hovering just above PropertyCo’s threshold (refer to Section 4.2.2.4.3). Whilst I was seated with DM-Team in the NBD project office space on Wednesday, 29 November 2017, I became aware of a conversation regarding the duration of the construction program, in which DM-Director informed DM-Commercial Tenants 1, DM-Commercial Tenants 2 and DM-Commercial Analyst: ‘it may be 45-months, but it really needs to go to 44 months’.⁷⁹ Whilst DM-

⁷⁶ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

⁷⁷ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁷⁸ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁷⁹ PropertyCo DM-Director, conversation transcript (29 November 2017).

Team were primarily focused on the particular economics of the NBD development, there was also considerable pressure from within PropertyCo for the development to be completed within program. As outlined in Section 4.2.2.4.5, PropertyCo anticipate revenues arising from their pipeline of development projects many years in advance, and slippages in individual development programs would have the potential to result in lower profits being recognised in future financial reporting periods.

With seemingly no architectural aesthetics at stake in this situation, DM-Team lobbied for the change to steel construction. In the interview in November 2017, DM-Commercial Analyst clarified DM's position on the effect of the change to construction in steel on the tower's appearance:

[DM] don't care, as long as it looks good, gives us [a] time saving and is not going to be any more expensive.⁸⁰

DM had also received an assurance, albeit reluctantly, from the PropertyCo D&C construction manager appointed to the NBD project ('D&C-Construction Manager') that the tower could be completed at least two months quicker in steel. In an interview in December 2017, he stated:

I've committed to two months less because of the steel [option ...] There's time saving, cost is line ball.⁸¹

In this situation there appears to be no architectural aesthetic at stake, provided the tower constructed in steel 'looks good'. Whilst I had overheard a conversation in the NBD project office space on Wednesday, 29 November 2017, in which D&C-Director reminded D&C-Structure: 'You can't have [a certain volume of structural] bracing just because it looks better'⁸², there was no particular championing of the relative architectural aesthetics of the tower constructed in steel versus concrete. Instead, what is at stake is an economy of time, and therefore cost, in the construction of concrete versus steel. This in itself, is fascinating. To remove the aesthetic here is to enact a type of hylomorphic move. Hylomorphism is the Aristotelian idea that there is a gap between form and matter. That is, an item of matter might be able to take any form, or a form any matter. Here the logic suggests that the form of the tower could adopt either the matter of concrete or steel, almost interchangeably. The philosopher of technology, Gilbert Simondon in *Physico-Biological Genesis of the Individual* (1964) critiques such a stance in suggesting that matter and form are always entwined, and suggests that the hylomorphic perspective is the perspective of the master (over the slave), the 'knowledge of a man who remains outside the

⁸⁰ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁸¹ PropertyCo D&C Construction Manager, interview transcript (21 December 2017).

⁸² PropertyCo D&C-Director, conversation transcript (29 November 2017).

workshop and considers only what enters there and what is done there'.⁸³ Indeed, it was not just a simple swap between concrete and steel at stake here. There was considerable resistance from D&C-Team as they had no experience of steel construction, as highlighted in the next vignette. Even those outside the workshop feel the need to control what happens within it.

5.2.5.4 Innovation

In an interview in October 2017, D&C-Senior Structural Engineer referred to his desire for innovation, and highlighted construction techniques which utilised alternative materials to reinforced concrete. This, he said was also the view of PropertyCo's CEO, who wished to promote PropertyCo as an innovative organisation.⁸⁴ Indeed, in an interview in November 2017, DM-Commercial Analyst referred to how strongly PropertyCo's CEO felt about steel:

[PropertyCo's CEO] wants to do steel. [PropertyCo's CEO] loves steel [...] and he's been asking, [since] a long time ago, why can't we do some steel? The first analysis went, it's going to cost you \$100m more, that's why, and [there are] the safety elements [to consider...] He [PropertyCo's CEO] kept forcing it, and forcing it, and forcing it, and [eventually he sort of accepted that steel might not be suitable for the NBD tower] by saying it would need more work. Then [D&C-CEO's] actually gone, well now they're doing [*another PropertyCo building*] in steel, [D&C business] now has more of an understanding of steel [construction].⁸⁵

PropertyCo's D&C-Senior Structural Engineer, its CEO and its D&C business CEO ('D&C-CEO') were all seemingly aligned. At the same time, GlobalEngineer Principal was arguing for a more efficient structure to be adopted for the NBD tower (as outlined in section 5.2.5.1). In respect of construction in steel, D&C-Senior Structural Engineer stated:

Look at the procurement opportunity, and the opportunity to [...] move into digital, because if you do steel you can really apply digital technology [...] because its prefabrication: the whole delivery, the whole process of it. I am pushing the steel option because I think it's the right answer for the building [...] given the shape of the building, the lack of geometric symmetry [...] If you put systems in then you want to get the benefit out of it. Every square metre of that floor, particularly around the perimeter; all of the bracing is different so we should be looking at techniques to build buildings with braces [...] Most buildings with braces are built out of steel.⁸⁶

Construction of the tower in steel, it seems, had the potential to bring innovation in construction techniques to PropertyCo, but (as mentioned in Section 5.2.2) this was not without resistance. DM-Commercial Analyst related in the interview in November 2017:

⁸³ Gilbert Simondon, *Physico-Biological Genesis of the Individual*, trans. Taylor Adkins (1964): 12. [http://topologicalmedialab.net/xinwei/classes/readings/Simondon/Physico-Biological GenesisIndiv.pdf](http://topologicalmedialab.net/xinwei/classes/readings/Simondon/Physico-Biological%20GenesisIndiv.pdf)

⁸⁴ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

⁸⁵ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁸⁶ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

We hadn't done a steel tower [...] before, so talking about safety [...] look at the [site's] access locations: are you going to be able to get these things [steel members] there? Concrete is easier and we're familiar with concrete.⁸⁷

But PropertyCo's Procurement Manager was more forthcoming. He believed the reason for D&C-Team's circumspection towards steel construction was based on fear, as repeated below:

The real problem [of building in steel] is that it forces designers, builders, etc, to have precise details before you start, so they are fearful of errors, as you can't make changes during construction. You can always change the formwork for the concrete as you go; you can't make errors with steel. People are fearful of it. The real issue with steel is it forces you to have your shit together before you start. With concrete you can always make adjustments as you go.⁸⁸

In an informal conversation on Wednesday, 29 November 2017, PropertyCo's D&C assistant construction manager appointed to the NBD project ('D&C-Construction Assistant Manager-1') clarified the fear:

The subbies [sub-contractors] don't know how to do it [steel construction]. No-one knows how to do it'.⁸⁹

The economic imperatives at stake here tend to relate to a choice between an upfront, or delayed investment strategy. PropertyCo could invest, either high and early in steel, or in a more steady-as-she-goes manner in concrete. In a study by Johannes Dreher and Joachim Thiel which considered innovation in the construction industry related to 'star' architecture projects, 'Star architecture and the geographies of innovation across the construction supply chain: the case of the Elbphilharmonie' (2021), all actors involved in the supply chain were required to 'embrace the complexities' that innovative solutions demanded in response to particular design issues.⁹⁰ This, they argued, worked to 'overcome the ambivalence related to innovation in construction'.⁹¹ Whilst Dreher and Thiel's study related to the particular innovations to address the glass facade of the Hamburg Elbphilharmonie, the complexities of construction in steel for a builder experienced in construction using reinforced concrete, such as PropertyCo, might be seen in the same light. They would not, for example, be familiar with the supply chain required for steel construction.

⁸⁷ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁸⁸ PropertyCo Procurement Manager, conversation transcript (27 November 2017).

⁸⁹ PropertyCo D&C-Construction Assistant Manager-1, conversation transcript (29 November 2017).

⁹⁰ Johannes Dreher and Joachim Thiel, 'Star architecture projects and the geographies of innovation across the construction supply chain: the case of the Elbphilharmonie', *European Planning Studies* 30, no. 1 (2021): 115. <https://doi.org/10.1080/09654313.2021.1951176>.

⁹¹ Dreher et al, 'Star architecture projects and the geographies of innovation across the construction supply chain: the case of the Elbphilharmonie', 117.

Nevertheless, the choice between steel and concrete is about conflicting temporalities, symptomatic of many of the decisions taken throughout the detailed design phase, and identified in many of the vignettes throughout this Chapter. Indeed, the question of lessee's yet to come and open possibilities, delayed decisions and ongoing flexibilities were high in the mind of PropertyCo: the temporalities of decisions. Whilst architectural aesthetics is seemingly disregarded in such a discourse, despite GlobalArchitect having originally proposed a tower constructed in steel in their Competition Submission Steel Scheme, so too is time. Here we have a sense of Jacques Rancière's *dissensus*, from 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge' (2009) in which the innovation of steel construction might be considered as a 'supplement that both reveals and neutralizes the division at the heart of the sensible'.⁹² This *aesthetic dimension* brings a more 'radical' way of seeing the tension at stake between architectural aesthetics and economic imperatives, that is, it is neutralized. Nevertheless, the obsessions of the project managers on time, and time as cost, is fascinating. Running fast, (as if fast was efficient) is problematic. Putting time into the design equation at this point might have changed any number of outcomes, but instead time is suspended; investments in time are tied so tightly to the moment and never to a consideration of the value of 'taking time now' to get things right. So, in this sense, form, matter and time take on odd characteristics when we consider the economic imperatives at stake. Indeed, getting one's 'shit together' might involve more consideration and less impulsive reaction.

5.2.5.5 *The return to steel*

Despite having submitted the Main Works DA to the City in November 2017 seeking approval to develop the design developed Rationalised Concrete Scheme (the 'Design Developed Scheme'), PropertyCo continued to examine the feasibility of constructing the scheme in steel. At a workshop convened on Wednesday, 29 November 2017⁹³ to discuss two alternative schemes to be constructed in steel, the first with a more organic structural bracing system (the 'Organic Steel Scheme') and the second with a more rationalised structural bracing system (the 'Rationalised Steel Scheme'), GlobalArchitect Principal-1 stated:

⁹² Jacques Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', *Critical Inquiry* 36, no. 1 (2009): 3. <https://doi.org/10.1086/606120>.

⁹³ In attendance were: D&C-Director, D&C-Program, D&C-Structure, D&C-Senior Structural Engineer, D&C-Cost Planner-1 GlobalArchitect Principal-1, GlobalArchitect Principal-2, GlobalArchitect Principal-4, GlobalArchitect Associate Principal, GlobalArchitect Associate, GlobalEngineer Principal, GlobalEngineer Associate and the author.

There is a subtlety between the two schemes. Structurally, which one performs [better] is more preferential. It's up to you guys [referring to *GlobalEngineer Principal*]. The [Organic Steel Scheme] is more dramatic.⁹⁴

To this, *GlobalEngineer Principal* responded that the:

[O]rganic [Steel] Scheme is more structurally efficient and has more flexibility. The reason is [there] is more torsional stiffness on the southern side. [In] construction [the] braces are only ever column-to-column. Even with the more Rationalised [Steel Scheme], the top and bottom connections are still uneven. You never have that problem with the Organic [Steel] Scheme [... There are] no 3D-nodes, so [it is] less complex.⁹⁵

At this point *PropertyCo's D&C cost planner* appointed to the NBD project ('D&C-Cost Planner-1') referred to the considerable savings, which would be realised in both time and cost from not constructing 3D-nodes.⁹⁶ To this, *GlobalArchitect Principal-1*, perhaps wishing to appear focused on costs, confirmed the saving would be \$6.5m.⁹⁷ A 3D-node is the three-dimensional junction of structural bracing members. Indeed, some three-months earlier at a workshop to discuss structure on Thursday, 10 August 2017, *GlobalEngineer Principal* displayed a render of alternative 3D-nodes, referring to their design complexity and the significant costs in construction arising from them.⁹⁸ Seemingly in agreement with *GlobalEngineer* in choosing the Organic Steel Scheme, *GlobalArchitect Principal-1* referred to the subtlety in deciding whether the bracing system should continue to the top of the Architectural Roof Feature, or terminate 15m lower, that is, immediately above the top commercial floor level:

We're experimenting with what looks right at the top of the building, but for structural [considerations] we want your feedback.⁹⁹

GlobalEngineer Principal responded:

You've got to brace the top bit somehow. We could stop it [immediately above the top commercial floor level] and put another bracing system in, so I'm not sure I have a strong opinion on it. Some other element can do that job [...] It's more an aesthetic decision than anything else.¹⁰⁰

What is, or isn't an aesthetic issue for the engineers is fascinating. An aesthetic issue seems to be an issue where there is no clear structural implication. Oddly, the question of an alignment of structure with form, that might constitute an architectural aesthetic, is not the position of the

⁹⁴ *GlobalArchitect Principal-1*, workshop transcript (29 November 2017).

⁹⁵ *GlobalEngineer Principal*, workshop transcript (29 November 2017).

⁹⁶ *PropertyCo D&C-Cost Planner-1*, workshop transcript (29 November 2017).

⁹⁷ *GlobalArchitect Principal-1*, workshop transcript (29 November 2017).

⁹⁸ *GlobalEngineer Principal*, workshop transcript (10 August 2017).

⁹⁹ *GlobalArchitect Principal-1*, workshop transcript (29 November 2017).

¹⁰⁰ *GlobalEngineer Principal*, workshop transcript (29 November 2017).

engineer. Nevertheless, GlobalArchitect Principal-2 was quick to clarify her firm's view, referring to one of their key design considerations: 'It enhances the height [of the tower]'.¹⁰¹

Focus then turned to the change in the shape of the core. GlobalArchitect Principal-1 outlined the proposal:

We thought [a] better layout [is] with [a] longer [and] flatter core. [The] jury is still out on longer term value; this is all about value. If this is a compromise to the financial viability of a floor plate's rental value, it is a subtlety. In other schemes we're doing, clients like deep spaces.¹⁰²

Whilst discussions continued regarding the *subtleties* between the Organic Steel Scheme and the Rationalised Steel Scheme, the jury seemed to have decided that the Design Developed Scheme, submitted in the Main Works DA just a few days earlier (albeit behind schedule) and to be constructed in reinforced concrete had been abandoned.

In late December 2017, the teams formally adopted the Organic Steel Scheme. At an RP meeting convened on Thursday, 21 December 2017¹⁰³ to endorse the revised design, GlobalArchitect Principal-1 stated:

The steel frame design is a radical change in the way the building works [...] Bracing loads are transmitted to the east and west of the core, so there is no need to have bracing on the east and west sides, and no need to have columns on the corners. The corners of the building, and floor spaces are now free of columns. This is a good leasing outcome. In respect of aesthetics, we have been experimenting here with expression of structure and elements. We're essentially playing games with colours and considering the relationship with the [surrounding city]. The scheme has become very much more like the Competition [Submission Steel] Scheme [...] Some of the [internal spaces] are unusual, but given the character of these spaces this might work with fit-outs.¹⁰⁴

Here, it seems GlobalArchitect Principal-1 is very comfortable with the tower in its new guise. Whilst much of the structural bracing system, which was an inherent component of the Competition Submission Steel Scheme, has not been reinstated—in fact more bracing has been removed with the deletion of the bracing on the east and west sides—the Design Developed Scheme, with its structural inefficiencies and somewhat lacklustre aesthetic has ended up on the cutting room floor, consigned to history. However, this is not mentioned by GlobalArchitect Principal-1. Instead, he focuses on the economic imperatives, in particular the 'good leasing

¹⁰¹ GlobalArchitect Principal-2, workshop transcript (29 November 2017).

¹⁰² GlobalArchitect Principal-1, workshop transcript (29 November 2017).

¹⁰³ In attendance were: D&C-Early Works, D&C-Program, D&C-Structure, D&C-Urban, D&C-Leisure, DM-Director, DM-Commercial Tenants-2, DM-Retail Tenants, D&C-Cost Planner-1, DM-Senior Design Manager, GlobalArchitect Principal-1, GlobalArchitect Principal-2, GlobalArchitect Principal-4, GlobalArchitect Associate, GlobalEngineer Associate and the author.

¹⁰⁴ GlobalArchitect Principal-1, meeting transcript (21 December 2017).

outcome' of the column-free floorplates and the newly added leasing credential of there being no corner columns.

Architectural aesthetics in this situation have been aligned with the degree to which the structure might be seen as dramatic. With the choice made to adopt the Organic Steel Scheme, the more dramatic scheme has prevailed. But, GlobalArchitect's seeming refusal to involve itself in deciding this outcome, having deferred to GlobalEngineer is particularly curious. What is even more perplexing is that GlobalArchitect's interest is not so much in the structural form, but rather its colour. Perhaps having needed to engage with so many proposed structural schemes for the tower, GlobalArchitect were simply resigned to this one, for it had some resemblance with their Competition Submission Steel Scheme, the design they submitted to the NBD architectural design competition 12 months earlier.

At an interview a few months later in July 2018, GlobalArchitect Principal-1 reiterated his firm's position in respect to the design, that they are:

[M]ore happy with this, because we think it's actually more interesting to look at, right? It's more of an expression of the forces going to ground.¹⁰⁵

In support of the argument that steel was the most appropriate construction methodology for the tower, GlobalEngineer's Principal referred in an interview in February 2018, to the significant amount of work that his firm had completed:

All you can do is put your compelling case forward and then actually make sure you don't let it go if you think it's a good one [...] We've been working on it for six or eight months, and we've had to do better than the [Rationalised] Concrete Scheme and almost make it doubly good because [PropertyCo] see risk [with steel construction]. We did steel with the exoskeleton, we did steel with the outriggers, we've done four different versions of the steel floor, and I think we've done six different buildings through that phase for them to get their heads around. We've probably done more schemes in greater detail on this to get to this phase than we've probably done on any other job, that I can remember [...] Multiple variations of the steel one because we've had to do the exoskeleton one, plus our preferred one.¹⁰⁶

The collaborative process that resulted in the scheme reverting to steel construction, involving the preparation of multiple design schemes and many weeks of debate amongst architects, engineers, cost planners and project managers regarding the architectural aesthetics and economic imperatives at stake, demonstrates the dependency, and contingency of architecture. Indeed, as Till (2009) writes:

¹⁰⁵ GlobalArchitect Principal-1, interview transcript (20 July 2018).

¹⁰⁶ GlobalEngineer Principal, interview transcript (12 February 2018).

Architecture is dependent on others at every stage of its journey from initial sketch to inhabitation.¹⁰⁷

And this process of collaboration, as noted by Cuff (1992) between a:

[C]onstellation of individuals as they make sense of each other's requirements and desires, moves towards a specific scheme that will be mutually agreeable.¹⁰⁸

The decision to revert to steel necessitated the submission of a revised Main Works DA to the City with a new set of drawings, a D&C-Team in need of new skills in steel construction and an architect resigned to a scheme which had more of a resemblance to their competition design entry submission.

5.2.5.6 *Form and matter*

Vignette-by-vignette, what we have seen is that the picture of what constitutes the aesthetic and what constitutes the economic has been thrust into a type of political discourse of the 'hard' and 'soft'. The competition winning design was rationalised as a heavier, denser and cheaper building than the 'too decorative' super-transparent and crystalline scheme. It needed a column inserted hard in the centre of the highest yielding high-rise floors, and for the tower to 'float' above its [Second Street] entrance it required a massive concrete beam costing several million dollars to construct. The tower's post-tensioning system provided very few 'soft spots' to accommodate voids/atria between floors. It was the hardening of what was previously a light filled design with its internal glass walls. But with costs of concrete construction rising, and time savings available from construction in steel, the hard economics dictated its part-resurrection. The newly revised structure hung onto inefficiencies in trying to resemble a tree, but with the right colour palette. This might have been soft, but the tower was still hard to the core, for this remained in concrete.

The politics of this discourse is the same as the politics of hylomorphism, which is to overvalue that which gives order and form, and undervalue the materiality of the architecture itself. Thus, in this early consideration of the structural design so many of the reconciliations to come are already being prefigured into the politics of the hard and the soft. The economics is going to be hard, the engineering will be hard and that which is a matter of expression will be considered in terms of the subtle, the mimetic and the soft. Notions associated with the aesthetic also implying tertiary, or decorative, have become the realm of the architects.

We have moved from an idea about the relationship between aesthetics and structure as set out in Chapter 2, in which something is considered to be aesthetically desirable when it is in close

¹⁰⁷ Jeremy Till, *Architecture depends* (Cambridge: Massachusetts Institute of Technology, 2009), 45.

¹⁰⁸ Dana Cuff, *Architecture: the story of practice* (Cambridge: Massachusetts Institute of Technology, 1992), 194.

relation with the structure and the flow of force. What we have now is a strange undermining of this type of alignment to the point where we are now talking about the expression of the forces. No longer are we dealing with the idea of forces and the architecture inherent to those. Instead, we are dealing with forces as a matter of expression, as if colour and other things were going to express the forces, rather than the structure itself being tightly aligned with a singular expression of the building.

5.3 Second vignette: Environmental and sustainable design

5.3.1 Introduction

In this section I illustrate, through consideration of (and my attendance at) a series of meetings and subsequent interviews, how architectural aesthetics and economic imperatives were reconciled to satisfy the environmental and sustainable credentials required of the NBD tower. These requirements were set out in the ADB, as outlined in Section 4.2.2.6, and summarised below:

- [A] smart building: environmental sustainability.
- Next generation sustainability credentials focused on the well-being of occupants.
- Passive solar shading to control glare and enhance sustainability, but not to the detriment of views. Maximisation of light whilst managing internal glare for occupants and achieving required sustainability performance. Passive solar shading methods encouraged to control glare and enhance sustainability.
- Building to be sustainable, functionally efficient to operate and maintain to keep running and maintenance costs at a minimum over its lifecycle. To achieve 6-star Green Star rating (As Built Office (v3)), minimum 5-star base rating in building NABERS Energy scheme, 4-star base building rating in NABERS Water scheme, minimum Gold WELL Building standard for base building.
- Consideration of biophilia.¹⁰⁹

In particular, I focus on how the use of external shades and internal blinds would address these environmental and sustainability credentials, for the design of these fixtures would have a direct impact on the tower's heating, ventilation and air-conditioning requirements. Identification of the architectural aesthetics and economic imperatives that were at stake might suggest how a reconciliation was effected. I commence with a Review Panel ('RP') meeting held on 18 August 2017, at which the shading system proposed for the tower was debated.

¹⁰⁹ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

5.3.2 'We don't want automatic blinds [...] no one wants them'

An RP meeting was convened on Friday, 18 August 2017 to consider the tower's proposed facade, including the particular strategies which might be employed to control solar penetration.¹¹⁰ During the meeting GlobalArchitect Principal-2 displayed a diagram showing three alternate facade sections proposed for the north/north-west facade. This diagram was photographed by the author and is included as Figure 5.2.

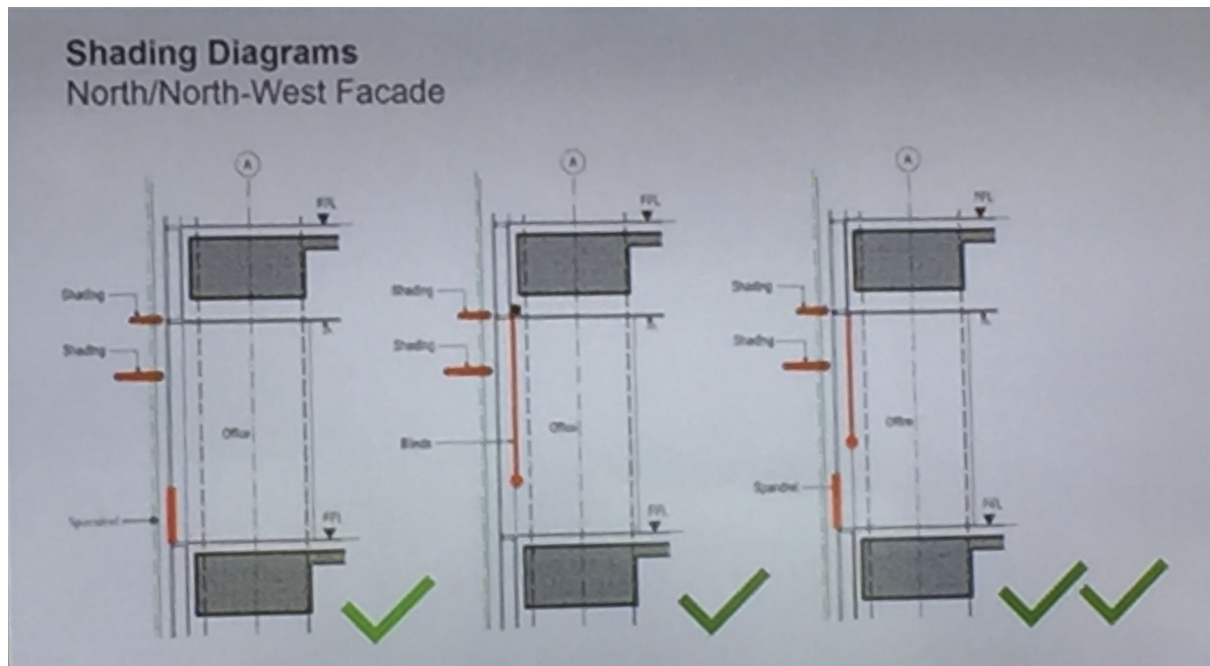


Figure 5.2 – Alternate facade sections proposed for the north and north-west facades. Photograph taken by the author of the image displayed during the RP meeting on 18 August 2017.

The first facade section proposed the use of two external shades and spandrels, designated with a single green tick; the second facade section proposed the use of two external shades and internal blinds, also designated with a single green tick; the third facade section proposed the use of two external shades, spandrels and internal blinds, and was designated with two green ticks. GlobalArchitect Principal-2 described this third option as 'aspirational'.¹¹¹ As discussion ensued, it soon became apparent that the jurors were not in favour of any of the options presented; their response to the use of spandrels (a vertical panel situated between glazing sections in a multi-

¹¹⁰ This was the only meeting I attended during my ethnographic study, at which the jury members appointed by PropertyCo to the NBD architectural design competition were in attendance: PropertyCo NBD Architecture Competition Juror-1 and PropertyCo NBD Architecture Competition Juror-2. Also in attendance were: D&C-Director, D&C-Facade, D&C-Structure, D&C-Program, D&C-Leisure, DM-Director, DM-Commercial Tenants-1, GlobalArchitect Principal-2, GlobalArchitect Senior Associate, GlobalEngineer Principal and the author.

¹¹¹ GlobalArchitect Principal-2, meeting transcript (18 August 2017).

level facade, thereby reducing the amount of glazing applied to each level) was lacklustre at best, and they referenced a ‘rebellion’ against automated internal blinds. PropertyCo’s NBD Architecture Competition Juror-1 (‘Juror-1’) said:

We don’t want automatic blinds [...] no one wants them. People pay a fortune for views.¹¹²

With PropertyCo’s Architecture Competition Juror-2 (‘Juror-2’) adding: ‘And they can’t override them!’¹¹³ To this, GlobalArchitect Principal-2 concurred:

We are getting that too. Tenants want choice [...] The way you work and live. We experience this every-day.¹¹⁴

But DM-Director quickly reminded those in attendance:

If you can override them then you don’t get the [sustainability] points [...] We have to be six-star!¹¹⁵

To this, Juror-1 referred to another rebellion:

Sustainability points have to make sense. We have to have a building that is functional.¹¹⁶

Indeed, as indicated above, the ADB required the tower achieve certain sustainability points/metrics, measured across several sustainability frameworks, namely: Green Star, NABERS (energy), NABERS (water) and WELL. Whilst achieving these criteria would make the tower more attractive to tenants, it was made difficult due to the limitations of the Development Budget. Indeed, PropertyCo’s internal sustainability consultants had been working with GlobalArchitect and D&C-Team to design facade sections to satisfy, as best they could, the required sustainability points. During an interview in October 2017, PropertyCo’s D&C environmental and sustainability design consultant (‘D&C-Sustainability Manager’) referenced the significant challenge posed by this exercise, namely, to reduce the sun’s heat load on the facade, whilst at the same time maximising views for the tower’s occupants:

In a building like [the NBD tower as proposed], view is key. If you don’t have views, you don’t have tenants and the better views you have got, the more dollars you get from the leased space, so views are probably the most important [factor to consider]. So, I think, generally if you address [in order: internal] blind use, peak loads and thermal comfort, energy [efficiency] will just pretty much follow that, if you do a good job with those things. Daylight is the next one [to consider], but that is closely linked to the views. So, with facades, I would say that the biggest impact [is internal] blind use [...] Most of it is driven by direct sunlight [...] If you can stop direct sunlight coming in and hitting a workstation, or a kitchen, or on the floor, you will generally increase views, because the

¹¹² PropertyCo NBD Architecture Competition Juror-1, meeting transcript (18 August 2017).

¹¹³ PropertyCo NBD Architecture Competition Juror-2, meeting transcript (18 August 2017).

¹¹⁴ GlobalArchitect Principal-2, meeting transcript (18 August 2017).

¹¹⁵ PropertyCo DM-Director, meeting transcript (18 August 2017).

¹¹⁶ PropertyCo NBD Architecture Competition Juror-1, meeting transcript (18 August 2017).

[internal] blinds won't have to be down. So, that means putting external horizontal shades on the building [...] They assist also in maintaining the peak load, because they reduce the amount of sunlight coming in. They also assist with the thermal comfort because you are reducing the surface temperature of the facade and it's that radiation temperature that impacts comfort and direct sunlight can impact comfort as well.¹¹⁷

D&C-Sustainability Manager explained peak load as the:

[M]echanical capacity [...] which ensures that with the rise of space, [...] you can push enough air into that zone to meet the space temperature of 23-degrees.¹¹⁸

In respect of his reference to thermal comfort, the SafeWork NSW website refers to this as 'a person's state of mind in terms of whether they feel too hot or too cold'.¹¹⁹ In this way, D&C-Sustainability Manager has articulated the architectural aesthetics and economic imperatives that were at stake. The architectural aesthetics in this situation relate to the quality of the developed space, by virtue of the unobstructed views it might afford, the daylight that might penetrate within it and therefore the level of thermal comfort its tenants might experience. In addition, the architectural aesthetics also relate to the environmental and sustainability qualities the scheme is able to assert; these qualities working to enhance the environmental/sustainability reputations of both the NBDJV and also those of its potential tenants (through their association). But, these architectural aesthetics represent something of a paradox, for it is not possible to develop space which simultaneously provides both unobstructed views and superior environmental and sustainability credentials without a mechanism to reduce the sun's heat load on the facade and thereby limiting views; so in this way it is arguable that achieving both the desired architectural aesthetics, and the required sustainability credentials is not possible. Indeed, in each of the three facade options proposed by GlobalArchitect (as depicted in Figure 5.2) views are obstructed either by blinds, spandrels or external shades (albeit to a lesser extent). The economic imperatives, on the other hand, relate to PropertyCo's desire to provide tenants with unobstructed views so that they might be charged a premium lease income. But, at the same time PropertyCo needed to satisfy the required sustainability points/metrics, as these qualities worked to increase the reputation and therefore the leasing credentials of the tower, and accordingly, it's capitalised value. As D&C-Sustainability Manager related:

You need to attract tenants and a lot of investors will say: "Well, we're not going to invest in it unless it's got this, this and this." For an investor, they don't care that you've designed a good facade and you have got a good mechanical plant, and engineering wise,

¹¹⁷ PropertyCo D&C-Sustainability Manager, interview transcript (19 October 2017).

¹¹⁸ PropertyCo D&C-Sustainability Manager, interview transcript (19 October 2017).

¹¹⁹ "Maintaining thermal comfort in indoor work environments", 6 July 2020, SafeWork NSW, accessed on 16 September 2023, <https://www.safework.nsw.gov.au/resource-library/heat-and-environment/maintaining-thermal-comfort-in-indoor-work-environments>.

it's solid. They don't care. They just want six-star Green Star. They want five-and-a-half star NABERS.¹²⁰

In their study 'Overcoming the Social and Psychological Barriers to Green Building' (2008) Andrew Hoffman and Rebecca Henn highlight barriers which they argue inhibit the adoption of green building technologies, categorising these as either entrepreneurial opportunities or obstacles to be overcome. The former would encompass a property developer establishing a comparative advantage by developing a green building.¹²¹ The latter encompasses the framing of green buildings within the property industry as a positive, together with education of the relevant market of the benefits of green buildings and the promotion of evolution in green building standards.¹²² In this particular circumstance, the 'rebellion' against blinds certainly created a significant obstacle for PropertyCo.

As a reconciliation strategy, PropertyCo was in support of the 'rebellion' and for very limited use of spandrels, and engaged in a detailed exercise to determine where external shades should be placed, based on detailed modelling of the sun's heat load throughout a year. Interestingly, any economic argument in favour of the use of automatic blinds over external shades was seemingly negated, as there was a negligible cost differential between these options. As D&C-Sustainability Manager explained, the detailed process to optimise the installation of shades involved running:

[A] high number of simulations on differing facade types [and] assessing [these] against performance criteria. [We] looked at direct heat components and radiant heat components. If we have external shading, the [required] spandrel is reduced.¹²³

Nevertheless, as D&C-Director explained at a workshop to consider the tower's facade on Friday, 11 August 2017,¹²⁴ the use of external shades to reduce the sun's heat load on the facade is not without its detractors: 'If shades are in a sight line, everybody will complain, I've seen it'.¹²⁵ Whilst the shade is horizontal, and relatively thin in depth, the level at which it is placed on the facade of a particular floor (for example, at eye level, ceiling level or otherwise), will have an impact on outlook, and as such, it would be difficult to argue that the view is not unobscured. In response, PropertyCo's D&C project manager responsible for the NBD tower's facade ('D&C-Facade') referenced the need for transparency in how the level was determined:

¹²⁰ PropertyCo D&C-Sustainability Manager, interview transcript (19 October 2017).

¹²¹ Andrew Hoffman and Rebecca Henn, 'Overcoming the Social and Psychological Barriers to Green Building', *Organization and Environment* 21, no. 4 (2008): 409. <https://doi.org/10.1177/1086026608326129>.

¹²² Hoffman et al, 'Overcoming the Social and Psychological Barriers to Green Building', 410-414.

¹²³ PropertyCo D&C-Sustainability Manager, interview transcript (19 October 2017).

¹²⁴ In attendance were: D&C-Director, D&C-Facade, D&C-Services, D&C-Structure, D&C-Sustainability Manager, Sustainability Associate, GlobalArchitect Principal-2, GlobalArchitect Senior Associate, GlobalArchitect Associate and the author.

¹²⁵ PropertyCo D&C-Director, workshop transcript (11 August 2017).

Who decides what is the right [shade] level? At [the RP meeting] we display this: how we came to the width and depth of sunshades.¹²⁶

Despite the impact of the placement of external shades on the facade, GlobalArchitect were, seemingly, not overly concerned with the effect on the tower's aesthetics. GlobalArchitect Principal-2 referred to the appearance of external shades supported with triangular shaped brackets as 'bitsy',¹²⁷ indicating that she was keen to avoid the use of such frames. In an interview in October 2017, D&C-Services outlined his surprise at GlobalArchitect Principal-1's reaction to the work to determine the optimal placement of external shades. He recounted him saying:

"Guys, we're just dumb architects. Just give us a recommendation" [...] And they took the recommendation, and they ran with it.¹²⁸

This recommendation, which involved the placement of external shades only where they were required to reduce heat load on the facade, took into consideration the shading effects of both existing and proposed neighbouring developments. This involved the placement of one external shade at certain levels and aspects, and two external shades on facades towards the top of the tower. But determining this strategy was not without some resistance from D&C-Team. As D&C-Sustainability Manager related:

They did say in one meeting [they] wanted to go to a single [external] shade everywhere. We kind of knocked that on the head straight away and said: "Well, you're not going to meet the [sustainability] targets that we agreed, which is what the facade performance was". So, that got knocked on the head straight away.¹²⁹

PropertyCo's approach in reconciliation, seemingly, involved a nuancing of the singular, that is: 'the facade' as a type of activated surface upon which difference is articulated. It went from a single mechanism to one varied by context and contingency. The key design issue at stake was the need to reduce the heat load on the surface of the facade, and in doing so, 'tick' some of the highly coveted sustainability criteria on the list of requirements of frameworks such as Green Star and NABERS, whilst simultaneously providing unobstructed views. This was an approach which equated sustainability with economic imperative, in which achieving six-star Green Star meant six-star leasing yields. Of course, this was never going to be possible, and in response Juror-1 invoked two fallacies. The first, '*ad populum*' involves an appeal 'to the people' in justification of an argument, which as Pratt explains might in some circumstances be relevant, but might also be

¹²⁶ PropertyCo D&C-Facade, workshop transcript (11 August 2017).

¹²⁷ GlobalArchitect Principal-2, workshop transcript (11 August 2017).

¹²⁸ PropertyCo D&C-Services, interview transcript (20 October 2017).

¹²⁹ PropertyCo D&C-Sustainability Manager, interview transcript (19 October 2017).

‘used to override questions and try to force assent rather than to promote an opportunity for agreement’.¹³⁰

By stating that ‘no one wants’ automatic blinds, whilst simultaneously saying ‘people pay a fortune for views’, and then employing this premise to justify the statement: ‘we don’t want’ automatic blinds, Juror-1 undermines subsequent discussion of the use of blinds. This is despite DM-Director reminding Juror-1 of the need to be ‘six-star’. He also invoked a second fallacy, that of ‘ambiguity’, in which no ‘clear referent’¹³¹ was offered. By stating that ‘sustainability points have to make sense’ and then ‘we have to have a building that is functional’ raises the question: to whom do the sustainability points need to make sense? From an economic imperative perspective, PropertyCo believed the points needed to make sense to them so they could claim their tower was sustainable, that it had ‘green ticks’ in all the right boxes, making it attractive to both tenants and investors. But they would have preferred to have had ‘red crosses’ in the boxes because blinds, spandrels and shades all work to obstruct views and are costly to install. From an aesthetic perspective it is arguable that the points needed to make most sense to the tenant, for only the tenant would experience the everyday effect of heat load on the facade. By pre-determining a particular type of strategy to reduce heat load, PropertyCo denied its tenants flexibility in choosing between the view or feeling thermally comforted. Indeed, they were only allowed one ‘green tick’.

¹³⁰ Pratt, *Logic: Inquiry, Argument, and Order*, 82.

¹³¹ Pratt, *Logic: Inquiry, Argument, and Order*, 79.

5.4 Third vignette series: Urban design

5.4.1 Introduction

In this section, I illustrate through a series of vignettes how architectural aesthetics and economic imperatives were reconciled for the public spaces proposed as part of the NBD scheme. The Private Planning Instrument ('PPI') executed between PropertyCo and the local regulatory authority (the 'City') set out the particular requirements for both the initial concept design and subsequent design development of these spaces, which included a [*Community Space*], public plazas, laneways with small retail offerings, a [*Public Leisure Facility*], a [*Public Events Space*] and public artworks, as outlined in Section 4.2.2.2. The PPI, therefore framed how PropertyCo's DM-Team and D&C-Team, GlobalArchitect and other consultants worked together to produce a scheme suitable for inclusion in the Main Works DA. This was of critical importance, as every square metre of Gross Floor Area ('GFA') developed as public space, PropertyCo could develop two square metres of additional GFA, and therefore lucrative Net Lettable Area ('NLA') in the scheme's tower. Due to the nature of the site, and GlobalArchitect's proposed design, the public spaces were not only heavily integrated with the commercial components of the overall NBD development, but some of them were arranged vertically.

In light of this, I have focused my attention in the vignettes on the evolving design for two key areas of the public spaces: the upper plaza and laneways, to identify the architectural aesthetics and economic imperatives that were at stake. The analysis of the evolving design for these spaces, might suggest how a reconciliation was effected. Whilst the upper plaza was designed to accommodate the [*Public Events Space*] and several trees planted in deep soil, its sloping nature created considerable complexity for the teams in attempting to accommodate the [*Public Leisure Facility*] and maximise the frontage of several small retail spaces located immediately beneath. Similarly, it was difficult for the teams to design an effective mitigation strategy against winds predicted to cross the laneways during the year, without resorting to the use of fixed, (and to them undesirable) canopies.

