ARCHITECTURE STUDIO
ARCHIVE: A CASE STUDY IN
THE COMPREHENSIVE DIGITAL
CAPTURE AND REPOSITORY OF
STUDENT DESIGN WORK AS AN AID
TO TEACHING, RESEARCH, AND
ACCREDITATION

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The ‘Architecture Studio Archive’ pilot sought to form a comprehensive digital archive of the diverse student work conducted in the first year of the Bachelor of Design in Architecture Degree at the University of Sydney. The design studio is the primary vehicle for teaching architectural design. It is a locus for creative activity, with students producing diverse works in analogue and digital media (sketches, final hand and CAD drawings, conceptual and scale models, and written work). Following assessment, they either take their work home or abandon it to potential damage in the studio. This project promised the retention of this material and the production of a powerful, searchable digital archive in the Sydney eScholarship Repository, using the open access digital management system DSpace for long-term storage and dissemination of the material. The intention was to establish procedures and protocols for digital archiving practices suited to creative work.

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BACKGROUND TO THE PROJECT

Faculty context

The ‘Architecture Studio Archive’ pilot sought to form a comprehensive digital archive of the diverse student work conducted in the design studio component of the first year of the Bachelor of Design in Architecture Degree at the University of Sydney in second semester 2008. 142 students were enrolled in the unit of study. The design studio is the primary vehicle for teaching architectural design. It is a locus for creative activity, with students producing diverse creative works in both analogue and digital media (sketches, final hand and CAD drawings, conceptual and scale models, and written work). Following assessment, they either take their work home or abandon it to potential damage in the studio. There is generally little or no record of its existence left for future reference. In the past, the principal deterrent to retaining a broadly representative range of student projects has been the burden of storing physical works, in particular large scale models. With the emergence of digital archives, there exists the potential to capture and securely store a vast amount of material without requiring physical storage space. The question of how best to archive architectural works produced in both analogue and digital media is highly topical and is one that academia shares with architectural practice. This particular study sought to retain the broad range of material produced by undergraduate students and to produce a powerful, searchable digital archive for long-term storage and dissemination of the material. The overall intention was to establish procedures and protocols for digital archiving practices particularly suited to diverse creative work, in order to produce a template that could be broadly adopted both in the Faculty of Architecture Design and Planning and more widely.

This article traces and documents the ‘Architecture Studio Archive’ as a case study; from its inception, through the development of procedures and protocols as a genuinely collaborative exercise between the authors, representing the Faculty and Library at the University of Sydney, through to loading of the work by students, and its subsequent use as a resource for teaching, research, accreditation, and marketing. It presents a successful collaborative project that could in principle be replicated by others, and suggests refinements and opportunities for similar innovations in the future.

Library context

At the University of Sydney, Faculty Liaison Librarians are the first point of contact for staff and students with library enquiries, and they also actively seek new ways to facilitate the delivery of information services. In the context of this project, the Liaison Librarian to the Faculty of Architecture, Design and Planning was the fulcrum between the Faculty and the Sydney eScholarship Repository, University of Sydney, City Road, Sydney 2006 Email: s.christensen@library.usyd.edu.au newman
Repository. The management of the repository, which was formally launched in 2006, sits within a relatively new Library unit entitled Sydney eScholarship\(^2\). Faculty Liaison Librarians work alongside the Sydney eScholarship Repository Coordinator to develop partnerships with a range of academic departments to archive and make readily available on open access material that is scholarly, research oriented, or of particular historical significance to the University, and that has been produced, contributed, sponsored by, or associated with a University of Sydney faculty, department, school, or centre. These criteria have in the past excluded undergraduate student work. However, when considered within the wider context, it is clear that a broader understanding of these definitions should be considered. Some students will contribute to future scholarship and the students themselves may go on to become scholars and researchers in their own right. It was felt that it would be well within the remit of the repository to introduce current undergraduate students to the repository as a tool for archiving their work. This project identified some unique challenges in attempting to archive a very large quantity of undergraduate portfolio work, which in the case of the Faculty of Architecture, Design and Planning ranges from images, physical models, audio and interactive multimedia to traditional written papers. This is one of the key innovative aspects of the project.

There is extensive literature on the broad contemporary role of the institutional repository in universities and academic institutions, and it has been comprehensively collated and tabled by Bailey in his online Institutional Repository Bibliography (IRB),\(^3\) covering such topic areas as: Institutional Repository Digital Preservation Issues; Repository Open Access Policies and Repository Software.

