APPENDIX 7

MUSIC and ARCHITECTURE: A BRIEF REVIEW OF THE CURRENT LITERATURES

7.1. Architecture and Music:

The literatures discuss the various approaches to analyse the relationships between architecture and music. The works written on the topic related to architectural and musical compositional languages such as numbers, geometry, ordering systems, harmony, etc… (De la Riva). Some of the reviewed literatures focus on Vitruvian, Palladian, and Pythagorean analysis of the relationships between music and architecture. On a contemporary approach, a numbers of the writings are illustrated along with a specific architectures or artworks. As for the works by architects, which have musical ideas, some are projects and many are built works. Most of the built works are buildings, private residences, parks, and architecture enhancements on highways. (ie. Martin et al) However, only a few instances where music and architecture were composed and designed for each other. These instances are listed in Chapter 6

The second subcategory concerns the experimental performance spaces and music. Which could be listed in the fist subcategory, along with works by architects. However, for this particular thesis, it is necessary to separate these two since experimental performance space discussed here, are primarily built as adjustable space for music research. One noticeable built work is Renzo Piano's design of the extension to Institute of Contemporary Research on Acoustics and Music (IRCAM) (1988-90), which are closely associated with composer Pierre Boulez. The extension to IRCAM contained an underground soundproof space that can be flexibly adjusting it physical and acoustical characteristics for the experimentations of new music.

In the last subcategory, may be a minor one, however it is important here to mention the creative relationship between the musicians, composers, artists and architects who were in the spirit of collaboration created works that are significant to the creative endeavours of architecture and music. A majority of the literatures, in this category, discuss the working relationships between the two professionals; some of those noted architects and composers are mentioned above.

7.2. Architectural acoustics

It would not be fair to not discuss the foundation on accepted auditorium designs and acoustics practice. The concert experience we have in concert halls today, are result of many years of tuning and retuning. There is an exceptionally extensive list of literatures on the subject of auditorium acoustics since 1900. Perhaps the one of the most accessible and well-known author to the design profession would be Leo Beranek. It is believed that we have achieved admirably in building the best rooms for the performance 19th century symphonic music. One of which is the Concertgebouw in Amsterdam (Beranek, 1996).

The second category of literatures examines the "relationship between physical sound and subjective auditory sensation", (Cabrera, 2003a & b) which may be defined as psychoacoustics. This perception of sound may have influence on musical listening in a performance space without being directly influenced by the spatial form of the room. This portion of the literature is important to this thesis in the subjective enhancement to the argument of this thesis, that even though the auditory perception of music and the spatial perception of architecture may be independent of each other, but they can be used interdependently to create an instrument of experience in terms of phenomenology. Review of the literature relate specifically to spatial impression in concert hall is found in Chapter 2.

7.3. Current researchs in the topics involve the relationships between architecture and music:

As discuss briefly in section A of the literature review, there are other approaches in this research arena in explaining the relationships between architecture and music. This section is to expanse on that discussion into a more specific relativity to the topic of this particular study. The current studies in this more narrowed field in the past 10 years are primarily academic theses, in the discipline of architecture or music.

These literatures discuss the relationships between music and architecture in terms of styles, music and architecture in the creative process, specific comparison of a piece of music to a piece of architecture, compositional aspects of form and space, geometry, ordering systems, (Amabile, Economou, Lootsma). There are some crossover-topics between the different categories mentioned above.

Music and architecture, separately, have been studied extensively in the domain of styles. Some scholarly research material considered these stylistic developments of music

and architecture have some correlations. (Classifying these new musical composition theories may not be accurate. However, for the purpose of classification some generalisation is needed.) These literatures focus on modern 20th century music and architecture in the constructivist, deconstructivist, minimalist, serialist, and post-modern directions.

One example, James Powell stated that his thesis "formulates a general theory of a complex minimal architecture, then achieves a specific manifestation by applying modulatory operations of twentieth century music to the design of a concrete architecture object." He tests his theory by applying it in a design project, which complete his thesis. The fact that I have not seen the design project, a question arises, is this an appropriate way of testing a theory? An architectural design often can be manipulated to fit any theory. Further more, if this author can arrive at a theory, he it is also possible that he would be able to drive the design process to meet the demands of his own theory. Where as other designers, may not be able to do so under different design contexts. To replicate the process, and to achieve the same results, various conditions must be met. In design projects, particularly those that have other specific constraints, this may not be possible.

Architecture and music are related on certain aspects regarding the creative process (Oechslin, Ong). One example in the literature, specifically focus on "*Deconstruction as a Creative Process as seen in Perter Eisenman's Wexner Center for the Visual Arts and Gyory Ligeti's 'Ramifications for String Orchestra or 12 Solo Strings'* by Norma Jean Humphrey (2001). This work looks at the link in the creative process through the lenses of deconstructivism, specifically "Jacques Derrida's critical theory of literary Deconstruction." The author findings indicate that "certain principles of Derrida's theory" are found to have some contribution to the "creative process" in the architecture of Eisenman and music of Ligeti. Deconstructivism may be suggestive to have a negative connotation, which the author has suggested that there are more studies needed to explore "more positive aspects of the Deconstructive discourse."