5.4.2 Milestone Reports

The PPI specified that title to the public spaces would be transferred to the City at completion of their construction and further required a competitive architectural design competition be

conducted.¹³² As detailed design of the spaces progressed and certain ‘milestones’ were met, PropertyCo was required to submit and present Milestone Reports to the City, which outlined the evolving design for the spaces, a statement of compliance with the PPI together with any proposed design departures. The milestones were specified as: Concept design, Schematic design, 50% design development, 90% design development and 100% design development. At each Milestone Report presentation, PropertyCo and their consultants needed to present their design ideas to the City and seek their guidance.

To manage the design process for the public spaces, PropertyCo appointed two project managers, each drawn from their respective D&C and DM businesses (‘D&C-Urban’ and ‘DM-Urban’). These managers had responsibility to ensure design development of the public spaces complied with the PPI, the ADB and the scheme’s financial requirements. To this end, their role was to work on a day-to-day basis with GlobalArchitect, their appointed landscape designer, an urban planning consultant, artists and PropertyCo’s in-house cost planners to progress the concept design to a point suitable for submission with the Main Works DA, scheduled for 2 November 2017. This, seemingly, required them to anticipate and respond to the regulatory authority of the City. The first vignette focuses on a Review Panel (‘RP’) meeting held to consider the design for public spaces on 3 August 2017.

5.4.3 ‘This is what we want endorsed’

An RP meeting was convened on Thursday, 3 August 2017 to review the Milestone Report ahead of PropertyCo’s presentation to the City, scheduled for the following Tuesday.¹³³ At the RP meeting, discussion centred around a number of issues related to the public spaces, including the extent of tree plantings necessary to mitigate the strong winds predicted in the laneways, together with the forecast of pedestrian movements across the NBD site. In respect to possible wind mitigation strategies, DM-Director was keen to avoid the use of fixed canopies, describing them as ‘architecturally horrible’.¹³⁴ The City, she said ‘would not accept anything solid’,¹³⁵ and

¹³² PropertyCo and the City, Private Planning Instrument (2016).

¹³³ In attendance were: D&C-Urban, D&C-Program D&C-Early Works, DM-Director, DM-Urban, DM-Commercial Tenants-2, GlobalArchitect Associate, Urban Planning Consultant, Landscape Architect Principal, Landscape Architect Associate and the author.

¹³⁴ PropertyCo DM-Director, meeting transcript (3 August 2017).

¹³⁵ PropertyCo DM-Director, meeting transcript (3 August 2017).

suggested the solution might require the selective use of screening, that is, ‘combining the trees with something else’.¹³⁶ The meeting then turned to consideration of pedestrian movements.

Due to the prevailing north-south pedestrian connectivity in this area of the Central Business District, the City was particularly keen to improve connectivity in the east-west direction. Key to realising this was urban design which encouraged pedestrian movement through the NBD site, and the proposed retail laneways and upper plaza were designed with this flow in mind. However, PropertyCo proposed reducing the width of the staircase connecting the laneways with the upper plaza as doing so would increase the frontage, and therefore desirability of the small retail spaces located beneath the plaza. This would also improve access to the [*Public Leisure Facility*] and the lift to the [*Public Events Space*]. The RP meeting then addressed the vertically integrated nature of the design proposed for the upper plaza.

Of particular concern was that PropertyCo had proposed several steps be placed at the western boundary of the upper plaza adjacent to [*First Street*], thereby creating a relatively level plaza space. Without these steps, the gradient of the space would compromise the functioning of the [*Public Leisure Facility*] immediately below, (and what seemingly was of most concern to PropertyCo) the requirement for additional costly excavation. D&C-Urban reminded the meeting that the City ‘thinks we are privatising the plaza with steps. They hate them’.¹³⁷ Whilst outside the scope of this dissertation, PropertyCo’s adjoining hospitality development would benefit from the design of a mostly level upper plaza, as it would enable outdoor dining; something which the City encouraged.

Accordingly, the architectural aesthetics at stake, and signalled by the phrase ‘architecturally horrible’, related to the possibility that the City would impose fixed awnings in the retail laneways rather than trees, thereby diminishing the biophilic qualities and attractiveness of the development; the narrowing of the staircase would compromise ‘clear sight lines’¹³⁸ and therefore east-west connectivity; and placement of steps at the western boundary of the site would create a barrier, thereby impeding pedestrian access to the upper plaza and the City’s much desired east-west connectivity. On the other hand, the economic imperatives at stake were that a wider staircase would reduce the frontage, and therefore the lease income which several retail spaces might generate, and a sloped upper plaza would necessitate the need for additional costly excavation to accommodate the [*Public Leisure Facility*] located immediately beneath. In addition, were the City to impose fixed canopies in the laneways, outdoor dining flexibility and therefore

¹³⁶ PropertyCo DM-Director, meeting transcript (3 August 2017).

¹³⁷ PropertyCo D&C-Urban, meeting transcript (3 August 2017).

¹³⁸ PropertyCo D&C-Urban, meeting transcript (3 August 2017).

the desirability of certain retail spaces would be diminished. PropertyCo's approach in reconciliation, seemingly, was to anticipate how the City might respond to its design proposals and agree on a particular presentation strategy. This was outlined by DM-Director:

So, we will go for City sign-off on Tuesday, so we know where they are. As long as we're clear going into the meeting this is what we want endorsed [...] they understand where we're coming from [...] We don't want to go in half-cocked [...] We will talk about an extreme that [we know] they won't like. They then go with a solution we proposed as it's kind of obvious [...] We need options that we want – only present these. There'll be no support [from the City] if we don't give them a solution.¹³⁹

It is apparent that DM-Director believed the best strategy to avoid unfavourable wind mitigation outcomes imposed by the City was to present particular (PropertyCo-favourable) aspects of the design to the City's planners as a natural outcome to the 'options'; providing them with a solution to something they would otherwise consider unacceptable, and therefore commit to and be supportive of. In this sense, PropertyCo's form of reconciliation can be understood as a paralogism of displacement, which in *Anti-Oedipus: Capitalism and Schizophrenia* (1972), Gilles Deleuze and Félix Guattari, define:

The law tells us: You will not marry your mother, and you will not kill your father. And we docile subjects say to ourselves: so that's what I wanted!¹⁴⁰

The explanation is simple enough. This form of 'reconciliation' is one whereby a negative is presented in a narrative of desire. That is, the idea of the Oedipal is presented into a story about what one desires. The point is not to adopt the negative narrative, but to reject it. But in rejection, one has entered the narrative. Indeed, by proposing a solid awning, that is, to show the extreme wind mitigation strategy, PropertyCo set-up the City to not only reject it, but to welcome (and want) PropertyCo's alternate wind mitigation plans involving the use of trees and screening elements.

PropertyCo's strategy adopted for the upper plaza was for plans and sections to deliberately '*de-emphasise*' the steps, that is, drawings presented would continue to show the steps, albeit using a fine line-weight so that they are, in effect, harder to see. To assist PropertyCo with design of the retail laneways, an urban planning consultant had been retained. He suggested the City might be more amenable to PropertyCo's design proposal for the upper plaza as a level space if it was presented as part of a more comprehensive 'big picture'¹⁴¹ urban design plan. GlobalArchitect's senior associate appointed to the NBD project ('GlobalArchitect Senior Associate') suggested the

¹³⁹ PropertyCo DM-Director, meeting transcript (3 August 2017).

¹⁴⁰ Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robert Hurley, Mark Seem and Helen Lane (Minneapolis: University of Minnesota Press, 1972), 114.

¹⁴¹ Urban Planning Consultant, meeting transcript (3 August 2017).

space might be used for events such as an outdoor cinema or ice-rink.¹⁴² Nevertheless, PropertyCo adopted the agreed-upon strategies, utilising the paralogism of displacement for wind mitigation and to de-emphasise the steps in their Milestone Report presentation to the City scheduled for the following Tuesday. But, much to their chagrin, the City stated its preference that the upper plaza be sloped to avoid the need for steps at its western boundary, and for a wide staircase to link the upper plaza to the retail laneways. No decision was made with regard to the trees.

Here we see a classic refusal to enter into the narrative presented. Despite the negative option being presented, in order to be rejected in favour of the positive option, the City does not enter the narrative and instead chooses to ignore the tactic. Coincidentally, the same thing happened to Sigmund Freud when he deployed the paralogism of displacement, as described in *Standard Edition of the Complete Psychological Works of Sigmund Freud* (1909 [1955]). When Freud's subject, Little Hans, was told by his mother: 'If you keep touching your pee-pee I'll have to send for Doctor A to cut it off. And then what will you widdle with?' Little Hans said: 'With my bottom'.¹⁴³ Little Hans, (like the City) saw the forest in spite of the trees. I now focus on a series of meetings, and subsequent discussions between 31 August 2017 and 26 September 2017, regarding the design for the upper plaza.

5.4.4 'Designing with a spreadsheet'

An RP meeting was convened on Thursday, 31 August 2017 to discuss the evolving design for the public spaces.¹⁴⁴ At this meeting, D&C-Urban stated the City's preference for the upper plaza is that it contain: 'A grid of nine trees, [set] further inwards from [*First Street* than currently proposed]'.¹⁴⁵ Clearly frustrated, she stated that her response to the City was that it is difficult to accommodate nine trees in deep-soil plantings in the upper plaza as the [*Public Leisure Facility*] was located immediately beneath. But the City remained, she said, unconvinced. It might be arguable that the City, in stating their preference for nine trees had adopted their own attempt at reconciliation via a paralogism of displacement; that they too had presented an extreme which they knew PropertyCo would not accept, and therefore open the way for some type of

¹⁴² GlobalArchitect Senior Associate, meeting transcript (3 August 2017).

¹⁴³ Sigmund Freud, *Standard Edition of the Complete Psychological Works of Sigmund Freud*, vol. 10: 'Two Case Histories ('Little Hans' and the 'Rat Man')', and 'Analysis of a Phobia in a Five-Year-Old Boy (1909)' (London: The Hogarth Press and the Institute of Psycho-analysis, 1955), 115.

¹⁴⁴ In attendance were: D&C-Director, D&C-Facade, D&C-Urban, D&C-Program, DM-Director, DM-Urban, DM-Retail, DM-Commercial Tenants-2, GlobalArchitect Principal-1, GlobalArchitect Associate, Urban Planning Consultant, GlobalEngineer Associate and the author.

¹⁴⁵ PropertyCo D&C-Urban, meeting transcript (31 August 2017).

compromise. Most alarmed at this, D&C-Director exclaimed the excavation ‘can’t go lower!’¹⁴⁶
DM-Director added:

The City said they are willing to compromise. So, we need to show the effect of six trees, not nine. We don’t want to show them nine trees if it’s going to cost us \$1m [for additional excavation]!¹⁴⁷

For PropertyCo, it was becoming increasingly difficult to avoid additional excavation, for not only would nine trees require some 270m³ of deep-soil planting, thereby removing considerable space from the [*Public Leisure Facility*], but as outlined in the immediately previous vignette, the utility of the [*Public Leisure Facility*] was already spatially compromised due to the City’s requirement that the upper plaza be sloped. Indeed, D&C-Team had already experienced significant difficulty in determining the depth of the excavation required for the tower, and they had missed their programmed Excavation DA submission date of 29 August 2017. The team were now facing the prospect of further uncertainty and delay to submission of the Excavation DA. But what was certain in this situation was the excavation budget, and the economic impasse, that it represented.

By stating that the excavation ‘can’t go lower’, D&C-Director established not only a monetary upper limit, but also a spatial limit or boundary, and therefore, an aesthetic limitation. Whilst forecasted costs would be expected to change as the detailed design phase progressed, a limitation had been placed on the aesthetic qualities the upper plaza could attain, for only a certain number of trees could be planted. At a meeting on Wednesday, 6 September 2017, D&C-Urban referred to the PPI, highlighting that it specified only 80m³ of soil be provided for plantings.¹⁴⁸ This, she said, was sufficient for only three-four trees (not the nine trees desired by the City) and added three-four trees will look ‘horrible’.¹⁴⁹

What is of interest here is the numeration of the innumerable. Another way of saying this is that the reconciliation involved a type of quantification of the ‘horrible’. Whilst it is easy to say: four is horrible, six is desirable and nine is impossible, the reason why something is horrible, desirable or impossible is a rather shifting matter, sometimes a matter of aesthetics and sometimes a matter of economics. Accordingly, the architectural aesthetics at stake were the spatial and biophilic qualities arising from the quantum of trees; that the upper plaza would be ‘horrible’ with the wrong number of trees. On the other hand, the economic imperative at stake was the cost of the excavation, together with costs which might arise from further delays to the submission of

¹⁴⁶ PropertyCo D&C-Director, meeting transcript (31 August 2017).

¹⁴⁷ PropertyCo DM-Director, meeting transcript (31 August 2017).

¹⁴⁸ In attendance were: D&C-Director, D&C-Urban, D&C-Program, DM-Urban, GlobalArchitect Principal-1, GlobalArchitect Principal-3, GlobalArchitect Senior Associate, Global Architect Associate and the author.

¹⁴⁹ PropertyCo D&C-Urban, meeting transcript (6 September 2017).

the Excavation DA. As a solution to the impasse, D&C-Director proposed that the City be asked to contribute to the cost of the trees.

A few days later on Tuesday, 12 September 2017, cognisant of my interest in this impasse, D&C-Urban advised me that she was ‘designing with a spreadsheet’.¹⁵⁰ Indeed, on her desk were two screens: the first displayed a plan of the upper plaza; the second displayed a spreadsheet setting out costings for the trees. As D&C-Urban adjusted costs in the spreadsheet, the number of trees was updated on the architectural plan, and a render of the upper plaza was generated so that the changing aesthetic could be assessed. She informed me that she would meet with the City to tell them that the budget for trees had been exceeded, and seek their assistance. D&C-Urban also related that GlobalArchitect were under resourced and had underestimated the structure required to support the deep plantings. Indeed, she was not only ‘designing with a spreadsheet’ but making changes to the architectural drawings.

To ensure costings for the deep-soil plantings were correct, D&C-Urban met with a PropertyCo D&C cost planner (‘D&C-Cost Planner-3’) on Monday, 18 September 2017. After noting that it will cost several million dollars for further excavation, D&C-Cost Planner-3 informed me that during development planning, it is typical for more design issues to arise from the involvement of planning authorities than from cost factors. Referencing the City, she said: ‘People don’t understand what calisthenics we have to go through to resolve these things!’¹⁵¹ But seemingly of more concern to her was what D&C-Cost Planner-3 referred to as the ‘pot mentality’,¹⁵² where budgets are set for what are considered to be separate silos of work. Using the number of trees proposed for the upper plaza as an example, she explained that PropertyCo’s design processes involve estimation of costs for individual works, but any savings which are likely to be realised are not redistributed across the entire project. To her, adopting this ‘silo mentality’ was counterproductive to producing a ‘great development’,¹⁵³ and therefore was seemingly, an anathema to architectural aesthetics. But it also seemed to contradict the comment PropertyCo’s D&C business Head of Excellence (‘D&C-HoE’) made in an interview some months earlier regarding the importance of the detailed design phase in determining the allocation of a cost per square metre, that this was a key outcome of the phase and that costs were not fixed at the outset, rather there was a ‘balancing’ involved (refer Section 1.4.4).¹⁵⁴ The use of the ‘pot mentality’ was

¹⁵⁰ PropertyCo D&C-Urban, conversation transcript (12 September 2017).

¹⁵¹ PropertyCo D&C-Cost Planner-3, meeting transcript (18 September 2017).

¹⁵² PropertyCo D&C-Cost Planner-3, meeting transcript (18 September 2017).

¹⁵³ PropertyCo D&C-Cost Planner-3, meeting transcript (18 September 2017).

¹⁵⁴ PropertyCo D&C-HoE, interview transcript (27 June 2016).

also highlighted as a concern by an architect in February 2016, as part of the Pilot Study (refer to Section 1.4.3.2):

You should be able to shift money around the pie to prioritise what's very important about a design.¹⁵⁵

This architect seems to have believed adoption of this mindset, by a managing contractor, limits design in a holistic sense, and therefore works to undermine the ability of the architect to emphasise what the key ingredients are in their design. Nevertheless, NBD teams persevered with design work and a meeting was convened on Monday, 25 September 2017 to review the next Milestone Report submission, due to be presented to the City the following day.¹⁵⁶ Whilst many of the required documents were still to be finalised by GlobalArchitect and the landscape architect, D&C-Urban outlined the strategy to be adopted with the City:

We need to lead with this [six trees], because they'll get used to this. But we can't afford it. It's better to show them what we want [...] My concern is we can't really afford this [design], so we don't want to make it a choice [...] We don't want to go too much into detail, that we're trying to push it too much.¹⁵⁷

This strategy, interestingly, is the opposite of the 'paralogism of displacement' which PropertyCo had adopted in its dealings with the City nearly two months earlier, and described in the previous vignette. Instead of deliberately presenting an extreme that PropertyCo knew would be rejected, they would present a compromise, albeit one that PropertyCo knew they could not afford. Calisthenics, indeed. If the City were to accept the compromise, PropertyCo would then ask them to contribute financially. But this strategising was, it seems, futile.

At the Milestone Report presentation to the City the following day, the City announced that until the winner of the architectural competition for the [*Public Events Space*] had been determined, their decision on the number and location of trees required in the upper plaza would be deferred. This was of major significance to PropertyCo, and a meeting of D&C-Team was hastily convened on the evening of Tuesday, 26 September 2017 to address the issue.¹⁵⁸ Attending was PropertyCo's 'National Planning Manager', who outlined the predicament relating to the Main Works DA:

¹⁵⁵ Architect, interview transcript (10 February 2016).

¹⁵⁶ In attendance were: D&C-Director, D&C-Facade, D&C Urban, D&C-Program, D&C-Leisure, GlobalArchitect Principal-3, GlobalArchitect Senior Associate and the author.

¹⁵⁷ PropertyCo D&C-Urban, meeting transcript (25 September 2017).

¹⁵⁸ In attendance were: D&C-Director, D&C-Facade, D&C-Urban, D&C-Early Works, DM-Urban, DM-Commercial Tenants-2, National Planning Manager and the author.

You need to submit the whole thing simultaneously to get the floor transfers you want. That's the only way legally. Our planning lawyers have been over and over it.¹⁵⁹

It was critical for PropertyCo to exploit the available floor transfers in accordance with the PPI. These transfers not only provided the right to develop an additional 10% of GFA in the tower, and with it the extra lease income from the NLA the space represented, but the Internal Rate of Return ('IRR') of the project (used as a basis to determine the scheme's financial feasibility) hovered around the threshold of 17% and the loss of this NLA would render the scheme uneconomic (refer to Section 4.2.2.4.3). But, these transfers, it seems were now dependent upon the design of the upper plaza and the spaces immediately beneath being finalised and submitted in the Main Works DA. D&C-Director was incensed, questioning whether a Main Works DA could be submitted at all. D&C-Facade articulated the predicament: 'If the City can't agree on six trees, how are we going to agree on a building?'¹⁶⁰ He further suggested that this would result in delays of two-three months. National Planning Manager provided clarification in response to the apparent posturing of the D&C-Team: if PropertyCo were to submit a Main Works DA without the City's 'in-principle approval'¹⁶¹ (in respect of the trees), this increased the risk that PropertyCo's design proposals would become subject to public comment, and that onerous conditions might be applied. But, in frustration, D&C-Director suggested the Main Works DA be submitted as planned, and specifically reference that PropertyCo had followed the direction of the City. In response, National Planning Manager replied:

If we go to them with that, we won't get approval: we're not getting anything approved!¹⁶²

In jest, D&C-Director replied:

Maybe we need a new negotiator [...] Thanks for making my day!¹⁶³

Indeed, it was not a good day. The architectural aesthetics at stake related to the [*Public Events Space*], which was the subject of an architectural design competition, over which PropertyCo had little, if any, control: for it was the prerogative of the City to determine which of the submissions would win. Until this decision was made, no decision would be made regarding the trees to be situated in the upper plaza. The PPI only required that PropertyCo design a section of the upper plaza to accommodate the [*Public Events Space*], albeit one designed to meet certain criteria. On the other hand, the economic imperatives at stake no longer related to the cost of excavation to

¹⁵⁹ PropertyCo National Planning Manager, meeting transcript (26 September 2017).

¹⁶⁰ PropertyCo D&C-Facade, meeting transcript (26 September 2017).

¹⁶¹ PropertyCo National Planning Manager, meeting transcript (26 September 2017).

¹⁶² PropertyCo National Planning Manager, meeting transcript (26 September 2017).

¹⁶³ PropertyCo D&C-Director, meeting transcript (26 September 2017).

accommodate additional trees, instead they represented the significant costs likely to arise from delays in submitting the Main Works DA, thereby necessitating a deferral in commencement of construction, the NBDJV incurring additional holding costs for the NBD site and the loss of lease income due to delays in reaching the date of practical completion ('PC'). Indeed, in light of the marginal nature of the IRR, the likely significance of both the length, and cost, of the delays might be sufficient to render the scheme as uneconomic. It is arguable, that at this moment, this circumstance represented something of a trial for PropertyCo. Indeed, in a scene in Franz Kafka's *The Trial* (1914–15 [1925]), *Titorelli*, (the painter in the court's confidence) famously outlines the different types of acquittal *Joseph K.*, (the accused) might consider: 'Definite acquittal, ostensible acquittal and indefinite postponement'.¹⁶⁴ Kafka, through *Titorelli*, explains 'definite acquittal' as the judgment when the accused is proven to be innocent;¹⁶⁵ 'ostensible acquittal' as a provisional judgment dependent upon an affidavit referencing the innocence of the accused, and forever subject to the stress arising from the possibility of a re-trial;¹⁶⁶ and 'indefinite postponement' as no judgment, due to the accused having befriended and continuing to influence relevant judges so as to prevent the case from progressing beyond its initial stages.¹⁶⁷ As such, 'ostensible acquittal' and 'indefinite postponement' prevent an acquittal in fact.¹⁶⁸

The City's announcement that it would defer its decision on the number of trees to be planted in the upper plaza until the winner of the architectural competition for the [*Public Events Space*] had been announced might be considered as an 'indefinite postponement', and seemingly Kafkaesque. Furthermore, PropertyCo's chosen strategic device at this moment, it seems, was akin to an 'indefinite postponement', for D&C-Facade instructed the team: 'We keep going. We don't tell any consultants about any of this'.¹⁶⁹ To this, PropertyCo's D&C project manager for Early Works ('D&C-Early Works') added: 'They'll knife us'.¹⁷⁰ D&C-Team, at this time, (just a month ahead of the fast-approaching Main Works DA submission deadline of 2 November 2017) were entirely reliant on GlobalArchitect's and Global Engineer's continuing, and somewhat relentless, design development work. By invoking 'indefinite postponement' as a type of reconciliation, which Kafka's *Titorelli* explains as 'preventing the case from ever getting any further than its first stages'¹⁷¹ PropertyCo hoped that it might, somehow, resolve the issue with the City, by which time

¹⁶⁴ Franz Kafka, *The Trial*, trans. Willa and Edwin Muir (London: Secker and Warburg, 1945), 171.

¹⁶⁵ Kafka, *The Trial*, 171.

¹⁶⁶ Kafka, *The Trial*, 176-177.

¹⁶⁷ Kafka, *The Trial*, 179.

¹⁶⁸ Kafka, *The Trial*, 181.

¹⁶⁹ PropertyCo D&C-Facade, meeting transcript (26 September 2017).

¹⁷⁰ PropertyCo D&C-Early Works, meeting transcript (26 September 2017).

¹⁷¹ Kafka, *The Trial*, 179.

GlobalArchitect's and GlobalEngineer's ongoing and uninterrupted design work would have progressed, enabling the submission of the Main Works DA as planned.

5.5 Fourth vignette series: Value engineering

5.5.1 Introduction

In this Section, through a series of vignettes, I consider the impact of value engineering on the design of the NBD tower to illustrate how architectural aesthetics and economic imperatives were reconciled. The ADB for the NBD scheme, in addition to setting out the NBDJV's design requirements, stated that the winning architect in the NBD architectural competition would be required to:

[W]ork with [PropertyCo's] appointed consultancy team to design develop and value engineer the winning design competition scheme to a point suitable for the lodgement of a development application. The winning design competition competitor will be required to design and develop the scheme to ensure the development commercial objectives are achieved, including the development scheme's conformance to the [PropertyCo] approved development design and construct budget as well as design feedback from the City.¹⁷²

The detailed design phase for the NBD scheme commenced in August 2017 with a series of design workshops, during which a considerable number of design issues, (including many cost related) were identified by D&C-Team, DM-Team, GlobalArchitect and GlobalEngineer. Whilst the teams worked during August and September 2017 in an attempt to resolve the issues, and despite the almost constant refrain from D&C-Team that cost needed to be reduced, some two months later the scheme remained considerably in excess of the Development Budget (refer Section 4.2.2.4.1). In response, in early October 2017, D&C-Team commenced an extensive Value Engineering ('VE') exercise, to identify some \$30m-\$40m in savings. However, by starting this process just one month prior to the Main Works DA scheduled submission date, there was a considerable risk that the process would identify numerous and pervasive design changes which, in turn would work to threaten this key deadline from being achieved.

In light of this, and to identify the architectural aesthetics and economic imperatives that were at stake, I have focused my attention on three key meetings: the VE Session on 6 October 2017 at which a list of VE items were identified, and then two subsequent meetings on 11 October 2017 and 16 October 2017 in which D&C-Team debated the VE items with GlobalArchitect. It was in these meetings that the most robust exchanges that I was privy to during my fieldwork occurred between D&C-Team and GlobalArchitect, and it is through the close reading of this dialogue that

¹⁷² PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

we might understand how reconciliations were effected through the VE process. I commence with an overview of the VE Session, and following this, focus my attention on the architectural aesthetics and economic imperatives at stake in respect of a few of the individual components of the design which were identified for VE at that session.

5.5.2 'Blue-sky thinking'

The VE Session was convened on Friday, 6 October 2017 as a 3-hour workshop, attended by 30 participants including members of PropertyCo's D&C-Team, DM-Team together with a number of internal PropertyCo specialists (some of whom did not have any prior involvement with the NBD scheme), GlobalArchitect's Australian based principals, GlobalEngineer and other external consultants. At the VE Session participants were asked to apply 'blue-sky thinking'¹⁷³ (brainstorming) to four components of the NBD design: Facade, Architecture, Structure and Services. Due to difficulties arising from time differences between Australia and Europe, GlobalArchitect's Europe-based principals did not attend the VE Session. With this in mind, a few days earlier D&C-Director requested that they conduct their own separate VE exercise, but they stated their preference was to examine the items arising from PropertyCo's VE exercise beforehand. The VE Session commenced with D&C-Director briefly describing design development following the architectural design competition, after which he stated: 'I'm not sure we can afford to build the building we've designed'.¹⁷⁴ He then wrote three numbers on a portable whiteboard located in the centre of the room.

The first number represented the cost estimate for the current design, the second number represented the threshold cost above which the project became uneconomic, and the third number represented the targeted cost. D&C-Senior Structural Engineer questioned whether some design aspects were to be considered as 'not negotiable?'¹⁷⁵ To this, D&C-Director responded:

Design excellence, the tree [structural bracing scheme] and 'Premium Grade' building.¹⁷⁶

D&C-Director then added the following to the whiteboard: '\$NLA, Capped GFA and Design excellence*'.¹⁷⁷ These points referred to the need to maximise the NLA, as this directly generates lease income (and as such was preceded by a dollar sign); that the scheme's GFA, as specified in

¹⁷³ PropertyCo D&C-Director, meeting transcript (6 October 2017).

¹⁷⁴ PropertyCo D&C-Director, meeting transcript (6 October 2017).

¹⁷⁵ PropertyCo D&C-Senior Structural Engineer, meeting transcript (6 October 2017).

¹⁷⁶ PropertyCo D&C-Director, meeting transcript (6 October 2017).

¹⁷⁷ PropertyCo D&C-Director, meeting transcript (6 October 2017).

the PPI¹⁷⁸ had already been exceeded and therefore, by necessity, was ‘capped’, and that ‘Design excellence’ (also specified in the PPI), was a key requirement (refer to Section 4.2.2.2). He emphasised ‘Design excellence’ by placing a large asterisk beside it. These three aspects, it seemed, needed to be kept front-of-mind by VE Session participants whilst they worked to identify cost savings.

Following this introduction, D&C-Team project managers, in turn, presented using PowerPoint slides, the current design status for each of the components: Facade, Architecture, Structure and Services. In the presentation for the Facade component, D&C-Facade emphasised the visual importance of the structural bracing system;¹⁷⁹ in the presentation for the Architecture component, D&C-Early Works suggested removing the escalator at the [*Second Street*] entrance and emphasised that the tower’s floorplates be column-free,¹⁸⁰ although D&C-Director interrupted D&C-Early Work’s presentation to clarify that the requirement that each floor be column-free was ‘aspirational’.¹⁸¹ This comment was particularly instructive, as the winning competition scheme had been largely driven by this principle (refer to Section 5.2.2), and considerable effort had been invested in preceding design workshops in an attempt to satisfy this requirement. D&C-Director also emphasised the importance of: ‘activating the [*Third Lane*] facade’¹⁸² to satisfy the City. During the presentation for the Structure component, D&C-Structure announced that PropertyCo was, as a separate parallel exercise, re-considering the design of the NBD scheme based on construction in steel. He explained this would allow the NBDJV to capitalise on potential cost savings accruing from the ‘time benefits in [steel] construction’¹⁸³ and from an increase in NLA as a result of a smaller core¹⁸⁴ (that is, the sizing of component members of the ‘core’ would be reduced if steel construction was adopted). This was a significant announcement at this time, for re-adoption of construction in steel would represent a significant reversal in the design development that had taken place since the architectural design competition, with the likely implication that a significant re-working of many aspects of the design would be required. In the presentation for the Services component, D&C-Services provided an overview of the proposed services, together with their location in the tower.¹⁸⁵

¹⁷⁸ PropertyCo and the City, Private Planning Instrument (2016).

¹⁷⁹ PropertyCo D&C-Facade, meeting transcript (6 October 2017).

¹⁸⁰ PropertyCo D&C-Early Works, meeting transcript (6 October 2017).

¹⁸¹ PropertyCo D&C-Director, meeting transcript (6 October 2017).

¹⁸² PropertyCo D&C-Director, meeting transcript (6 October 2017).

¹⁸³ PropertyCo D&C-Structure, meeting transcript (6 October 2017).

¹⁸⁴ PropertyCo D&C-Structure, meeting transcript (6 October 2017).

¹⁸⁵ PropertyCo D&C-Services, meeting transcript (6 October 2017).

Following these presentations, teams of six/seven participants ('VE-Teams') commenced their brainstorming sessions, each lasting around 45 minutes. Immediately prior to the commencement of the VE Session, D&C-Director asked me to participate by offering my ideas.¹⁸⁶ With trepidation I complied. I was allocated to the VE-Team which included GlobalArchitect Principal-3 (another of GlobalArchitect's principals appointed to the NBD project) and GlobalArchitect Principal-4, DM-Commercial Tenants-1, D&C-Construction Manager, a facade waterproofing consultant and senior services engineer. During the Architectural component session, my fellow VE-Team members stood beside a table, on which A1-size architectural plans were displayed. Thick felt-tip pens were used to help them articulate their ideas and mark-up proposed changes, which focused heavily on the reworking of retail spaces adjacent to the [*Second Street*] entrance, largely in response to D&C-Early Work's earlier suggestion that the escalator be deleted. For the other components, my fellow VE-Team members were seated whilst discussing their ideas, with some use of impromptu hand drawings. During each of the component discussions, ideas appeared to flow quite freely amongst my fellow VE-Team members, although perhaps not surprisingly, GlobalArchitect's principals were quick to defend their design.

The VE Session concluded after three-hours of deliberations and generated a list of 26 VE items for D&C-Team to consider in further detail. As the VE Session concluded, GlobalArchitect Principal-3 commented:

This is a lot different to what I expected, I thought it was going to be just PowerPoint [presentations].¹⁸⁷

GlobalArchitect Principal-4, during an interview later that month, observed that he had not participated in a VE exercise conducted as a workshop. Commenting on the process, he said:

What's good is they are pulling people who are detached from the project, they haven't got the baggage, they haven't got the history of the project. But they are looking at the project from a very objective point of view and seeing it for what it is at that point in time [...] The value of that is that people come in cold, and you are looking at a situation and thinking: well, these are the opportunities we see at the table [...] But, the issue from outside is: is that the right path? And is that path [the] one [...] we can afford?¹⁸⁸

Indeed, the VE Session presented the D&C-Team, and arguably GlobalArchitect, with much to consider. Many of the VE items identified during the VE Session, if adopted, had the potential to result in significant and pervasive changes to the design. To make sense of the items, D&C-Team met a few days later, on 11 October 2017.

¹⁸⁶ The potential risk to my research of becoming part of the observed data is considered in Section 1.5.4.

¹⁸⁷ GlobalArchitect Principal-3, meeting transcript (6 October 2017).

¹⁸⁸ GlobalArchitect Principal-4, interview transcript (17 October 2017).

5.5.3 '\$550m is the figure!'

At a D&C-Team meeting convened early on Tuesday, 10 October 2017, the 26 VE items arising from the VE Session were discussed in turn, with the aim of identifying potential issues which might arise if they were pursued.¹⁸⁹ D&C-Director joined the meeting shortly after it commenced, announcing:

I'm just back from a meeting with No. 1 and No. 2 in D&C. They say \$550m is the figure!¹⁹⁰

This was the first time that I, and possibly other D&C-Team members, had been privy to a precise maximum Main Works cost (the amount the D&C business would charge the NBDJV for 'main works', that is, the construction of the tower). This, I suspect provided the timely impetus and justification for what the team embarked upon over the next few days. Indeed, at midday that day, several members of D&C-Team met with D&C-Cost Planner-1 and a second D&C cost planner ('D&C-Cost Planner-2') to again consider the 26 VE items, from several perspectives: potential cost savings that might be realised; the likely complexity in their pursuit; the difficulty in soliciting decision/commitment for the VE items to be pursued, and; the risk that the City might reject the changes in design when submitted in the Main Works DA.¹⁹¹ With each of the items having been costed by D&C-Cost Planners 1 and 2, a list of 10-12 key VE items was determined at this meeting, which D&C-Director referred to as the 'big items'. Armed with the 'big items', D&C-Team were now, seemingly, ready for battle with GlobalArchitect.

I now turn my attention to the discussions, which took place between D&C-Team and GlobalArchitect in respect of seven of these 'big items' proposed by PropertyCo, and following, two of the VE items proposed by GlobalArchitect, to identify the architectural aesthetics and economic imperatives that were at stake. These items have been selected based on several criteria. Firstly, there were clearly identifiable architectural aesthetics and economic imperatives which were at stake; secondly, the impact on the design, and cost, of the tower was likely to be significant as reflected in the dialogue between D&C-Team and GlobalArchitect which unfolded; and thirdly, both D&C-Team and GlobalArchitect defended their respective positions with a degree of passion. Whilst I have presented this section thematically, discussions took place at

¹⁸⁹ In attendance were: D&C-Director, D&C-Facade, D&C-Early Works, D&C-Structure, D&C-Services, D&C-Program, D&C-Construction Assistant Managers, D&C-Cost Planner 1, D&C-Cost Planner 2 and the author.

¹⁹⁰ PropertyCo D&C-Director, meeting transcript (10 October 2017).

¹⁹¹ In attendance were: D&C-Director, D&C-Facade, D&C-Early Works, D&C-Structure, D&C-Cost Planner-1, D&C-Cost Planner-2 and the author.

specially convened VE ‘Item Evaluation’ meetings on Wednesday, 11 October 2017,¹⁹² and Monday 16 October 2017.¹⁹³ In addition to these meetings, I was privy to preliminary exchanges between D&C-Team and GlobalArchitect in respect to a couple of the ‘big items’, at the VE Session itself and at subsequent meetings where discussions continued. Following my detailed consideration of the VE items proposed by both PropertyCo and GlobalArchitect, I focus on the exhaustion of the NBD teams in a 10th vignette.

5.5.4 VE items proposed by PropertyCo

The seven VE ‘big items’ proposed by PropertyCo, which I now consider as separate vignettes, relate to the NBD scheme’s: Structural bracing system, Architectural roof features (the western and eastern aspects are considered separately), City Garden, Main lobby, Entrance from [*Second Street*] and the Leasing ‘shell’. Following a discussion of the architectural aesthetics and economic imperatives at stake, I consider how the teams worked to achieve a reconciliation for each of these items. I commence by focusing on changes proposed to the Structural bracing system.

5.5.4.1 *Structural bracing system*

In this first vignette related to the VE, I consider changes proposed by PropertyCo to the structural bracing system for the tower. As described in Section 5.5.2, during the VE Session on Friday, 6 October 2017, I was fortunate to be seated within a VE team which included GlobalArchitect’s Principal’s 3 and 4 and a facade waterproofing consultant, amongst others. My fortune was particularly apparent when this VE-Team considered the Structures component, during which the facade waterproofing consultant suggested that the external structural bracing system be situated internally, thereby reducing, (as he explained) the number of costly facade penetrations and as such, mitigating the risk of water penetration. He also suggested that bracing members be painted to appear visible through the glass facade.¹⁹⁴ In response, GlobalArchitect Principal-4 stated:

[This is] a poor suggestion. I don’t know, are we painting buildings? I’m a simple man, you lose the integrity.¹⁹⁵

¹⁹² In attendance were: D&C-Director, D&C-Facade, D&C-Program, D&C-Structure, D&C-Cost Planner-1, GlobalArchitect Principals 1-4, GlobalArchitect Senior Associate GlobalArchitect Associates and the author.

¹⁹³ In attendance were: D&C-Director, D&C-Facade, D&C-Early Works, D&C-Program, D&C-Cost Planner-1, GlobalArchitect Principals 1, 2 and 4, GlobalArchitect Senior Associate, GlobalArchitect Associates and the author.

¹⁹⁴ PropertyCo Facade Waterproofing Consultant, meeting transcript (6 October 2017).

¹⁹⁵ GlobalArchitect Principal-4, meeting transcript (6 October 2017).

GlobalArchitect Principal-3 was somewhat more instructive, adding: 'It's too big a change. We're never going to go with that!'¹⁹⁶ But D&C-Director, who had been standing nearby and evidently following the unfolding conversation, interrupted, and in jest proposed the removal of the bracing system in its entirety.¹⁹⁷ GlobalArchitect Principal-3, perhaps not having realised that this was not a serious proposal, exclaimed: 'If we take away the bracing, it's just a dog!'¹⁹⁸ D&C-Director responded, whilst smiling: 'But we'd know how much we'd be spending on it!'¹⁹⁹

Perhaps this somewhat preliminary discussion regarding the structural bracing system during the VE Session was a forerunner of what was to unfold a few days later at the VE Item Evaluation meeting on Wednesday, 11 October 2017, at which D&C-Director proposed to:

Remove the [external] bracing to the building; show [the] brace details in the curtain wall system and add out-riggers to the plant rooms.²⁰⁰

GlobalArchitect's team members appeared somewhat stunned by this proposal, and some reacted with laughter. D&C-Facade explained the rationale was to maintain the design of the structural bracing system, but that it should be: 'Viewed [...] through the facade, so some money [is] saved'.²⁰¹ GlobalArchitect Principal-2 responded:

From an architectural point of view, it's not a good thing to do. But from a construction [point of view], it's good.²⁰²

At the subsequent VE Item Evaluation meeting on Monday, 16 October 2017, GlobalArchitect Principal-1 highlighted his strong concern for the impact of this proposal on the tower's aesthetics:

It is a very different scheme and from the outside will look like it is all clad in rectilinear panels.²⁰³

The architectural aesthetics at stake in this situation relate to the visually striking structural bracing system, arguably the most distinctive, noticeable and therefore recognisable aspect of the design. Indeed, placement of the structural braces at the edge of the floorplates and behind the curtain-wall glazing system, rather than their situation as distinct from the floorplates and on the exterior of the curtain-wall glazing system would render them not only less noticeable, and

¹⁹⁶ GlobalArchitect Principal-3, meeting transcript (6 October 2017).

¹⁹⁷ PropertyCo D&C-Director, meeting transcript (6 October 2017).

¹⁹⁸ GlobalArchitect Principal-3, meeting transcript (6 October 2017).