Lynch offers one of the best definitions of the role that institutional repositories perform within universities, when he writes that they are:

> “… a set of services that a University offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution.”\(^4\)

Others have since refined and added to this definition, notably in terms of identifying the increasing role that repositories play in raising an institution’s profile and enhancing and even changing the scholarly publishing paradigm. In his work on institutional repositories and scholarly publishing, Ware\(^5\) notes that repositories will ‘complement’ scholarly publishing and Walters states that “… universities and the libraries hosting IRs are looking for ways to weave their repositories into the "information fabric" of their campuses' academic and business processes and catalyze changes in scholarly communications more broadly.”\(^6\)

Focusing more closely on the Australian context, it is to be noted that repositories play a crucial role in terms of research reporting and compliance in exercises such as the Excellence in Research Australia (ERA) initiative, as identified by
Henty. The technical specifications for this exercise, published by the Australian Research Council, state that the ERA requires access to institutional repositories to peer review reported material.

While there is a mounting body of literature on the role institutional repositories have within universities, the vast majority is focused on academic and researcher output and data. Most of the literature on student work and the use of institutional repositories is focused on postgraduate student theses and to some extent honours theses, with which the Sydney eScholarship Repository is already very familiar. Thus this particular application, based upon undergraduate’s work in a multimedia environment, is a new approach which may prove to be a useful pilot for others to adopt. The repository platform that the Library has adopted is DSpace. It is an open source digital management system jointly developed by the Massachusetts Institute of Technology (MIT) and Hewlett Packard. Broadly understood, the repository seeks to securely store a broad range of digital material in perpetuity, and to make it readily retrievable via the internet to any who wish to access it. The DSpace package comes with a basic set of tools enabling file submission, and these can be customised to a certain degree without major rewriting of code, making it suitable for projects such as the Architecture Studio Archive as discussed below.

PURPOSES OF THE ARCHIVE

The repository is best understood as a raw resource, in that it purely seeks to capture and securely store high quality digital files (text, pdf, images, CAD) and then make them readily available for future utilisation for a range of purposes. It
is assumed that by being made available on open access, the material may be fairly used for the purposes of research and study. If the University wants to utilise the material for other purposes, they will therefore need to negotiate directly with the student. The particular uses to which material in the Architecture Studio Archive may be put include teaching, research, accreditation, and marketing.

**Teaching:**

A scenario in which a collection in the repository could be used for teaching purposes would be one in which an academic is required to take over the teaching of a particular architectural design subject whose history they are unfamiliar with. Via a quick search, they could check the types of projects that have been run in the past, what resources were used and remain available, and what the student outcomes were. The database could also be accessed by academics when reflecting on student feedback provided in Unit of Study Evaluations. Both these uses are immediate and effective and would directly benefit the teaching of a particular unit of study, encouraging ongoing use of the repository. Over time, the repository would house materials which, considered in sum, would provide an excellent overview of the trajectory of the teaching of the subject.

**Research:**

Digital archives provide a rich and readily available resource for research. An academic who had run a particular unit of study for a number of years and wanted to publish on their architecture design studio pedagogy would have at their fingertips a comprehensive record of work produced by students to both analyse as part of their research and to use as supplementary illustrative material.

**Accreditation:**

The Bachelor of Design in Architecture and the Master of Architecture are both professionally accredited by a ‘National Visiting Panel’, convened as part of the Australian Architecture Program Accreditation and Recognition Procedure. As part of the five yearly accreditation process, examples of student work from each degree program must be presented to the panel. These materials consist of both drawings and models that are bulky and difficult to store. The digital archive may be able to serve in place of the physical storage of models and drawings, which are prone to damage and occupy valuable space in the Faculty building. It would be convenient if this material could be documented and stored digitally, and could even be made available to the panel prior to their visit. One imagines a scenario where assessors would be given limited access to certain material over the internet in order to make remote preliminary assessments before visiting the Faculty.

**Marketing:**

A University’s international profile as both a teaching and research institution is increasingly determined by its online presence. The student work in the Sydney eScholarship Repository is harvested by search engines and tools such as Google, Google Scholar, Scientific Commons, and the Arrow Discovery Service,
increasing the exposure of both individual students’ work and, by association, the Faculty and The University of Sydney. The repository also provides a ready graphic resource for promotional material such as brochures, flyers, and posters. As has previously been noted, however, this requires additional clearance from the creators.