7.4. Phenomenology:

It is necessary to define what phenomenology is, before proceeding to discuss architecture and music phenomenology. According to the Oxford Companion to The Mind, phenomenology is a term used in philosophy to denote enquiry into one's conscious and particularly intellectual process, any preconceptions about external causes and consequences

being excluded. Edmund Husserl, the philosopher who was formally known to have developed this method of investigation into the mind. (Gregory, pp614-616)

7.4.1. Architecture Phenomenology:

The phenomenology of architecture has been a subject of discussion by some architects and architectural historians. So far, from this literature review, the human intellectual experience of architecture in terms of phenomenology is examined through the writings of Steven Holl, Juhani Pallasmaa, Alberto Pérez-Gómez, and Christian Norberg-Schulz. In summary, human perception of space is a part the human experience of the spatial quality of architecture. This experience is generated by human intellectual conscious of simply being is existed in the space. And, in relation to phenomenology, it is excluding "the social-economical conditions, although they may facilitate or impede the (self-) realization of certain existential structure." The concept of existential space is the defined by Norberg-Schulz "is not a logico-mathematical term, but comprises the basic relationships between man and his environment."

This "basic relationship between man and his environment" discussed by Pallasmaa and Holl in terms of sensing architecture through everyday life, and to transcend the daily experience through sensing architecture of its essence by discarding the commercialistic distractions of our own daily lives.

Other writings on the visual perceptions and relationship between humans and their environments are explored in Edward T. Hall's *The Hiddend Dimension: Man's Use of Space in Public and Private.* One of the senses that have possible influences on the experience of space is "kinesthetic", in more explicit terms as compared to Pallasmaa's and Holl's. In moving about a space, one experiences it, and "what you can do in it determines how you experience a given space" (Hall). In Japanese architecture, according to Hall, "The early designers of Japanese garden apparently understood something of the interrelationship between the kinesthetic experience of space and the visual experience." The garden was designed so that when one walk through it, some relatively specific set of body movements must be made, thus enable the visitors to experience the garden a certain way that may be intended by the designers.

Hall's writing poses a challenge to the question(s) of this thesis, on how relevant kinesthetic and tactile senses specifically to the holistic experience of a performance space, and weather or not these senses are too important to be left out in the discussion.

7.4.2. Music Phenomenology:

In this literature review, phenomenology of sound is the primary discussed by the philosopher Don Ihde in *Listening and Voice*, and among his numerous publications (Ihde 1976, et al, 1979). Under the umbrella of phenomenology, Ihde also discusses the perception of listening experience in terms of "sounds as meaningful" (Ihde, 1976, p4). In sensing the meaningfulness of sound, which believed here as the essence of listening, we must be critically listen to the sounds of the world and intellectually sense what we are listening.

Thomas Clifton and Harris Berger offered two descriptions of phenomenology of music. Clifton's description of a musical experience is a process of "actualising" the sound being presented to a person. That person is experiencing the sound, which suggest some meanings, "with his mind, his feelings, is senses,…" The author made a distinction between what is music and what is not. By his definition, music is "an ordered arrangement of sounds and silences whose meaning is presentative." The listener's experience is concentrating "upon the essences" of the musical object and its meaning. This meaning, which distilled from the experience, is unique to every individual and cannot be shared unless it is expressed. Unlike Berger, Clifton's context of the argument in regarding the expression of the listeners on the experience is based on Western Classical music tradition (Clifton,1983, pp1-15).

While Berger has followed the general definition of phenomenological experience of music, he has a different viewpoint that based on an ethnographic context. In the Jazz music tradition, as argued by Berger, the audience's phenomenological experience not only directly related to music is being played but also influences by the other members of the audience. In this sense, the "constitution of experience is a social act," and Berger suggested that human as a social beings, "we can learn to constitute experiences in ways similar to that of others."(Berger, 1999, p21-22). It is may be understood here that the phenomenological experience of Jazz music in an idealist philosophy is not possible objectively. While Jazz music listening approach involves a level of 'sharing' in the experience, Western Classical music listening involves individual intellectual analysis of what is being heard (Berger, 1999, p23-28).

7.5. The phenomenological relationship between architecture and music:

Don Ihde mentioned, "seeing is knowing". "Hearing is knowing" could be said in this context, and the person who is "knowing" what he seeing or hearing is relating to the object of experience in some intellectual capacity.

After Husserl, Ihde defined First Phenomenology as (i) highly technical language, (ii) set of intellectual machinery, (iii) epoché, phenomenology of reductions, bracketing, (iv) science of experience. Epoché, in the first phenomenology, may be analysed in details in a systematic way. This also discussed by Berger, and Clifton.

After Heiddeger, Ihde defined The Second Phenomenology as (i) question of existential language, (ii) sense of learning [where one feels even as he enters a new language that he has know it all along], (iii) profound way of experience. Berger and Clifton seems to lean toward approaching experience in the Second Phenomenology. Clifton's argument based on context of experience seems to be of an individual and Berger's, of a group, which emphasis on a sharing, by way of expressing their feelings.

Berger found that when he examine experience using epoché, "nothing has changed: the objectivity of the world is retained in pure experience that the epoché establishes." He suggested that we should "remove the epoché and find out what lurks behind experience, because the objective characteristics of the world are given directly in experience." Clifton discussed what seems to be a similar point but about the analysis of pitch, in itself, cannot be use anatomically to understand experience. He said, "pitch is 'transparentized' in a musical context, which is to say that we experience music through the pitch, rather than the pitch itself."

In Pallasmaa's article, "An Architecture of the Seven Senses" in *Questions of Perception: Phenomenology of Architecture*, he discussed various senses employed in the experiencing of architecture. Architecture is a container of experience by way of containing time, memory, and the experiencing human being. The person is connected to the memory of the place by the sense of touch, smell, hear, and taste. Some of these senses may not be employed literally, but according to Pallasmaa, memory can evoke these certain sensations. It seems that the human sensing capacity and bodily memory are possible ways of bridging the architectural and musical experiences and inturn contributes to a holistic experience.