¹⁹⁹ PropertyCo D&C-Director, meeting transcript (6 October 2017).

²⁰⁰ PropertyCo D&C-Director, meeting transcript (11 October 2017).

²⁰¹ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

²⁰² GlobalArchitect Principal-2, meeting transcript (11 October 2017).

²⁰³ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

therefore quite different to the competition winning design (the Rationalised Concrete Scheme), but such placement might result in difficulty in differentiating the tower from other glass curtain-walled skyscrapers, themselves clad in rectilinear panels. This strategy, seemingly, would directly contrast with the ADB, which required the tower to:

Command institutional recognition with [a] clearly identifiable image and high appeal for tenants, world class, enhance the city's reputation as a global city.²⁰⁴

It would also, arguably, work to limit the expression of structure and as such reduce the aesthetic quality of the architecture, a key determinant as outlined by Arthur Schopenhauer in *The World as Will and Representation* (1819 [1966]) and more recent structural expressionists (refer to Section 2.3.5). Schopenhauer relates:

The conflict between gravity and rigidity is the sole aesthetic material of architecture [...] From what has been said, it is absolutely necessary for an understanding and aesthetic enjoyment of a work of architecture to have direct knowledge through perception of its matter as regards its weight, rigidity, and cohesion.²⁰⁵

What Schopenhauer is noting is the direct link between aesthetics and the structural implication of any object/architecture. And to this very point, the expressionist Ludwig Mies van der Rohe stated: 'nothing should be built that is not clearly constructed'.²⁰⁶ The clear expression of structure is an integral part of the aesthetics of his buildings, for example, the apartments at 860 Lake Shore Drive, Chicago (1948–51), Crown Hall at Illinois Institute of Technology, Chicago (1952–56) and the Seagram Building, New York (1958). This is indeed the architectural aesthetic at stake in the project at this moment. On the other hand, the economic imperative at stake relates to the significant complexity in buildability, and therefore time and cost, (both in terms of labour and materials) of the construction of components allowing the structural bracing system to penetrate the facade, and for the additional benefit of mitigating water penetration, (as outlined by the facade waterproofing consultant at the VE Session). Buildability was considered an essential factor for the tower, as outlined in the ADB:

Buildability will be a key factor in assessment of competition submissions: desire for rational structural grid, maximisation of prefabricated and repetitious elements, consideration of construction methodology including buildability and staging.²⁰⁷

²⁰⁴ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

²⁰⁵ Arthur Schopenhauer, *The World as Will and Representation*, vol 1. trans. E. Payne (Newburyport: Dover Publications, 1966), 368 and 370. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=1894850>.

²⁰⁶ Ludwig Mies van der Rohe cited in Kenneth Frampton, *Modern architecture: a critical history* (London: Thames & Hudson, 1992), 161.

²⁰⁷ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

During many of the workshops relating to the structural bracing and facade systems during the detailed design phase, reference has been made to the complexity and non-repetitious nature, of facade components necessary to accommodate the structural bracing system.

Responding to PropertyCo's proposal, GlobalArchitect Principal-2 appeared somewhat more conciliatory than GlobalArchitect Principal-1, and attempted to seek a reconciliation by agreeing to study the proposal:

If this is somewhere we need to explore; if [the] project needs to go that way in terms of value engineering [...] we need to do a study [of the effect of...] highlighting the [structural] braces through treatment applied to the glazing, [which] may be more transparent or [a] different colour. We will try this, as this may achieve [a] similar effect in the end.²⁰⁸

D&C-Director questioned whether the desired visual effect, that the structure remained somewhat visible, would be best achieved via the use of a frit (a ceramic pattern), or a diagonal transom or mullion (a structural bar) applied to the glazing.²⁰⁹ GlobalArchitect Principal-1 responded that a transom would be more applicable.²¹⁰ But perhaps most surprisingly, an associate member of GlobalArchitect's NBD team, ('GlobalArchitect Associate') questioned whether the desired effect could be achieved with the use of: 'Fake transoms or mullions?'²¹¹

This directly contradicted with GlobalArchitect Principal-4's stated concern for the architectural 'integrity' of the scheme just a few days earlier at the VE Session. He had described the use of mimicry, through the application of paint, as a 'poor suggestion'.²¹² This perspective was echoed by D&C-Services. In an interview in October 2017 he said:

I understand why we're doing things like pushing the facade out to the line [the boundary of the allowable site development envelope], but putting the bracing behind the glass and then putting a cladding over the top kind of seems, like, a bit shit to me.²¹³

Nevertheless, in respect of this proposal, reconciliation was subject to a detailed study of the aesthetic effect of situating the structural bracing system within the facade. This was, arguably, the most significant proposal in respect of the architectural aesthetics of the scheme, and its deferral to a study, in which GlobalArchitect would need to fully consider its impact on 'design excellence', goes some way to highlight this. It also aligns the reconciliation with work being conducted concurrently by GlobalEngineer to consider whether construction of the scheme in

²⁰⁸ GlobalArchitect Principal-2, meeting transcript (16 October 2017).

²⁰⁹ PropertyCo D&C-Director, meeting transcript (16 October 2017).

²¹⁰ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²¹¹ GlobalArchitect Associate, meeting transcript (16 October 2017).

²¹² GlobalArchitect Principal-4, meeting transcript (6 October 2017).

²¹³ PropertyCo D&C-Services, interview transcript (20 October 2017).

steel, rather than reinforced concrete, was more economical. This is described in detail in the series of vignettes in Section 5.2 which consider the structural system proposed for the NBD tower.

But, mimetic expression is of fundamental concern: in relegating the architectural aesthetic to one of camouflage, it has camouflaged the lack of aesthetic integrity. When Schopenhauer refers to a connection between an aesthetics and a structure the idea is a simple one, that a form might express the flow of force. GlobalArchitect's initial design conception for the NBD tower paid much lip-service to the idea of a structure that expressed the flows of force in an arboreal form. That the form might now become a stuck-on, or painted-on image is a challenging thought. To Schopenhauer, aesthetic integrity in architecture is equivalent to the flow of force in the expression of form and material. The very association of 'fake' is challenging in this regard, and might be seen as a repeating of the reconciliations of Darwinism with orthogenesis. The core idea of natural selection is that phylogeny follows ontogeny: expression follows a function. That is, an expression is of a particular manner because it serves a purpose. However, post-Darwin figures such as Stephen Jay Gould famously critique the oversimplification of the idea in noting how often expression seems to be function-less, or indeed counter-functional. In 'Exaptation – A Missing Term in the Science of Form' (1982) Stephen Jay Gould and Elisabeth Vrba define *exaptation* as:

[C]haracters evolved for other usages (or for no function at all), and later "co-opted" for their current role [...] They are fit for their current role, hence *aptus*, but they are not designed for it, and are therefore not *ad aptus*, or pushed towards fitness. They owe their fitness to features present for other reasons, and are therefore *fit (aptus) by reason of (ex) their form, or ex aptus*.²¹⁴

Indeed, the colour and patterning of a tiger may have little to do with its function and a lot to do with mere expression for expression's sake. But this is a complex reconciliation. When a moth mimics the patterning of a spider in the colour of its wings, it is doing so for particularly functional reasons which help to ensure its survival. The NBD tower was about to conduct the same biomimetic move: by adopting a patterning in its facade it mimicked structural expressionism and was therefore unfit in an aesthetic sense; but in 'co-opting' to serve an economic imperative it becomes fit at the same time. The reconciliation was built, the transoms were stuck-on to the facade and disbelief was suspended.

²¹⁴ Stephen Jay Gould and Elisabeth Vrba, 'Exaptation – A Missing Term in the Science of Form', *Paleobiology* 8, no. 1 (1982): 6. <https://doi.org/10.1017/S0094837300004310>.

5.5.4.2 Architectural roof feature (western aspect)

At the VE Item Evaluation meeting on Wednesday, 11 October 2017, PropertyCo proposed to remove the Architectural Roof Feature ('ARF') from the western half of the tower. The ARF extended the tower vertically by 15m and consisted of a frame supporting vertically placed glass panels. This architectural element was designed to reduce the solidity of the top of the tower, providing a visual transition to the sky from the 54-levels of enclosed commercial floorspace situated beneath it. Elimination of the ARF's western aspect would not only result in cost savings, estimated to be \$1.5m, but potentially generate additional revenue as views from the uppermost floors of the tower's eastern aspect would be significantly enhanced. Responding to this significant change, GlobalArchitect Principal-1 said we:

[D]o feel strongly. There has to be some noticeable landscape [as a replacement... It] won't look right without something visible. You need to see something, a tree.²¹⁵

To this, D&C-Facade responded:

Trees will be blown off [there will be] leaves everywhere [... There should be] nothing up there higher than [a] balustrade. That is so the view is there.²¹⁶

Accordingly, the architectural aesthetics at stake in this situation relate to the relationship between the massing/proportioning of the NBD tower, and how this transitions with the sky. There was the risk that removing the western half of the ARF might have a detrimental impact on these elements, rendering the tower less aesthetically pleasing and potentially effecting how the tower relates to the skyscrapers surrounding it. On the other hand, the economic imperatives at stake in this situation relate to savings in labour and material costs from not constructing the western half of the ARF. Furthermore, additional lease income would be generated from the uppermost floors of the eastern half of the tower as a result of enhanced views from these spaces.

Dialogue continued, with D&C-Director linking the proposal to tenants: 'Whatever we provide has to be the right solution for the tenants'.²¹⁷ To this, GlobalArchitect Principal-1 responded:

We are sensitive to what tenants see. We totally understand that. Basically [D&C-Director], although we understand the tenant side we have an obligation to the [City]. This will be the most noticeable building on the City skyline.²¹⁸

But the City skyline, it seems, was not the primary motivating factor for D&C-Director:

²¹⁵ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

²¹⁶ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

²¹⁷ PropertyCo D&C-Director, meeting transcript (11 October 2017).

²¹⁸ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

I'm not disagreeing with you [... We] also want the opportunity to build the building. At the moment we're not building the building!²¹⁹

This dialogue, arguably, laid bare what so many of the conversations I had observed earlier in August and September 2017 in workshops, side-meetings and RP meetings had politely skirted around. Indeed, costs continued to exceed the Development Budget, but at this time D&C-Director had announced that the development was not proceeding as a result. And, unless GlobalArchitect agreed to remove the ARF from the western half of the tower, the chances of the development proceeding would be reduced further. GlobalArchitect, confronted with this reality, rallied in defence of the aesthetic qualities of their design for it seemed their key constituent, (their reputation) was, at this moment in danger of being compromised by PropertyCo's commercial aspirations. To reinforce their argument that there must be something 'noticeable' as a replacement, GlobalArchitect quickly produced a render showing the top few floors of the tower with a sizeable tree, shown in Figure 5.3.

²¹⁹ PropertyCo D&C-Director, meeting transcript (11 October 2017).



Figure 5.3 – Render showing tree as a replacement of the ARF (western aspect). Photograph taken by the author of image displayed during the meeting on 11 October 2017.

This somewhat naïve image resulted in laughter amongst the teams. GlobalArchitect Principal-1, whilst laughing himself, stated there is a need to:

[C]luster trees to the southern side, however small they might end up being. We'll talk to [Landscape Architect].²²⁰

GlobalArchitect Principal-4 suggested that palm trees might be suitable:

There are palm trees which are capable of withstanding cyclonic winds, [when] well secured. Outriggers [are] required to support them.²²¹

To this, D&C-Director replied: 'Palm trees are an option',²²²

Whilst this dialogue was instructive for me as it set out, so clearly, the relative positions of PropertyCo and GlobalArchitect on this issue, together with the budgetary position of the development, it also highlighted the fallacies on which their attempts at effecting a reconciliation were based. Indeed, by linking the removal of the western half of the ARF to the opportunity to build the building, PropertyCo's argument was based on what Pratt describes as a fallacy of relevance, specifically as an '*appeal to force (ad baculum)*'²²³ in which PropertyCo attempted to force GlobalArchitect to accept its premise that the western half of the ARF must be removed, in the fear that otherwise, there would be no building. This is the reconciliation where one can't see the forest for the trees. Indeed, when you are not going to win your argument regarding the trees, you invoke the forest. But in presenting a choice involving only two options, PropertyCo simultaneously constructed its argument based on a 'false dilemma':²²⁴ that there was no alternative other than removal of the western half of the ARF. In addition, PropertyCo's premise regarding provision of the 'right solution' for tenants, when no tenants had pre-committed to lease space in the tower, was again, somewhat spurious. GlobalArchitect's arguments also ran the risk of being based on somewhat fallacious premises. Indeed, they made an '*appeal to the people (ad populum)*'²²⁵ by stating the tower 'won't look right without something visible', and that such an omission would be potentially 'most noticeable' due to the prominence of the tower. Perhaps what would be most noticeable was, rather than a compromised aesthetic (*ad abores*), GlobalArchitect's compromised reputation.

At the subsequent VE Item Evaluation meeting on Monday, 16 October 2017, GlobalArchitect were seemingly more agreeable to the removal of the western half of the ARF, referring to suitable rooftop plantings. However, at a meeting on Tuesday, 24 October 2017 they further clarified their position, requiring the ARF be replaced with a balustrade, four-metres high. But a balustrade of

²²⁰ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

²²¹ GlobalArchitect Principal-4, meeting transcript (11 October 2017).

²²² PropertyCo D&C-Director, meeting transcript (11 October 2017).

²²³ Pratt, *Logic: Inquiry, Argument, and Order*, 82.

²²⁴ Pratt, *Logic: Inquiry, Argument, and Order*, 77.

²²⁵ Pratt, *Logic: Inquiry, Argument, and Order*, 82.

this scale might more correctly be seen as a substitute ARF, albeit of reduced scale. This was resisted by D&C-Facade, who stated: ‘We can only afford a small balustrade’.²²⁶ Seemingly therefore, just a few days later, and in spite of comments to the contrary, there would indeed be a building, and the Development Budget might stretch to include such a balustrade.

5.5.4.3 *Architectural roof feature (eastern aspect)*

In this vignette, I consider PropertyCo’s proposed changes to the Architectural Roof Feature (‘ARF’) for the eastern aspect of the tower. The ARF extended the tower vertically by 15m and consisted of a frame supporting vertically placed glass panels to reduce the solidity of the top of the tower and at the same time worked to disguise the plant room located adjacent to it. At the VE Item Evaluation meeting on Wednesday, 11 October 2017, D&C-Team told GlobalArchitect to redesign the ARF, so that it became integrated with the plant room.

The architectural aesthetics at stake in this situation are similar to those outlined in the previous vignette relating to the ARF for the tower’s western aspect, that is, they address the relationship between the massing/proportioning of the tower, and how it transitions with the sky. In the situation relating to the ARF (western aspect), the proposal was that the ARF be removed. But in this situation, the proposal is that the ARF be integrated with the plant room and accordingly become a less transparent architectural feature, thereby limiting its effect in providing a visual transition to the sky from the 54 levels of enclosed commercial floorspace situated beneath it. The economic imperatives at stake in this situation relate to savings in labour and materials costs from not constructing independent structures for both the ARF and plant room, estimated at \$500k.

Expressing his alarm at PropertyCo’s assertiveness in telling him to redesign the ARF, GlobalArchitect Principal-1 responded: ‘Is this what we’re doing, or a conversation?’,²²⁷ to which D&C-Facade replied:

Both. These are suggestions out of the VE Session, and we want your help with them. When you say it is an instruction [we see this] as a design thing to work through.²²⁸

In an attempt to break the awkward impasse, which resulted following this exchange, Global Architect Principal-3 stated that he wished to understand the ‘relative value’ in the changes proposed.²²⁹ But D&C-Director quickly replied:

²²⁶ PropertyCo D&C-Facade, meeting transcript (24 October 2017).

²²⁷ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

²²⁸ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

²²⁹ GlobalArchitect Principal-3, meeting transcript (11 October 2017).

These are the big-ticket items. We had a squillion of them. We have a \$30m-\$40m problem. Scratching around the edges isn't getting us there. This isn't an instruction. You need to have your own value engineering session. If it's not these [items], then it'll be others.²³⁰

At this moment I reflected on what I had just witnessed; to me it represented a total paradigm shift. D&C-Team were attempting, at this time, not only to manage the project, but to manage GlobalArchitect and control the design outcome. By telling GlobalArchitect to redesign the ARF for the eastern aspect of the tower, despite claiming it wasn't an 'instruction' and by then stating: 'if it is not these [items], then it'll be others', it seems D&C-Team had taken an overly oppressive stance in an attempt to effect a reconciliation, further reinforcing their fallacious argument based on the '*appeal to force (ad baculum)*',²³¹ identified in the previous vignette where they raised the fear of 'not building the building'. Indeed, where an appeal to force is enacted, Pratt explains the forced nature of the conclusion not only undermines this argument, but also works to block future arguments,²³² and therefore future design options from being proposed. As such, pursuit of such a strategy would be most unlikely to result in 'design excellence'. With GlobalArchitect potentially silenced, I wondered, who at this time was the designer? At an interview later that month, D&C-Services related similar thoughts:

Whose building is it? Is it GlobalArchitect's building? Is it DM's building? Or is it our [D&C's] building? Or, is it everyone's building? I don't know whose building it is. But, our role is not to do architecture, or do structure, I think. I think our role's the facilitator. I don't think our role is to come up with solutions unless the solutions stop. I think the difference is that some of us see the wrong solution in their mind come through.²³³

Perhaps on the evening of 11 October 2017, the building seemed to belong to whoever could find \$30m-\$40m in savings required. D&C-Team, in managing the Development Budget believed a reconciliation required them to adopt the role of designer, or even the architect. In this sense, D&C-Team are acting in 'bad faith'. In *Being and Nothingness: An Essay in Phenomenological Ontology* (2018), Jean-Paul Satre identifies this as a situation in which:

The person to whom one is lying and the person who is lying are one and the same person.²³⁴

Indeed, the D&C-Team know that their facticity is that of project manager, for that is what they are experienced in. Their role, as explained by D&C-HoE is:

²³⁰ PropertyCo D&C-Director, meeting transcript (11 October 2017).

²³¹ Pratt, *Logic: Inquiry, Argument, and Order*, 82.

²³² Pratt, *Logic: Inquiry, Argument, and Order*, 82.

²³³ PropertyCo D&C-Services, interview transcript (20 October 2017).

²³⁴ Jean-Paul Satre, *Being and Nothingness: An Essay in Phenomenological Ontology*, trans. Sarah Richmond (London: Routledge, 2018), 90.

Greasing all those cogs [to keep the wheels in the process moving], but with the aim being a valued outcome for the client.²³⁵

But when they adopted the role of designer by telling GlobalArchitect to remove the ARF for the eastern aspect of the tower, they were henceforth claiming that they were designing the tower, whilst knowing that they were not the designer, and therefore conscious of this bad faith. Satre explains that in such a situation, the person of bad faith:

[K]nows this truth very precisely, in order to hide it all the more carefully for myself.²³⁶

Nevertheless, the role of the project manager might be seen as occupying a liminal space. As the facilitator, they are not the developer of the NBD scheme, nor are they its architect. Instead, their role is to ensure the cogs keep turning, that there is a flow between developer and architect. This represents a politics of the vague, and in this vignette D&C-Team might be seen as having put force into the somewhat liminal space they occupy through bad faith. They might justify this on the basis that they were a slave to the economic imperative of the spreadsheet with its displaced authority, turning them into an *ubermensch*: we forced the removal of the ARF, but we were told to do this. It is not really us.

5.5.4.4 *City Garden*

In this next vignette, I consider VE changes proposed by PropertyCo to the City Garden. In their NBD architectural competition design submission, GlobalArchitect proposed that a 'City Garden' be located on level 5 of the tower, to distinguish the podium, (which consisted of the lobby and levels 1-4) from the office tower which commenced at level 6. Occupying level 5 of the tower, the City Garden design comprised a double height space with extensive foliage planted along its edges. But the City Garden concept, whilst commended by the City, and considered a key aspect of the competition winning scheme (the Rationalised Concrete Scheme), had been identified as problematic during design workshops in August and September 2017 as the space comprised of a whole floor of the tower which would not generate any direct lease income. Indeed, during design workshops, DM-Team attempted to identify suitable uses for the space: that it include meeting rooms for tenants, a café/restaurant, or a gym. None of these options were judged as viable by DM-Team due to the limited public lift access available to this level from the lobby. In addition, wind consultants advised that the space would attract strong winds. In light of these difficulties, when it was realised that considerable savings were potentially available from replacing the extensive foliage with a screed of pebbles, thereby eliminating the requirement to

²³⁵ PropertyCo D&C-HoE, interview transcript (27 June 2016).

²³⁶ Satre, *Being and Nothingness: An Essay in Phenomenological Ontology*, 90.

construct the expensive deep-soil planters required to support planned foliage, PropertyCo's interest in pursuing the City Garden was significantly diminished. Despite this, the City Garden remained a key architectural component of the tower, albeit without the garden. At a workshop on Wednesday, 27 September 2017, GlobalArchitect Principal-1 summarised the status of the City Garden design:

At [the] moment it's just a big terrace, as all the GFA is in the tower. Ultimately, we are interested in people going to that level. Whether there is a fixed or mobile café, or some meeting point. In [*DM-Director's*] mind there is some kind of meeting space there. It's something [to think about...] later on, when [we're] knocking holes in floorplates [to create atria/voids for tenants with contiguous leased space ... This] will free up GFA for it.²³⁷

But D&C-Facade was concerned of the risk to the design program this posed:

We'll need balustrades, etc. If [tenants] want to do something down the track we [still] need some intention now [otherwise] we will need [to submit an amended Main Works DA]. Otherwise, we'll introduce cost and we're trying to mitigate that at the moment.²³⁸

To which GlobalArchitect Principal-1 concurred:

I think you're right. It's just a terrace with landscaping. There is no NLA or GFA there at all.²³⁹

At the VE Item Evaluation meeting on Wednesday, 11 October 2017, D&C-Facade proposed removing the City Garden from the tower altogether, as the cost of constructing the space was estimated to be \$7m. He stated there is the:

[O]ppportunity to lower the City Garden. At the moment, there's nothing there: no NLA. Maybe we should delete it.²⁴⁰

GlobalArchitect Principal-2 immediately questioned the effect of this proposal: 'So, lower the height of the tower?'²⁴¹ In response, D&C-Facade reminded participants of the need to reduce cost:

If we wish to chase savings, we need to make some big calls: not [just] remove a coat of paint.²⁴²

To this, GlobalArchitect Principal-1 responded in defence of the City Garden:

²³⁷ GlobalArchitect Principal-1, workshop transcript (27 September 2017).

²³⁸ PropertyCo D&C-Facade, workshop transcript (27 September 2017).

²³⁹ GlobalArchitect Principal-1, workshop transcript (27 September 2017).

²⁴⁰ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

²⁴¹ GlobalArchitect Principal-2, meeting transcript (11 October 2017).

²⁴² PropertyCo D&C-Facade, meeting transcript (11 October 2017).

Architecturally we like the City Garden's visual separation. It separates the podium and the [Community Space], so we prefer that.²⁴³

The architectural aesthetics at stake in this situation relate to the effect of the City Garden visually separating, and therefore reducing, the mass or bulk of the tower situated above it, when viewed from across the upper plaza from [First Street]. Renders produced for the architectural design competition showed the City Garden as highly attractive, planted with a dense foliage which helped to address the ADB's biophilia requirements. Intended as a space available to all occupants of the tower, it would provide tenants with something in excess of the offerings of other commercial buildings, providing a green space for staff to relax, have their lunch, hold meetings, etc. On the other hand, the economic imperatives at stake relate to the considerable labour and materials costs of constructing the City Garden space, which occupied one level of the tower's GFA yet provided no NLA, and therefore would generate no income.

Despite their reluctance at 'deleting' the City Garden, at the subsequent VE Item Evaluation meeting on Monday, 16 October 2017, GlobalArchitect proposed, surprisingly, that it be replaced with commercial office space, together with additional half-sized floors at the tower's apex so as to maintain the height of the tower. GlobalArchitect Principal-1 set-out the proposal:

If there is no benefit to level 5 [the City Garden], just an area unused and costly, then we [...] have transferred floor area from levels at [the] top [of the tower], west[ern aspect], to level 5 to maintain [the tower's overall] height.²⁴⁴

GlobalArchitect Principal-2 added: '[It's] a shame to lose that height [that] we have been dealing with until now'.²⁴⁵

Accordingly, at this moment GlobalArchitect Principal-1 appears to have adopted the mindset more associated with a property developer; that the additional half-sized floors at the tower's apex would attract premium lease income by virtue of their height, and the views they afforded:

[This] comes down to [the] equation for rent [achievable] at a [lower level] versus level 54.²⁴⁶

Perhaps GlobalArchitect's commercial stance in this circumstance was in reaction to the '*appeal to force*'²⁴⁷ enacted by PropertyCo, and described in the previous vignette (refer to Section 5.5.4.3) in respect of changes proposed to the ARF (eastern aspect). In that situation it was arguable that PropertyCo assumed the role of designer, or architect (by force). Maybe in this latest instance,

²⁴³ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

²⁴⁴ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²⁴⁵ GlobalArchitect Principal-2, meeting transcript (16 October 2017).

²⁴⁶ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²⁴⁷ Pratt, *Logic: Inquiry, Argument, and Order*, 82.

GlobalArchitect were assuming the role of property developer, by political necessity. Perhaps this was the very role of the architect, which Nic Clear refers to in 'A Near Future' (2009) where he writes that debates in architecture:

[H]ave not tried to call into question the economic imperatives of late capitalism that drive financial speculation [...] Even the avant-garde architectural firms of the 1980s are now operating as large international commercial practices, and the Deconstructivists have proved to be more than enthusiastic capitalists. The critical and intellectual ambitions inspired by Jacques Derrida, Gilles Deleuze and Guy Debord have been replaced with the monetarist ideologies of Milton Friedman and Alan Greenspan. The architectural profession has embraced the late capitalist model enthusiastically and uncritically, while all the time pandering to the concepts of social and environmental responsibility.²⁴⁸

Deconstructivists are those architects rejecting the rationality of modernism. Seemingly, GlobalArchitect, which may once have been the avant-garde, have too embraced the capitalist model. But perhaps here they have gone one step further than Clear suggests: they have not pandered to social and environmental responsibility, but instead rejected it. They have replaced the City Garden's biophilia with Milton Friedman's ideology that 'The Social Responsibility of Business is to Increase its Profits'.²⁴⁹

In response to GlobalArchitect's capitalist embrace, D&C-Director replied:

There is an incremental, don't quote me but [it] comes down to about \$X per square metre. But, by shifting lettable area down from the top [of the building ...] the floors at [the] top aren't efficient floors, as [the] building core [comprising lifts and services] occupies [...] half a floor.²⁵⁰

In reply, GlobalArchitect Principal-2 stated: 'But [you achieve a higher] rental up there'.²⁵¹ Nevertheless, D&C-Director was not convinced: 'But it is not efficient'.²⁵² In reply, GlobalArchitect Principal-1 argued: 'But [we] don't need to re set-out the whole structure [...] We like it architecturally'.²⁵³ Remaining unconvinced, D&C-Director stated:

But [I'm] not sure it delivers any savings as I still have to build the gross floor space. Converting four floors to half-sized floors is still costing me. That's my initial view. I'll hold my views and let [D&C-Cost Planner-1] do his work.²⁵⁴

²⁴⁸ Nic Clear, 'A Near Future', *Architectural Design* 79, no. 5 (2009): 6. <https://doi.org/10.1002/ad.942>.

²⁴⁹ Milton Friedman, 'The Social Responsibility of business is to increase its profits', *The New York Times Magazine*, 13 September 1970, 32–33. ProQuest. <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/newspapers/social-responsibility-business-is-increase/docview/2441921739/se-2>.

²⁵⁰ PropertyCo D&C-Director, meeting transcript (16 October 2017).

²⁵¹ GlobalArchitect Principal-2, meeting transcript (16 October 2017).

²⁵² PropertyCo D&C-Director, meeting transcript (16 October 2017).

²⁵³ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²⁵⁴ PropertyCo D&C-Director, meeting transcript (16 October 2017).

But GlobalArchitect Principal-2, concerned about the effect of the tower's aesthetics after removal of the City Garden stated: 'When losing the height, you lose something with the proportioning of the building'.²⁵⁵ But again, D&C-Director argued:

My gut feel is that the reshuffling of floors will not reduce cost, but I want [D&C-Cost Planner-1] to look at this. My gut feel is that level 5 [the City Garden] will go. [D&C-Cost Planner-1], you're here: will it [reshuffling of floors] save money?²⁵⁶

D&C-Cost Planner-1 responded: 'Probably not, but I need to work it out'.²⁵⁷

This is a most intriguing dialogue. Indeed, GlobalArchitect in attempting a reconciliation, justifies its seemingly commercial proposal from economic and aesthetic viewpoints, simultaneously. The space at the apex, by virtue of the views it would afford, should generate premium lease income. At the same time, the tower's height is maintained, something seemingly important to GlobalArchitect in light of the aesthetics involved. But this proposal was not well received by D&C-Director as it failed to consider the efficiency of the space relative to the cost of its construction. As Carol Willis explains in *Form Follows Finance* (1995) skyscrapers have an *economic height*:

The economic height of a building refer[s] to the number of stories that would produce the highest rate on the money invested. At some point in the construction of every skyscraper, the law of diminishing returns sets in, and rents for the additional stories do not cover costs [...] By far, the greatest price of height lies in the requirements of efficient vertical circulation. While elevators are expensive to build, [...] their major cost accrues in the large amounts of space consumed by shafts.²⁵⁸

At the highest levels of the NBD tower, the core area would be considerable in size, relative to the amount of NLA provided on each level, particularly for half-sized floors. Whilst D&C-Director agreed to consider GlobalArchitect's proposal²⁵⁹, it was subsequently not found to be financially viable and accordingly, was not pursued.

A reconciliation between traditionally opposing parties can be advanced when one party adopts the stance of the other. In this case, GlobalArchitect adopted the logic of the developer. But doing so, always comes with a risk. Sun Tzu's *The Art of War* (500BCE [2019]), the world's oldest military treatise, describes the principles of warfare and provides guidance on how to deal with conflict. Sun Tzu accounts for the way in which opposing armies adopt the logics of their opposition in war techniques. In respect of the enemy's weakness, he states:

²⁵⁵ GlobalArchitect Principal-2, meeting transcript (16 October 2017).

²⁵⁶ PropertyCo D&C-Director, meeting transcript (16 October 2017).

²⁵⁷ PropertyCo D&C-Cost Planner-1, meeting transcript (16 October 2017).

²⁵⁸ Carol Willis, *Form Follows Finance* (New York: Princeton Architectural Press, 1995), 45-46.

²⁵⁹ PropertyCo D&C-Director, meeting transcript (16 October 2017).

Rouse him, and learn the principle of his activity or inactivity. Force him to reveal himself, so as to find out his vulnerable spots.²⁶⁰

If you know the enemy and you know yourself, you need not fear the result of a hundred battles.²⁶¹

Accordingly, to secure victory, you must take on the mindset of the enemy. That is, the victor must adopt the position of those they wish to defeat. The downside of this can be a developing of affection for one's enemy. Here GlobalArchitect adopt the logic of developer, at the risk of entering the developer's realm. They are no longer in battle on their own turf, but rather now occupy lines of a spreadsheet, in particular DM-Team's PVM with its calculation of IRR (refer to Section 4.3.5). When the keeper of architectural aesthetics adopts the economic logic of the developer, they better be prepared for the spreadsheet to be the arbiter of good taste.

A week later, at a meeting on Tuesday, 24 October 2017, D&C-Facade referred to the significant 'push-back' against the proposal to lower the tower from within PropertyCo, and reinstatement of the City Garden:

Push back is coming, and [there are] no funds to do it [the City Garden]. We don't have the money to do it.²⁶²

Despite the lack of funds, GlobalArchitect Principal-2 argued in favour of the City Garden: 'We believe we need an element of landscape there'.²⁶³ To this, PropertyCo's D&C project manager responsible for the NBD design program ('D&C-Program') concurred: 'I think you're 100% right. A City Garden with no garden is hard to sell!'²⁶⁴ But, referencing the earlier decision to replace the garden with a screed of pebbles, D&C-Facade stated to GlobalArchitect:

In terms of the Main Works DA, you need to do what you're asked to do: add the pebbles; D&C-Director has no money. If the [City] write [to us] and say this is a bloody stupid idea, then we'll look at it.²⁶⁵

Indeed, GlobalArchitect Principal-4 was concerned about the City's response:

The [City] will probably condition it as a garden [in granting planning approval for the Main Works DA].²⁶⁶

To this, GlobalArchitect Principal-3 added:

²⁶⁰ Sun Tzu, *The Art of War* (New York: Dover Publications, 2019), 52. ProQuest Ebook Central, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=5748250>.

²⁶¹ Sun Tzu, *The Art of War*, 40.

²⁶² PropertyCo D&C-Facade, meeting transcript (24 October 2017).

²⁶³ GlobalArchitect Principal-2, meeting transcript (24 October 2017).

²⁶⁴ PropertyCo D&C-Program, meeting transcript (24 October 2017).

²⁶⁵ PropertyCo D&C-Facade, meeting transcript (24 October 2017).

²⁶⁶ GlobalArchitect Principal-4, meeting transcript (24 October 2017).

Their main concern [will be]: how this will look from buildings around it, particularly if it is just a sea of pebbles?²⁶⁷

Realising the predicament this created, D&C-Director summarised the position:

Dating back to competition days, [level 5] was a City Garden. A landscape between the podium and offices [above]. It provides differentiation, it provides a neck. [But], I don't have money to put a garden in, and the NBDJV have already banked the saving. If the [City] have a problem, then we need to discuss it, we need to sell the idea of the neck. At the end of the day, we have only that, and no garden there.²⁶⁸

Despite this, D&C-Facade stated:

We could debate this for another three months. We're not going to find the money to do this.²⁶⁹

Indeed, despite many weeks of discussion, in the Main Works DA the City Garden was proposed as a space containing no garden, just a screed of pebbles, waiting for the City to condition the space as a garden in their development consent. The reconciliation effected for the City Garden, it seems, was for the City to determine.

In this situation, the developer has become the aesthete, making what is surely an aesthetic type of argument. It is a poetic or linguistic argument based on the sliding definition of the image of an approved building towards an abstraction of what will be built. In order to operate the necessary economics the developer has in this instance decided to play the aesthete. They have become a poet of the perverse, imagining a garden without plants, and a neck without a collar. They will still have a 'City Garden' and a neck, but neither will be quite like the City might have imagined them.

5.5.4.5 Main lobby

At the VE Item Evaluation meeting on Wednesday, 11 October 2017, D&C-Team proposed changes to the Main lobby (the 'lobby'). These included that the floorspace occupied by the tower's lobby be reduced by half, with cost savings estimated to be \$4.5m, and that the height of the lobby be lowered, saving an additional estimated \$1.5m. D&C-Facade stated the proposal was to:

[R]educe [the] size of [the] existing main lobby and put retail [units previously located indoors] outside [...] on [the] terraces.²⁷⁰

²⁶⁷ GlobalArchitect Principal-3, meeting transcript (24 October 2017).

²⁶⁸ PropertyCo D&C-Director, meeting transcript (24 October 2017).

²⁶⁹ PropertyCo D&C-Facade, meeting transcript (24 October 2017).

²⁷⁰ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

GlobalArchitect Principal-1 questioned the strategy: ‘How does this save money?’,²⁷¹ to which, D&C-Facade responded:

Mechanical systems [are] less; finishes [are of] less value: ceiling and floor [... There is] lots of accumulation of items that add-up.²⁷²

Having considered PropertyCo’s proposal, when the teams met at the following VE Item Evaluation meeting on Monday, 16 October 2017, GlobalArchitect Principal-1 reminded the meeting that a smaller lobby, with an exposed concrete ceiling, had been proposed in the Competition Submission Steel Scheme, that is, prior to adoption of the Rationalised Concrete Scheme (refer to Section 5.2.2). D&C-Director requested that GlobalArchitect prepare a sketch for a smaller lobby, noting the:

[M]ain saving is out of [expensive] finishes: [... with less] internal areas [... and larger] public areas [...] There is a lot of money in [the...] lobby ceiling. There is a GFA saving too. Please do a sketch. I’ll manage my cost planner.²⁷³

The architectural aesthetics at stake in this situation relate to the *grandeur* of the lobby space. Occupying a whole floor of the tower, the lobby, when viewed across the Upper Plaza, or from [Second Street] or the retail laneways immediately below, would appear impressive both in terms of its scale and level of finish, not only to its tenants or future tenants, but also to passers-by. Indeed, GlobalArchitect Principal-2 outlined her firm’s proposal for the lobby at design workshops on Tuesday, 8 and Friday, 11 August 2017:

[The] lobby is long. It’s about being long and narrow, [and] needs elements which rake the scale [...] tall seating [...] The] intention is not to just have a stair [to the retail laneways on the level below], but [a] reception desk [...] in [the] centre, pop-up retail, [a] kiosk for drinks.²⁷⁴

A monolithic look: no joints [or individual] elements.²⁷⁵

At an RP meeting on Thursday, 17 August 2017, when the location of a coffee kiosk to be situated in the lobby was discussed, DM-Director further clarified the significance of the lobby space:

The lobby is a pretty important piece for the tower [...] It] should be a beautiful space [...] The coffee kiosk looks really big in this space [...] This is not a lobby to accommodate retail.²⁷⁶

²⁷¹ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

²⁷² PropertyCo D&C-Facade, meeting transcript (11 October 2017).

²⁷³ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²⁷⁴ GlobalArchitect Principal-2, workshop transcript (8 August 2017).

²⁷⁵ GlobalArchitect Principal-2, workshop transcript (11 August 2017).

²⁷⁶ PropertyCo DM-Director, meeting transcript (17 August 2017).

As described in Section 2.3.2, in *Elements of Criticism* (1761 [2005]) Henry Home, Lord Kames argues of the importance of grandeur to architectural aesthetics:

Of all the emotions that can be raised by architecture, grandeur is that which has the greatest influence on the mind; and it ought therefore to be the chief study of the artist, to raise this emotion in great buildings destined to please the eye.²⁷⁷

Indeed, a lobby with a height of 14m might go some way towards realising this emotion, and Figure 5.4 shows an early render of the Main lobby proposed by GlobalArchitect, which provides some sense of its scale.

On the other hand, the economic imperatives at stake were the savings attributable to reduced labour and material costs from the construction of a lobby which occupies a smaller area of the tower's ground floor and with vertical surfaces of a reduced height. Indeed, the combined effect of a smaller lobby footprint and height would allow a considerable portion of expensive indoor finishes to be replaced with less costly finishes suitable for an outdoor space, and for both the horizontal and vertical extent of glazing to be reduced. In addition, reduction in height would reduce the extent of expensive finishes applied to the core walls. The resulting reduction in the volume of the lobby space would also allow for specification of a heating, ventilation and air-conditioning system ('HVAC') with reduced capacity, and therefore less cost. The reduced size of the lobby footprint would allow PropertyCo to transfer the GFA to another location, potentially increasing NLA and thereby generating additional lease income.

²⁷⁷ Henry Home, Lord Kames, *Elements of Criticism*, ed. Peter Jones (Indianapolis: Liberty Fund, Inc, 2005), 709. <https://ebookcentral-proquest.com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=3327286>.



Figure 5.4 – Render showing GlobalArchitect’s early proposal for the Main lobby. Photograph taken by the author of image displayed during the RP meeting on 17 August 2017.

In attempting a reconciliation, GlobalArchitect Principal-1 responded with much concern, referring to what he believed to be the underlying basis which supported the height, and scale, of the lobby as designed by his firm:

The height of the lobby: [...] The only drama and relief from [the] other [surrounding] verticals is the scale of the lobby. It is hemmed in by lanes. [The] building is in a lane [Third Lane]. I thought this was the main reason on day one?²⁷⁸

But, D&C-Director quickly clarified that the height of the lobby was:

To make [the lobby] taller, so to have more floors above [a neighbouring development].²⁷⁹

Adoption of this strategy, would of course, maximise views and therefore the lease income that might be generated. But, it would also potentially generate additional lease income by virtue of its role in creating a space which would inspire ‘emotion’, and therefore ‘grandeur’, referred to in an aesthetic sense. In *System of Transcendental Idealism* (1800 [1978]) Schelling writes of the ‘calm, and silent grandeur’ that is the ‘infinite’ characteristic of art.²⁸⁰ In this situation, it would be

²⁷⁸ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²⁷⁹ PropertyCo D&C-Director, meeting transcript (16 October 2017).