**FUNDING FOR THE PROJECT**

Based on the ambitions and parameters set out above, funding for the project was sought and attained via an application to the Teaching Improvement and Equipment Scheme (TIES)\(^1\), administered by the Office of the Acting Deputy Provost (Learning and Teaching) and Pro Vice-Chancellor. A nominal sum was awarded to the project on the condition that its work be completed within 12 months. Although the broad intention was to establish procedures and protocols for digital archiving practices particularly suited to creative work, the concrete criterion upon which the project would be assessed was the successful creation of a comprehensive digital archive of work produced in a single unit of study in 2008, with a view to the development of a template that could be broadly adopted in the Faculty of Architecture, Design and Planning. The grant was awarded in February 2008, and an initial meeting for implementation of the project was held soon thereafter. Project meetings between the Faculty and Library were conducted on approximately a monthly basis during the year, and more individuals were brought in closer to the date when students were to upload all of their work in November. A final report was submitted to the funding body at the end of January 2009.

**PROJECT MANAGEMENT PROCESS**

Once funding was secured, the project moved into the implementation phase. Since the Library had been a partner in the development of the project whilst the parameters were being established and approximate funding implications calculated, there existed a strong grasp of the scope of the project. Nevertheless, a specific scoping meeting was held to reaffirm deliverables and to clarify expectations of the partners in the project. At this stage, the scope of the project was refined, paying close consideration to items such as outcomes, deliverables, roles, and responsibilities. The most significant issues that were identified can be summarised under: community structure; items; and workflow as follows:

**Community structure:**

- Naming protocols for the collection (Faculty, Discipline, Subject, Year).
- Determining who would be administrators, and what their responsibilities would be.

**Items**

- What metadata\(^12\) (descriptive information) should be captured and which elements should be pre-populated.
The number of files per individual student submission (4-5 in total: 1-2 pdfs of drawings, 2 photographs of models, 1 image rendering).

File naming conventions.

Workflow

The assistance that would be provided to students in terms of preparing material (instructions and on-hand support during loading of files).

Establishing a generic login for students.

The order in which the students were to load the requisite material and information, including granting the copyright licence, uploading material, and completing the metadata form.

The Library uses a standard project management procedure, which served as a basis for discussion. In addition, the Library staff involved in the project had extensive project management training and experience, which proved invaluable in keeping the project on track and on time. The Sydney eScholarship Repository service has policies and processes in place for managing the establishment of collections that have specific requirements and higher than usual levels of complexity. During initial discussions between the Faculty and Library in the implementation phase of the project, it quickly became apparent that certain customisations to the way material is deposited in the repository would have to be made.

Once these customisations were agreed upon, a true costing was developed based on an extensive task analysis and breakdown. Each task was accurately costed taking into account the resources required and the estimated time it would take based on comparable past projects. The tasks were broken down as follows:

- establishment of a trial collection on the Sydney eScholarship Repository platform;
- analysis of the data elements (metadata) required;
- consultation with the Sydney eScholarship's Digital Project Analyst in relation to image file formats for archiving;
- customisation of submission forms and workflows;
- encoding in xml and adding a controlled vocabulary;
- testing and the establishment of a production site.

Once the costing was agreed upon, work on the repository component of the project commenced, with a deadline for 12th November 2008: the students' final submission date for assessment.

As the roles of the project collaborators were well defined at the outset, it was clear who would be responsible for each task, facilitating the establishment of clear and realistic timelines. The Faculty was responsible for communicating with students about the material they would be required to submit, ensuring students fully understood the copyright release implications, and ensuring that
the material would be delivered in the correct digital size, resolution, and format. The Faculty was also responsible for providing instructions to the students on how to load their material and for ensuring that there were sufficient computers available in the architecture studio for the students to upload material on the specified date. They also managed the workflow in terms of providing individuals who could approve submissions for final inclusion in the collection.

The Library was responsible for the establishment of the collection within the repository; customisation of repository features; advice on digital formats; training of Faculty staff in loading works; long term storage of the material, and ensuring that it was, and remains, freely accessible via the web.

COPYRIGHT

Given the project would be concerned with the archiving of student works, and in light of the fact that under the regulations adopted by the University of Sydney, copyright rests with the student, it was necessary to develop a set of procedures for the management of rights. For clarification on the complex issues of copyright, including obtaining permission to make the material available on open access, the University’s Director of Copyright Services was consulted. Concerns discussed included copyright issues surrounding graphic works, the signing and retention of release forms, and the kinds of usage that would be covered by the release. Students are required to sign release forms before submitting work into the repository, acknowledging that: they grant the repository permission to make their work available on open access; they retain full copyright of the material; and they have read and understood the terms and conditions of the uses to which their work might be put. The repository platform DSpace requires as part of its submission work flow that a licence be accepted. If someone submitting to the repository does not grant the licence, the submission process is terminated. While the student retains copyright of their work, the University owns the rights to the metadata and other information that is stored on its servers and this is stated on the repository site. So far this has not caused any confusion, as the statement on the repository site clearly notes “The University of Sydney claims copyright ownership of all information stored on this site, unless expressly stated otherwise.”

It is important to note that the release form only covers the archiving and dissemination of work in the repository. If the University wishes to subsequently use any of the work in the archive for promotional purposes, such as for example on posters, pamphlets, or a website, additional permission must be granted by the student. Traditionally, this procedure would be carried out using hardcopy permission forms. However, the task of administering, collating, and storing the forms for such a large number of students would be highly onerous. In this project, an innovative solution was developed whereby students would be required to sign online release forms as a seamless part of the workflow process of uploading their work. This considerably streamlined the process.
PEDAGOGICAL INTENTIONS AND PROCESS

The following describes the theoretical underpinning and pedagogical intentions of the particular architectural design task documented in this pilot project. It was carried out by first year architecture students over the course of 13 weeks.

The title of the project was Nine Quarter City. It set out to be a sustained collective meditation on the contemporary city. Fragments of the ground plans of nine actual cities (Dubrovnik, Madrid, Isfahan, Tunis, Tokyo, Bern, Venice, Jerusalem, and New York) were fused with an abstract street grid of strict geometry (Fig. 2). They were abutted non-discriminately and were stabilised by two major diagonal axes, one a land axis (boulevard) and the other a water axis (canal). The result was a vast urban conglomerate of nine distinct city quarters that were at once familiar and unique. Each quarter comprised sixteen adjacent blocks of identical size (84 x 59.4m, or A3 at 1:200). Every one of the 144 blocks was developed by a different student as a speculative architectural proposition.

The heavily reduced figure-ground plan (black as built-form and white as the open space in between) served as the basis for the initial stages of design undertaken as a ‘conversation’ with the other members of the quarter. Research was conducted into the distinctive cultural and physical characteristics of the original cities in order to begin to reinvest vitality in the plans. The characteristic topographic and environmental conditions of each city were documented, as were the typical building materials and techniques. An array of representations of the cities in a range of media provided frames of reference: painting and literature, historical
plans, first-hand experience, satellite images, postcards, and tourist guidebooks. The concern at this stage was equally with the physical and mnemonic context, and collages of perceptions and interpretations were produced to initiate the creative process of design.

Individual students were charged with elaborating on the basic plan, determining a range of buildings that might be appropriate for their quarter of the city, then deciding on a specific program for their own block and developing a concrete architectural proposal for one building. They investigated the potential richness of multiple architectural works communicating across a civic topography. Nine Quarter City began to build its own context and its own history as the original host city ceded importance to the newly imagined one. Groups began to forge their own community and negotiate their own rules for urban and architectural actions.

Figure 3

As can be seen in the large master model (Fig. 3) developed collectively at 1:200, the rigor of the initial framework combined with the liberty of individuals to design to programs of their choosing resulted in an abundant, intricately woven and highly articulated architectural topography. The overall dimensions of the master model were 356cm wide by 504cm long.