²⁸⁰ Friedrich Schelling, *System of Transcendental Idealism*, trans. Peter Heath (Charlottesville: University Press of Virginia, 1978).

achieved without effort. Nevertheless, the arguments made by both GlobalArchitect Principal-1 and D&C-Director are clearly supported by the ADB. In relation to the lobby, it requires:

Maximisation of floorspace above the approved development height of an adjoining property via design initiatives and floor-to-floor heights [including the] lobby [...] Generous and prestigious upper ground floor lobby with internal height up to 14m.²⁸¹

Accordingly, in relation to the lobby, the ADB has set-up a circumstance where it might be particularly difficult for any type of reconciliation to be effected through VE. It is, indeed, true that the underlying basis for a tall lobby was to maximise commercial floorspace above a neighbouring development. But it is also true that the lobby be both 'generous and prestigious'. It is not surprising, that in responding to the apparent conundrum in seeking to reduce the size and height of the lobby, both GlobalArchitect Principal-1 and D&C-Director played to their prejudices: GlobalArchitect argued in support of grandeur; D&C-Director argued for cost reduction.

The reconciliation here is at once predictable and disappointing. Pratt explains, in such a situation, the use of '*prejudice*' renders the choice of arguments as somewhat fallacious:

One's interests in the outcome of the argument might lead one to set aside some premises in favour of others on grounds that seem to cut against the goals of communicative action.²⁸²

Indeed, in arguing for the reduction in the height of the lobby, D&C-Director was essentially undermining the economic basis upon which the tower had been determined: that it maximise floorspace above a neighbouring development. In this case, despite grandeur being foremost in their mind, GlobalArchitect supported the economic imperative that the tower maximise the generation of lease income. The equation engaged was one that suggested grandeur is the equivalent of cost, but the equation could just as easily have been one in which grandeur is the equivalent of income. The architectural aesthetic and the economic imperative here are negotiated as if they were ideological positions rather than entwined pragmatisms, where one composes of the other. What we encounter in this situation is so very often a complete distrust of the big picture. When cost and income are treated as belonging to two radically different realms, it is a very odd disconnect. Here one does not succeed when the other is compromised, indeed both potentially lose.

5.5.4.6 Entrance from [Second Street]

In this next vignette, I consider VE changes proposed by PropertyCo to the [Second Street] entrance to the tower. In his presentation of the Architecture component at the VE Session on

²⁸¹ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

²⁸² Pratt, *Logic: Inquiry, Argument, and Order*, 80.

Friday, 6 October 2017, D&C-Early Works suggested the removal of the escalator designed to provide access to the lobby from [*Second Street*]. At the VE Item Evaluation meeting on Monday, 16 October 2017, D&C-Facade proposed not only the removal of the escalator, but also, the staircase located beside it, with a combined cost saving estimated to be \$1m:

We've already got rid of the escalator, now [we propose to] remove the stairs and convert [the area] to retail space. People will walk down the laneways and then up new stairs [to access the lobby]. This happens at [*a neighbouring building*].²⁸³

This change was seen as highly problematic by GlobalArchitect Associate, who argued that removing the staircase would impede fire brigade emergency access,²⁸⁴ but GlobalArchitect Principal-1 went further, expressing his incredulity that the building would physically front [*Second Street*] but have no entrance, as 'bizarre'.²⁸⁵

The architectural aesthetics at stake in this proposal relate to the appearance of a 54-storey 'Premium Grade' building which provides no immediate access from the street frontage on which the majority of its massing is situated. Furthermore, the proposal necessitates a programming requirement that entering the building from this street would require its occupants to walk along a relatively narrow shop-filled laneway, then ascend an equally narrow flight of stairs to access a lobby with an internal height of 14m. Whilst such an arrangement might be met favourably by devotees of Frank Lloyd Wright, it is arguable, that such programming would detract from the prestige to which the ADB aspired. Indeed, the ADB required:

Suitable entry statement[s] and arrival experiences [...] for both [*First Street*] and [*Second Street*] entrances.²⁸⁶

As discussed in Section 5.2.4, in the vignette relating to the Mid-elevation column, GlobalArchitect's architectural competition winning design (the Rationalised Concrete Scheme) attempted to maximise the size of the stairs leading from [*Second Street*] to the lobby; having proposed that a column transferring some 50-levels of load above this space, separate a few levels above the stairs so that the bulk of the tower appeared to float above, and therefore not obscure, the entrance.

On the other hand, the economic imperatives at stake in this proposal relate not only to the cost savings achievable from removing the escalator and staircase, estimated to be \$1m, but also the additional retail lease income which would be generated from a retail space in this highly desirable location. Responding to this situation, and attempting to effect a reconciliation,

²⁸³ PropertyCo D&C-Facade, meeting transcript (16 October 2017).

²⁸⁴ GlobalArchitect Associate, meeting transcript (16 October 2017).

²⁸⁵ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²⁸⁶ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

GlobalArchitect Principal-1 questioned whether the proposal had been discussed with DM-Team.²⁸⁷ In doing so, he made a fallacious argument based on what Pratt refers to an ‘*appeal to authority*’.²⁸⁸ Whilst Pratt argues that:

[T]here may be cases where authorities can justify a claim, there are also cases in which such claims must be called into question.²⁸⁹

An example would be a situation where the source of the authority lacks the necessary jurisdiction. In this instance, GlobalArchitect Principal-1 is appealing to a higher body, the DM-Team, in order to make the reconciliation as they are identified as the party with the necessary jurisdiction to make the required decision. The key economic argument being mounted in this case, is being made by the D&C-Team. But, in order for DM-Team to arbitrate a decision, it is likely that the arguments of both GlobalArchitect and the D&C-Team will require further justification.²⁹⁰ Indeed, D&C-Director responded by stating:

DM-Team were at the VE Session. We want your design input: if these are things that won’t fly, then tell us. We’ll take them off the list.²⁹¹

The response here is to suggest that DM-Team’s appearance at the VE Session—where the core economics of the project were discussed and the need for large cost reductions to the project was articulated—means that DM-Team were already on-board with subsequent proposals for cost reductions. GlobalArchitect’s appeal to authority here, was being undermined by the very idea that the authority was already complicit. The oddity of this position, however, is that though large scale cost reductions were articulated at the VE Session, the detail of any individual cost reduction was not fleshed out. The reconciliation here is thus perhaps less an ‘appeal to authority’ and more a prior ‘inculcation of authority’. D&C-Director co-opts the authority of the DM-Team by having already established a form of in-principle support for the bigger issue at stake: the overall economic imperative of the project.

It appears in this moment that referencing the DM-Team was of no benefit, as D&C-Director responded immediately asking for more input from GlobalArchitect to justify their resistance to the proposal, as if that resistance were counter to authority. Indeed, the inculcation of authority reconciliation enacted by D&C Team was so successful that no attempt was made by GlobalArchitect Principal-1 to reference the ADB, which clearly set-out the NBDJV’s requirements

²⁸⁷ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²⁸⁸ Pratt, *Logic: Inquiry, Argument, and Order*, 80.

²⁸⁹ Pratt, *Logic: Inquiry, Argument, and Order*, 80.

²⁹⁰ Pratt, *Logic: Inquiry, Argument, and Order*, 80.

²⁹¹ PropertyCo D&C-Director, meeting transcript (16 October 2017).

for entrances to the tower. Nor, did D&C-Director reference GlobalArchitect Associate's concern that emergency access might be hampered. Authority wins.

5.5.4.7 *Leasing 'shell'*

At the VE Item Evaluation meeting on Wednesday, 11 October 2017, D&C-Team proposed changes to the leasing 'shell' which would be adopted for the tower. Under this arrangement, typical office floors would be finished as a 'cold shell', that is, infrastructure such as lighting and other fittings and fixtures would need to be completed by the lessee of the space. The cost saving for adopting 'cold shell' leasing was estimated to be \$34m. Despite this very significant saving, D&C-Director stated that this strategy:

Transfers cost from the base build to the fit out: the tenant would want a bigger incentive. So, this just changes the timing of the cost, not the cost [itself].²⁹²

GlobalArchitect Principal-1 was in favour of this proposal, adding that irrespective of cost, this strategy reduces the potential for waste, in situations where a tenant removes the recently installed fixtures and fittings to replace them with their own.²⁹³ Indeed, this had been discussed at design workshops some months earlier. On Tuesday, 8 August 2017, D&C-Program asked:

[The] fundamental question [is] how does this look architecturally? We're offering plaster[board] on beams and columns as part of the base building. We're offering carpet and plasterboard walls in lift lobbies for the base building. In [the Development Budget] these are [considered] base. We know where we sit from [a] cost perspective. We want to now look at this aspirationally [sic] from an architectural perspective [to determine] what the experience is, how the core looks and [how it] controls what the tenant can do with these spaces?²⁹⁴

On 11 August 2017, when questioning the basis upon which PropertyCo should allocate the Development Budget, D&C-Facade asked:

Where is value? Do we put money into the [building's] public spaces or within the tenancy spaces?²⁹⁵

To this, GlobalArchitect Principal-2 responded unequivocally, 'The tenant rips it out anyway!'²⁹⁶

At the subsequent VE Item Evaluation meeting on Monday, 16 October 2017, GlobalArchitect Principal-1 stated that NBD Architecture Competition Juror-2 ('Juror-2') was in favour of the cold shell idea, but GlobalArchitect Principal-1 noted that they:

²⁹² PropertyCo D&C-Director, meeting transcript (11 October 2017).

²⁹³ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

²⁹⁴ PropertyCo D&C-Program, workshop transcript (8 August 2017).

²⁹⁵ PropertyCo D&C-Facade, workshop transcript (11 August 2017).

²⁹⁶ GlobalArchitect Principal-2, workshop transcript (11 August 2017).

[N]eed to look at [concrete ceiling] beams to see how they look, with [GlobalEngineer's involvement] [...] You do see this on the renderings, so we do need to make a decision on this for the [Main Works] DA.²⁹⁷

That is, prospective lessees can see the type of interior that the building might hold via drawings, thus negating the need to build what would otherwise be pulled out. A few days later, in the DM-Team workspace on Friday, 20 October 2017, the proposal to provide tenants with a cold shell was further discussed, during which DM-Director expressed her concern that she was:

[N]ot sure optically [whether cold] shell [...] works, and [whether the NBDJV...] will see it as a saving.²⁹⁸

This situation was particularly difficult as there were no pre-commitment tenants to help provide the necessary clarity DM-Director required. There was also the risk that the NBDJV participants might consider the visually unappealing aesthetic of the cold shell as a potential disincentive to attract tenants, and therefore not consider it to be a valid cost saving.

Accordingly, the architectural aesthetics at stake in this situation relate to the appearance of typical floors prior to their fit-out by tenants. The proposed cold shell would present a tenant with a concrete floor slab, very limited application of plasterboard to walls and an exposed ceiling, revealing the underside of the concrete floor slab above, concrete beams, services pipes and cables of varying sizes. Whilst this might be acceptable to certain tenants, particularly those who prefer to specify their own fit-out, thereby saving them the need to remove the recently installed fixtures and fittings, it might be visually unappealing to other tenants expecting a certain level of finish (that is, a 'warm shell') as a starting point for their own fit-out. Indeed, DM-Director was concerned the NBDJV might be of this persuasion. On the other hand, the economic imperatives at stake relate to the possibility that the visually unappealing aesthetic of a cold shell space might act to dissuade a potential tenant from committing to the space, with the effect that space remains vacant for a longer period and income generated from leasing is reduced. Interestingly, at the meeting to evaluate the VE items on Tuesday, 10 October 2017, D&C-Cost Planner-1 made the somewhat contradictory remark: 'A cold shell could cost more as it has to look good'.²⁹⁹ Indeed, it seems that even a cold shell requires some level of aesthetic consideration before it is presented to tenants. The pipework would need to be better organised, and services better arranged in order to look decent, even when it might all get covered-up.

Whilst the potential cost savings appeared significant, as D&C-Director explained, the saving would likely be handed back to tenants as a lease incentive, albeit after the completion of the

²⁹⁷ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

²⁹⁸ PropertyCo DM-Director, conversation transcript (20 October 2017).

²⁹⁹ PropertyCo D&C-Cost Planner-1, meeting transcript (10 October 2017).

building, or perhaps later depending on the commencement date of the relevant tenancy. The cost saving, therefore, was attributable to the differential between the lease incentive offered to a tenant, and the labour and materials cost in providing a warm shell for the relevant leased space. In addition, benefits would accrue based on the time value of money elapsed between the date at which the tower was completed, and the date on which a lease incentive was provided to a tenant. The time value of money refers to the differential between an amount of money received today and the same magnitude of money received in the future. It assumes that the amount received today would be invested and generate a return, therefore being of a greater value than the amount received in the future. Benefits would also accrue, as D&C-Cost Planner-1 indicated at the meeting to evaluate the VE items on 10 October 2017, from savings attributable to the tower being completed ahead of program (as the requirement to construct the warm shell was eliminated).³⁰⁰

Despite the potential for savings, the decision was made to provide a warm shell for tenants, thereby bringing about a reconciliation between the architectural aesthetics and economic imperatives which were at stake. This was despite, on 20 October 2017, DM-Director reiterating the need for cost savings to be identified: 'We are right at the edge of the funding envelope. We have used the lot!'³⁰¹ But, in the absence of a pre-commitment tenant, the visual appearance, and therefore architectural aesthetics of a cold shell was considered to be more dissuasive to potential tenants than the savings that it might realise. DM-Director justified the adoption of a cold shell as being 'legitimate on the basis that [we] have [a] pre-commitment tenant'.³⁰² This, however, seemingly ignores the potential for other outcomes which might be considered favourable to both the NBDJV and its future tenants. By deciding between 'cold' or 'warm' leasing shells for the tower at this time, despite knowing the tower would take, at most 48-months to construct, it might be argued that PropertyCo had based its decision on a fallacious argument, that of '*excluded possibilities*',³⁰³ whereby other alternatives were potentially overlooked. In an interview that same month, DM-Director stated:

Because we've got smaller floorplates, and the way that workplace trends are sort of moving at the moment, we're more likely to have smaller tenants which will be two-three floor tenants [...] They start to commit on their new accommodation [...] probably 12-months out from completion to 24-months out from completion.³⁰⁴

Indeed, the decision between 'warm' and 'cold' leasing shells was one that might have been deferred until construction had commenced, and potential tenants were closer to committing to

³⁰⁰ PropertyCo D&C-Cost Planner-1, meeting transcript (10 October 2017).

³⁰¹ PropertyCo DM-Director, conversation transcript (20 October 2017).

³⁰² PropertyCo DM-Director, conversation transcript (20 October 2017).

³⁰³ Pratt, *Logic: Inquiry, Argument, and Order*, 78.

³⁰⁴ PropertyCo DM-Director, interview transcript (11 October 2017).

lease space. This brings to light an important aspect of the reconciliations: their temporality. That is, the punctuality of the decision being made. Sun Tzu states that the best battle is the one not fought: ‘He will win who knows when to fight and when not to fight’.³⁰⁵ And in orchestrating this strategy, you want at best to sit at the riverside and just wait for your enemy’s body to float past. Sun Tzu recommends:

The rule is, not to besiege walled cities if it can possibly be avoided [...] The general who is unable to control his impatience will launch his men to the assault like swarming ants, with the result that one-third of his men are slain, while the town remains untaken [...] Therefore the skilful leader subdues the enemy’s troops without any fighting; he captures their cities without laying siege to them; he overthrows their kingdom without lengthy operations in the field [...] With his forces intact he will dispute the mastery of the empire, and thus, without losing a man, his triumph will be complete.³⁰⁶

Timing is of the essence, and in the punctual or temporal reconciliation in this vignette, a deferral is a win. If the ebb and flow of trends ‘are sort of moving at the moment’ and a decision does not need to be taken just yet, best to wait and see where the trend trends.

5.5.5 VE items proposed by GlobalArchitect

I now consider, as separate vignettes, two of the VE items proposed (somewhat reluctantly) by GlobalArchitect, in response to D&C-Facade’s request that GlobalArchitect conduct their own VE session (a request made towards the end of the VE Item Evaluation meeting on Wednesday, 11 October 2017).³⁰⁷ At that meeting, GlobalArchitect Principal-1 stated:

We thought we’d look at yours [VE item list] first. Now we’ve seen it I think we’ll have too.³⁰⁸

Indeed, between 11–16 October 2017 GlobalArchitect considered potential cost savings and presented these at the VE Item Evaluation meeting on Monday, 16 October 2017. GlobalArchitect Principal-2’s opening comment set the scene for the meeting:

To achieve value engineering, we need to be a bit radical!³⁰⁹

Included in GlobalArchitect’s list of VE items were: Downgrade of the NBD commercial tower from ‘Premium Grade’ to ‘Grade A’, and the removal of the [*Second Street*] Portal. Following a discussion of the architectural aesthetics and economic imperatives at stake, I consider how the

³⁰⁵ Sun Tzu, *The Art of War*, 39.

³⁰⁶ Sun Tzu, *The Art of War*, 38.

³⁰⁷ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

³⁰⁸ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

³⁰⁹ GlobalArchitect Principal-2, meeting transcript (16 October 2017).

teams worked to achieve a reconciliation for these items. I commence by focusing on the downgrade from 'Premium Grade' to 'Grade A'.

5.5.5.1 Downgrade from 'Premium Grade' to 'Grade A'

At the VE Item Evaluation meeting on Monday, 16 October 2017, GlobalArchitect suggested that significant savings in the cost of fittings and finishes would be achieved by downgrading from 'Premium Grade' to 'Grade A', as specified by The Property Council of Australia in *A Guide to Office Building Quality* (2012).³¹⁰ The ADB required that the NBD tower:

Generally conform to Property Council of Australia 'A Guide to Office Building Quality' (PCA-2012) Premium Grade designation.³¹¹

The architectural aesthetics at stake, arising from the potential downgrading of the tower to 'Grade A' might be best related to differences in 'Presentation' as specified by The Property Council of Australia: a 'landmark' and 'pace setter' in the setting of rents rather than a 'high quality' building; 'expansive' rather than 'high quality' views; 'ample' natural light rather than 'natural light'; 'prestige and premium' rather than 'high quality' access, lobby, lift interiors, lift ride and amenities.³¹² On the other hand, the economic imperatives at stake were twofold: whilst the downgrade would likely result in considerable cost savings from the specification of less expensive fixtures and finishings, this would need to be assessed against any incremental reduction in lease income from the tower. GlobalArchitect Principal-2 stated that this was something to 'discuss with DM-Director'.³¹³ Reconciliation, therefore was a matter for the DM-Team to consider and discuss with the NBDJV, assuming DM-Team thought the proposal had merit.

Interestingly, in this situation GlobalArchitect proposed a fallacious argument based on an '*appeal to authority*'.³¹⁴ Despite GlobalArchitect arguing that savings would be achieved from their proposal to downgrade the tower, they again risked being asked for more reasons to justify their premise.³¹⁵ But this was not, perhaps, as significant as the fallacy of '*laziness*'³¹⁶ which GlobalArchitect's argument represents. Whilst the ADB required the tower to 'generally' conform to the 'Premium Grade' designation, it did not state that it should conform to 'Grade A'

³¹⁰ Property Council of Australia, *A Guide to Office Building Quality* (Sydney: Property Council of Australia, 2012).

³¹¹ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

³¹² Property Council of Australia, *A Guide to Office Building Quality*, 8.

³¹³ GlobalArchitect Principal-2, meeting transcript (16 October 2017).

³¹⁴ Pratt, *Logic: Inquiry, Argument, and Order*, 80.

³¹⁵ Pratt, *Logic: Inquiry, Argument, and Order*, 80.

³¹⁶ Pratt, *Logic: Inquiry, Argument, and Order*, 81.

designation. Downgrading the building might be seen as reaching for the lowest fruit, and as Pratt explains, any ‘agreement is hampered in part because information that may make a difference in the process is not actively sought’.³¹⁷ Indeed, changing the designation would create savings, but it does not adequately address the full economic imperative at stake. The constraint of cost, which when properly considered should always fathom the *cost of the cost*, that is, the potential loss in revenue that results from a cost saving. It is in the complex territory of ‘opportunity cost’, that such a decision resides. What the NBDJV desires in such a discussion is GlobalArchitect rising to the challenge to find creative solutions, not the lazy outcome of a simple ‘downgrading’ of the building. The best-case scenario here is a superior architectural, and economic outcome. Ignoring the lazy reconciliation of GlobalArchitect, NBD’s design development continued with the ‘Premium Grade’ designation in mind.

5.5.5.2 Removal of the [Second Street] Portal

In this next vignette, I consider VE changes proposed by GlobalArchitect to remove the [Second Street] Portal. At the VE Item Evaluation meeting on Monday, 16 October 2017, GlobalArchitect, proposed removing the portal which extends the tower’s podium towards the [Second Street] boundary. The podium comprises the lobby and levels 1-4 of the tower. Despite this suggestion, GlobalArchitect Principal-2 stated:

[The] City might not like [this] too much, as they asked us to add [the portal] in [the] second stage of the competition.³¹⁸

Accordingly, D&C-Director was not in favour of the idea, stating: ‘There could be too much planning risk. What about the loss of podium space?’³¹⁹ By ‘planning risk’ D&C-Director is referring to the possibility that the City might, having specifically requested that GlobalArchitect add the [Second Street] Portal, consider PropertyCo’s proposal to remove it as somewhat antagonistic. This might lead to repercussions, such as the City’s refusal to approve other aspects of the scheme which PropertyCo consider important. In response, GlobalArchitect Principal-1 justified his firm’s proposal:

*You asked us to come up with ideas to make the project more efficient. You get a big reduction in cost for knocking that off.*³²⁰

The architectural aesthetics at stake in this proposal relate to the removal of the podium adjacent to [Second Street], and as such limiting the favourable, mass reducing effect of the podium on the

³¹⁷ Pratt, *Logic: Inquiry, Argument, and Order*, 81.

³¹⁸ GlobalArchitect Principal-2, meeting transcript (16 October 2017).

³¹⁹ PropertyCo D&C-Director, meeting transcript (16 October 2017).

³²⁰ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

appearance of the tower (when viewed from [*Second Street*]). The economic imperatives at stake in this proposal relate to cost savings attributable to reduced labour and materials costs from not constructing this section of the podium. Again, this proposal is based on the fallacious argument of '*laziness*'.³²¹ By proposing the removal of a component of the design which the City had specifically requested, rather than reconsidering it in an attempt to reduce cost, GlobalArchitect effectively hampered design development of the podium. As such, the reconciliation in this circumstance was the dismissal of GlobalArchitect's proposal, with D&C-Director asking GlobalArchitect:

If you could give me a sketch of how the [*Second Street*] lost podium appears, we will think about it. But I don't recommend it.³²²

5.5.6 Exhaustion

In this vignette, I consider the dialogue between GlobalArchitect and D&C-Team which followed the discussion of the VE items at the first VE Item Evaluation meeting on Wednesday, 11 October 2017. As discussed in Section 5.5.5, GlobalArchitect agreed, albeit reluctantly, to PropertyCo's request to conduct their own VE session, but this triggered GlobalArchitect Principal-1's concern for potential delays to the program: 'Is the [Main Works] DA on hold?'³²³ GlobalArchitect Principal-2 added: 'How will we make [the Main Works] DA?'³²⁴ But D&C-Director was unequivocal, perhaps even Shakespearean, stating: 'The [Main Works] DA is not on hold! DA is not on hold!'³²⁵

Perhaps the only response to this was: 'The Lady protests too much, methinks' which Queen Gertrude said of the seemingly unbelievable love expressed by the Player Queen to Hamlet in William Shakespeare's *Hamlet, Prince of Denmark* (1599–1601 [1985])³²⁶ Nevertheless, Global Architect Principal-1 expressed his concerns over the extent of PropertyCo's 'big items', emphasising that his firm's design was meritorious, and now at risk:

³²¹ Pratt, *Logic: Inquiry, Argument, and Order*, 81.

³²² PropertyCo D&C-Director, meeting transcript (16 October 2017).

³²³ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

³²⁴ GlobalArchitect Principal-2, meeting transcript (11 October 2017).

³²⁵ PropertyCo D&C-Director, meeting transcript (11 October 2017).

³²⁶ William Shakespeare, *Hamlet, Prince of Denmark*, (Minneapolis: Lerner Publishing Group, 1985), Act 3, Scene 2. ProQuest Ebook Central. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=5445719>.

We won a competition. There was a competition process. Getting rid of structural elements that were key to the competition: this makes a farce of the competition. How does it relate to [the City's planning officers] and the City?³²⁷

D&C-Director justified his actions on the basis of the Development Budget, stating: 'We have commercial objectives to meet. We have to save \$30m-\$40m'.³²⁸ But GlobalArchitect Principal-1 exclaimed: 'These are radical changes to get to budget!'³²⁹ Despite D&C-Facade suggesting that this situation can be typical on large projects,³³⁰ D&C-Director instructed:

I think the City needs to understand that if the design doesn't work with the developer then there is no building.³³¹

D&C-Director's response was to turn the meeting's attention to the economics at stake, as he saw it. The economic imperative was framed as a 'be-all and end-all' item. It is also worth noting that the economics of the situation are cast as concerning cost only at this moment. Here again, GlobalArchitect Principal-1 protested:

We thought we'd done that, with two processes of design and then value engineering months ago, working through lift lobby redesign, etc. To put up new options that were [considered] before the competition feels like we're going backwards.³³²

The 'two processes of design and then value engineering months ago' to which GlobalArchitect Principal-1 refers relate to the significant re-working of his firm's competition entry design immediately following the architectural design competition (refer to Section 5.2.2). But D&C-Director justified the approach:

These ideas came up in the workshop [VE Session] within 3 hours. Some people [participating] had no background on the scheme. These are the big-ticket items. Let's debate them. If there are technical reasons for them, we'll drop them. But we still have the \$30m-\$40m to find.³³³

The logic of D&C-Director is fascinating. On the one hand the VE items are described as having been the outcome of a 3-hour meeting where some people 'had no background on the scheme', which might lead to a conclusion that the items were thus insignificant or lacked sufficient context to be efficacious. On the other hand, he concludes that these are 'big-ticket items'. There is little stability to this logic, but the context allows one to discern what D&C-Director means. Indeed, it was in Hamlet too, that Shakespeare writes: 'There is nothing either good or bad but thinking

³²⁷ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

³²⁸ PropertyCo D&C-Director, meeting transcript (11 October 2017).

³²⁹ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

³³⁰ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

³³¹ PropertyCo D&C-Director, meeting transcript (11 October 2017).

³³² GlobalArchitect Principal-1, meeting transcript (11 October 2017).

³³³ PropertyCo D&C-Director, meeting transcript (11 October 2017).

makes it so'.³³⁴ Focus then turned to the likelihood of delays to the Main Works DA submission. D&C-Program argued the changes arising from the VE items proposed could not be accommodated in the timeframe.³³⁵ Perhaps instructively, this comment was not acknowledged by other D&C-Team members; indeed, her view aligned with that of GlobalArchitect. Nevertheless, the immediacy of the Main Works DA submission deadline of 2 November 2017 focused the conversation for the remainder of the meeting. D&C-Program reiterated:

If we are locked in by [the] timeframe, then [the] VE items will need to be [included in an amended Main Works DA submission].³³⁶

GlobalArchitect Principal-1 clarified why there would be a delay:

[Production of] renders doesn't happen quickly: we need days [...] Producing renders is a very important part of the DA and we have to put them on hold [...] To be honest all these changes are a delay. Chopping off the [Architectural] Roof Feature is a delay, this is all [for an amended Main Works DA submission].³³⁷

To this, GlobalArchitect Associate added: 'Radical changes! Lots of rework! We need another 2.5 weeks for all this'.³³⁸ But D&C-Director responded: 'No! You're not putting anything on hold!'³³⁹ In light of the apparent impasse, D&C-Program questioned:

So, in parallel, do we develop another [Main Works DA] version [which] we put in [later] as an amendment?³⁴⁰

This was clearly unacceptable to GlobalArchitect Principal-2: 'No parallel teams! [...] That is too much!'³⁴¹ A somewhat more conciliatory GlobalArchitect Principal-1 said: 'We'll pull people out of [our] teams to look at the VE [items] very carefully'.³⁴²

What is fascinating in this dialogue is the degree of resignation which GlobalArchitect seem to carry. They express alarm at the 'radical changes' and the repetitive nature of the process: 'we thought we'd done that' and 'we're going backwards'. But what this dialogue might be hinting at is the degree of exhaustion to which GlobalArchitect have succumbed. Their design has been pulled and poked, subject to the most brutal of VE processes including, arguably, design changes administered by force. In 'The Exhausted' (1995) the philosopher Gilles Deleuze states:

³³⁴ Shakespeare, *Hamlet, Prince of Denmark*, Act 2, Scene 2.

³³⁵ PropertyCo D&C-Program, meeting transcript (11 October 2017).

³³⁶ PropertyCo D&C-Program, meeting transcript (11 October 2017).

³³⁷ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

³³⁸ GlobalArchitect Associate, meeting transcript (11 October 2017).

³³⁹ PropertyCo D&C-Director, meeting transcript (11 October 2017).

³⁴⁰ PropertyCo D&C-Program, meeting transcript (11 October 2017).

³⁴¹ GlobalArchitect Principal-2, meeting transcript (11 October 2017).

³⁴² GlobalArchitect Principal-1, meeting transcript (11 October 2017).

The tired has only exhausted realization, while the exhausted exhausts all of the possible. The tired can no longer realize, but the exhausted can no longer possibilite.³⁴³

It would seem that GlobalArchitect at this point are more than tired, and only slightly less than exhausted. For GlobalArchitect to conduct their own VE exercise following two comprehensive VE processes and the lengthy period of design workshops in which dozens of design issues were identified and debated might work to render the possible quite impossible. Indeed, the VE items identified by GlobalArchitect might reflect their state of exhaustion. Their proposals that the tower be downgraded from 'Premium Grade' to 'Grade A', and the [*Second Street*] Portal be removed demonstrated that they were invested in the VE game, but only to make it clear that the game was itself problematic. Their proposals were never going to fly and might even be considered as *red herrings*, a type of productive distraction. The VE game was problematic for it focused only on cost reduction; there had been seemingly little, if any, effort directed at understanding or attempting to quantify the 'valued outcome for the client',³⁴⁴ something considered as a necessity by D&C-HoE. The cost side of the economic imperative had dominance, but what of the inherent value in GlobalArchitect's design aesthetic? In an interview in February 2018, GlobalEngineer Principal stated that he believed the intense focus on cost had 'taken people's focus away from actually finding the value side of the equation'.³⁴⁵ The identification of the upside in spending was missing. The sense of the possible that GlobalArchitect were contracted to provide was overlooked, leading in the extreme to an unpalatable aesthetic. But, this exhaustion was probably at work within D&C-Team too. They were doing all they could to find cost savings to get the scheme within budget, and meet the close-approaching key program deadline. It was perhaps only logical that they would focus more or less exclusively on cost, as this was the only element they could manage. They were exhausted by the Development Budget with its low rates; they too were facing the unpalatable: costs which they simply could not bring under control.

In an interview in December 2017, DM-Director referred to another unpalatable behaviour, where design changes might be seen to be forced:

That's all very political. We have to be very careful that we're not seen to be bullying the architects, which we're not. That's really important [...] We could never put anything forward to the City that [GlobalArchitect] didn't support. It has to come through the

³⁴³ Gilles Deleuze, 'The Exhausted', trans. Anthony Uhlmann, *SubStance* 24, no. 3 (1995): 3. <https://www.jstor.org/stable/3685005>.

³⁴⁴ PropertyCo D&C-HoE, interview transcript (27 June 2016).

³⁴⁵ GlobalEngineer Principal, interview transcript (12 February 2018).

architect. The architect at this part of the project actually has quite a lot of control and some architects use that more than others.³⁴⁶

However, in a state of exhaustion it might be impossible for GlobalArchitect to draw upon the appropriate degree of control that might be called for. All they could do was drag out the fish to distract the hounds. Nevertheless, in an interview in July 2018, GlobalArchitect stated they were not overly concerned that their design work had been subjected to such rigorous challenge nine months earlier: they believed their design had been developed to respond directly to the ADB, and as such was robust:

You should be able to defend it, right? Because you can't go: "It has to be like that because that's what I want". It's not a great argument, is it?³⁴⁷

GlobalArchitect Principal-2 concurred: 'Some other architects do that: my way or no way! But we're not like that'.³⁴⁸ Indeed, in an interview in October 2017, D&C-Services expressed his surprise at GlobalArchitect's apparent acceptance to their design being subject to such challenge:

Sometimes they seem like pushovers. You know [when we say]: "We're going to delete all this [Architectural] Roof Feature".³⁴⁹

However, in defending their design, GlobalArchitect were keen to differentiate between VE proposals in terms of their overall impact on the integrity of the design. GlobalArchitect Principal-2 stated their firm's philosophy towards VE is:

We like to put the money where it's actually best used [...] If you have to say where? If you had to do something about engineering, clearly the cladding, for example: it is important that it's kept to a certain level of quality because it's what makes a building more timeless and last[ing ...] So, if you badly engineer certain elements you're putting the actual building at risk of ageing fast, and not being able to have that sort of timeless quality that we normally like to achieve in our buildings. That's why in reality, most of our buildings are known to be timeless because we try to be very firm with clients and say: "We can save it on other things, but try to keep it on certain elements that will make your building stay forever".³⁵⁰

Following the VE Item Evaluation meetings, discussion of certain of the VE items continued for several weeks. The Main Works DA for the design developed Rationalised Concrete Scheme (the 'Design Developed Scheme') was finalised and submitted, albeit two weeks behind schedule. This delayed submission, that was deemed impossible by the tired, was here impossibilitated by the exhausted.

³⁴⁶ PropertyCo DM-Director, interview transcript (14 December 2017).

³⁴⁷ GlobalArchitect Principal-1, interview transcript (20 July 2018).

³⁴⁸ GlobalArchitect Principal-2, interview transcript (20 July 2018).

³⁴⁹ PropertyCo D&C-Services, interview transcript (20 October 2017).

³⁵⁰ GlobalArchitect Principal-2, interview transcript (20 July 2018).

5.6 Fifth vignette series: One team; one dream

5.6.1 Introduction

In this section I illustrate how architectural aesthetics and economic imperatives were reconciled, and in particular, how the D&C and DM teams responded to the organisational tension at play between them, a dynamic established following the sale of the NBD site to the NBDJV in December 2016. At this time, the DM business was appointed by the NBDJV as on-going development manager, and with the D&C business preferred main works contractor. Despite both of these businesses being divisions of PropertyCo, this arrangement highlighted their seemingly opposing financial interests in the NBD scheme and created an additional challenge for team members to manage during the detailed design phase. In an attempt to understand how the teams responded to this challenge and effected a reconciliation, firstly, I consider a lively conversation between D&C-Director and DM-Director regarding the requirement, as set-out in the PPI for significant expenditure on public art. Secondly, I focus on discussions at an RP meeting regarding a lighting scheme for the tower, and thirdly on the responses of D&C-Director and DM-Director during interviews. I commence by providing an explanation of the respective financial interests of each team in the NBD scheme.

5.6.2 ‘They don’t believe we’re right’

As a property development organisation, PropertyCo’s profit is generated from two distinct activities: the purchase, development and subsequent sale of a site (development activity), and the provision of construction services to a third party (design and construction activity). In respect of development activity, profit is recognised when the developed site is sold or revalued, measured by reference to the amount of capital invested, and is therefore higher when the contracted sum, charged by the main works contractor for design and construction works, is lower. In contrast, in respect of design and construction activity, profit is recognised on an ongoing basis, (reflecting the stage of completion of the activity) and is higher when design and construction costs incurred are lower, and the contracted sum charged to the site’s owner is higher. Hence, the seemingly opposing financial interests of the DM and D&C businesses in the NBD scheme.

Whilst the application of accounting measurement rules (as set out in the Australian Accounting Standards) to these activities would, ordinarily, be of little interest, where an organisation

conducts both development activity and design and construction activity on the same project, accounting measurement rules set up different and potentially conflicting objectives and interests for the respective divisions of that organisation to manage. Indeed, with PropertyCo being part owner of the NBDJV, and appointed by it as both development manager and main works contractor, these potentially conflicting interests became highly relevant. During the course of the detailed design phase, DM-Team sought to maximise the profit which they anticipated would arise on sale of the scheme following its completion, by contracting for its construction at the lowest possible cost. On the other hand, D&C-Team sought to maximise the profit that would be generated over the period of design and construction works, by contracting their services at the highest possible cost. Accounting metrics, in this sense, set the scene for competitive interactions between the teams, and as a strategy to address possible mistrust which might be expected to arise in such a situation (and had arisen on previous projects), both teams were co-located within a specially dedicated project office established within PropertyCo's premises. In an interview, PropertyCo's D&C business finance manager ('D&C-Finance Manager') referred to mistrust between the teams:

It's better, [but] there has been mistrust [in the past]. The fact that they're all sitting there [co-located] is, I think, phenomenal [...] If [the teams are combined] competitive tension goes away. It causes friction, causes wasted noise, wasted energy, wasted conversations and wasted meetings because they [DM] don't believe we're [D&C] right.³⁵¹

Despite the apparent waste of effort to which D&C-Finance Manager alludes, D&C-CEO stated, in an interview in February 2016, (in reference to PropertyCo's 'model' approach to project management), that tension is something that must be carefully managed in a design setting. But, in this interview he also highlighted that tension might also be seen as desirable in helping to find the right outcome for PropertyCo's development projects, so that they achieve their premise of a:

[S]trong result of design aesthetic, function, performance, and the hard-nosed: let's just build it.³⁵²

PropertyCo's 'model' approach to project management is considered in detail in Section 4.3. This outlines the role of its project managers, which D&C-HoE described, in an interview in June 2016, as the grease that keeps the machine turning:

The project manager's actually saying: we really need to achieve that, and that means you need to give up this, and you'll get that, but you get that, and they all start working. It's greasing all those cogs, but with the aim being a valued outcome for the client. So

³⁵¹ PropertyCo D&C Finance Manager, interview transcript (10 January 2018).

³⁵² PropertyCo D&C-CEO, interview transcript (29 February 2016).

you're not allowed to grease the wheels and just come up with anything, it's got to be in tune with what your client wants.³⁵³

Indeed, project management was seen by PropertyCo as key to the success of its developments, but with its D&C and DM divisions typically working in different organisational silos, and their KPI's based on conflicting metrics, when their respective team members came together to work as one team on the NBD development, an additional and most pressing challenge required careful management. PropertyCo, as one organisation, needed to ensure the potential for mistrust amongst its siloed employees did not work against it in achieving its 'valued outcome for the client', in this case, the NBDJV.

This vignette represents a scale-shift to those earlier. Instead of GlobalArchitect operating as guardian of aesthetics, and PropertyCo as keeper of the dollars, here we see a considered internal dynamic being constructed within PropertyCo itself. Indeed, the tension between the developer and builder is played out under the one roof, and given the conflicting financial metrics at stake, it is little wonder that there has been a history of 'mistrust'. But decisions needed to be made with what the 'client wants' in mind, to achieve the desired 'strong result'. In such a situation, does this installation of a Devil's Advocate assist PropertyCo in finding its desired strong result and therefore become comfortable in the belief that it has made a robust decision, or might this be seen as something far more insidious, such as the installation of the Devil itself, undermining their desired balance? Indeed, if the internal is tense, its external face is made particularly hard.

5.6.3 'It's art!'

In the design workshops and meetings I observed during the detailed design phase, and on a day-to-day basis within the dedicated project office, tension between the DM and D&C teams, where it existed, appeared to be expressed as healthy banter. A dialogue in the team office on Friday, 25 August 2017, relating to the commissioning of public artwork for the scheme, defined most clearly for me, each team's perspective, (albeit in an exaggerated, playful, and perhaps stereotyped way). When D&C-Team openly questioned, within the project office, the significant amount of the Development Budget required to be spent on public art, (the PPI, as outlined in Section 4.2.2.2, specifies that 1% of the scheme's total capital investment value be spent on public artwork,³⁵⁴) DM-Director exclaimed: 'It's art!'³⁵⁵ seemingly justifying the cost. To this, D&C-

³⁵³ PropertyCo D&C-HoE, interview transcript (27 June 2016).

³⁵⁴ PropertyCo and the City, Private Planning Instrument (2016).

³⁵⁵ PropertyCo DM-Director, conversation transcript (25 August 2017).

Director immediately responded, reminding DM-Director that the requirement in constructing/procuring the artwork represents both 'time, and cost!',³⁵⁶ and after a long pause, stated: 'I'm trying to protect PropertyCo's share price!'³⁵⁷ To this, his DM counterpart responded 'so are we, but with a long-term vision'.³⁵⁸ A few moments later she added: 'The [Main Works] DA requires it!'³⁵⁹ But, D&C-Director, seemingly suggesting the public art budget could simply be ignored until the City directed otherwise, replied: 'We have no DA conditions yet',³⁶⁰ and after pausing added 'I can't believe you're looking at this as a positive!'³⁶¹ DM-Director, in reply, said: 'We have to turn it into a positive',³⁶² to which D&C-Director responded 'I don't work in DM'.³⁶³

In this situation the architectural aesthetics at stake relate to the public artwork the NBDJV is required to commission. At this time, the proposed artworks comprised of an installation based on the use of the site by local indigenous communities prior to colonisation, and a series of lighting installations throughout the site's public plazas and laneways. The combination of cultural awareness expressed through art, together with an innovative lighting scheme would, arguably, establish the NBD development as both an informative and visually attractive place for its occupants and visitors. The economic imperatives, on the other hand, relate to the cost of constructing/procuring the artwork, which at 1% of the scheme's total capital investment value, was of a sizable magnitude. The artwork, however, might be expected to not only entice higher paying commercial tenants to the tower, but also encourage visitors to the scheme's public plazas and laneways, generating business for its retailers and providing the NBDJV with justification in charging higher rents for these spaces.

Discussions such as those involving D&C-Director and DM-Director regarding expenditure on art not only highlight the internal tension at stake between the D&C and DM businesses, but they also highlight something about the reconciliation itself. The banter between them is reinforcing of a type of self-parody. The D&C business is always focused on reducing cost. The DM business is always focused on increasing income. It is not that either side does not understand the other, and it is not that either side fails to see its own bias. It does so, with humour. And this is the nature of dualistic constructions more generally, be it master/slave narratives, hetero/homo narratives, left/right political narratives, etc. There is, in such situations, a type of pre-given to the relations.

³⁵⁶ PropertyCo D&C-Director, conversation transcript (25 August 2017).

³⁵⁷ PropertyCo D&C-Director, conversation transcript (25 August 2017).

³⁵⁸ PropertyCo DM-Director, conversation transcript (25 August 2017).

³⁵⁹ PropertyCo DM-Director, conversation transcript (25 August 2017).

³⁶⁰ PropertyCo D&C-Director, conversation transcript (25 August 2017).

³⁶¹ PropertyCo D&C-Director, conversation transcript (25 August 2017).

³⁶² PropertyCo DM-Director, conversation transcript (25 August 2017).

³⁶³ PropertyCo D&C-Director, conversation transcript (25 August 2017).

The left knows very well what the right will say and is already posed against it; and vice versa; and in contemporary neo-liberal societies, we know full well that the left and the right tend not to be that different. Indeed, more often than not they attended the same universities, but still we imagine that there is a value in having both sides heard. It is the interdependencies of both sides that perpetuate the larger structural conditions. Both the D&C and DM figures are most likely interchangeable (one swapping onsite work boots for suede loafers) and both are PropertyCo.

I now turn my attention to an RP meeting on 18 August 2017, at which discussions took place regarding a lighting scheme for the tower, and the addition of twin spires.

5.6.4 'Once you see it with the spires, it is beautiful'

An RP meeting was convened on Friday, 18 August 2017 to discuss the facade of the commercial tower.³⁶⁴ GlobalArchitect Principal-2 presented several ideas for facade animation, in particular a strategy for the southern facade, which had been identified as problematic by the City. This facade was the longest and least varied of all the tower's facades and this concern was outlined in a letter sent to GlobalArchitect in December 2016 by the representative of the NBD architectural design competition adjudicating panel. Whilst there was no particular requirement for animation of the other facades, other than a lighting scheme for the northern-facade, the ADB required that the tower:

[C]ommands institutional recognition with clearly identifiable image and high appeal for tenants, world class, enhance the city's reputation as a global city.³⁶⁵

This somewhat vague and clichéd language arguably provided significant scope for GlobalArchitect's interpretation and design response in its architectural design competition submission. Some nine-months following the conclusion of the architectural design competition, this ADB requirement was clarified by GlobalArchitect Principal-2, when she said: 'The main principle from the facade is the tree, from the competition'.³⁶⁶ Herein, what was referred to as 'institutional recognition; and 'identifiable image' was named: the tree. Responding to this key principle, and perhaps linking it with the requirement in the PPI for artwork, attention turns to the idea of lighting 'the tree'. NBD Architecture Competition Juror-2 ('Juror-2') asked:

³⁶⁴ In attendance were: PropertyCo NBD Architecture Competition Juror-1, PropertyCo NBD Architecture Competition Juror-2, D&C-Director, D&C-Facade, D&C-Structure, D&C-Program, D&C-Leisure, DM-Director, DM-Commercial Tenants-1, GlobalArchitect Principal-2, GlobalArchitect Senior Associate, GlobalEngineer Principal and the author.

³⁶⁵ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

³⁶⁶ GlobalArchitect Principal-2, meeting transcript (18 August 2017).

Are we looking at lighting? How will we bring that in? Are you thinking about having this in, as art?³⁶⁷

Seemingly in agreement, GlobalArchitect Principal-2 replied: 'We need to work on this: the lighting at night'.³⁶⁸ But, at this moment, DM-Director reminded the meeting of the City's aspirations for the scheme: They 'want us to animate the laneways, not prioritise art'.³⁶⁹ Juror-2, mindful of the requirements of both the ADB, and those of the City, advised that animation was something PropertyCo was considering: 'We're looking at what is happening with buildings around the world, [for] options'.³⁷⁰ He then asked, 'How do you animate cities?'³⁷¹ Clarifying her firm's position in this regard, GlobalArchitect Principal-2 said:

We always think illuminating the tree [structural bracing system] is the thing to do [...] and maybe [also] the diagrid [on the east and west facades ... We] proposed polished edges of cladding to pick up light, as we did with [*another development*], which works quite well [...] If we have LEDs in it, there is a much bigger effect in up-lighting the tree. If we put [install] LEDs in the factory [during fabrication] it is much easier to achieve.³⁷²

But D&C-Facade questioned this, having understood that the City was not favourable to the up-lighting of the tree. The City 'said you couldn't do it'.³⁷³ To this, D&C-Director highlighted the City's vague and somewhat confusing position on the lighting of the tree:

Let's be clear about the [City ...] You [GlobalArchitect Principal-3] said: "We're looking at different options".³⁷⁴

Later in the RP meeting, GlobalArchitect Principal-2 displayed a render of the tower showing the mega-columns, (located on the northern facade) extended above the Architectural Roof Feature to create twin spires, each with a height of 30m. This render was met with surprise by those in attendance, perhaps most strongly by D&C-Facade, who was left wondering how this render had passed the attention of the D&C-Team when conducting their review of the material GlobalArchitect were presenting: 'How did you [D&C-Team], let this get through?'³⁷⁵ In response, D&C-Director asked D&C-Facade: 'Did you see this presentation?'³⁷⁶ The D&C-Team were, at this time, somewhat blind-sided. This render had slipped-through the cracks, undermining both the authority and control with which project managers (necessarily) obsess, and it pre-empted a slap

³⁶⁷ NBD Architecture Competition Juror-2, meeting transcript (18 August 2017).

³⁶⁸ GlobalArchitect Principal-2, meeting transcript (18 August 2017).

³⁶⁹ PropertyCo DM-Director, meeting transcript (18 August 2017).

³⁷⁰ NBD Architecture Competition Juror-2, meeting transcript (18 August 2017).

³⁷¹ NBD Architecture Competition Juror-2, meeting transcript (18 August 2017).

³⁷² GlobalArchitect Principal-2, meeting transcript (18 August 2017).

³⁷³ PropertyCo D&C-Facade, meeting transcript (18 August 2017).

³⁷⁴ PropertyCo D&C-Director, meeting transcript (18 August 2017).

³⁷⁵ PropertyCo D&C-Facade, meeting transcript (18 August 2017).

³⁷⁶ PropertyCo D&C-Director, meeting transcript (18 August 2017).

on the wrists. Deflecting this apparent slippage in the review process, D&C-Facade described the twin spires as: 'A great idea, before we cost it'.³⁷⁷ But D&C-Director was more direct, responding perhaps, both in reaction to the negative affect of being blind-sided by the render, and at the cost required in its execution: 'Let's understand it, before we kill it'.³⁷⁸ For D&C-Director, the element of surprise had not only undermined his control, but might have also, simultaneously worked to undermine the case for the twin spires.

At this moment, DM-Director contributed to the unfolding discussion, expressing her opinion regarding the twin spires, and it seems, the ARF: 'It looks more elegant without the box [ARF] around it'.³⁷⁹ In response, GlobalArchitect Principal-2 clarified her firm's position on architectural roof features:

[This City] is OK. Dubai is outrageous. Simplicity for [the] top of [a] tower is generally what we recommend as a practice.³⁸⁰

Following a period of silence, during which attendees studied the displayed render of the tower with its newly added spires, D&C-Facade asked, in an attempt at finding a resolution: 'Do we go with spires in the [Main Works] DA?'³⁸¹ DM-Director replied: 'We need to understand the cost of it'.³⁸² But, in response to the apparent lack of any definitive opinion being expressed, by either the D&C or DM teams, GlobalArchitect Principal-2 referred to the superior aesthetics achieved by adding the twin spires to the tower: 'Once you see it with the spires, it is beautiful!'³⁸³ Here we have a sense of Immanuel Kant's 'aesthetic idea' from *Critique of Judgment* (1790 [1987]), the animating principle:

[W]hich prompts much thought, but to which no determinate thought whatsoever, i.e., no [determinate] *concept*, can be adequate, so that no language can express it completely and allow us to grasp it.³⁸⁴

But, D&C-Director questioned: 'Would you remove the [architectural] roof features to pay for the spires?'³⁸⁵ At this moment, DM-Director interrupted, clarifying PropertyCo's response, which seemingly equated the twin spires with other aspects of the NBD design, which too, were the subject of ongoing deliberation:

³⁷⁷ PropertyCo D&C-Facade, meeting transcript (18 August 2017).

³⁷⁸ PropertyCo D&C-Director, meeting transcript (18 August 2017).

³⁷⁹ PropertyCo DM-Director, meeting transcript (18 August 2017).

³⁸⁰ GlobalArchitect Principal-2, meeting transcript (18 August 2017).

³⁸¹ PropertyCo D&C-Facade, meeting transcript (18 August 2017).

³⁸² PropertyCo DM-Director, meeting transcript (18 August 2017).

³⁸³ GlobalArchitect Principal-2, meeting transcript (18 August 2017).

³⁸⁴ Immanuel Kant, *Critique of Judgment*, trans. Werner Pluhar (Indianapolis: Hackett Publishing Company, 1987), 182.

³⁸⁵ PropertyCo D&C-Director, meeting transcript (18 August 2017).

It is a matter of proportion, for looks. We need to look at [the relative cost of installing expensive facade] glazing versus [the] spires versus [the effect of these on] leasing.³⁸⁶

Indeed, in an interview in October 2017, D&C-Services had stated, when referring to GlobalArchitect's Competition Submission Steel Scheme (submitted to the NBD architectural design competition):

I think clarity of glass is going to be really important, but we're probably going to scrap [expensive] glass because we can't afford it.³⁸⁷

Perhaps, it seems, expensive glass was never going to be something PropertyCo would seriously consider. The logic here is similar to that expressed in statements like: 'Let's understand it, before we kill it'. The reconciliation herein might be considered just as concocted as the tension within PropertyCo, for we all know the answer. The answer is 'no', but before we get to 'no' let's consider the options. Reconciliation in this situation is more like recognition: recognition of the only way the discussion will go; recognition of the overarching power of the purse-strings; recognition of the dominance even within the notion of economic imperatives that fixates more on cost than income.

In order to achieve the foregone conclusion and mindful of the seemingly all-conquering tree metaphor, which on-going design work continued to reference, D&C-Program said of the twin spires, somewhat dismissively: 'I wonder whether it relates to the concept of the tree? It looks like chopsticks'.³⁸⁸ Slap! This was more a face slap than a wrist slap. This comment seemed to help clarify the views of DM-Director, who then stated her preference, unequivocally:

If choosing between [the] lighting scheme or [the] spires, then I go with [the] lighting scheme.³⁸⁹

Despite, only a few moments earlier, having described the tower as 'beautiful' with the addition of the twin spires, GlobalArchitect Principal-2 concurred with DM-Director on what was the key aesthetic to pursue: 'Oh, definitely! The lighting scheme'.³⁹⁰

Indeed, the architectural aesthetics at stake in this situation relate to the night-time visual effect of up-lighting the tower's structural bracing system (that is, the tree). Against this, DM-Director also needed to consider the addition of the twin spires, or the quality/transparency of the glass to be specified for the facade. As GlobalArchitect Principal-2 qualified so assertively, the tower is 'beautiful [...] once you see it with the spires'. But it wasn't, it seems, as beautiful as it might be if

³⁸⁶ PropertyCo DM-Director, meeting transcript (18 August 2017).

³⁸⁷ PropertyCo D&C-Services, interview transcript (20 October 2017).

³⁸⁸ PropertyCo D&C-Program, meeting transcript (18 August 2017).

³⁸⁹ PropertyCo DM-Director, meeting transcript (18 August 2017).

³⁹⁰ GlobalArchitect Principal-2, meeting transcript (18 August 2017).

the structural bracing system was lit, because the lighting scheme was GlobalArchitect Principal-2's clear preference, and therefore the up-lighting of the tree was reinforced as the key architectural aesthetic at stake. A lighting scheme emphasising the tree would indeed be visually striking, and presumably address the ADB's clichéd requirements regarding image. On the other hand, the economic imperatives at stake in this situation relate to the costs, (albeit at this stage unknown) of providing a suitable lighting scheme to up-light the tree, of constructing the twin spires, or in respect of the glazing to be specified for the facade, (notwithstanding D&C-Services opinion that it was not something they could 'afford').

Costs for a lighting scheme or the twin spires were not included in the Development Budget and as such represented an additional cost that D&C-Team would predictably view unfavourably, as budgeted costs continued to exceed the Development Budget. The glazing system, on the other hand, was a budgeted element, but determination of the most appropriate glass to specify for the facade would require further work, with its own, presumably unfavourable, budgetary effect. Despite these apparent constraints, it would be difficult to argue that the lighting scheme, the twin spires, or even a more expensive glazing system would not contribute to the leasing credentials, and therefore profitability of the scheme. At this time, however, this was an unknown and as such, a reconciliation between the architectural aesthetics and economic imperatives at stake appeared elusive. Nevertheless, in an interview in October 2017, DM-Director explained, quite instructively, how she works with her D&C counterpart in the allocation of the Development Budget:

In terms of the balance between spending money and not overspending, so making it feasible, I think it comes down to just having, taking, a commercial view on things, and that's really important: for my role is that I have to be thinking very commercially [...] Most of those things that are product enhancements you can put [in], that some people might think were flamboyant, pretty much all of them I could justify for a commercial reason, so for instance [...] lighting the upside of the building. [D&C-Director] will say: "Nah, we don't need to do that, that's ridiculous, you know that we don't [have the budget]. If we had the budget, clearly we'd do it". But that would be one of the first things that he would cut out of the cost. I would take a very firm view in the other direction, that that's going to really be the element that shows off the iconic nature of the architecture in the skyline [...] and that for our tenants and our investors who are looking for this world-class product, that's what matches this tower with [*GlobalArchitect's most publicly known and commended works of architecture located overseas*] so I would look at it from that perspective, even though I do think that it will look beautiful, and I love that idea. It's not just because it will look beautiful – it's got to be. I have to put a commercial view on it as well, so from an investor's perspective, from an appetite for investors to seek out that building as part of their portfolio: that will put us a step ahead of competition.³⁹¹

³⁹¹ PropertyCo DM-Director, interview transcript (11 October 2017).

This commercial view, it seems, prioritised the up-lighting of the tree, despite the resistance from both D&C-Team, (in terms of its cost) and the City, (in terms of what they wanted to be prioritised). But, DM-Director, by stating that ‘it’s got to be beautiful’ and at the same time ‘having to put a commercial view on it as well’ has highlighted the aspect of her role as DM-Director, which is not only difficult, but operates in a poised tension with itself. Indeed, an individual product enhancement might well be both beautiful and commercially viable in the sense that it would attract investors, but such a situation might not always eventuate. And herein is the issue of the two sides of any profit and loss calculation: income and expense. This discourse, and so many of the vignettes we have considered above, operated only on the expenses side of the equation, without the income side being considered in any particular formal sense. It’s such an odd point of fixation for those that also know an investor has ‘an appetite’ for that which is aesthetically pleasing. The income side of the equation is that beauty, without commercial viability, was not true beauty in any substantive sense. Indeed, there was little, if any, desire for adoption of twin spires, despite GlobalArchitect Principal-2’s claims that they make the tower ‘beautiful’. Perhaps an architect’s claims of beauty could be simply dismissed on commercial grounds, or that lighting of the tree was seen as a more beautiful outcome, because it related to the tree metaphor. This, it seems was GlobalArchitect’s choice too. Although everyone had an appetite for aesthetics, no one wanted to dine with chopsticks.

5.6.5 One team; one dream

In an interview in August 2017, D&C-Director explained how he works with his DM-counterpart in respect of budget allocation:

My client won’t let me build something that isn’t commercial or isn’t right for the market. So, I’m the D&C contractor. I have [*DM-Director*] that also has a responsibility in defining the product. So yes, I could build a cheaper building, but she probably won’t be very happy with it.³⁹²

So in a sense, tension is managed with reference to what the commercial property market demands the ‘product’ to be; with a ‘cheaper building’ presumably lacking in the necessary commercial capacity by way of ‘beauty’. But in a situation where costs are prohibitive, and it is difficult to determine which design elements should remain, and those which should be abandoned, DM-Director explained she relies on the guidance of the architect:

Well, firstly I think it’s making sure that you’ve got the balance right so looking at where, when, obviously you’ve got a budget so some things have to compromise where the value

³⁹² PropertyCo D&C-Director, interview transcript (30 August 2017).

should sit, like where you should be focusing your funding when you become tight of funds, but if I have those conversations with [D&C-Director], I guess I will be in my head assessing whether I think it's important to our product, so whether it's important to our customer, whether it's important to our vision for the project to be [...] this iconic tower in the sky and if I have to test, particularly when it comes to design elements, I'd always look for the architect to try and get a sense of whether the architects' committed to what they've got on the table. So, I think that's really important, and I've got a lot of trust in [D&C-Director], but [we] don't always agree on where we want to put funding or what we want to focus the design on, so I know that he will have done that robust [cost] review before it would have come to me in any case, but we will often have a bit of a, you know, discussion or debate around certain elements, but in those [RP meeting] presentations I'm always looking for the architect to be behind what they're presenting, rather than feeling as though they're being compromised and having to put something on the table.³⁹³

Reconciliation, therefore, relies on two outcomes. Firstly, D&C-Director (and his team) will perform the 'robust' cost review, which might have already removed some design elements which the architect had championed. Indeed, GlobalArchitect, and GlobalEngineer for that matter, were contracted separately to PropertyCo's D&C business, not its DM business. DM, in this sense, rely on the D&C business not to have argued for, and been successful in, removal of design elements which DM would themselves see as important to their vision. Thomas Fisher argues in *In the Scheme of Things: Alternative Thinking on the Practice of Architecture* (2000) that these might be the very elements which 'added value in the first place'.³⁹⁴ Secondly, DM would need to place their faith in the architect to articulate the inherent beauty and then determine for themselves whether this beauty might be considered as commercial. But, Fisher points to the difficulty of the architectural profession in demonstrating their value:

The difficulty we [architects] have in demonstrating our value is tied to the larger problem of our economy's unwillingness or inability to put a value on a building user's happiness, a community's aesthetic pleasure, or the accommodation of future generations. Our value is tied to protecting something that economists, at least, do not put a price upon.³⁹⁵

In this sense, DM-Director's desire for the architect to be behind what they are presenting, to argue for the aesthetics at stake, the beauty, is made all the more difficult because their value is unpriced and therefore considered elusive. This whole process is something of a tall order, particularly when 54-stories are at stake, and deliberated over a long period, with conflicting financial objectives in play. The product on offer might, or might not, represent commercial beauty.

³⁹³ PropertyCo DM-Director, interview transcript (11 October 2017).

³⁹⁴ Thomas Fisher, *In the Scheme of Things: Alternative Thinking on the Practice of Architecture* (Minneapolis: University of Minnesota Press, 2000), 28.

³⁹⁵ Fisher, *In the Scheme of Things*, 31.

The value of an internal tension, the tensions of income and expense, and of beauty and return here is fascinating. The co-presence of both within the one system is operative and the resolution is almost pre-programmed. Capitalism itself, for Karl Marx (and figures such as Thorstein Veblen) represents this type of tension that perpetuates itself. Marx's conceptualisation of capitalism is both production and anti-production. In *Das Kapital: A Critique of Political Economy* (1867 [2012]) he notes that the value of any product is a compaction of both a 'use-value'³⁹⁶ which is the economic imperative of actual costs that go into a production and 'exchange value'³⁹⁷ which relates to the near irrational and indeed 'mystical' fetishisation and aestheticisation for certain things. Capitalism encompasses both. Indeed, in *Urban fortunes: the political economy of place* (2007) John Logan and Harvey Molotch refer to exchange value in relation to the nuances of buildings:

Office space on the top floor of a skyscraper is more desirable than the same square footage just one floor below.³⁹⁸

Similarly, in *The Theory of The Leisure Class* (1899 [1998]) Thorstein Veblen suggests that value is so often divorced from anti-production and is thus not an escape from capitalism: it's already encompassed. Veblen writes:

The only practicable means of impressing one's pecuniary ability on these unsympathetic observers on one's everyday life is an unremitting demonstration of ability to pay.³⁹⁹

Leisure time is indeed part of production, and every piece of music or sunrise has a price attached. That is, capitalism is equally at home with production (economic production) as it is with leisure, art, music, etc., capturing the tension of both economic imperatives and aesthetic drives. When both are interwoven, (albeit in tension) within the one system, (let's call this PropertyCo) a highly productive, resilient and almost self-compelling mechanism is operating. Mistrust between the D&C and DM teams was always going to be reconciled. As D&C-Services reminded the supposedly opposing teams of PropertyCo during the detailed design phase on several occasions, with impeccable comic timing: 'One team, one dream'. The idea, therefore, of the architect as an outside force to PropertyCo, is an odd one, because what GlobalArchitect were up against is already contained within PropertyCo in the form of DM-Director. The logics offered by the architect have already been pre-empted, articulated and codified in the ADB and in the meeting rooms

³⁹⁶ Karl Marx, *Das Kapital: A Critique of Political Economy*, ed. Friedrich Engels (Washington D.C.: Regnery Publishing, 2012), 19. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=909542>.

³⁹⁷ Marx, *Das Kapital: A Critique of Political Economy*, 20.

³⁹⁸ John Logan and Harvey Molotch, *Urban fortunes: the political economy of place* (Berkeley: University of California Press, 2007), 25.

³⁹⁹ Thorstein Veblen, *The Theory of The Leisure Class* (New York: Prometheus Books, 1998), 87.

thereafter. In many ways, it is arguable that the overall outcomes for the design of the tower were already determined. This was always going to be a building resolved. Not necessarily beautiful, but definitely built.

5.7 Sixth vignette series: *Politicking*

5.7.1 Introduction

In this section I consider how architectural aesthetics and economic imperatives were reconciled in the frame of ‘design excellence’. But in this particular illustration, instead of focusing on the detailed design phase (ahead of the submission of the Main Works DA to the City), I consider the period immediately following the submission of the Main Works DA in mid-November 2017 to understand how the architectural aesthetics and economic imperatives that were at stake were reconciled through what DM-Director referred to, in an interview in December 2017, as ‘politicking’.⁴⁰⁰ The PPI executed between PropertyCo and the City⁴⁰¹ granted PropertyCo the right to develop an additional 10% GFA and therefore additional NLA in the tower, providing that the winning scheme, the Rationalised Concrete Scheme, demonstrated ‘design excellence’. This required PropertyCo to conduct a competitive architectural design competition and for GlobalArchitect, to submit a statement accompanying the Main Works DA confirming that following the detailed design phase the scheme (the ‘Design Developed Scheme’) continued to exhibit the equivalent ‘design excellence’ qualities of the Rationalised Concrete Scheme. For PropertyCo, it was of critical importance that the Design Developed Scheme demonstrated equivalent ‘design excellence’; for delays arising from the City’s granting of development consent (including the additional 10% GFA) had the potential to result in delays in the commencement of construction works, with the likelihood of significant additional cost. I commence by considering the unfavourable reception the NBD tower received publicly, following submission of the Main Works DA.

5.7.2 ‘Ho-humness’

A press article⁴⁰² published shortly after the Main Works DA was submitted in November 2017, showing side-by-side renders of the Rationalised Concrete Scheme and the Design Developed Scheme, posed the question of whether the competition winning design had been compromised during the detailed design phase. Members of both D&C-Team and DM-Team expressed

⁴⁰⁰ PropertyCo DM-Director, interview transcript (14 December 2017).

⁴⁰¹ PropertyCo and the City, Private Planning Instrument (2016).

⁴⁰² For the purposes of anonymity, this press article is not referenced.

considerable alarm at the publication of the press article, commenting that the comparison of competition winning schemes pre and post design development was not something that is typically highlighted by the press. Nevertheless, in an interview in February 2018, GlobalEngineer Principal informed me that GlobalArchitect had presented the Design Developed Scheme at an industry conference and there had been what he detected to be: 'A bit of ho-humness in the crowd – [it was] a bit underwhelming'.⁴⁰³

When interviewed in December 2017, DM-Director clarified that the principal concern expressed in reference to the Design Developed Scheme was that the structural bracing proposed for the north facade 'was too simplistic'.⁴⁰⁴ Ironically, the structural bracing system included in GlobalArchitect's design submitted to the architectural design competition (the 'Competition Submission Steel Scheme') had been described by the competition adjudicating panel as 'too decorative'.⁴⁰⁵ It was subjected to a rationalisation process before it was announced as the winning scheme. This is considered in detail in the series of vignettes related to Structural Design in Section 5.2. DM-Director added:

It [concern that the design was too simplistic] was particularly highlighted in the press article [...] which showed the design competition scheme [Rationalised Concrete Scheme]. So, it wasn't just me, it was everybody.⁴⁰⁶

Accordingly, it is arguable that the architectural aesthetics and economic imperatives at stake in this situation were being driven by public opinion. The removal of the series of folds in the structural bracing system certainly made for a less animated northern facade, and therefore aesthetic, but this potential rendering of the tower as less of the landmark (which the ADB required it to be), might not only work to dampen interest from future tenants and the amount of lease income generated, but also impair PropertyCo's reputation. DM-Director informed me that the reconciliation effected, that is, PropertyCo's response to the negative publicity was to 'change the north facade quite dramatically',⁴⁰⁷ in comparison to the Design Developed Scheme submitted to the City in the Main Works DA, and that they were working with GlobalArchitect to this effect. This, of course, represented something of a U-turn. Running concurrently with design development of the Rationalised Concrete Scheme was a separate design project which explored the potential for the scheme to be constructed in steel. As described in Section 5.2.5.5, the Organic Steel Scheme was subsequently adopted in late December 2017, superseding both the

⁴⁰³ GlobalEngineer Principal, interview transcript (12 February 2018).

⁴⁰⁴ PropertyCo DM-Director, interview transcript (14 December 2017).

⁴⁰⁵ Letter from representative of the NBD architectural design competition adjudicating panel to GlobalArchitect (16 December 2016)

⁴⁰⁶ PropertyCo DM-Director, interview transcript (14 December 2017).

⁴⁰⁷ PropertyCo DM-Director, interview transcript (14 December 2017).

Rationalised Concrete Scheme and Design Developed Scheme. But at this time when DM-Director needed to address the negative publicity in the press article and the ‘ho-humness’, a decision on adoption of a steel scheme had not been made.

5.7.3 ‘Politicking’

In respect of GlobalArchitect’s proposed revisions to the structural bracing system of the Design Developed Scheme, PropertyCo’s DM-Director informed me that conversations had commenced with relevant City planning staff, and in particular the members of the panel who would consider whether the intent of the original design competition had been satisfied. Indeed, the scheme needed to demonstrate equivalent, between (what the City refers to as) ‘design excellence qualities’ and those of the Rationalised Concrete Scheme. DM-Director spoke of the balancing act this required:

[The Design Developed Scheme] is a lot more cost-effective. It’s easier to build. But, trying to balance the expectations of [the City], because we’ve got a design scheme that was the competition-winning scheme, which was very elaborate in terms of bracing, so we need to make sure that we keep the City onside.⁴⁰⁸

With some relief, she indicated that one of the panel members had expressed his view that the proposed changes to the Design Developed Scheme were something he could support,⁴⁰⁹ removing, perhaps one of the biggest hurdles. But the proposed changes also needed to be agreed to both within PropertyCo, and by the NBDJV.

To this end, DM-Director informed me the revisions to the northern facade were presented to the two PropertyCo executives who had been adjudicating panel members of the NBD architectural design competition, and quickly received their ‘sign-off’.⁴¹⁰ She added that the design revisions would be ‘locked-in’⁴¹¹ with the NBDJV, initially via telephone and then more formally at the NBD Project Governance Committee (‘PGC’) meeting scheduled in January 2018. She outlined this process as ‘politicking’,⁴¹² noting it would require a very quick turnaround:

We have to back ourselves that we’re going to go to all these next forums. So, they’re not actually a formal sign-off, but I guess it comes back to this whole lobbying process. You seek support from the right people in the business that you know are going to have the ear of our executive. So, if [NBD Architectural Design Competition adjudicating panel member] walks in and says: “I’m happy with it”, I know that gives me a better chance of

⁴⁰⁸ PropertyCo DM-Director, interview transcript (14 December 2017).

⁴⁰⁹ PropertyCo DM-Director, interview transcript (14 December 2017).

⁴¹⁰ PropertyCo DM-Director, interview transcript (14 December 2017).

⁴¹¹ PropertyCo DM-Director, interview transcript (14 December 2017).

⁴¹² PropertyCo DM-Director, interview transcript (14 December 2017).

convincing [DM-CEO (PropertyCo's DM business CEO)] and others. But really, I have to always consider that the NBDJV is our formal sign-off. But typically, the NBDJV, other than one person from [its 50% equity participant], is only interested in the financial metrics, so the focus with them is going to be: "This is cheaper and faster and less risk".⁴¹³

This suggests that PropertyCo's pursuit of the NBDJV to obtain 'formal sign-off' of GlobalArchitect's design changes to the structural bracing system, is the key economic imperative at stake at this moment, for 'formal sign-off' equated solely to a financial metric. Whilst obtaining this 'formal sign-off' was intended to provide certainty to the NBDJV's equity participants, (perhaps foremost among them being PropertyCo given their management of the NBDJV), by attempting to reconcile a 'formal sign-off' with the form of the proposed changes to the structural bracing system, it comes with the risk that the logical fallacy of '*equivocation*' has been invoked, in which 'incompatible referents',⁴¹⁴ as explained by Pratt, are used to support an argument. Whilst an equivalence might be established, two elements with different logics have been placed alongside one another, and the case presented that 'x' equates to 'y', even when 'x' and 'y' are radically different. In this case, an aesthetic 'ho-humness' was balanced out by a 'politicking' to achieve an economic imperative and the financial metric.

Indeed, it is not possible to reconcile a committee's sign-off with a bracing system. Perhaps the lack of common denominator driving this situation, in which an attempt was, seemingly, made to equate the notions of quality with quantity, is attributable to the somewhat amorphous nature of public opinion. In the language of the DM-Director this question of a reconciliation of incompatible terms tends to be framed around the idea of what would count as a 'formal' acknowledgement and an informal opinion. A 'formal sign-off' seems to trump the informal opinion of ho-humness. The right formal support from 'the right people' tends to be what is required to suppress the formlessness of public opinion.

In *Visions of Excess* (1927–1939 [1985]) philosopher Georges Bataille wrote of the 'formless' ('L'informe'):

A dictionary begins when it no longer gives the meaning of words, but their tasks. Thus, *formless* is not only an adjective having a given meaning, but a term that serves to bring things down in the world, generally requiring that each thing have its form. What it designates has no rights in any sense and gets itself squashed everywhere, like a spider or an earthworm. In fact, for academic men to be happy, the universe would have to take shape. All of philosophy has no other goal: it is a matter of giving a frock coat to what is, a mathematical frock coat. On the other hand, affirming that the universe resembles nothing and is only *formless* amounts to saying that the universe is something like a spider or spit.⁴¹⁵

⁴¹³ PropertyCo DM-Director, interview transcript (14 December 2017).

⁴¹⁴ Pratt, *Logic: Inquiry, Argument, and Order*, 79.

⁴¹⁵ Georges Bataille, *Visions of Excess*, trans. Allan Stoekl (Minneapolis: University of Minnesota Press, 1985), 31.

Public opinion might be viewed as formless in this sense: its continuing dialogue ensures that whatever it suggests will ultimately be squashed, by its layers of conflicting views. Whether it is over articulated like the 'spider', or without any type of shape like the 'spit', it nevertheless, in this case, motivated a particular set of actions. The public's desire for an overly-articulated structural bracing system, (the 'spider') seemingly out-manoeuvred the 'ho-hum' Design Developed Scheme submitted in the Main Works DA (the 'spit'). And, PropertyCo's response to this, by attempting to reconcile the newly proposed built form with a 'formal sign-off', demonstrates a somewhat remarkable type of politically driven activity: a reconciliation via 'politicking'.

5.8 Summary

In this Chapter I have highlighted, through a series of vignettes, how architectural aesthetics and economic imperatives were reconciled. The vignettes were organised to demonstrate the particular design complexities and uncertainties the teams negotiated.

The first series of vignettes occurred under the heading, 'structural design', and described the rationalisation of GlobalArchitect's super-transparent and crystalline architectural design competition entry—which had been designed to maximise flexibility—before it was announced as the competition winner. In its new guise it was less decorative and would be constructed in reinforced concrete. The 'tree' was established as the remnant architectural aesthetic, in the form of the structural bracing system. But this form was not efficient. It needed an intrusive column inserted, or a nib wall extended, into the floor space of the highest yielding high-rise floors. There was difficulty in accommodating the insertion of voids/atria between floors, and an expensive transfer beam was required to satisfy GlobalArchitect's desire for the tower to float above its [*Second Street*] entrance. To help make sense of the arguments promoted by the teams in enacting reconciliations, the logic of their premises was examined, and identified a number of logical fallacies. Indeed, the redesign of the tower as less decorative and constructed in concrete was based on an argument which worked against the fundamental nature of the tower's design: its flexibility. The 'rationalised' design also worked against innovation. But the tree metaphor became rooted in a design sense, and I turned to the philosophy of Blanchot. This was particularly instructive as a reminder that this aesthetic could no longer be reached.

The narrative between the forces of architectural aesthetics and economic imperatives was posed as a duality of the 'hard' and the 'soft'; the hardness of economics and structure and the softness of the aesthetics. This was despite the hard being inefficient, inflexible and as it turned out, just as costly as construction in steel. But the dye had been set. When the scheme was again—towards the end of the detailed design phase—redesigned for construction in steel, the structural bracing system continued its resemblance to a tree, by force. The philosophy of Gould was helpful here. The aesthetic discourse related to a consistency in geometry and structure, but the economic discourse related to a consistency between the flow of force and the flow of dollars required to resist that force. The 'beauty' of the economic theory which the structural engineers were pursuing, was undermined by the necessity of the tree, and in itself, inefficient. The more dramatic of the steel design options was subsequently adopted, despite considerable resistance.

There was 'a good leasing outcome'⁴¹⁶ and GlobalArchitect could then focus on the choice of colour of the structural bracing system as an expression of the structural forces at play. Aristotle's theory of hylomorphism, the interchangeability of form and matter, was helpful in understanding this situation. But Simondon takes a contrary view: that form and matter are always entwined, with one only rhetorically dominating the other.

A second section, containing one vignette, looked at '*environmental and sustainable design*'. The tower needed to satisfy certain sustainability requirements focusing on the well-being of its occupants and to maximise light, but not to the detriment of views. To make sense of the reconciliation effected in this paradoxical situation, the logic of the contentions made by the teams was considered. Whilst this logic was in fact, illogical, it brought about a resolution in which external shades were placed only where they were considered as essential, and the much-desired sustainability points were secured.

A third series of vignettes considered the scheme's '*urban design*'. PropertyCo attempted to win the City's support for a narrow staircase, a level upper plaza and that 'architecturally horrible' fixed awnings would not be used. They presented the City with an extreme in the hope that the City would see their proposals in a favourable light, whilst at the same time de-emphasising what they did not want the City to see. Deleuze and Guattari's concept of paralogism was considered to help illuminate the underlying contentions in this situation. PropertyCo invoked a paralogism of displacement, but this worked against them. Indeed, the City responded with their own, despite PropertyCo's attempts at a compromise. The reconciliation enacted was subject to the somewhat Kafkaesque notion of 'indefinite postponement' which threatened the financial viability of the whole scheme.

A fourth series of vignettes focused on the '*value engineering*' exercise. Despite considerable effort in identifying cost savings, and the constant refrain from D&C-Director to that effect, the scheme remained stubbornly over budget, or the budget remained underfunded. Either way, an extensive value engineering exercise was commenced in early October to identify \$30m-\$40m in savings. This involved 'blue-sky thinking' at a specially convened VE Session, caveated with a series of non-negotiables: 'design excellence', the resemblance to the tree and the tower's designation as 'Premium Grade'. VE items proposed included the placement of the structural bracing system behind the curtain wall facade and mimicked externally by transoms, the western half of the ARF was to be removed and its eastern half integrated with the adjacent plant room, the City Garden would be deleted, the grandeur of the main lobby would be curtailed and individual floors would

⁴¹⁶ GlobalArchitect Principal-1, meeting transcript (21 December 2017).

be finished as a 'cold shell'. GlobalArchitect conducted their own VE exercise and proposed the downgrading of the tower from 'Premium Grade' to 'Grade A' and the removal of the [Second Street] Portal.

In making sense of the arguments put forward by PropertyCo, which were at times quite brutal, I drew from the philosophy of Sun Tzu. In his military treatise, he explains how to win a battle. This was particularly insightful, but so too was that of Sartre, in identifying the bad faith at work when PropertyCo 'adopted' the role of architect. The biophilosophy of Gould was also instructive in consideration of the structural bracing system's mimicry on the tower's facade. During the VE process, a number of illogical contentions were made in support of particular arguments. There were moments where appeals to authority were enacted, false dilemmas presented, and clear prejudices were at play. There were also instances of what appeared to be an element of laziness. Indeed, the teams were tired after months of continuous redesign, possibly exhausted, and no longer as capable to possibillitate on request.

A fifth series of vignettes occurred under the heading, '*one team; one dream*', which considered the tension between PropertyCo's D&C and DM teams following the appointment by the NBDJV of PropertyCo as both development manager and preferred main works contractor. This provided for the most fascinating of organisational concoctions resulting in teams with opposing financial metrics. The tension between them was a feature of the detailed design phase and at times played itself out as a self-parody, particularly in the dialogue concerning expenditure on public artworks, and later when a choice was to be made between a lighting scheme for the structural bracing system, or the addition of twin spires. To make sense of the contentions at play and understand how reconciliations were enacted, I turned to Marx and Veblen. Indeed, what was missing in the team's deliberations was an analysis of the additional income which the artwork, the lighting scheme or the twin spires might have generated. 'Use' value, in the Marxist sense was most present given the fixation on cost, but 'exchange' value was not, and capitalism might not have been able to perform as intended. Perhaps it was a case of: one dream; different beds?