The project recognises and celebrates the fact that a city is rarely the product of a single directive. It is the rich and evolving result of conflict, negotiation, cooperation, and creativity.
LOADING OF MATERIAL BY THE STUDENTS

Students were made aware at the commencement of the semester that they would be uploading their final work into the repository, but that it would not be assessable. The decision was made early on in the project to disengage submission of work into the archive with assessment for the unit of study. As the intention was to create a comprehensive archive, there was no qualitative appraisal of student work before acceptance. There was discussion about whether to ultimately include grades in the metadata. It would be highly desirable to be able to search by the relative quality of projects. However, it is a University policy to only release grades to individual students, and it was decided not to couple grades with records in the archive. The following information was included in the students’ unit of study outline:

“In addition to hardcopies of assessable items, it is a requirement that you provide digital copies of some of the work. This work will be deposited, with your consent, in the Sydney University ‘eScholarship Repository’ of student work. If for some reason you do not want your work placed in the repository you can ask that it be withheld. You will be uploading the files yourselves under the instructions of your tutor, and will be asked to acknowledge that you have read and understood the license which is included for your information at the end of this unit outline. The eScholarship repository can be accessed at (http://ses.library.usyd.edu.au/). A ‘community’ for Architecture, Design and Planning will be set-up during the semester, and you will be given guidance as to how you go about uploading files closer to the date.”

One week before submission students were provided with more detailed instructions, including file specifications and naming protocols:
When speaking of digital archival data, a distinction can be made between ‘output data’ and ‘native data’. Output data is a graphic representation of a final work much as one would see in an exhibition, whereas native data retains the digital object’s interactive software characteristics as utilised in its creation. In the pilot Architecture Studio Archive project, a decision was made only to archive output data, which does not involve the resolution of as many complex issues as native data. The determination of file types is crucial to the long-term viability.
of an archive, given that digital files are only accessible in combination with appropriate hardware and software, and it must be borne in mind that hardware and software are regularly replaced by newer versions with extended capabilities. It is, then, prudent to use accepted standards that are likely to have the greatest longevity.\textsuperscript{14} It was decided to specify PDF and JPEG as the two output file types that students would upload into the repository. This decision was made because the students submitting work into the archive were first-year undergraduates and were not yet producing their projects using sophisticated software. Many of the drawings were carried out by hand and were scanned and composed onto a drawing sheet together with vector drawings, photographs of physical models, and accompanying text using publishing software such as Adobe InDesign, which can easily export PDFs.

The repository permits University of Sydney PhD and MA research students to add their own metadata to their theses, which is important given the unique nature of the works. On the whole, this is diligently conducted and the quality of the metadata is good. However, at undergraduate level, where students are conducting projects as part of a structured curriculum, much of the metadata that one would like to attach to works is common across the group. In this project, it was decided to pre-fill metadata elements where possible,\textsuperscript{15} thus reducing the scope for students to inadvertently include information that was either not required, or would be misleading. The quality of the resulting metadata is very high.

\textbf{Loading files}

The first year architecture design studio is a large open plan space in which students work in small groups at individual tables producing drawings and models, and where they discuss their work with tutors and with their peers. It is equipped with 10 general-purpose computer workstations, which the students used to upload their files. Leading up to the upload day, 20 students were trained by the Faculty in the uploading procedure using a ‘train the trainer’ model. This served to both test the user experience as a means of identifying potential problems, and to produce students sufficiently familiar with the process to be able to answer questions from their peers on the final submission day. In addition to providing students with detailed instructions (see appendix), on the spot assistance was provided by a Faculty Liaison Librarian who was present for the duration of the final studio session that was set aside for the loading. They assumed the dual responsibility of assisting students to load their files into the repository and providing feedback on the process to the project managers, who were not able to be present for the entire duration of the upload day. The presence of a librarian proved extremely beneficial, as they were able to record feedback from students at the point of loading, observe user behaviours, and answer any questions from students regarding the submissions process. In total 124 records, each of which contained between 4 and 6 files, were created during the session in one hour. A total of approximately 11 gigabytes of data was loaded. As part of the workflow, an administrator checked every entry to ensure conformance with file type and naming protocols prior to its final inclusion in the repository. This was an arduous
process given the very large number of entries, and a small number of non-specified file types were inadvertently allowed into the archive. Given that there may be retention issues with these files in the future, more personnel resources will be dedicated to this part of the workflow in subsequent iterations of the project.

PROJECT OUTCOMES AND EVALUATION

The principal outcome of the project is a fully functional and readily accessible digital archive in the Architecture Design and Planning ‘community’ in the Sydney eScholarship Repository. Open access is provided through the Sydney eScholarship website (http://escholarship.usyd.edu.au/). The specific collection (DESA1002, 2008) is at http://ses.library.usyd.edu.au/handle/2123/3633. A large amount of metadata is attached to each entry, allowing searches via a wide range of criteria, including ‘author’, ‘title’, and ‘subject’. Figure 5 illustrates how an individual student’s entry appears in the archive.