A sixth and final series of vignettes was presented under the heading, '*politicking*'. Following submission of the Main Works DA, the 'Design Developed Scheme' did not receive the public fanfare PropertyCo had hoped for and was considered at an industry conference as 'ho-hum'. This negativity had the potential to render the tower as less of a landmark than it needed to be, working to depress both lease yields, and PropertyCo's reputation with it. DM-Director 'politicked' to win the support of executives within PropertyCo and members of the NBD architectural competition adjudicating panel: to 'sign-off' on the design changes and thereby fix the problem. A 'formal sign-off' was reconciled with the aesthetic qualities of the structural bracing system. To help understand the contentions in play in this situation, the fallacious nature

of the logic employed was identified, and subsequent analysis informed by the philosophy of Bataille. The reconciliation enacted relied on an equivocation, and the amorphous nature of public opinion, with its layering of conflicting and therefore formless viewpoints, was quite effectively: squashed.

In the next Chapter I provide a conclusion to this research. In addition to highlighting opportunities for further research, it focuses on the 10 modes of reconciliation that occur in resolution of the dualism at play between the architectural aesthetics, and economic imperatives, in the vignettes described in this Chapter.

6 CONCLUSION

6.1 Introduction

The aim of this dissertation was to explore and understand how architectural aesthetics and economic imperatives are reconciled in complex, interdependent and contingent building design processes. I posed the question: how are the architectural aesthetics and economic imperatives at stake in the development of a commercial skyscraper reconciled during the detailed design phase? Drawing from observations made during a long period of immersion within a large property development organisation, the dissertation revealed how key design decisions were made as the competition winning scheme for the 54-storey NBD tower was subjected to a rigorous process of design development and value engineering in anticipation of being awarded planning approval.

As I commenced this research, I revisited Rem Koolhaas's *Delirious New York* (1994), which describes the theory of *Manhattanism* in which humankind lives in a totally fabricated and congested world, a property developers' paradise: 'The urbanistic doctrine that suspends irreconcilable differences between mutually exclusive positions'¹ is considered by Koolhaas as 'the only program where the efficiency intersects with the sublime'.² This image, in so many ways, summates the focus of this dissertation. In a chapter which describes the design of Rockefeller Center in Midtown Manhattan, Koolhaas refers to the incompatibles inherent in its design brief; elements that could not be brought together, except it seems without the representative of *Manhattanism*. This person was Raymond Hood, an architect who, without developing psychological problems, transcended the double paradox inherent in the brief:

Combine the maximum of congestion with the maximum of light and space, and all planning [...] should be based upon a commercial centre as beautiful as possible consistent with a maximum income that should be developed.³

Indeed, Rockefeller Center was designed and constructed without any tenants. This allowed the architects to pursue a form of 'purism' (or should we call it 'maximalism'?) which brought together 'beauty, utility, dignity and service',⁴ as described by its owners. In *Form Follows Finance* (1995), Carol Willis refers to Hood as someone who was able to manipulate both his clients and the zoning envelopes to produce unconventional buildings, and at the same time address the

¹ Rem Koolhaas, *Delirious New York* (New York: Monacelli Press, 1994), 162.

² Koolhaas, *Delirious New York*, 174.

³ Fortune cited in Koolhaas, *Delirious New York*, 178.

⁴ Rockefeller Center, Inc. cited in Koolhaas, *Delirious New York*, 207.

economic considerations of yield and cost.⁵ But Koolhaas describes the lament of this design outcome, its victim a skyscraper in 'pragmatic camouflage',⁶ referencing Benjamin de Casseres: 'I am Business. I am Profit and Loss. I am Beauty come into the Hell of the Practical'.⁷

But is this necessarily a bad thing? After all, it was only an office building. Louis Sullivan considered the aesthetics of an office building in *'The Tall Office Building Artistically Considered'* (1896):

How shall we impart to this sterile pile, this crude, harsh, brutal agglomeration, this stark, staring exclamation of internal strife, the graciousness of those higher forms of sensibility and culture that rest on the lower and fiercer passions?⁸

In his writing, Sullivan explicitly refers to the economics of the office building as having been properly resolved but also recognised that he was describing a skyscraper:

It must be tall, every inch of it tall, the force and power of altitude must be in it, the glory and pride of exultation must be in it. It must be every inch a proud and soaring thing.⁹

And in this regard, he famously wrote 'form ever follows function'.¹⁰ But how is it that these incompatibles, to which both Sullivan and Koolhaas refer, are reconciled? How might the notions of architectural aesthetics and economic imperatives be brought together? This dissertation suggests that the contentions and drives of the late nineteenth and twentieth centuries, roll into the early decades of the twenty-first century.

In 2015–16, I conducted a Pilot Study in which I interviewed a number of architects, and property developer PropertyCo, to understand whether there was a tension between design and cost, and if there was indeed such a tension, how it was managed. The answer from each of the research participants was unequivocally 'yes', but there was equivocation about how the tension might be resolved. The Pilot Study was most helpful as it not only clarified this question, but several of the participants also provided guidance which assisted in planning this larger research project, and highlighted areas for further investigation.

Review of literature which considers this tension suggests only limited scholarly endeavour has been conducted in this space. Much has been written about iconic buildings, the 'star' architects

⁵ Carol Willis, *Form Follows Finance* (New York: Princeton Architectural Press, 1995), 10.

⁶ Koolhaas, *Delirious New York*, 88.

⁷ De Casseres cited in Koolhaas, *Delirious New York*, 88.

⁸ Louis Sullivan, 'The Tall Office Building Artistically Considered. I. II. III'. *Lippincott's Monthly Magazine*, no. 3 (1896): 403. <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/magazines/tall-office-building-artistically-considered/docview/135759955/se-2>.

⁹ Sullivan, 'The Tall Office Building Artistically Considered', 403.

¹⁰ Sullivan, 'The Tall Office Building Artistically Considered', 403.

who design them and the 'Bilbao effect' in elevating economic activity in the cities where they are built. In *The Iconic Building* Charles Jencks (2005) describes them as an:

[E]xpressive landmark [...] driven by social forces, the demand for instant fame and economic growth.¹¹

Jencks notes the strong desire for corporates and property developers to tap into the favourable economics of landmark developments: 'now every corporate headquarters seeks to be an icon'.¹² In "Revitalization, transformation and the "Bilbao effect": testing the local area impact of iconic architectural developments in North America, 2000–2009' (2020) Mike Patterson states that such buildings lift rental yields and property values for developers. But, in 'Designer Buildings: Estimating the Economic Value of 'Signature' Architecture' (2011) Fuerst et al note that little work has been done linking the particular design credentials of commercial iconic buildings with their exchange value.¹³ In a similar vein, in 'Iconic Architecture as a hegemonic project of the transnational capitalist class' (2012) Leslie Sklair and Laura Gherardi recommend scholarly attention be directed to understand how such buildings arise and how they serve the interests of global capital investors.¹⁴ Despite these apparent gaps in literature, research has focused on the collaborative nature of architectural practice.

In 'Star Architecture as Social-Material Assemblage' (2020) Laura Lieto argues that design of iconic buildings is the result of a multiplicity,¹⁵ dependent on the interactions of actants such as 'quantity surveyors, project managers and structural engineers [...] and] clients, those that actually pay for and commission buildings'.¹⁶ The socio-spatial setting for these interactions, she writes, is 'fostered by ties of trust and collaboration; ongoing confrontations between actors, ideas, styles and business opportunities'.¹⁷ In *Architecture depends* (2009) Jeremy Till considers these interactions, referring to the practice of architecture as 'irredeemably contingent',¹⁸ for it is subject to the 'input and control of others' from the moment of the architect's initial sketch.¹⁹ He describes the architectural profession's adopted position of 'authority and certainty', in which it

¹¹ Charles Jencks, *The Iconic Building* (New York: Rizzoli International Publications, 2005), 7.

¹² Jencks, *The Iconic Building*, 13.

¹³ Fuerst et al, 'Designer Buildings: Estimating the Economic Value of 'Signature' Architecture', *Environment and Planning* 43, no.1 (2011): 169, <https://doi.org/10.1068/a43270>.

¹⁴ Leslie Sklair and Laura Gherardi, 'Iconic architecture as a hegemonic project of the transnational capitalist class', *City* 16, no. 1–2 (2012): 59, <https://doi.org/10.1080/13604813.2012.662366>.

¹⁵ Laura Lieto, 'Star Architecture as Socio-Material Assemblage', in *About Star Architecture: Reflecting in Cities in Europe*, ed. Nadia Alaily-Mattar, Davide Ponzini and Alain Thierstein (Cham: Springer, 2020), 25.

¹⁶ Lieto, 'Star Architecture as Socio-Material Assemblage', 27.

¹⁷ Lieto, 'Star Architecture as Socio-Material Assemblage', 29.

¹⁸ Jeremy Till, *Architecture depends* (Cambridge: Massachusetts Institute of Technology, 2009), 45.

¹⁹ Till, *Architecture depends*, 73.

attempts to pursue a type of purity in design through abstraction as problematic. It risks, he argues being seen as detached from the world, and must therefore reform²⁰ to comprise of:

[A]ngels with dirty faces [... The] dependent and contingent architect – has to be light enough on his or her feet, and modest enough, to allow that intent to be shaped by other events and desires.²¹

Such events or desires might include cost reduction exercises through value engineering or being mindful of those without aesthetics foremost on their mind during client interactions. Indeed, in *Breaking ground: adventure in life and architecture* Daniel Libeskind referred to cost reduction as the necessary impetus for greater design creativity. He further stated that:

Working with developers can be tricky. It means fulfilling two opposite goals, giving the developer his maximum profits whilst making sure that the resulting building goes beyond private interests.²²

The need to maximise lettable space and at the same time design a scheme with the necessary degree of civic grandeur which the developer purports to provide, is potentially challenging to pull off. In 'Office buildings and the signature architect: Piano and Foster in Sydney' (2007) Donald McNeill emphasised that the 'global architectural firm must give value added economically',²³ stating:

[M]arketing weight [of a global architect] is not quantifiable, which in property development terms means that design is only relevant if unequivocal gains to profitability are added²⁴ [and] for premium developments to be successful, developers require an understanding of how potential anchor tenants see their operational efficiencies to be best achieved.²⁵

In this sense, design might be considered as somewhat secondary to the economic considerations of the developer and their tenant. Nevertheless, Till argues that the 'enigmatic quality' of architectural creativity—the element that is difficult to completely explain—is what makes it valuable and therefore desirable.²⁶ Perhaps this creative value peaks when it might most easily be explained as developer's profit.

So that the notions of *architectural aesthetics* and *economic imperatives* at stake in a property development might be more fully understood, in the chapters immediately following the introductory chapter of this dissertation, I provided a detailed overview of each of the terms. My

²⁰ Till, *Architecture depends*, 165.

²¹ Till, *Architecture depends*, 194.

²² Libeskind, *Breaking ground: adventures in life and architecture* (New York: Riverhead Books, 2004), 262-263.

²³ Donald McNeill, 'Office buildings and the signature architect: Piano and Foster in Sydney', *Environment and Planning A* 39 (2007): 499, <https://doi.org/10.1068/a3720>.

²⁴ McNeill, 'Office buildings and the signature architect: Piano and Foster in Sydney', 499.

²⁵ McNeill, 'Office buildings and the signature architect: Piano and Foster in Sydney', 497.

²⁶ Till, *Architecture depends*, 160.

consideration of *architectural aesthetics*, which we think of relating to ideas of beauty, began with the writings of Marcus Vitruvius Pollio. In *The Ten Books of Architecture* (33–20BCE [1914]) Vitruvius stated that buildings must possess ‘firmitas, utilitas and venustas’,²⁷ that is durability, convenience, and beauty. Writers during the period of Enlightenment, including Christian von Wolff and Henry Home, Lord Kames furthered Vitruvius’s paradigm in combining notions of beauty with function. Wolff argued in *The Principles of Architecture* (1750–1757) that perfection in beauty is a facade which, as a work of art, enwraps a building.²⁸ Home argued in *Elements of Criticism* (1761 [2005]) that perfection in beauty is the result of proportioning and regularity in design, together with emotions stemming from grandeur.²⁹

In his *Critique* (1790 [1987]), Immanuel Kant refers to the momentary ‘free play’³⁰ of imagination experienced when the beauty of an object is considered, and that such beauty is either ‘free’ or ‘conditioned’ by the function the item is intended to perform.³¹ Much later in *Critique*, Kant explains his theory of ‘aesthetic ideas’, that there must be an animating principle: a ‘spirit’ which assigns beauty to the work of genius, but again notes that beauty in architecture is limited by function, and as such, expression is restricted.³² However, this represents a departure from the Vitruvian paradigm, as Kantian beauty involves the expression of an unrestricted intellectual idea, whereas Vitruvius referred to a formal beauty. Post Kant, the expressionist Friedrich Schelling posed in *The Philosophy of Art* (1859 [1985]) that expression of the intended function of a building is the source of its beauty in architecture,³³ and Arthur Schopenhauer posed in *The World as Will and Representation* (1819 [1966]) that expression of the construction and structure satisfies this impulse.³⁴ These ideas paved the way for expressionism in more recent periods. Whilst these ideas are most relevant, for the purposes of this dissertation I considered a more contemporary understanding of architectural aesthetics. In particular, the ‘aesthetic dimension’, as postulated by Jacques Rancière in ‘The Aesthetic Dimension: Aesthetics, Politics, Knowledge’ (2009) which considers an aesthetic quality as something *in excess of*, or *additional to* itself, a

²⁷ Marcus Vitruvius, *The Ten Books of Architecture*, trans. Morris Morgan (Cambridge: Harvard University Press, 1914), 17. <https://www.gutenberg.org/cache/epub/20239/pg20239-images.html>.

²⁸ Wolff cited in Paul Guyer, ‘Kant and the Philosophy of Architecture’, *The Journal of Aesthetics and Art Criticism* 69, no. 1 (2011): 9. <https://doi.org/10.1111/j.1540-6245.2010.01442.x>.

²⁹ Henry Home, Lord Kames, *Elements of Criticism*, ed. Peter Jones (Indianapolis: Liberty Fund, Inc, 2005), 709. <https://ebookcentral-proquest.com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=3327286>.

³⁰ Immanuel Kant, *Critique of Judgment*, trans. Werner Pluhar (Indianapolis: Hackett Publishing Company, 1987), 62.

³¹ Kant, *Critique of Judgment*, 76.

³² Guyer, ‘Kant and the Philosophy of Architecture’, 15.

³³ Schelling cited in Guyer, ‘Kant and the Philosophy of Architecture’, 11.

³⁴ Arthur Schopenhauer, *The World as Will and Representation*, vol 1. trans. E. Payne (Newburyport: Dover Publications, 1966), 368 and 370. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=1894850>.

supplement to its own parts.³⁵ It is the feeling of awe that you might experience when experiencing a work of art, or indeed when facing one of Sullivan's scintillating stone facades.

In my consideration of *economic imperatives*, I focused particularly on the microeconomic strand of the science of 'economics'. In this dissertation I considered a development scheme proposed by an individual organisation, and in this sense, my research considers the effects of changes in the pricing and availability of resources together with methods of production used by this organisation. I also considered the meaning of 'imperative', that is, something that must be done. The sole motivation of business, as argued in *The Wealth of Nations* (1776 [2012]) by Adam Smith, is the generation of profit.³⁶ Accordingly, profit is considered as the economic imperative for the purposes of this dissertation. I carried this assumption into the first meetings between the property developers and architects and little was ever said that might challenge this most basic of premises, despite use of the word 'value' from time-to-time in reference to the 'client'. Whilst attempts have been made to broaden the motivations of business in recent years so that it might better respond to increasing social and environmental awareness, it is difficult to argue that the generation of profit for shareholders is not the paramount aim for business.³⁷ Indeed, there are no regulations requiring a departure from profit as the key measure in financial reporting. Profit is a calculative measure derived from the netting of a businesses' income and expense. Despite a number of theories having been put forward as to what profit actually measures, the organisation PropertyCo (the focus of my study) is required to comply with the Australian Accounting Standards, and it is the accounting notion of profit which resonates with the rhetoric of the property development industry. Consistent with the accounting notion of profit, the seeking of large profits requires the same form of maximalisation strategy as that adopted for Rockefeller Center, particularly the maximisation of income, alongside the minimisation of expense.

Armed with an understanding of *architectural aesthetics* and *economic imperatives*, the ethnographic engagement with a large property development organisation allowed me to observe how these notions came to be reconciled on a particular development scheme. I was accommodated by PropertyCo and immersed within a Design & Construction ('D&C') project management team during the detailed design phase for a significant development. I witnessed first-hand, how architectural aesthetics and economic imperatives are reconciled, or remained as 'incompatibles' held in an architectural tension. In this particular development scheme, the 'NBD',

³⁵ Jacques Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', *Critical Inquiry* 36, no. 1 (2009): 3. <https://doi.org/10.1086/606120>.

³⁶ Adam Smith, *The Wealth of Nations* (Ware: Wordsworth, 2012), 369.

³⁷ Rob Gray, 'Social, environmental and sustainability reporting and organisational value creation? Whose value? Whose creation?', *Accounting, Auditing & Accountability Journal* 19, no. 6 (2006): 805. <https://doi.org/10.1108/09513570610709872>.

PropertyCo were pursuing the notion of ‘design excellence’, for it was this designation that would allow them to develop 10% additional floor area to the maximum allowable Gross Floor Area (‘GFA’) for that site (as set out in local planning regulations) making what was initially considered an uneconomic development scheme into something that would be profitable for them. It is thus the case that the reconciliations of architectural aesthetics and economic imperatives tended to circulate about the core question of ‘design excellence’ in the case of the NBD tower. Despite the vague character of ‘excellence’ and the breadth of processes that might be regarded as ‘design’, ‘design excellence’ tended to be a core frame of reference.

My immersion within one of PropertyCo’s D&C project management teams (‘D&C-Team’) provided the opportunity to understand, and appreciate, their ‘model’ project management approach as I watched it unfold. Though anonymised for the purposes of this study, it should be noted that the reason I am happy to refer to the approach as ‘model’ is largely because in terms of the Australasian property development industry, PropertyCo are very big players. It also may be noted that the architects, and the appointed engineer for the scheme, GlobalArchitect and GlobalEngineer are indeed that: global, and there are very few firms internationally that are more recognisable. The ‘model’ approach brought a great many people to the process, all of whom had significant expertise and experience in the design, construction, and development of large commercial buildings. According to PropertyCo’s development manager for the NBD scheme (‘DM-Director’), the D&C-Team consisted of employees with ‘ENTJ’³⁸ personality types, which NERIS Analytics Limited’s ‘16 Personalities’ website describes as the ‘Commander Personality’: ‘extraverted, intuitive, thinking and judging’.³⁹ Indeed, there was a directness with which the D&C-Team members spoke with one another, and in the way its members interacted with their Development Management (‘DM’) counterparts, who were seemingly less forceful and outgoing. It also made for extremely interesting interactions and dialogue with the scheme’s appointed architect, engineer, and other consultants. Indeed, the directness with which opinions were expressed, and the forcefulness with which reconciliations would be effected were both striking, at times brutal, and intimidating. PropertyCo’s D&C business Head of Excellence (‘D&C-HoE’) described its model project management approach as the oil ‘greasing [... the...] cogs’,⁴⁰ as these tend to get stuck during the detailed design phase for development projects with participants wanting something to suit themselves. D&C-HoE also explained to me that a purpose of the detailed design process was to identify how much of the development budget would be

³⁸ PropertyCo DM-Director, interview transcript (11 October 2017).

³⁹ NERIS Analytics Limited, ‘Commander Personality’, *16personalities.com*, viewed on 16 September 2023, <http://16personalities.com/entj-personality>.

⁴⁰ PropertyCo D&C-HoE, interview transcript (27 June 2016).

apportioned amongst elements such as materials, labour costs, mechanical and electrical systems, leaving a residual amount to spend on the facade.⁴¹ This is fascinating, as the facade is the element which, according to Wolff, encapsulates the aesthetic quality of the building, and from the outset, aesthetics tended to be considered by PropertyCo as something residual.

The NBD development scheme, from inception, was inherently difficult. The development site was small and any development proposal needed to accommodate a series of public benefits spaces in order to access additional lucrative GFA. Indeed, PropertyCo had attempted to sell the site early in 2016 and commissioned a Reference Scheme design, and Development Budget, which underestimated the costs in developing a 'Premium Grade' building. PropertyCo were unsuccessful in selling the scheme and decided to retain it for future development. In mid-2016 an agreement was signed with the City, the local regulatory authority, allowing development of a [245m] tower, with the proviso that it constituted 'design excellence'. To reduce its exposure to the scheme, PropertyCo sold the scheme to a joint venture arrangement, retaining a minor interest. PropertyCo's DM business assumed responsibility for marketing and leasing, together with financial management of the scheme. Its D&C business remained preferred Main Works contractor. This established a most interesting internal dynamic, for its DM and D&C businesses were motivated by opposing financial metrics. D&C sought to maximise the contracted amount it would charge the joint venture owners of the scheme (the 'NBDJV') for design and construction, whilst DM sought to contract at the lowest amount as this would work to maximise the gain on sale that would be achieved at practical completion ('PC'), should the development be sold. This resulted in healthy banter between team members from the DM and D&C businesses, but on occasions it was difficult to see how this might benefit the NBDJV, as multiple tensions were operationalised.

In order that the scheme might be considered 'design excellence' an architectural competition was required, together with a statement from the winning architect that, following detailed design development, the scheme would continue to exhibit equivalent 'design excellence' to the original competition winning design. It's an odd measure to pursue and with no definition of 'design excellence' available and its relation to a somewhat amorphous and multilayered public opinion not being clearly articulated, it would be difficult to determine whether 'design excellence' had been achieved. Indeed, the expression of any opinion related to said 'design excellence' is often met with public backlash and, in extreme cases, litigation. Whilst it would be difficult to claim that 'design excellence' had been achieved without the involvement of the competition winning architect, the scheme was subjected to a rigorous process of value

⁴¹ PropertyCo D&C-HoE, interview transcript (27 June 2016).

engineering. Thomas Fisher notes in *In the Scheme of Things: Alternative Thinking on the Practice of Architecture* (2000) that value engineering might remove some of the key qualities that the architect had designed.⁴² PropertyCo's DM-Director was very keen to highlight that, at no point did they 'bully' the architect and that they relied on them to articulate why certain aspects of their design were essential. Nevertheless, the value engineering exercise was particularly brutal and some of the dialogue might suggest that aspects of the design were a forced outcome as a result of particular modes of communication. During the value engineering exercise, \$30m-\$40m in savings were required and nothing, it seemed, was off the table. Throughout this exercise only the economic imperatives were allowed to prevail, despite the exercise having derailed the program's 'essential' timings. There were no substantive additional aesthetic qualities with which the scheme was imbued.

It is beyond the scope of this dissertation (and likely impossible) to assert that 'design excellence' had (or had not) been achieved in the NBD scheme, and if such a deliberation were possible, it is likely best made by GlobalArchitect. However, the competition winning scheme, as announced, was a value engineered 'rationalisation' of the scheme initially submitted to the competition by the winning architect. The competition winning scheme was designed to be something super-transparent and crystalline, seemingly 'bigger than it was',⁴³ designed to provide maximum flexibility to its tenants. It relied on a steel structure to fully realise this vision, with a glass clad core and glass lifts. But, the rationalisation required the formal (and perhaps decorative) characteristics of the scheme to be significantly downplayed, and the redesign had to be capable of being constructed in reinforced concrete. Whilst rationalisation reduced the initial 'wow factor' of the scheme, what the teams believed was the endearing quality in appearance remained, the structural bracing system, which looked a little bit like a tree. This set-up an enduring form which became non-negotiable, even when it was not considered the most structurally efficient form. Even for the architect, a firm wedded to structural expression, the tree, despite its potential inefficiency, was deeply rooted. What is also deeply rooted is the element of control a developer seemingly has over an architectural design competition conducted for the purposes of achieving 'design excellence' and accessing additional GFA. The developer appoints half the adjudicating panel members and retains the casting vote in event of a tie, despite the other half of the panel having been appointed by the City. The developer therefore, had control over the outcome of the competition, and it seems, the power to value engineer, radically simplify and arguably impair the 'chosen' competition winning scheme. After the winner is announced, and detailed design

⁴² Thomas Fisher, *In the Scheme of Things: Alternative Thinking on the Practice of Architecture* (Minneapolis: University of Minnesota Press, 2000), 28.

⁴³ PropertyCo D&C-Services, interview transcript (20 October 2017).

development commences, there may be little, if anything left to work on. The big moves have already been made, and no one ever knows. This may be the moment Koolhaas refers to as 'where the efficiency intersects with the sublime'.⁴⁴

⁴⁴ Koolhaas, *Delirious New York*, 174.

6.2 Modes of reconciliation

In this dissertation the methodology has allowed an analysis of a variety of forms of reconciliation between architectural aesthetics and economic imperatives. These are the two forces that play themselves out as two key tensions negotiated through design processes. This initial fixation was the result of two key factors. The first related to a type of dual background that I maintain between the disciplines of architecture and accounting. The fixations of both these areas are articulated in any construction process and as a result of that background, I was well placed to discern this interplay. This sense was reinforced by the second key factor, which was the ethnographic engagement. During my period of immersion it became painfully obvious that in the discourse of the project managers, architects and engineers and all the teams that contribute to the production of any large-scale building, these two forces are invoked as key logics in contention. At times the two forces are negotiated in their generality, at times as the pointed focus, and at other times as qualities that can be submitted as architectural aesthetics and quantities that can be stand-ins for economic imperatives. That is to say, the logic of a *qualitative* aesthetics, and the *quantitative* economics, are invoked almost as characters or caricatures for all sorts of contentions.

One of the outcomes of a close consideration of the form of resolution or reconciliation that occurs between the two forces is that the dualism, or binary that is in play, itself suggests a number of modes of reconciliation. There is here an odd mathematics at stake; and there seems to be a set of possible reconciliations to any dualistic or binary negotiation. A thorough review of all the reconciliations that played themselves out vignette-by-vignette, argument-by-argument, contention-by-contention, suggests that these reconciliations fall into patterns of a kind. It is the conclusion of this dissertation that there are 10 key *modes* of reconciliation that occurred. Of these modes, there are also spatio-temporalities at stake. An oddity of the ethnographic methodology is that I knew the outcome of so many of the reconciliations whilst writing about them. Sometimes the reconciliation described is enacted in the room in which I was present and sometimes the reconciliation is enacted off-camera, or off site completely. Sometimes the reconciliation is reached immediately, sometimes deferred, and sometimes put into a temporal 'holding-room' to remain perpetually unresolved. Indeed, it is arguable that following the value engineering exercise, and following many months of ongoing changes to the design of the tower, the GlobalArchitect and PropertyCo teams were suffering from a type of exhaustion (refer to Section 5.5.6). Despite the shifting spatio-temporalities of these reconciliations, all of them seemed to fall into one of 10 key modes. Early in this dissertation I used a particular word 'form',

and the phrase ‘form of reconciliation’ to suggest or predict that the reconciliations would take a type of diagrammatic shape or to imagine that the reconciliations would play out in an identifiable and often repeatable structure. My research suggests that of the 10 identified modes of reconciliation that occur, there is a general recognisable form. However, it will also be noted below that often there is, discussion-by-discussion or phrase-by-phrase, or dispute-by-dispute, a slide and a shift between these forms. It turns out that when project managers, architects, engineers, City planners, etc. engage in argument, that the arguments themselves do not necessarily have logic at their core. It is for this reason, I will refer to these reconciliations as ‘modes’.

Before identifying the 10 modes of reconciliation, it is worth addressing the question of logic. This is a question to do with what constitutes the logical, what constitutes the illogical, and what constitutes, as often referred to in the vignettes, as the ‘fallacious’. Most fascinatingly, what this dissertation uncovers is that in grand building works and the type of discussions that are had around such building works, sound logic does not necessarily win. On multiple occasions what is clear is that fallacious logic, the illogical, the formless, and the irrational, tend to be operative. The term ‘operative’ suggests that a phrase, a position, a logic, albeit fallacious, operates successfully in order to reconcile tensions, even when that position makes little mathematical or logical sense. This being the case, I will herein spend very little time presenting findings based on notions of truth, or validity, or logical consistency, and focus instead upon what appears to be 10 core ways in which a reconciliation is enacted between the two key forces of architectural aesthetics and economic imperatives. I commence with the first of these key modes of reconciliation, where the forces operated as disjointed sets, and then consider each of the other modes of reconciliation in turn.

6.2.1 Disjoint forces

What can be discerned from an analysis of the vignettes is core moments where a reconciliation is enacted by virtue of the disjointed nature of architectural aesthetics and economic imperatives. The disjointed nature of the two forces was encountered in two of the vignettes, and is represented diagrammatically in Figure 6.1.

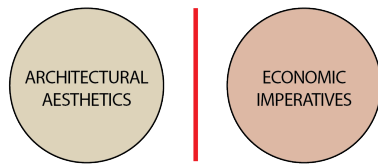


Figure 6.1 – Architectural aesthetics and economic imperatives as disjoint forces. Image by the author.

The first example of this mode of reconciliation is in the vignette which considers the budget for the scheme's public artwork (refer to Section 5.6.3). In this vignette a type of humorous self-parody is at play between the DM and D&C teams. DM-Director's claim that the expenditure is justified because: 'It's art'⁴⁵ goes hard-up against D&C-Director's justification for not spending: 'I'm trying to protect PropertyCo's share price'.⁴⁶ But DM-Director responds with: 'So are we, but with a long-term vision'.⁴⁷ Indeed, they were both trying to protect the share price, they both had a long-term vision and they both had a vested interest in it; but the architectural aesthetic at stake and the economic imperative sit resolutely distinct from one another. The relation here is *pre-given*. It is a snapshot of the larger game being played and the parodic type of reconciliation here highlights the duality of architectural aesthetics and economic imperatives.

A second example of the disjoint mode of reconciliation is in the vignette which considers the reduction in both the floorspace and height of the main lobby, and therefore its grandeur (refer to Section 5.5.4.5). In this vignette the architectural aesthetics and economic imperatives were considered in a predictable, and prejudiced manner. Kames writes that the architectural emotion of grandeur has 'the greatest influence on the mind'.⁴⁸ Indeed, DM-Director alluded to the importance to the tower of the lobby: 'It should be a beautiful space'.⁴⁹ GlobalArchitect Principal-1 stated: 'The only drama and relief is the scale of the lobby'.⁵⁰ But, grandeur comes at a cost; and (conversely) it also provides income. Not only does a tall lobby raise the level of all floors—and floors that would otherwise not be afforded a view are provided with an outlook—but in combination with generosity of floorspace, the resulting scale, and grandeur, provides the important first impression which the owner of the building and its tenants want to convey to their clients, employees and visitors. This argument, it seems was only relevant to D&C-Director in part. The lobby floorspace was reduced. The prejudices at play reinforced that architectural

⁴⁵ PropertyCo DM-Director, conversation transcript (25 August 2017).

⁴⁶ PropertyCo D&C-Director, conversation transcript (25 August 2017).

⁴⁷ PropertyCo DM-Director, conversation transcript (25 August 2017).

⁴⁸ Home, *Elements of Criticism*, 709.

⁴⁹ PropertyCo DM-Director, meeting transcript (17 August 2017).

⁵⁰ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

aesthetics and economic imperatives at times worked as mutually exclusive, disjointed sets with no real point of concurrency.

6.2.2 Forces acting in opposition

An analysis of the vignettes indicated that at certain core moments, a reconciliation is enacted by invoking the oppositional nature of architectural aesthetics and economic imperatives. Formulating the relation as *oppositional* was a habit for the developer and the architect and their teams. Indeed, at times this oppositionality was invoked in humour, in jibes, and in knowing deferrals to stereotypical traits and even in moments of interchange, where one character would take on the qualities of the other in caricaturist form. A diagrammatic representation of this form of dualism is shown in Figure 6.2.

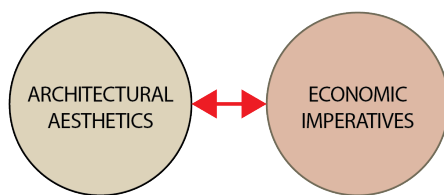


Figure 6.2 – Architectural aesthetics and economic imperatives as forces in opposition. Image by the author.

In the vignette which considers the transfer of load from a mid-elevation column to adjacent corner columns, five levels above the tower's [*Second Street*] entrance (refer to Section 5.2.4), architectural aesthetics and economic imperatives were mobilised as opposites. Interestingly, invoking the oppositional nature of the two forces seems to be (itself) a reconciliation. GlobalArchitect's desire was for the tower to 'float' above the entrance. D&C-Senior Structural Engineer's response was: 'How big is your chequebook?'⁵¹ This type of self-parodic deferral simply reinforces the oppositionality at stake. In an attempt to effect a reconciliation, GlobalEngineer Principal proposed utilising the structural bracing system to carry the load and allow for the column to be eliminated. GlobalArchitect Principal-2 was delighted: 'We like to be purists'.⁵² Indeed, structural expression was key in their design, and it had already been much diluted since they submitted their architectural design competition entry. D&C-Director

⁵¹ PropertyCo D&C-Senior Structural Engineer, meeting transcript (17 August 2017).

⁵² GlobalArchitect Principal-2, workshop transcript (10 August 2017).

reminded her of looming impurities in the spreadsheet of the economic imperative: ‘Someone needs to be the keeper of the dollars’.⁵³ The reconciliation was deferred, but opposing camps had been firmly established by the architects (the ‘Schopenhauerists’) and the project managers (the ‘exchequers’).

A second example of this mode of reconciliation was evidenced in the vignette which considered the proposed removal of the tower’s entrance from [*Second Street*] (refer to Section 5.5.4.6). In this situation it was proposed that the escalator linking the tower’s Main lobby with [*Second Street*] be replaced with a retail space. GlobalArchitect’s appeal to DM to prevent this outcome involved the statement that no entrance was ‘bizarre’.⁵⁴ The point is that no entrance might indeed be more economical (in a cost-mitigation sense) but to have no street entrance would make no logical sense. The escalator was removed. This form of reconciliation can also be evidenced in the moment where D&C-Director reminded GlobalArchitect: ‘DM-Team were at the VE Session’,⁵⁵ rendering their appeal to DM invalid. This was a thrusting of the two forces into opposition, in which the architect left via one door, and the developer via another. It might seem like no reconciliation, but the resolution in design terms constituted a reconciliation, nevertheless. I now turn my attention to reconciliations in which the forces operated in the reverse of this mode: in a state of mutual attraction.

6.2.3 Forces favourably disposed

Detailed examination of the vignettes highlighted that at certain core moments reconciliations were enacted which relied upon the favourable disposition of architectural aesthetics and economic imperatives. This seemingly unlikely occurrence, in which the ‘soft’ of the aesthetic and the ‘hard’ of the economic operated together in some type of mutual admiration, might be seen as moments of *les extrêmes se touchent* (opposites attract). This logic may have been occurring at the scale of property developer and architect, but it also might play itself out within one organisation. Indeed the setup of the NBD development project within PropertyCo itself was based on this type of dynamic tension and fraught liaison. This mode of reconciliation is represented diagrammatically in Figure 6.3.

⁵³ PropertyCo D&C-Director, meeting transcript (17 August 2017).

⁵⁴ GlobalArchitect Principal-1, meeting transcript (16 October 2017).

⁵⁵ PropertyCo D&C-Director, meeting transcript (16 October 2017).

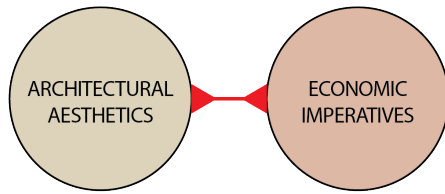


Figure 6.3 – Architectural aesthetics and economic imperatives as forces favourably disposed. Image by the author.

In the vignette which considered the opposing financial metrics of the D&C and DM teams (refer to section 5.6.2) the reconciliation between architectural aesthetics and economic imperatives was effected, as D&C-HoE described, to get: ‘A valued outcome for the client’.⁵⁶ Indeed, PropertyCo worked towards finding the ‘strong result of design aesthetic, function, performance and the hard-nosed: let’s just build it’⁵⁷ for their client, but internally there was a trade-off between how much DM-Team would pay, and how much D&C-Team (the ‘keeper of the dollars’) would charge for the design and construction works. Instead of a devil’s advocate working to find the ‘valued outcome for the client’, perhaps the devil, deliberately flaming mistrust between the teams, was working to undermine the desired ‘strong result’ and ‘best outcome’. It might have been less the attraction of *les extremes se touchent*, and more the coupling of *les liaisons dangereuses*.

A second example of this type of reconciliation might be seen in the vignette in which GlobalArchitect proposed that the tower’s designation be downgraded from ‘Premium Grade’ to ‘Grade A’ (refer to Section 5.5.5.1). This action would provide for significant cost savings in the level of fixtures and fittings specified, but with a lower designation the tower would no longer attract the premium lease yields which were so attractive to PropertyCo. The issue at stake was therefore one of opportunity cost. This somewhat lazy proposal was never going to be accepted, despite GlobalArchitect Principal-2 telling D&C-Team to: ‘Discuss [it] with DM-Director’.⁵⁸ The reconciliation effected in this situation sought a superior outcome for both architectural aesthetics and economic imperatives and relies on a logic that acknowledges the mutual attraction of the dollar and the aesthetic. ‘Premium Grade’ at once denotes both the aesthetic quality and the economic quantity.

⁵⁶ PropertyCo D&C-HoE, interview transcript (27 June 2016).

⁵⁷ PropertyCo D&C-CEO, interview transcript (29 February 2016).

⁵⁸ GlobalArchitect Principal-2 (meeting transcript (16 October 2017).

6.2.4 Economic imperatives as the dominant force

Close examination of various vignettes makes it clear that reconciliations were often enacted by the positioning of economic imperatives as the dominant force and architectural aesthetics as a subset or a constituent *part* of the economic. This was the predominant type of reconciliation encountered in the study and this might be about the historic moment we currently inhabit. In a neoliberal, late-capitalist moment, it seems terribly unsurprising that reconciliations are made this way. But we need to be careful; it is indeed historical. If one considers the moment of Baroque architecture, in the seventeenth and eighteenth centuries (indeed itself a global architectural style), it was the aesthetic exuberance which resonated best with the philosophical moment. Our own moment of international architects and international styles of high-rise corporate buildings is one where the dollar dominates. A diagrammatic representation depicting economic imperatives as the dominant force is shown in Figure 6.4.

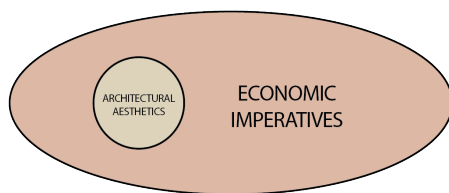


Figure 6.4 – Economic imperatives as the dominant force. Image by the author.

In the vignette, which considered the assessment of the competition winning design by the jurors appointed to the NBD architectural design competition, economics asserted its dominance. Indeed, before the winning design was announced, it had been ‘rationalised’ (refer to Section 5.2.2). The reconciliation established the ‘Rationalised Concrete Scheme’, and with it the sacrifice of the super-transparent crystalline aesthetics of the tower. The winning architect was required to confirm the redesigned scheme could be constructed in reinforced concrete, not in steel, and it adopted a heavier, less decorative aesthetic. The very word ‘rationalised’ seems to suggest the making of the aesthetic accord with a ‘rational’ logic of spreadsheets and economics. GlobalArchitect Principal-1 stated: ‘Every time we plucked out a diagonal brace, it was less, less cost.’⁵⁹ But what was left standing would become a shadow of its former self; it would bare only the slightest resemblance to the tree-image that had marked its design conception. The tree tower

⁵⁹ GlobalArchitect Principal-1, interview transcript (20 July 2018).

would become a twig under the force of economic rationalisation. The reconciliation reinforced that an aesthetic best, would only be the 'best' where it suited the economics of the moment. Aesthetics were tightly restricted as a subset of the economic.