The project fulfilled its criteria for success as set out in the grant application. This was in large part due to the cross-disciplinary approach, drawing on the varied independent skills and experience of the principal collaborators and others who contributed at particular times. The principal issues that emerged and needed to be addressed over the course of the project were: file types and sizes, naming protocols, metadata, submission procedures, and copyright. Having carefully considered each of these issues, the submission process was streamlined so that the very substantial amount of data could be uploaded within one hour on a single day.
From the point of view of the University of Sydney Library, the project as a whole presented an ideal opportunity to test procedures, policies, and capabilities of the infrastructure and the repository service. Its success demonstrates the capability of the DSpace infrastructure and interface to support an intensive data upload model. It verified the ability to operate within DSpace’s standard overall structure whilst being permitted to make customisations to components such as data upload fields and forms; submission order and controlled vocabularies. In a project management sense, it presents a concrete example of the Library delivering on a significant repository project and meeting a defined project budget, an achievement which can be presented to prospective clients. There were a number of benefits to students involved in the project, including an increased awareness of the value of properly documenting work for future reference, and encouraging best academic practice at an early stage of tertiary education. Overall, a significant outcome of the project is an increased awareness of the benefits of collaborative work between the Library and the staff of the Faculty of Architecture, Design and Planning.

The project also revealed a number of shortcomings of the current repository service that should be rectified. A coordinated method for individual student sign-on using the University’s UniKey authentication system should be developed, for a number of reasons, firstly, because many students thought that they could use their University sign-on credentials, and secondly, because it is difficult to contact individual students after they have uploaded work, if it needs, for example, to be corrected.

Using a generic login means that an administrator can check the student’s name as recorded in the repository against a separate spreadsheet containing their email address before being able to make contact with them. Furthermore, the submission process is not sufficiently intuitive and some students had problems with the internal navigation despite being provided with extensive written instructions. Another concern is that the University of Sydney instance of DSpace is currently unable to generate thumbnails of PDF documents, meaning that a visual representation of files saved in this format is not available as a quick reference before actually downloading the large files. The repository interface is very basic and is not visually attractive. A more visually appealing interface would stimulate users to engage with the contents of the repository.

**FUTURE PLANS**

The project was very successful as a pilot study. The diversity of material that was archived, along with the very large number of students submitting to the archive (the largest simultaneous load the Sydney eScholarship Repository had experienced), meant that it was a very good test of the system. In addition to replicating the project to comprehensively digitally document works produced in DESA 1002, the use of the archive as a resource for teaching, research, accreditation, and promotion will be explored in the coming years.

In order to disseminate knowledge about digital archival practices and to encourage uptake of the repository, the team presented the study to the Faculty
in a ‘dialogues on teaching’ seminar hosted by the Learning and Teaching Committee. The seminar covered the particular experiences of the pilot study: best practices for submitting work to the archive; setting up a ‘community’ in the repository; customising the submission process for the needs of particular units of study, and contact details of library staff who will help with the process. A number of academics expressed a genuine interest in utilising the repository, particularly in relation to its capacity for archiving large multimedia works. For example a ‘Sound Design and Sonification’ community has now been set up to archive audio files. The team made a separate presentation to University of Sydney Library staff. It stimulated discussion about future repository projects and the role of the Faculty Liaison Librarian in these projects. Other initiatives by the Faculty and the Library will continue in the coming years. At present the eScholarship Repository sits entirely independent of the local WebCT virtual learning environment, which academics are increasingly adopting in the Faculty as a system for administering individual units of study. The repository is a digital asset management system as opposed to a content management system. It is conceived as a receptacle for the final, definitive version of a work, whereas a learning management system such as WebCT is better suited to handle draft or interim versions of a work, as well as managing submissions and marking workflow. Coupled with this is the fact that some of the material stored within WebCT may not be able to be presented on open access. However there is significant scope for closer co-ordination and links between the systems. An initial step will be to include direct web links to relevant Communities in the repository from WebCT sites, enabling immediate access to previous student works. A longer term proposition that would require a significant investment of time in terms of programming advanced functionality would be to merge the process of submission of assessable tasks with the uploading of work into the repository. This would avoid duplication of tasks, both for the students submitting the work, and for staff in charge of receipt of the submissions.