But the twig was, not surprisingly, a structurally inefficient remnant of the forces at play. In the vignette which considered structural inefficiencies inherent in the Rationalised Concrete Scheme (refer to Section 5.2.5.1), the reconciliation enacted relied on the aesthetics being considered as a type of consistency between structure and geometry. The economic imperatives related to the cost of the structural bracing system (the tree/twig) which would most efficiently resist the forces. In union, the qualitative and the quantitative align and D&C-Senior Structural Engineer placed the two forces in a relation of *les extremes se touchent*: 'The geometry of the building and the structure go hand-in-hand'.⁶⁰ But, he was at pains to then note the 'visible element that the architect wants [... is] not the most [structurally] efficient'.⁶¹ Indeed, all was not hand-in-hand, as the union of structure and geometry, which might well have produced an attractive building, was reconciled with the structural motif: the remnant of a tree. This form of reconciliation tends to rely on the linguistic deferral of 'hard' and 'soft'. That is, the hard as economics—fixed, strong and inflexible—against the softness of the aesthetic, which might be bent into any form to satisfy the economics.

As the detailed design phase progressed, and the scheme remained stubbornly over budget, a brutal value engineering exercise was executed. In the vignette which considered the removal of the ARF from the western half of the tower (refer to Section 5.5.4.2), the reconciliation enacted forced GlobalArchitect Principal-1 to justify his firm's design: 'We have an obligation to the City',⁶² adding, the tower: 'Won't look right without something visible [at the top ...] a tree'.⁶³ But, D&C-Director invoked the forest: 'It has to be the right solution for the tenants'⁶⁴ and then dropped a bombshell: 'At the moment we're not building the building'.⁶⁵ There was, in this case, seemingly no solution possible other than the economic. This reconciliation represented a compromise to the tower's aesthetics, and quite possibly compromised GlobalArchitect's reputation.

In the vignette which considered the proposal to integrate the ARF for the eastern half of the tower with the adjacent plant room (refer to Section 5.5.4.3), the reconciliation involved the subjugation of both GlobalArchitect and the aesthetics at stake, leaving GlobalArchitect Principal-

⁶⁰ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

⁶¹ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

⁶² GlobalArchitect Principal-1, meeting transcript (11 October 2017).

⁶³ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

⁶⁴ PropertyCo D&C-Director, meeting transcript (11 October 2017).

⁶⁵ PropertyCo D&C-Director, meeting transcript (11 October 2017).

1 flabbergasted: ‘Is that what we’re doing, or a conversation?’⁶⁶ The response from D&C-Facade was: ‘Both’,⁶⁷ with D&C-Director stipulating: ‘If it’s not these [items] then it’ll be others’,⁶⁸ instructing GlobalArchitect to conduct their own value engineering session. This was framed as a ‘bad faith’ reconciliation, one which took no prisoners. In the neo-liberal contemporary, even aesthetes are forced into spreadsheets.

6.2.5 Architectural aesthetics as the dominant force

In contrast to the previous mode of reconciliation, analysis of the vignettes identified (just) one moment where a reconciliation was enacted by the positioning of architectural aesthetics as the dominant force. This is represented in the diagram in Figure 6.5.

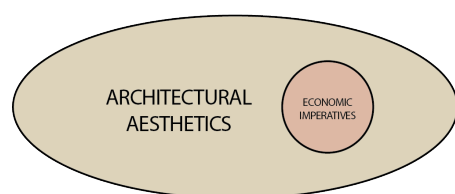


Figure 6.5 – Architectural aesthetics as the dominant force. Image by the author.

The vignette which considered the proposal to finish typical floors of the tower in the form of a ‘cold shell’, for the lessee to complete to their specification at a later date (refer to Section 5.5.4.7) highlights such an outcome. The reconciliation enacted focused on the question posed by D&C-Program: ‘But how does it look architecturally?’⁶⁹ DM-Director was concerned about the ‘optics’⁷⁰ of the ‘finished’ floors, at this point, and in particular what the NBDJV might think. D&C-Cost Planner-1 reminded the team that a ‘cold shell might cost more as it has to look good’,⁷¹ and that the raw aesthetic might dissuade a tenant from leasing the space. It is in this moment that the force of the ‘income’ side of the economic spreadsheet is invoked and the aesthetic is seen as the solution. In the absence of a pre-commitment tenant, and the much-needed clarity they might

⁶⁶ GlobalArchitect Principal-1, meeting transcript (11 October 2017).

⁶⁷ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

⁶⁸ PropertyCo D&C-Director, meeting transcript (11 October 2017).

⁶⁹ PropertyCo D&C-Program, workshop transcript (8 August 2017).

⁷⁰ PropertyCo DM-Director, conversation transcript (20 October 2017).

⁷¹ PropertyCo D&C-Cost Planner-1, meeting transcript (10 October 2017).

have provided, the reconciliation opted for the cosiness of a ‘warm shell’, in which the architectural aesthetics were the dominant force. But this was, seemingly only a ‘lukewarm’ outcome. Indeed, Sun Tzu tells us: ‘He will win who knows when to fight and when not to fight’.⁷² With no tenant appearing on the battlefield, the reconciliation might have been best left unreconciled.

6.2.6 Economic imperatives with momentum

Whereas the previous two modes of reconciliation suggested the relegation of one of the forces under the other, analysis of the vignettes indicates there were core moments in which reconciliations were effected due to what might be described as the blind-siding of architectural aesthetics by the economic imperatives. This is represented diagrammatically in Figure 6.6.

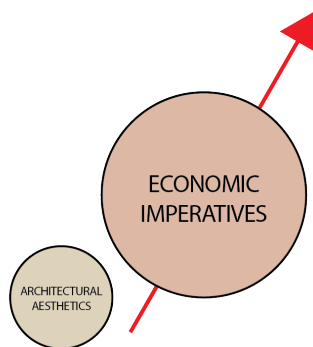


Figure 6.6 – Economic imperatives as the force with momentum. Image by the author.

Perhaps the most subversive of economic forces were on display in the vignette which considered changes to the tower’s structural bracing system, in which all bracing members would be situated internally and mimicked externally with a ‘stick-on’ transom (refer to Section 5.5.4.1). GlobalArchitect Principal-4 had stated, prior to this reconciliation being enacted that: ‘You lose the integrity’,⁷³ suggesting that if the structural expression were merely mimicked the tower would look frivolous. GlobalArchitect Principal-3 said: ‘We’re never going to go with that’.⁷⁴ Nevertheless, a reconciliation lacking in aesthetic integrity was enacted and GlobalArchitect were

⁷² Sun Tzu, *The Art of War* (New York: Dover Publications, 2019), 39. ProQuest Ebook Central, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=5748250>.

⁷³ GlobalArchitect Principal-4, meeting transcript (6 October 2017).

⁷⁴ GlobalArchitect Principal-3, meeting transcript (6 October 2017).

left stunned. A few days later they were somewhat more conciliatory, stating a preference for transoms rather than other forms of material mimicry, and agreed to embark upon a detailed study of the non-structural expression. From this moment, the tower adopted a patternation of its facade to save its economic face. The ‘Schopenhauerists’ had departed, the aesthetics of structural integrity had gone with them, and all that was left was an outline of a tree.

In the vignette, which considered the redesign of the tower so that it could be constructed in steel (refer to Section 5.2.5.5), the reconciliation enacted was one which GlobalArchitect Principal-1 referred to as a ‘good leasing outcome’.⁷⁵ It was achieved by removing internal and corner columns. Adoption of the ‘Organic Steel Scheme’ was the end point of lengthy design development work which had considered factors including cost and time, structural inefficiencies, and the desire for innovation. With economic imperatives having a momentum of their own, the architectural aesthetics could do little more than try to minimise the damage. Indeed, in the vignette which considered the reaction of GlobalArchitect to the value engineering exercise (refer to Section 5.5.6) it was noted that in such a scenario there was an exhaustion of the aesthetic, a type of resignation of the non-denumerable in the face of the spreadsheet. GlobalArchitect were nearing exhaustion, but so too were D&C-Team, so the momentum of the economic might eventually lose steam.

Even moments of minor resistance offered by GlobalArchitect were swept away in the wake of the economic drive. In the vignette which considered a lighting scheme for the tree (refer to Section 5.6.4), the element which had come to represent the scheme’s ‘institutional recognition’ and ‘identifiable image’, D&C-Team were blind-sided at an RP meeting when GlobalArchitect displayed a render of the tower showing the addition of twin spires, this image having snuck through the tightly controlled D&C-Team review process. One team member referred to the twin spires as ‘chopsticks’.⁷⁶ D&C-Director stated: ‘Let’s understand it, before we kill it’.⁷⁷ When GlobalArchitect Principal-2 was given a ‘choice’, based on the economics of the moment, between a lighting scheme for the tree and the twin spires, she voted for the lighting scheme.

Such moments illustrate not only the momentum of the economic, but also the oddity of the momentum. In the vignettes, multiple moments were noted where the economics at play were not even the *whole* of an economics. That is, there are multiple moments where only the ‘cost’ was at stake and the very idea of ‘income’ was forcibly neglected. In consideration of the twin spires the cost side of the economic ledger was firmly on the run. The income side, however, was

⁷⁵ GlobalArchitect Principal-1, meeting transcript (21 December 2017).

⁷⁶ PropertyCo D&C-Program, meeting transcript (18 August 2017).

⁷⁷ PropertyCo D&C-Director, meeting transcript (18 August 2017).

missing in action; there was no one rushing to engage with it, or to defend it. It is quite possible that the twin spires might have improved the scheme's leasing credentials and rental yields, but the side of the profit equation more likely disposed to the aesthetic, was somehow erased from the spreadsheet. Nevertheless, DM-Director did pay lip service, noting the scheme has 'got to be [...] beautiful',⁷⁸ but one might assume she meant commercially beautiful. Despite investors having an appetite for the aesthetically pleasing, the developers fixated on the spreadsheet column that dealt with 'cost'. It was as if they were at a piano attempting to play chopsticks with only one hand.

6.2.7 Architectural aesthetics with momentum

In contrast to the previous mode of reconciliation, analysis of the vignettes indicates a core moment in which a reconciliation was effected due to what might be described as the blind-siding of the economic by architectural aesthetics. In the tightly controlled and managed space in which design development took place, this was an unexpected outcome and had the sense of the aesthetic force rolling forward leaving the economists to pick up the bill. A diagrammatic representation of this mode of reconciliation is included in Figure 6.7.

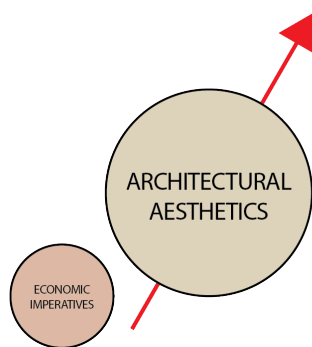


Figure 6.7 – Architectural aesthetics as the force with momentum. Image by the author.

The most simply discernible example of this mode of reconciliation is evidenced in the vignette which considers the negative reaction—of both the property industry and the public—to changes to the architectural competition winning scheme following submission of the Main Works DA (refer to Section 5.7.2). A reconciliation to address this reception was quickly effected whereby

⁷⁸ PropertyCo DM-Director, interview transcript (11 October 2017).

the northern facade was redesigned. Indeed, PropertyCo placed the ‘ho-hum’⁷⁹ response of the property industry and the public's perception that the architectural design competition winning scheme had been compromised, under a very intense spotlight. Architectural aesthetics were given a new-found momentum, almost divorced from the economic imperatives which had been at stake throughout the detailed design phase. The language here was fascinating. Where the economic is oft framed in relation to the ‘rational’ and the dollar quantification, the aesthetic finds itself summated in metaphor (trees and chopsticks) and in a type of illusory and almost glossolalic vocabulary. Though the terms used tend to be vague, the sense or force implied is far from mild. When the tower was characterised as ‘ho-hum’, underwhelming, and compromised, a counter offensive in the aesthetic realm was quickly mounted.

6.2.8 Deferral to a higher order

As a departure from each of these modes of reconciliation, analysis of the vignettes indicates there were core moments where reconciliations were enacted due to the interrelationship of the forces at play with a higher order. These were moments where in the tussles between the two (architectural aesthetics and economic imperatives), an appeal is made to a (third) higher authority. This ‘higher order’ or ‘higher authority’ took a few forms over the course of the design project. It should be noted that in each of the reconciliations enacted, the bearer of an economic imperative (usually the property developer) was the group that appeals to the higher body. The inverse of this mode was not observed. A diagrammatic representation of this mode of reconciliation is shown in Figure 6.8.

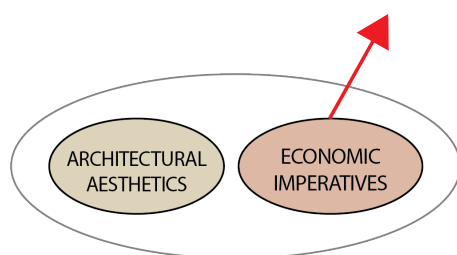


Figure 6.8 – Deferral of forces to a higher order. Image by the author.

⁷⁹ GlobalEngineer Principal, interview transcript (12 February 2018).

An example of deferral to a higher order is in the vignette which considered the removal of the City Garden (refer to Section 5.5.4.4). The curious situation emerged where GlobalArchitect swapped 'sides' and assumed the role of property developer, having been reminded that finding value engineering savings of \$30m-\$40m required that they do more than 'just remove a coat of paint'.⁸⁰ Responding to this demand, GlobalArchitect abandoned biophilic aesthetics and proposed a City '*Garden*' consisting of office space, located at the top of the tower so that the height of the tower would be maintained. D&C-Director was quick to point out that the developed space would not be 'efficient'⁸¹ space. Nevertheless, D&C-Team assumed the role of the aesthete, having itself proposed the City Garden consist only of a 'sea of pebbles'. The reconciliation enacted deferred resolution to the City, in the form of an anticipated planning condition. In this case the higher authority is left to make the resolution. One reason can be that to defer to a higher authority that you know will support your case can save time that would otherwise be spent arguing; another is that at times it makes sense to let the higher authority reach the natural conclusion that internal diametrically opposed positions might not. D&C-Program stated: 'A City Garden with no garden is hard to sell'.⁸² At this time it was for the City to determine whether there would be a walk in the park, or potted plants in an office.

In the vignette, which considered the number, and location, of trees to be situated in the upper plaza (refer to Section 5.4.4) the reconciliation enacted also involved a deferral to the higher order of the City. At first, the City required a grid of nine trees, and that it be situated further from the [*First Street*] boundary than PropertyCo would prefer. PropertyCo's strategy was to design 'with a spreadsheet',⁸³ as D&C-Urban remarked, and seek a compromise with six trees. The aesthetic at stake related to the biophilic integration of real trees in a scheme that was all about the figuration of the tree. The economics of the matter were insensitive to the idea. Indeed, D&C-Director said the excavation 'can't go lower'⁸⁴ as costs to provide for more deep-planting spaces were unbudgeted. But, the City blind-sided D&C-Team by indefinitely postponing the design of the upper plaza, including the number and location of trees, until the design for the *Public Events Space* had been determined. This was something which PropertyCo had no control over, and at this moment the whole development was at risk. Without the City's clarity on the trees, PropertyCo could not access the additional, and very lucrative, 10% additional GFA for its tower

⁸⁰ PropertyCo D&C-Facade, meeting transcript (11 October 2017).

⁸¹ PropertyCo D&C-Director, meeting transcript (16 October 2017).

⁸² PropertyCo D&C-Program, meeting transcript (24 October 2017).

⁸³ PropertyCo D&C-Urban, conversation transcript (12 September 2017).

⁸⁴ PropertyCo D&C-Director, meeting transcript (31 August 2017).

by providing the Community benefits, and the Main Works DA submission would need to wait. There would be no economics without resolution of the architectural aesthetics by the City.

6.2.9 One force cannot conceive of itself without the other

Analysis of the vignettes pointed to core moments where reconciliations were enacted which relied on the dissolution of the *arbitrary*, or somewhat *discretionary* distinction between the architectural aesthetics and economic imperatives at play. These were moments in which it might not have been possible to conceive of architectural aesthetics without economic imperatives, and vice versa. This situation is represented diagrammatically in Figure 6.9.

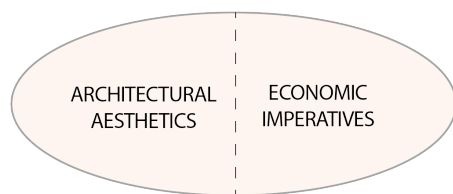


Figure 6.9 – Arbitrariness of architectural aesthetics and economic imperatives. Image by the author.

An example of this mode of reconciliation is in the vignette which considers the insertion of a column in the centre of the high rent yielding, high-rise floors (refer to Section 5.2.3). A key attribute of the tower's design was to provide its tenants with flexibility. In respect of a column located in the centre of the floor space, DM-Director said: 'Can't have it!'⁸⁵ and when an alternative nib wall, extending into the floor space from the core was presented, she questioned: 'That far?'⁸⁶ No reconciliation was effected. There would not be a building with an internally situated column, or a nib wall. 'Fucking columns!'⁸⁷ D&C-Director exclaimed, reacting to the lack of clarity. GlobalArchitect responded to this impasse by sending a list of unresolved matters to D&C-Team, and in a way adopted the role of project manager at this moment. Indeed, it was not possible to conceive of the economic without resolution of the architectural aesthetics, and it was the aesthetic capacity for flexibility that was invoked to breach the dualistic divide more often asserted in debates between architectural aesthetics and economic imperatives.

⁸⁵ PropertyCo DM-Director, workshop transcript (10 August 2017).

⁸⁶ PropertyCo DM-Director, meeting transcript (17 August 2017).

⁸⁷ PropertyCo D&C-Director, meeting transcript (5 September 2017).

In the vignette, which considered the ability of the Rationalised Concrete Scheme to accommodate voids/atria in contiguous multi-floor tenancies (refer to Section 5.2.5.2), it was not possible to conceive of the aesthetics without the resolution of the economic imperatives at stake. The insertion of voids/atria requires the identification of ‘soft spots’, that is, locations where a section of floorplate can be removed. But these ‘soft spots’ were dependent on the placement of ‘hard’ post-tensioned beams, themselves responding to the economics of the Rationalised Concrete Scheme. The reconciliation favoured the hard. But this meant, as D&C-Senior Structural Engineer stated: ‘You can’t even fit a bloody stair from one level to the other without destroying the building’.⁸⁸ Rules were required on where soft spots might be, but connections between floors might be best made by pressing the elevator button.

6.2.10 Transversality of forces

The last of the modes of reconciliation that are identifiable in a few of the vignettes highlights core moments where the reconciliations enacted cut across the architectural aesthetics and economic imperatives, akin to the act of a transversal line in geometry as represented diagrammatically in Figure 6.10. In this reconciliation both architectural aesthetics and economic imperatives appear more like the residue of a force that pushes them aside.

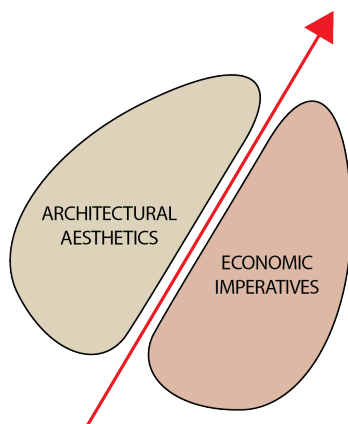


Figure 6.10 – Transversality of forces. Image by the author.

⁸⁸ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

In the vignette, which considered PropertyCo's desire to be innovative (refer to Section 5.2.5.4), PropertyCo's CEO was said to 'love steel'⁸⁹ and D&C-Senior Structural Engineer was spruiking digital fabrication and its 'procurement opportunity'.⁹⁰ In contrast was the fear in the minds of D&C-Team members, as construction in steel would require them to have precise details before construction commenced and they would not be able to correct for errors during construction. The decision to invest in steel procurement, to be innovative and forward thinking, or continue with malleable and familiar construction in reinforced concrete was posed as a question of time; seemingly not of aesthetics, and also not of cost. Investment in time, meant taking the time now to get it right, first time, and ahead of time. Architectural aesthetics and economic imperatives were pushed aside by the transversal line of innovation, which thrusting forward, required those on its trajectory to have their 'shit together',⁹¹ and be ready to roll once the thrust of time necessitated.

A second example of this mode of reconciliation is in the vignette which considers the tower's environmental and sustainable design (refer to Section 5.3.2). The ADB specified that the tower satisfy a number of sustainability rating schemes, enhancing leasing credentials and the reputation of the developer, architect and tenant. This required the accumulation of sustainability points, including those from the installation of automatic blinds. But Juror-1 cited a rebellion: 'We don't want automatic blinds [...] no one wants them'.⁹² Nevertheless, DM-Director reminded him: 'We have to be six-star!'⁹³ But he still wasn't convinced: 'Sustainability points have to make sense'.⁹⁴ Despite GlobalArchitect remaining silent on the issue, a reconciliation was enacted responding to the location where the facade would receive heat load: external shades would be placed only where they were absolutely necessary. There would be no internal blinds installed and only limited use of spandrels. The need to collect as many aesthetic 'green ticks' as possible to secure the much desired sustainability points, whilst at the same time ensuring that views would not be obscured by automatic blinds, determined what the architectural aesthetics and economic imperatives would be. Indeed, they couldn't consist of 'red crosses'.

In these moments the habitual deferral to the tension of aesthetics and economics is forgotten, or appears only in the wake of a far bigger issue which sweeps both up transversally. It is perhaps this mode of reconciliation that reminds us that the habit of posing the aesthetic and economic as

⁸⁹ PropertyCo DM-Commercial Analyst, interview transcript (30 November 2017).

⁹⁰ PropertyCo D&C-Senior Structural Engineer, interview transcript (19 October 2017).

⁹¹ PropertyCo Procurement Manager, conversation transcript (27 November 2017).

⁹² PropertyCo NBD Architecture Competition Juror-1, meeting transcript (18 August 2017).

⁹³ PropertyCo DM-Director, meeting transcript (18 August 2017).

⁹⁴ PropertyCo NBD Architecture Competition Juror-1, meeting transcript (18 August 2017).

generative forces is perhaps just that, a habit. To suggest it is a habit is not to say that it has no logical or productive basis, but rather to suggest that the developers, architects and engineers are often occupying simple ideological positions that can lead to predictable contentions. This is in spite of the fact they know there are bigger drives at stake. In this case it is the bigger drive that operates as *dissensus* in the sense described by Rancière: 'the staging of an excess',⁹⁵ to construct, to build into the sky and to assert presence.

6.2.11 Summary

Consideration of the modes of reconciliation vignette-by-vignette has been particularly insightful. Firstly, it has confirmed the sense suggested at the outset of this dissertation about the tension between architectural aesthetics and economic imperatives, that concern the interplay of these forces and that might demonstrate the dominance of the spreadsheet over less tangible or creative endeavours. By far, the largest number of reconciliations were at core moments when the architectural aesthetics at stake were relegated as subsets of the more dominant 'hard' economic forces at play, or, the economic arguments seemingly had greater momentum than the architectural aesthetics could muster. This dominance of profit motive, of short-term gains, and cost minimisation (at all costs) is a key aspect of the neo-liberal world and the institution of the spreadsheet: the VPM and its IRR calculation.

Secondly, this consideration of the forces at play in high-rise iconic developments has demonstrated the role of higher order authorities, in this case the City. In instances where the forces were deferred to the City's imperative, it was the architectural aesthetics which prevailed. This is telling and equally disappointing at the same time. Prior literature suggests that working with a property developer is potentially tricky for the architect: that a design which emphasises civic grandeur might suffer where maximisation of lettable space is a key design criterion. For the NBD scheme, achieving 'design excellence' provided the bonus of additional lucrative floorspace, but PropertyCo still pushed what might be considered 'design excellence' over the boundary resulting in a 'ho-hum' design, necessitating its quick re-working. In neo-liberalism, art might be considered as a force of resistance, but in the building design process I observed for this development, artistry was dependent on the intercession of a power with regulatory authority. The 'soft' was unable to resist the 'hard' on its own. In some ways this dissertation suggests the necessity of the state in moderating (or mitigating) the development process. Even with unequivocal gains to profitability in exchange for the promise of 'design excellence', it is likely

⁹⁵ Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', 3.

that without state intervention, architectural aesthetics would suffer badly. This is despite the ADB requiring a 'beautifully suited, classic and timeless architectural design'⁹⁶ through a competitive and high-profile international architectural design competition.

Thirdly, PropertyCo had chosen one of the world's most recognisable architectural practices to design their tower. They wanted to cash-in on the brand cachet of GlobalArchitect, despite not having raised sufficient funds to pay for the vision GlobalArchitect had promised in their architectural design competition entry. As a result, PropertyCo set about undoing some of this vision, offloading some of the architectural 'excess' in the process. This required a long period during which the architectural aesthetics and economic imperatives at stake were debated, challenged, and fought over. It required GlobalArchitect to abandon elements of architectural purity: the expression of structure, to become 'angels with dirty faces'.⁹⁷ The extensive interactions between architects, engineers, project managers, cost planners and other parties during the detailed design phase certainly recalls the multiplicity and contingency identified in prior literature. But my observation of this complex and often messy process has also emphasised the need for architects to have the right tools available to clearly articulate the key aspects of their design—its enigmatic quality—for this is precisely where the developer sees the value of an architect, to support them to create their 'iconic tower in the sky'.⁹⁸

Nevertheless, following this lengthy phase and with the necessary measure of 'design excellence' maintained, PropertyCo would still be able to point to their [245m] GlobalArchitect designed tower, and charge a premium to would-be tenants, who in turn could point to their GlobalArchitect designed 'Premium Grade' premises. In *The Communist Manifesto* (1848 [2008]) Karl Marx wrote: 'All that is solid melts into air'.⁹⁹ Perhaps this overlooked the western half of the NBD tower, which courtesy of value engineering, finishes quite abruptly at its apex. Less of a melting and more a solidifying of dollars hard-up against the clouds.

Finishing, perhaps less abruptly than the western half of the tower, is this dissertation. The aim of the research was to explore and understand how architectural aesthetics and economic imperatives are reconciled through complex, interdependent and contingent building design processes. The building processes observed certainly fulfilled these criteria. The reconciliations enacted between the architectural aesthetics and economic imperatives at stake during the detailed design phase for the NBD scheme provided extensive, mesmerising and captivating

⁹⁶ PropertyCo, summary of NBD Architectural Design Brief (29 September 2016).

⁹⁷ Till, *Architecture depends*, 194.

⁹⁸ PropertyCo DM-Director, interview transcript (11 October 2017).

⁹⁹ Karl Marx, *The Communist Manifesto* (Oxford: Oxford University Press, 2008), 6.

research data, which has allowed me to shine a light on a most fascinating part of the process in the design of a skyscraper. With limited prior research closely focusing on the detailed design phase for iconic commercial developments, the analysis of the reconciliations in this dissertation has contributed to the literature by explaining how particular aspects of the architectural design were assessed by PropertyCo, thereby demonstrating how they might be linked with exchange value. The analysis of the reconciliations therefore extends our understanding of how iconic buildings arise and how, through extensive value engineering, they serve the interests of global capitalist investors.

Analysis has also highlighted further strands that continue to thread their way, almost in spite of the research aim. These investments in future research scholarship are considered in the next section.

6.3 Future investments in research

In this section I make a number of observations based on the research data collected which might point to future scholarship. These include the deference of the economic imperative to the cost side of the profit equation, the illusory nature of 'design excellence' and the residual or 'soft' characterisation of the aesthetic. I also highlight an area of potential future research arising from the Pilot Study. Following this, I consider the peculiarity of the ethnographic study and that there was, indeed, a choice in the development of the working definitions of architectural aesthetics and economic imperatives used in this dissertation.

6.3.1 Focus on cost

During my period of immersion within PropertyCo, and throughout the detailed design phase there was a distinct focus on cost. This was attributable to a number of factors, including the very limited Development Budget and the lack of any internal PropertyCo cost planner working exclusively on the scheme until well into the detailed design phase. Despite the constant refrain from D&C-Director that the project was over budget, that they could not afford it, that the building was on hold, it seems the 'keeper of the dollars' was simply lacking the necessary expertise needed to rely on when estimating materials and labour costs. GlobalEngineer Principal suggested that the intense cost focus had the effect of taking 'people's focus away from actually finding the value side of the equation'.¹⁰⁰ Indeed, most curiously, there was a distinct lack of any formal cost/benefit analysis. Its absence, at least to me, was deafening. In the neo-liberal, late capitalist world we inhabit, rigorous cost/benefit analysis is held-up as a key exercise in government and business efficiency and is often publicly referred to by politicians, corporations and even individuals as they seek to justify that their decisions are made based on sound, rational analysis. That PropertyCo was not performing a detailed, on-going cost/benefit analysis was most surprising. At times DM-Team made references that they were checking certain matters regarding the leasing of the tower with the market, but the PVM spreadsheet they maintained was heavy on information relating to forecasted income per individual lettable space, and light on cost. Indeed, this spreadsheet model included only a few cells on the first worksheet where costs were input, despite these totalling more than \$500 million and having been estimated in considerable detail. In *Form Follows Finance*, Carol Willis quotes Cass Gilbert who in 1900 stated

¹⁰⁰ GlobalEngineer Principal, interview transcript (12 February 2018).

a skyscraper is: 'A machine that makes the land pay'.¹⁰¹ In making the land pay, one would want to maximise both the income that might be generated, *and* minimise the costs in doing so, rather than focusing only on one side of the profit equation. Given that there was no pre-commitment tenant throughout the detailed design phase, the PVM spreadsheet needed to stand in as substitute for tenants, and it needed to talk loudly to PropertyCo. But without a detailed cost/benefit analysis, it was less vocal than it might have been.

In *Postmodernism, or, The Cultural Logic of Late Capitalism* (1991) Fredric Jameson writes:

Of all the arts, architecture is the closest constitutively to the economic, with which, in the form of commissions and land values, it has a virtually unmediated relationship.¹⁰²

Jameson considers multinational businesses as the patrons and commoditisers of architecture in the postmodern, neo-liberal period. With profitability being so important to business, and this unmediated relationship at play, I had expected to observe a regime in which rigorous cost/benefit analyses identified cost savings and connected these with the income the particular built item was expected to generate. This was particularly so, in light of D&C-CEO's desired:

[S]trong result of design aesthetic, function, performance, and the hard-nosed: let's just build it.¹⁰³

Without this analysis, the design outcome PropertyCo had hoped for might not have been so strong, and further research of this area would potentially be beneficial to the property development industry.

6.3.2 'Design excellence'

It is arguable that the NBD scheme tested the definition of what 'design excellence' might be. From the very outset, before the winning architectural design competition scheme was announced, it had been value engineered. What was considered 'too decorative' was eliminated (despite this being an expression of the structural forces at play) and the scheme was reimagined as a tower constructed in reinforced concrete, a 'rationalised' type of 'design excellence'. Nevertheless, certain elements of the pre-rationalisation guise remained: including the slight resemblance to a tree. But this 'form' was not efficient architecture, and for GlobalArchitect, who were structural expressionists, this must have been something of an anathema. Nevertheless, the arboreal metaphor, despite the City Garden having been deleted, might have gone some way to address the

¹⁰¹ Willis, *Form Follows Finance*, 19.

¹⁰² Fredric Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism* (London: Verso, 1991), 5.

¹⁰³ PropertyCo D&C-CEO, interview transcript (29 February 2016).

ADB's requirement for biophilia. As the architectural theorist Andrew Ballantyne wrote in *Deleuze and Guattari for Architects* (2007): 'Buildings wear the facades they need to convey to the external world what they are and who they accommodate'.¹⁰⁴ Maintenance of the resemblance to the tree may have been a subconscious, and convenient, exercise in greenwashing.

Whilst it is difficult to define what 'design excellence' might encompass, this research has—as a consequence of its methodology and the case study explored—negotiated what 'design excellence' is not. The Rationalised Concrete Scheme, post further design development received an underwhelming, 'ho-hum' reaction at a property industry conference, and a press article which showed a side-by-side render of the scheme before and after design development suggested the tower's aesthetics had been compromised by the process. A quick rallying by DM-Director effected a redesign, so that GlobalArchitect could confirm that the scheme continued to demonstrate equivalent 'design excellence' qualities as the winning Rationalised Concrete Scheme. The fact that this process happened so quickly, is perhaps indicative that both PropertyCo, and GlobalArchitect knew what 'design excellence' was not. Vague as it is, 'design excellence' is one of very few levers the state is able to pull in respect of high-rise architecture.

The concept of 'design excellence' would seem to be attractive to developers not because it is an aspirational target related to design qualities and the enhancing of the built environment, but because it allows them to add an additional 10% GFA to their developments. The necessity for 'design excellence' was spoken of only in terms of floor area. In a skyscraper, this most lucrative additional GFA is situated at the top of the tower, that is, the floors which generate the highest rental yields. Accordingly, the price of 'design excellence', the cost of the aesthetic, might be considered as the additional rental. This in itself is fascinating and perhaps a demonstration of how simply 'qualities' can find themselves 'quantified', and an area that has potential for further exploration.

6.3.3 Residual of the aesthetic

From the working definition of architectural aesthetics developed earlier in this dissertation, it is arguable that the ADB called for a design which might go somewhere towards satisfying Rancière's idea of aesthetics. That is, the NBD scheme provide for something 'in excess of' or supplemental to itself,¹⁰⁵ something sublime. But the ADB also required an economic type of sublime. Indeed, it reads as a contradiction in terms. It requires what might be considered as the

¹⁰⁴ Andrew Ballantyne, *Deleuze and Guattari for Architects* (London: Routledge, 2007), 72.

¹⁰⁵ Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', 3.

aesthetically 'soft' at the same time as the economically 'hard'. As this dissertation has demonstrated, these forces are very difficult to bring together without compromising or eliminating the effect of one of the forces. In the case study analysed, it was when reconciliations were enacted under the eye of the state (a higher power), where architectural aesthetics won the day.

Just before my period of immersion at PropertyCo began, D&C-HoE described the facade of a skyscraper as a type of residual, and that the architectural aesthetic might be related to the facade. It was a 'residual' element in the sense that the cost per square metre of the development had to be allocated between the essential elements of labour and materials costs, mechanical and other services.¹⁰⁶ Whatever remained, would be allocated to the facade, and therefore might be considered to be residual. The aesthetic capacities of a facade come here to be positioned as that which is left-over and thus somewhat different to the considerations of 'excess', or 'supplement', as Rancière defines the aesthetic.¹⁰⁷ Instead, here the aesthetic might even be considered a *deficit*. In the NBD scheme, the slight resemblance to a tree was arguably the residual aesthetic, but even this element was subject to value engineering and cost reduction.

Perhaps what was lacking when architectural aesthetics were being debated during the detailed design phase, and might have aided a more considered outcome, was the scale model of the scheme itself. This 2m high detailed and finely executed model resided at GlobalArchitect's Australian studios, having pride of place in their lobby. As a result, there was nothing on hand, at PropertyCo's premises, for the teams to reference during deliberations about aesthetics or for them to feel any emotion towards, other than rough plans and sections. On a few occasions GlobalArchitect displayed high-resolution renders of the scheme. These had the effect of engaging the D&C and DM teams more than any other diagrams that were displayed. On one occasion, a 'fly-through' video of the scheme was shown. This arguably, had the highest level of engagement from PropertyCo's team members throughout the detailed design phase. Perhaps the lack of images and visualisations reduced the impact that aesthetics might imbue. A quality like the sense of 'grandeur' would come to be cast as that which can be measured in dollars, rather than as an outcome of the relation between the economic and aesthetic. The deficit of aesthetic representations may indeed reinforce a sense of the aesthetic as *excess* or *deficit*; that which may or may not be present, or may or may not impact. In "'Google for President': Power and the Mediated Construction of an Unbuilt Big Tech Headquarters Project' (2023) Mark Sawyer et al consider the role of architects and architecture in the positioning of big technology firms,

¹⁰⁶ PropertyCo D&C-HoE, interview transcript (27 June 2016).

¹⁰⁷ Rancière, 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge', 3.

specifically Google's unbuilt headquarters. The authors note that 'symbolic capital is translated between fields (technology, architecture, political) through media'.¹⁰⁸ Even in cases where the main objective of client and architect is not the creation of a particular building, the overriding objective for them became the 'construct[ion of] a media narrative that sustains attention to the point that it will affect reality'.¹⁰⁹ The particular capacity of specific aesthetic representations to sustain attention in complex, interdependent and contingent building design processes is an area where future scholarship might be focused.

6.3.4 Pilot Study

One of the key themes emerging from the Pilot Study was that procurement of architectural services, in particular the novation of contracts, is an area of much concern for architects. They believe it has an impact on the aesthetic quality and functionality of buildings. Whilst this was considered as beyond the scope of this dissertation, further research in this area might help to highlight the effect of this practice on design outcomes for both architects and building owners.

6.3.5 Other considerations

For the purposes of this research, I was immersed within a project management team at a large Australian property development organisation, PropertyCo. Whilst this provided a very rich set of data, it is arguable, that if I had instead been embedded in another section of the project, or within GlobalArchitect's team, I might have developed a different perspective of the proceedings and indeed, some of my conclusions might be different. This is the peculiarity of the ethnographic study: I was at location 'X' rather than location 'Y', and it is impossible to be at location 'X' and 'Y' at the same time. Future research might consider an ethnography based on an immersion within an architect's studio to observe the effects of the reconciliation of architectural aesthetics and economic imperatives, and perhaps across a variety of developments.

In addition, this research focused entirely on one development scheme. It is arguable that different reconciliations might have been enacted with a different site, a different developer, a different architect, a different set of financial metrics, and a different higher authority. The

¹⁰⁸ Mark Sawyer et al, "Google for President": Power and the Mediated Construction of an Unbuilt Big Tech Headquarters Project', *Architectural Theory Review* 27, no. 1 (2023): 147. <https://doi.org/10.1080/13264826.2023.2231563>.

¹⁰⁹ Sawyer et al, "Google for President": Power and the Mediated Construction of an Unbuilt Big Tech Headquarters Project', 147.

learnings from this dissertation must thus be considered with this in mind. Nevertheless, I observed the detailed design process of a scheme which had considerable complexity, interdependency, and contingency. This allowed me to collate and reflect upon considerable in-depth material and draw the conclusions I have presented in this dissertation. The development scheme proposed a 54-storey commercial office building. Had the study focused on a different type of building, for example, a public building such as an art gallery, or a hotel, or an educational institution, the reconciliations affected might also have been different, allowing possibly for a different set of conclusions to be drawn. Despite this, the level of access I was granted during this research has allowed me to write with some level of authority on the development of a significant commercial office building.

Lastly, for the purposes of this study, I focused on the ideas of many philosophers and theorists including Vitruvius, Kant, Schelling, Schopenhauer and the modernists, and Rancière in establishing a working definition of architectural aesthetics. This was partly because the modern definition of aesthetics rests in a discourse that carefully treads between aesthetics and functional utility: the core concepts with which this dissertation is concerned. This was a particular move, and it has implications in how aesthetics was considered in the analysis of the vignettes, the reconciliations and with the overall conclusions reached. In the same way, the notion of the economic imperative was considered as a microeconomic phenomenon, in particular focusing on accounting profit as something which must be generated in business. An alternative interpretation of economic imperative would have similar implications for the analysis of the vignettes, reconciliations and conclusions. Future studies might consider alternative interpretations of both architectural aesthetics and economic imperatives.

BIBLIOGRAPHY

Alaily-Mattar, Nadia and Alain Thierstein. 'The Circulation of News and Images: Star Architecture and Its Media Effects'. In *About Star Architecture: Reflecting in Cities in Europe*, edited by Nadia Alaily-Mattar, Davide Ponzini and Alain Thierstein. Cham: Springer, 2020.

Australian Accounting Standards Board. 'Accounting Standards'. <https://aasb.gov.au/pronouncements/accounting-standards/>.

Australian Accounting Standards Board. 'Presentation of Financial Statements (AASB 101)'. 2020. https://aasb.gov.au/admin/file/content105/c9/AASB101_07-15_ACOMP dec21_01-22.pdf.

Australian Accounting Standards Board. 'Investment Property (AASB 140)'. 2021. https://aasb.gov.au/admin/file/content105/c9/AASB140_08-15_COMPdec21_01-22.pdf.

Australian Accounting Standards Board. 'Conceptual Framework'. 2022. https://aasb.gov.au/admin/file/content105/c9/Conceptual_Framework_0519_COMPdec21_01-22.pdf.

Australian Accounting Standards Board. 'Revenues from contracts with customers (AASB 15)'. 2022. https://aasb.gov.au/admin/file/content105/c9/AASB15_12-14_COMP dec 22_01-23.pdf.

Australian Accounting Standards Board. 'Property, plant and equipment (AASB 116)'. 2022. https://aasb.gov.au/admin/file/content105/c9/AASB116_08-15_COMPdec 22_01-23.pdf.

Baldwin, A. S. Austin, T. Hassan, and A. Thorpe. 'Modelling Information Flow during the Conceptual and Schematic Stages of Building Design'. *Construction Management and Economics* 17, no. 2 (1999): 155–167. <https://doi.org/10.1080/014461999371655>.

Ballantyne, Andrew. *Deleuze and Guattari for Architects*. London: Routledge, 2007.

Bataille, Georges. *Visions of Excess*. Translated by Allan Stoekl, Minneapolis: University of Minnesota Press, 1985.

Beuving, Joost. 'Problems of Evidence in Ethnography: A Methodological Reflection on the Goffman/Mead Controversies (with a proposal for rules of thumb)'. *Forum: Qualitative Social Research* 22, no. 2 (2021). <https://doi.org/10.17169/fqs-22.1.3567>.

Boland, Richard, Fred Collopy, Kalle Lyytinen, and Youngjin Yoo. 'Managing as Designing: Lessons for Organization Leaders from the Design Practice of Frank O. Gehry'. *Design Issues* 24, no. 1 (2008): 10–25. <https://doi.org/10.1162/desi.2008.24.1.10>.

Bole, Simon, and Richard Reed. 'The Value of Design: A Discussion Paper'. *Architectural Science Review* 52, no. 3 (2009): 169–175. <https://doi.org/10.3763/asre.2008.0039>.

Boltanski, Luc, and Laurent Thévenot. *On Justification: Economies of Worth*. Princeton: Princeton University Press, 2006.

Business Roundtable. 'Business Roundtable Redefines the Purpose of a Corporation to Promote an Economy that Serves all Americans', 19 August 2019. Accessed 5 May 2023. <https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans>.

- Blackwell, Benjamin. 'Deep layers of Flatland'. *Metode* 1 (2023): 1–19. <https://metode.r-o-m.no/artikler/essay/deep-layers-of-flatland-scaling-up-nanomaterials>.
- Blanchot, Maurice. *The Book to Come*. Translated by Charlotte Mandell. Stanford: Stanford University Press, 2003.
- Callon, Michel. 'Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay'. *The Sociological Review (Keele)* 32, no. 1 suppl. (1984): 196–233. <https://doi.org/10.1111/j.1467-954X.1984.tb00113.x>.
- Chodikoff, Ian. 'Designing for Change: A Global Architecture Firm Reflects on its Homegrown Processes of Design and Client relations'. *Canadian Architect* 52, no. 10 (2006): 48–50. <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/trade-journals/designing-change/docview/213305255/se-2>.
- Clear, Nic. 'A Near Future'. *Architectural Design* 79, no. 5 (2009): 6–11. <https://doi.org/10.1002/ad.942>.
- Clifford, James, and George Marcus. *Writing Culture: The Poetics and Politics of Ethnography*. Berkeley: University of California Press, 1986.
- Cohen, Jean-Louis. *The Future of Architecture. Since 1889*. London: Phaidon Press, 2012.
- Creswell, Harry. *The Honeywood File: an adventure in building*. London: The Architectural Press Ltd, 1983.
- Creswell, John. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*. Los Angeles: Sage Publications, 2013.
- Cuff, Dana. *Architecture: the story of practice*. Cambridge: Massachusetts Institute of Technology, 1992.
- Davila, Tony. 'An empirical study on the drivers of management control systems' design in new product development'. *Accounting, Organizations and Society* 25, no.4–5 (2000): 383–409. [https://doi.org/10.1016/S0361-3682\(99\)00034-3](https://doi.org/10.1016/S0361-3682(99)00034-3).
- Dawkins, Richard. *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder*. London: Penguin Books, 2006.
- Deleuze, Gilles and Félix Guattari. *Anti-Oedipus: Capitalism and Schizophrenia*. Translated by Robert Hurley, Mark Seem and Helen Lane. Minneapolis: University of Minnesota Press, 1972.
- Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. Minneapolis: University of Minnesota Press, 1987.
- Deleuze, Gilles. 'The Exhausted'. Translated by Anthony Uhlmann. *SubStance* 24, no. 3 (1995): 3–28. <https://www.jstor.org/stable/3685005>.
- Denzin, Norman. *Interpretive Ethnography: Ethnographic Practices for the 21st Century*. Los Angeles: Sage Publications, 1997.
- Doyle, Deb. *Grey Areas and Gremlins: A Grammar and Punctuation Refresher*. Gynea: Deb Doyle, 2010.
- Dreher, Johannes, and Joachim Thiel. 'Star architecture projects and the geographies of innovation across the construction supply chain: the case of the Elbphilharmonie'. *European Planning Studies* 30, no. 1 (2021): 105–120. <https://doi.org/10.1080/09654313.2021.1951176>.
- Dumas, Angela, and Henry Mintzberg. 'Managing the Form, Function, and Fit of Design'. *Design Management Journal* 2, no. 3 (1991): 26–31. <https://doi.org/10.1111/j.1948-7169.1991.tb00573.x>.
- Evans, David, and Paul Gruba. *How to Write a Better Thesis*. Carlton: Melbourne University Press, 2007.

- Fallan, Kjetil. 'Architecture in action: traveling with actor-network theory in the land of architectural research'. *Architectural Theory Review* 13, no. 1 (2008): 80–96. <https://doi.org/10.1080/13264820801918306>.
- Farmer, Graham. 'Re-contextualising Design: Three Ways of Practicing Sustainable Architecture'. *Architectural Research Quarterly* 17, no. 2 (2013): 106–119. <https://doi.org/10.1017/S1359135513000468>.
- Fazio, Michael, Marian Moffett, and Lawrence Wodehouse. *A World History of Architecture*. London: Laurence King, 2003.
- Fetterman, David. *Ethnography: Step-by-Step*. Los Angeles: Sage Publications, 2010.
- Fisher, Thomas. *In the Scheme of Things: Alternative Thinking on the Practice of Architecture*. Minneapolis: University of Minnesota Press, 2000.
- Flyvbjerg, Bent. 'Quality Control and Due Diligence in Project Management: Getting Decisions Right by Taking the Outside View'. *International Journal of Project Management* 31, no. 5 (2012): 760–774. <https://doi.org/10.1016/j.ijproman.2012.10.007>.
- Flyvbjerg, Bent. 'What You Should Know About Megaprojects and Why: An Overview'. *Project Management Journal* 45, no. 2 (2014): 6–19. <https://doi.org/10.1002/pmj.21409>.
- Frampton, Kenneth. *Modern architecture: a critical history*. London: Thames & Hudson, 1992.
- Freud, Sigmund. 'Two Case Histories ('Little Hans' and the 'Rat Man')', and 'Analysis of a Phobia in a Five-Year-Old Boy (1909)', in *Standard Edition of the Complete Psychological Works of Sigmund Freud*. London: The Hogarth Press and the Institute of Psycho-analysis, 1955.
- Friedman, Milton. 'The Social Responsibility of Business is to Increase its Profit'. *New York Times Magazine*, 13 September 1970. ProQuest. <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/newspapers/social-responsibility-business-is-increase/docview/2441921739/se-2>.
- Fromm, Erich. *The Anatomy of Human Destructiveness*. Ringwood: Penguin Books, 1977.
- Fuerst, Franz, Patrick McAllister, and Claudia Murray. 'Designer Buildings: Estimating the Economic Value of "Signature" Architecture'. *Environment and Planning* 43, no. 1 (2011): 166–184. <https://doi.org/10.1068/a43270>.
- Geertz, Clifford. *The Interpretation of Cultures: Selected Essays*. New York: Basic Books, 1973.
- Ghauri, Pervez, and Kjell Grønhaug. *Research Methods in Business Studies*. Harlow: Prentice Hall, 2010.
- Giddens, Anthony. *Capitalism and modern social theory: An analysis of the writings of Marx, Durkheim and Max Weber*. Cambridge: Cambridge University Press, 2014.
- Gieryn, Thomas. 'What buildings do'. *Theory and Society* 31, no. 1 (2002): 35–74.
- Gleeson-White, Jane. *Double Entry: How the merchants of Venice shaped the modern world – and how their invention could make or break the planet*. Sydney: Allen & Unwin, 2011.
- Goldberger, Paul. *Why Architecture Matters*. New Haven: Yale University Press, 2009.
- Gould, Stephen Jay, and Elisabeth Vrba. 'Exaptation – A Missing Term in the Science of Form'. *Paleobiology* 8, no. 1 (1982): 4–15. <https://doi.org/10.1017/S0094837300004310>.
- Grabner, Isabella. 'Incentive system design in creativity-dependent firms'. *The Accounting Review* 89, no. 5 (2014): 1729–1750. <https://doi.org/10.2308/accr-50756>.
- Gray, Rob. 'Social, Environmental and Sustainability Reporting and Organisational Value Creation? Whose Value? Whose Creation?'. *Accounting, Auditing & Accountability Journal* 19, no. 6 (2006): 793–819. <https://doi.org/10.1108/09513570610709872>.

- Grubbauer, Monika. 'Architecture, Economic Imaginaries and Urban Politics: The Office Tower as Socially Classifying Device'. *International Journal of Urban and Regional Research* 38, no. 1 (2014): 336–359. <https://doi.org/10.1111/1468-2427.12110>.
- Gutman, Robert. *Architectural Practice: A Critical View*. New York: Princeton Architectural Press, 1988.
- Gutman, Robert. 'Critical Issues for Architectural Practice... .. An Opportunity Missed'. *Architectural Research Quarterly* 5, no. 2 (2001): 107–108. <https://doi.org/10.1017/S1359135501001142>.
- Guyer, Paul. 'Kant and the Philosophy of Architecture'. *The Journal of Aesthetics and Art Criticism* 69, no. 1 (2011): 7–19. <https://doi.org/10.1111/j.1540-6245.2010.01442.x>.
- Held, John, and Richard Choy. 'Deskilling and skilling in architect profession – trust, fees and experience'. *BPN* (January 2015). <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/trade-journals/deskilling-skilling-architect-professiontrust/docview/1650036595/se-2>.
- Hines, Ruth. 'Accounting: Filling the negative space'. *Accounting, Organizations and Society* 17, no. 3 (1992): 313–341. [https://doi.org/10.1016/0361-3682\(92\)90027-P](https://doi.org/10.1016/0361-3682(92)90027-P).
- Hoffman, Andrew, and Rebecca Henn. 'Overcoming the Social and Psychological Barriers to Green Building'. *Organization and Environment* 21, no. 4 (2008): 390–419. <https://doi.org/10.1177/1086026608326129>.
- Home, Henry, Lord Kames. *Elements of Criticism*. Edited by Peter Jones. Indianapolis: Liberty Fund, Inc, 2005. <https://ebookcentral-proquest.com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=3327286>.
- Isaac, David, John O'Leary and Mark Daley. *Property Development: Appraisal and Finance*. London: Palgrave, 2016.
- Isaac, David, and John O'Leary. *Property Valuation Techniques*. London: Palgrave Macmillan, 2013.
- Jameson, Fredric. *Postmodernism, or, The Cultural Logic of Late Capitalism*. London: Verso, 1991.
- Jeacle, Ingrid, and Chris Carter. 'Fashioning the popular masses: accounting as mediator between creativity and control'. *Accounting, Auditing & Accountability Journal* 25, no. 4 (2012): 719–751. <https://doi.org/10.1108/09513571211225114>.
- Jencks, Charles. *The Iconic Building*. New York: Rizzoli International Publications, 2005.
- Justesen, Lise, Jan Mouritsen, and Samantha Warren. 'The triple visual: Translations between photographs, 3-D visualizations and calculations'. *Accounting, Auditing & Accountability Journal* 22, no. 6 (2009): 973–990. <https://doi.org/10.1108/09513570910980490>.
- Kafka, Franz. *The Trial*. Translated by Willa and Edwin Muir. London: Secker and Warburg, 1945.
- Kanoglu, Alaattin. 'An Integrated System for Design/Build Firms to Solve Cost Estimation Problems in the Design Phase'. *Architectural Science Review* 46, no. 1 (2003): 37–47. <https://doi.org/10.1080/00038628.2003.9696962>.
- Kant, Immanuel. *Critique of Judgment*. Translated by Werner Pluhar. Indianapolis: Hackett Publishing Company, 1987.
- Koolhaas, Rem. *Delirious New York*. New York: Monacelli Press, 1994.
- Latour, Bruno. *Laboratory Life: The Social Construction of Scientific Facts*. Beverly Hills: Sage Publications, 1979.
- Latour, Bruno. 'Visualisation and Cognition: Drawing Things Together'. Paper prepared for introduction of seminar organised at Ecole des Mines for the CNRS. 12–14 December 1983, no. 21 (1983). Accessed on 22 August 2016. www.bruno.latour.fr.

- Latour, Bruno. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press, 2007.
- Libeskind, Daniel. *Breaking ground: adventures in life and architecture*. New York: Riverhead Books, 2004.
- Lieto, Laura. 'Star Architecture as Socio-Material Assemblage'. In *About Star Architecture: Reflecting in Cities in Europe*, edited by Nadia Alaily-Mattar, Davide Ponzini and Alain Thierstein. Cham: Springer, 2020.
- Logan, John and Harvey Molotch. *Urban fortunes: the political economy of place*. Berkeley: University of California Press, 2007.
- Lucas, Ray. *Research Methods for Architecture*. London: Laurence King Publishing, 2016.
- Margolin, Victor. *Design discourse: history, theory, criticism*. Chicago: The University of Chicago Press, 1989.
- Marx, Karl. *The Communist Manifesto*. Oxford: Oxford University Press, 2008.
- Marx, Karl. *Das Kapital: A Critique of Political Economy*. Edited by Friedrich Engels. Washington, D.C.: Regnery Publishing, 2012. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=909542>.
- McNeill, Donald. 'Office buildings and the signature architect: Piano and Foster in Sydney'. *Environment and Planning A* 39 (2007): 487–501. <https://doi.org/10.1068/a3720>.
- McWilliam, Gil, and Angela Dumas. 'Using metaphors in new brand design'. *Journal of Marketing Management* 13, no. 4 (1997): 265–284. <https://doi.org/10.1080/0267257X.1997.9964472>.
- Mommersteeg, Brett. 'Approximations: On Some Ways to Listen to a Building "in the Making"'. *Science, Technology, & Human Values* (2022): 1–25. <https://doi.org/10.1177/01622439221116964>.
- NERIS Analytics Limited. 'Commander Personality'. Accessed on 16 September 2023. <http://16personalities.com/entj-personality>.
- Norman, Donald. *Emotional Design: Why We Love (or Hate) Everyday Things*. New York: Basic Books, 2005.
- Obrinsky, Mark. *Profit Theory and Capitalism*. Philadelphia: University of Pennsylvania Press, 1983.
- Pallasmaa, Juhani. *The Eyes of the Skin: Architecture and the Senses*. Chichester: Wiley, 2012. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=896076>.
- Patterson, Matt. 'Revitalization, transformation and the "Bilbao effect": testing the local area impact of iconic architectural developments in North America, 2000–2009'. *European Planning Studies* 30, no. 1 (2020): 32–49. <https://doi.org/10.1080/09654313.2020.1863341>.
- Pratt, Scott. *Logic: Inquiry, Argument, and Order*. Hoboken: John Wiley & Sons, 2014. ProQuest Ebook Central, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=7104348>.
- Property Council of Australia. *Method of Measurement for Lettable Area*. Sydney: Property Council of Australia, 2008.
- Property Council of Australia. *A Guide to Office Building Quality*. Sydney: Property Council of Australia, 2012.
- Rancière, Jacques. 'The Aesthetic Dimension: Aesthetics, Politics, Knowledge'. *Critical Inquiry* 36, no. 1 (2009): 1–19. <https://doi.org/10.1086/606120>.

Rancière, Jacques. *Politics of Aesthetics*. Edited by Gabriel Rockhill. London: Bloomsbury Publishing, 2013. ProQuest Ebook Central, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=1224249>.

Robson, Keith. 'Accounting numbers as "inscription": Action at a distance and the development of accounting'. *Accounting, Organizations and Society* 17, no. 7 (1992): 685-708. [https://doi.org/10.1016/0361-3682\(92\)90019-0](https://doi.org/10.1016/0361-3682(92)90019-0).

Rosa, Joseph. *Louis I. Kahn, 1901-1974: enlightened space*. Koln: Taschen, 2006.

SafeWork NSW. 'Maintaining-thermal-comfort-in-indoor-work-environments'. 6 July 2020. Accessed on 16 September 2023. <https://www.safework.nsw.gov.au/resource-library/heat-and-environment/maintaining-thermal-comfort-in-indoor-work-environments>.

Samuel, Flora. *Le Corbusier in Detail*. London: Routledge, 2007. <https://doi.org/10.4324/9780080550626>.

Satre, Jean-Paul. *Being and Nothingness: An Essay in Phenomenological Ontology*. Translated by Sarah Richmond. London: Routledge, 2018.

Sawyer, Mark, Georgia Lindsay and Nadia Alaily-Mattar. "'Google for President': Power and the Mediated Construction of an Unbuilt Big Tech Headquarters Project'. *Architectural Theory Review* 27, no. 1 (2023): 136–151. <https://doi.org/10.1080/13264826.2023.2231563>.

Schelling, Friedrich. *System of Transcendental Idealism*. Translated by Peter Heath. Charlottesville: University Press of Virginia, 1978.

Schelling, Friedrich. *The Philosophy of Art*. Edited by Douglas Stott. Minneapolis: University of Minnesota Press, 1985. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=316641>.

Schopenhauer, Arthur. *The World as Will and Representation, vol 1*. Translated by E. Payne. Newburyport: Dover Publications, 1966. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=1894850>.

Shakespeare, William. *Hamlet, Prince of Denmark*, Minneapolis: Lerner Publishing Group, 1985. ProQuest Ebook Central. <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=5445719>.

Sheil, Bob. 'Transgression from drawing to making'. *Arq* 9, no. 1 (2005): 20–32. <https://doi.org/10.1017/S1359135505000059>.

Silverman, David. *A Very Short, Fairly Interesting and Reasonably Cheap Book About Qualitative Research*. Los Angeles: Sage Publications, 2013.

Silverman, David. *Interpreting Qualitative Data*. Los Angeles: Sage Publications, 2014.

Simon, Herbert. *The New Science of Management Decision*. Englewood Cliffs: Prentice-Hall, 1977.

Simon, Herbert. 'Making Management Decisions: The Role of Intuition and Emotion'. *The Academy of Management Perspectives* 1, no. 1 (1987): 57–64. <https://doi.org/10.5465/ame.1987.4275905>.

Simondon, Gilbert. *Physico-Biological Genesis of the Individual*. Translated by Taylor Adkins. Paris: Presses Universitaires de France, 1964. <http://topologicalmedialab.net/xinwei/classes/readings/Simondon/Physico-BiologicalGenesisIndiv.pdf>.

Sklair, Leslie, and Laura Gherardi. 'Iconic architecture as a hegemonic project of the transnational capitalist class'. *City* 16, no. 1–2 (2012): 57–73. <https://doi.org/10.1080/13604813.2012.662366>.

Smith, Adam. *The Wealth of Nations*. Ware: Wordsworth, 2012.

Spencer, Douglas. *The Architecture of Neoliberalism: How Contemporary Architecture Became an Instrument of Control and Compliance*. London: Bloomsbury, 2017.

- Sullivan, Louis. 'The Tall Office Building Artistically Considered. I. II. III'. *Lippincott's Monthly Magazine* no. 3 (1896): 403. <http://ezproxy.library.usyd.edu.au/login?url=https://www.proquest.com/magazines/tall-office-building-artistically-considered/docview/135759955/se-2>.
- Taranath, Bungale. *Structural Analysis and Design of Tall Buildings*. New York: McGraw-Hill, 1988.
- The Macquarie Concise Dictionary*. Edited by Arthur Delbridge and John Bernard, Third Edition. Macquarie University: The Macquarie Library, 1998.
- Thompson, Craig, and Diana Haytko. 'Speaking of fashion: Consumers' uses of fashion discourses and the appropriation of countervailing cultural meanings'. *Journal of Consumer Research* 24, no. 1 (1997): 15–42. <https://doi.org/10.1086/209491>.
- Till, Jeremy. *Architecture depends*. Cambridge: Massachusetts Institute of Technology, 2009.
- Trevisan, Paola, and Jan Mouritsen. 'Compromises and compromising: Management accounting and decision-making in a creative organisation'. *Management Accounting Research* 60 (2023): 100839. <https://doi.org/10.1016/j.mar.2023.100839>.
- Tzu, Sun. *The Art of War*. Translated by Lionel Giles. New York: Dover Publications, 2019. ProQuest Ebook Central, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=5748250>.
- Bommel, Koen. van. 'Towards a legitimate compromise?: An exploration of Integrated Reporting in the Netherlands'. *Accounting, Auditing, & Accountability* 27, no. 7 (2014): 1157–1189. <https://doi.org/10.1108/AAAJ-04-2013-1309>.
- Van Maanen, John. *Tales of the field: On Writing Ethnography*. Chicago: University of Chicago Press, 1988.
- Veblen, Thorstein. *The Theory of The Leisure Class*. New York: Prometheus Books, 1998.
- Vitruvius, Marcus. *The Ten Books of Architecture*. Translated by Morris Morgan. Cambridge: Harvard University Press, 1914. <https://www.gutenberg.org/cache/epub/20239/pg20239-images.html>.
- Vollmer, Hendrik. 'How to do more with numbers. Elementary stakes, framing, keying, and the three-dimensional character of numerical signs'. *Accounting, Organizations and Society* 32, no. 6 (2006): 577–600. <https://doi.org/10.1016/j.aos.2006.10.001>.
- Welch, Patrick, and Gerry Welch. *Economics: Theory & Practice*. Hoboken: Wiley, 2016. ProQuest Ebook Central, <https://ebookcentral-proquest-com.ezproxy.library.sydney.edu.au/lib/usyd/detail.action?docID=5106492>.
- Whittle, Andrea, and André Spicer. 'Is actor network theory critique?'. *Organization Studies* 20, no. 4 (2008): 611–629. <https://doi.org/10.1177/0170840607082223>.
- Whyte, Jennifer, Kjell Tryggestad, and Alice Comi. 'Visualizing practices in project-based design: tracing connections through cascades of visual representations'. *The Engineering Project Organization Journal* 6, no. 2-4 (2016): 115–128. <https://doi.org/10.1080/21573727.2016.1269005>.
- Willis, Carol. *Form Follows Finance*. New York: Princeton Architectural Press, 1995.
- Wolcott, Harry. *Ethnography: A Way of Seeing*. Lanham: AltaMira Press, 2008.
- Yaneva, Albena. *Made by the Office for Metropolitan Architecture: An Ethnography of Design*. Rotterdam: 010 Publishers, 2009.
- Yaneva, Albena. 'Editorial. New Voices in Architectural Ethnography'. *Ardeth* 2 (2018): 17–24. <http://journals.openedition.org/ardeth/739>.
- Yin, Robert. *Qualitative Research from Start to Finish*. New York: The Guildford Press, 2011.

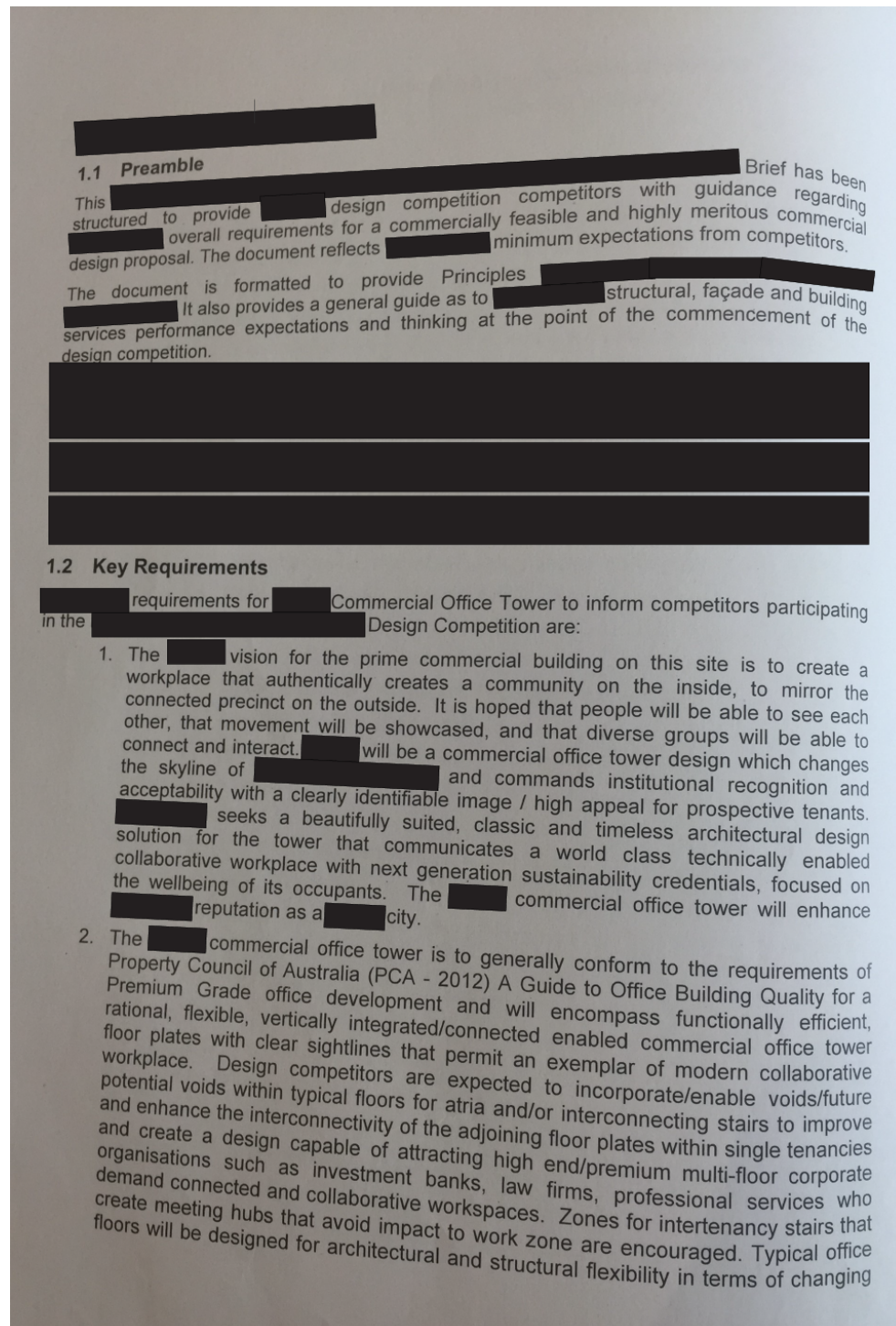
APPENDIX A

Semi-structured interview template

1. How long have you been with PropertyCo/Other organisation as appropriate? What were your previous roles?
2. What was the pathway for you in assuming your responsibilities and skills?
3. What are the key experiences and people that have shaped your sense of what is necessary to be effective in your role?
4. How were you appointed to the NBD project? Was there a choice?
5. What are your primary considerations in structuring your work activities: what, where, who, when, how?
6. What are your key reporting relationships?
7. What are the most important KPIs in your own performance?
8. What are the key organisational relationships which you protect and foster?
9. What are the challenges/frustrations you face in the wider set of relationships you have?
10. What keeps you awake at night?
11. What are the key tensions that you see between architectural aesthetics and economic imperatives? What in particular, is at stake? How and when does it manifest itself? How is it best managed in your view?
12. What is a good and poor design outcome?
13. What can I best afford not to miss?
14. What would you hope to get from me observing the process in this way?

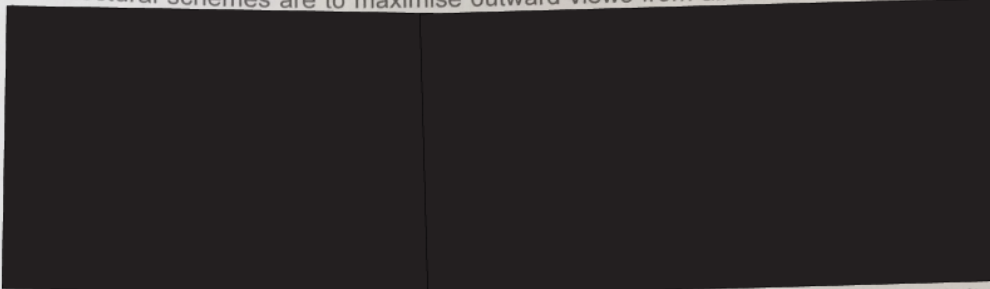
APPENDIX B

The following pages show the NBD Architectural Design Brief ('ADB'). This has been redacted for the purposes of anonymity.



tenancy tenure and future tenant needs and be easily adaptable to accept change and advancements in technology and ways of working collaboratively.

3. Architectural schemes are to maximise outward views from all office floor levels [REDACTED]



All view and outlook opportunities inherent in the [REDACTED] sites location and its approved tower envelope should be maximised by competitors.

4. The maximisation of views is expected to be achieved, in part, by maximising the amount of available [REDACTED] floor space above the level of the proposed (approved envelope height of [REDACTED] directly [REDACTED] of the [REDACTED] site. The minimisation of [REDACTED] floor space below the [REDACTED] envelope at [REDACTED] is expected to be achieved through a combination of architectural design initiatives, some of which could include maximising ground plane retail floor to floor height, maximising the commercial office lobby internal height, [REDACTED] floor to floor heights in accordance with the requirements of the [REDACTED] pragmatic selection of low rise floor to floor heights, strategic positioning of podium and low rise plant rooms (where relevant) and the like. Passive solar shading methods are encouraged to control glare and enhance sustainability, but must not be to the detriment of views. The structural frame will be efficient and will be configured to minimise detrimental impacts upon views.
5. There is potential to create vertical villages within the [REDACTED] tower adjacent the most prominent view points on the floor plate provides an enhanced leasing opportunity for [REDACTED] Vertical Villages will increase the appeal of the smaller floor plates currently contemplated by the permissible [REDACTED] tower envelope improving the likelihood of securing sufficient leasing pre commit to bring the development to fruition. The introduction of vertical villages will also provide a significant opportunity for [REDACTED] design competition proponents competitors to create an articulated façade response worthy of the [REDACTED] towers most prominent [REDACTED] façade line in the [REDACTED] skyline. Articulated façades are to be within the permissible envelope.
6. Night time showcase. The commercial office towers dominance of the [REDACTED] skyline [REDACTED] address should also be enhanced from a night time perspective. Design competitors should contemplate and investigate opportunities for the towers night time presence to showcase its premiership in the night time skyline and perspective through innovative forms of internal, façade and external lighting. [REDACTED]
[REDACTED]
7. In all cases, the [REDACTED] commercial tower office floor plates are to have their area maximised (PCA NLA) having regard to the approved envelope with an expected PCA NLA/Statutory GFA target efficiency of over 90%. Design competitors should closely study the relevant definitions of Statutory GFA [REDACTED] and PCA

NLA to ensure that the efficiency of commercial office tower floor plate designs and resultant PCA NLA are maximised.

8. While multi floor and full floor tenants are expected to be the norm, design competitors are to investigate and provide for flexibility of commercial floor plates to allow efficient sub-divisibility into smaller tenancies (maximum 3 tenancies per floor)
9. Commercial office tower architectural design schemes are to maximise access to [REDACTED] natural light while managing internal glare for occupants and achieving the commercial office towers required sustainability performance. Passive solar shading methods are encouraged to control glare and enhance sustainability. Design competitors need to create a building that is sustainable, functionally efficient to operate and maintain, that will keep running and maintenance costs at a minimum over its entire life cycle.
10. The commercial office tower will be side core (with core positioned directly adjacent the realigned [REDACTED] frontage of [REDACTED]). It is envisaged that the side core will generally encompass 3 lift rises (Low Rise, Mid Rise and High Rise). Transfer zones between lift risers will be provided at the level of the upper most floor of the rise. The core configuration needs to coordinate closely with the basement driveway access and in consideration of a proposed Through Site Link between lift cores from [REDACTED]. The core will be configured to minimise accountable Gross Floor Area (GFA) located within the core footprint (which is not leasable PCA NLA), so as to maximise the efficiency and commercial viability of the tower. The extent of riser and cupboard doors opening out on to the leasable floor area from the core is to be minimised (if not eliminated). Design competitors should be aware that increasing core size diminishes the area of the floor plate within the approved envelope.
11. Design competitors should consider the [REDACTED] view corridors of other neighbouring development proponents within [REDACTED]. These include [REDACTED]. Adverse impacts to [REDACTED] view corridors of neighbouring development proponents, over and above those contemplated by the approved [REDACTED] tower envelopes are likely to result in significant objections during subsequent public exhibition of the design competitors scheme during the development application phase.

12. [REDACTED]

13. [REDACTED]

[REDACTED]

14. For the purpose of the design competition, the [REDACTED] commercial office tower design occupancy rates are to be:

- a. Commercial office [REDACTED] 1:10 m2 PCA NLA
- b. [REDACTED]
- c. Commercial office fire stairs and amenities: 1: 8 m2 PCA NLA
- d. Building services typically 1:10 sq. m PCA NLA (1:8 m2 PCA NLA [REDACTED])
- e. Lifts at a population density of 1 person per 12m2 per PCA Premium Grade.

15. Design competitors must also consider that the number of lifts to achieve the requirements of Property Council of Australia (PCA - 2012) Design competitors must have regard to the optimising the commercial office towers height to prevent unnecessary and undesirable erosion of the commercial tower floor plate areas via the provision of "surplus" lifts.

16. A single vehicle entry / exit point into the basement is to be provided from [REDACTED]

[REDACTED] It is envisaged that this vehicular entry / exit point will service both the commercial office tenant vehicular parking requirements (circa [REDACTED] cars) together with the [REDACTED] central loading dock/service vehicle facilities. The [REDACTED] central loading dock facilities will also be required to service the retail tenancies [REDACTED]

[REDACTED] Design competitors must ensure that the basement entry/exit and ramp can accommodate the required service vehicles.

17. Commercial office tenants End of Trip facilities (including bike storage, amenities and locker rooms etc. for cyclists) are expected to be located in the basement

18 [REDACTED]

19. Preliminary flood modelling undertaken by [REDACTED] indicates 100-year frequency flood events create overland flow depths of the order of [REDACTED] in [REDACTED] and the new [REDACTED] laneway flood scenarios are less problematic, however, design competitors will need to consider flood mitigation as part of their design schemes. Vertical Transport solutions implemented in the commercial office tower together with retail planning, building threshold, basement driveway threshold, egress stair planning, [REDACTED] building servicing and operation generally will all be required to consider and protect against flooding.
20. The primary business address for the [REDACTED] commercial office tower is to be from [REDACTED]. The commercial office lobby is expected at the upper ground floor, accessible directly from the primary [REDACTED] business address via the new public plaza [REDACTED]. A secondary (but equally important) business address from [REDACTED] to the commercial office lobby is expected via separate escalator/disabled lift. Design competitors are expected to create a suitable entry statement and arrival experiences at both [REDACTED].
21. The majority of the commercial office tower lifts are not expected to directly access the laneway and basement levels, instead terminating at the upper ground lobby. Supplementary vertical transport facilitating ready connection between the commercial office tower lobby and the activated laneway [REDACTED] level is expected via both lift and escalator. Likewise, separate carpark/basement/laneway jockey lift services are expected to service the Upper Ground floor lobby, Ground Floor (Lanes) and all basement levels of the tower.
22. [REDACTED]
23. Sustainability. Achieve 6 Star Green Star rating under Green Star – As Built Office (v3) ratings tool, or its equivalent. Achieve a minimum 5 Star base building rating in operation under the NABERS Energy scheme, 4 Star base building rating in operation under the NABERS Water scheme. Base Building to facilitate minimum Gold WELL Building Rating Standard
24. A compliant commercial office tower PCA Premium Grade lift service can be provided utilising Destination Control lift technology. It is envisaged that each commercial office tower floor be served by one dedicated goods lift in association with one shared goods / passenger lift to provide a PCA required two goods lift service. The single dedicated goods lift is to be included within the new tower building is to serve all levels from the lowest basement level to the highest plant room level. The goods lift is to be designed to meet the PCA "Premium" criteria
25. Indicative floor to floor, floor to ceiling heights expectations are as follows:
- Above [REDACTED] RL 112.5 RL AHD, typically up to 3.95m permitting 150mm raised access floor and circa 3,000mm ceiling height (above raised access floor). Minimum acceptable ceiling height 2,700mm
 - Below [REDACTED] RL 112.5 RL AHD, typically maximum 4.35m

- c. Minimum 6.4m plant room floor to floor
 - d. [REDACTED]
 - e. In all cases, maximise ground level retail and through site link floor to floor and ceiling heights.
 - f. Create a generous and prestigious upper ground floor main lobby of clear internal height of up to 14m
 - g. Client floor opportunities to be investigated at the floors coinciding with the top of each lift rise.
26. Buildability will be a key factor in the assessment of design proposals, with those designs demonstrating rational structural grids and which maximise the potential use of prefabricated elements and repetitious elements considered favourably. Submission entries must have regard to construction methodology, including issues such as buildability and staging.
27. In areas where adjacent buildings are in close proximity to the [REDACTED] [REDACTED] measures to maintain privacy for the occupants [REDACTED] are to be considered.
28. Flexibility to meet future tenant requirements. Design competitors should demonstrate how the building design has the flexibility to meet a variety of additional tenant requirements beyond PCA Premium Grade. These could include:
- a. 150mm raised access floor
 - b. Office floor plate flexible penetrable zones for future vertical connection
 - c. Enhanced ceiling heights generally and specifically to potential client floors
 - d. World class commercial end of trip facilities (potentially encompassing concierge, laundry, gymnasium etc.)
 - e. BMS/IT/Phone App interface
 - f. Biophilia
 - g. Others to the design competitor's determination
29. Building Technology. [REDACTED] will be technically enabled and will put people and experience at the forefront of all technology decisions. [REDACTED] will be a showcase for smart, open-architected and future ready technology that is sympathetic to the natural environment whilst pushing the boundaries of innovation. [REDACTED] will be a dynamic, immersive and connected place that simulates co-creation, creativity, innovation and professional excellence. It will set new benchmarks in lifestyle experience and attract the brightest people, minds and businesses to converge, connect and innovate.
- As people increasingly rely on technology to stay 'connected'. Technology provides the means to maintain social relationships, and is used to inform decisions about work, lifestyle and social activities.
- As cities continue to grow, people will look for places where 'seamless connectivity' is easy to achieve, or is ubiquitous. Being 'connected' is as important as proximity to work, access to transport and personal safety.
- [REDACTED] has the clear vision and objective to be a leading global smart building where the use of technology innovation and process combine to create a place that is safer,

more comfortable and productive for its occupants and more operationally efficient for its owners and operators.

Underpinning the smart building vision are a number of foundational digital infrastructure components. Realising the smart building vision will attract and subsequently retain leading commercial tenants and will require a focus and commitment to the following:

- Integrated Connectivity
- A Globally Connected Building
- Mobility Internet of Things (IoT's)
- Tenant Experience & Engagement
- Operational Excellence
- Environmental Sustainability
- Automated Workplace Optimisation

30. The winning designer will be required to work with the [REDACTED] appointed consultancy team to design develop and value engineer the winning design competition scheme to a point suitable for the lodgement of a development application. The winning design competition competitor will be required to design and develop the scheme to ensure the development commercial objectives are achieved, including the development schemes conformance to the [REDACTED] approved development design and construct budget as well as design feedback form the City [REDACTED]
31. Design competitors must document as part of their design competition scheme submission where their design scheme is non conforming to this [REDACTED] or the planning controls for the site.