A second enticing future prospect is the utilisation of the contents of the repository by students as the basis for an online portfolio. The University of Sydney is currently closely considering the introduction of ePortfolios as a vehicle for students to showcase their achievements to prospective employers in a readily accessible format. In some subject areas the ePortfolios may simply be a receptacle for a list of grades achieved in individual units of study, but in visually oriented fields, such as architecture, there exists the potential to creatively curate works into a visually appealing overall presentation.

CONCLUSION

The Architecture Studio Archive has the potential to expand into a valuable and flexible resource for the Faculty of Architecture, Design and Planning over the coming years. The success of the pilot project will provide an impetus for other Faculties when it comes to setting up and administering communities and collections within the repository, and the project deliverables will facilitate the development of future partnerships between Faculties and the Library. In all, the Architecture Studio Archive project was concerned with both preservation
and innovation. It has revealed to tomorrow’s professionals and academics the significant merits of archiving their work digitally, and has established a firm foundation for the adoption of best practice in the Faculty, the University, and beyond.

APPENDIX:

INSTRUCTIONS:

DESA1002 (Design Practice 1B)
2008

DIGITAL ARCHIVE

The eScholarship repository can be accessed at (http://ses.library.usyd.edu.au/).

On the left-hand side of the page, under ‘Sign on to’, click on:
‘My Sydney eScholarship Repository’

In the field ‘E-Mail Address’, type: xxxxxxx
In the field ‘Password’, type: xxxxxxx

Follow the process below to submit your files:

Page 1:
- Click the button ‘Start a New Submission’

Page 2:
- From the drop-down menu select the collection ‘2008’
- Click on the button ‘Next’

Page 3:
- Tick the box ‘The item consists of more than one file’
- Click on the button ‘Next’

Page 4:
- Scroll down the page and click the button ‘I grant the license’

Page 5:
- Upload one document (use the File Description in the table below)

Page 6:
- Click the button ‘Choose File’ and select your first file, which should be your final A1 presentation,
titled ‘Final’
- In the field ‘File Description’ type ‘Final’
- Click the button ‘Add Another File’ and repeat the procedure above until you have uploaded all 5 files
- When you have uploaded all files click ‘Next’
Page 7:
- Enter your surname and name in the appropriate fields
- In the field ‘Title’ leave ‘DESA1002 ‘Nine Quarter City’ –‘ but write your name in place of <Name>

Surname>
- Complete the date information
- Leave Project name as ‘Nine Quarter City’
- Fill in your sector number (e.g. D3 or J2)
- In the field ‘Abstract’ include your 200-300 word ‘postcard’ text describing your project
- Click on the button ‘Next’

Page 8:
- Check that the information you have submitted is correct
- Click on the button ‘Next’
- Finished!

ENDNOTES
1. An entire conference on specifically this theme was held at the Netherlands Architecture Institute in Rotterdam 10-12 June, 2009 Hybrid Architecture Archives: Creating, Managing and Using Digital Archives.
2. Sydney eScholarship is an initiative of the University of Sydney Library and comprises; Sydney University Press, Sydney eScholarship Repository, the Scholarly Text and Image Service and the services of a Digital Analyst http://escholarship.usyd.edu.au/

10. DSpace. www.dspace.org. The DSpace Diagram is provided courtesy of the DSpace Federation – www.dspace.org


13. For example, architects currently work with software programs such as AutoCAD, Vectorworks and Microstation. These programs produce files in which drawings can be viewed by rotating, panning and zooming or by turning specific layers on and off. These particular software functions would need to be conserved to reproduce the file in its authentic, or native form. For a longer discussion on the archival of ‘native form’ data see: Kristine K. Fallon and Carissa Kowalski Dougherty, “A Pilot Project for Born-Digital Architecture Data at the Art Institute of Chicago,” (paper presented at *Architecture and Digital Archives: Architecture in the digital age: a question of memory*, Paris France November 8-10 2007)

14. Standards can be defined as file formats that are based on a published, supplier-independent, platform-independent, open standard, defined by formally acknowledged standardisation bodies such as ISO, NEN or W3C (World Wide Web Consortium). Examples of such standards are XML (eXtensible Markup Language) and JPEG. PDF is supplier-dependent and consequently not strictly a standard. However, it does function as a standard in practice since it is extremely widely used by the public.


16. It had initially been assumed that it would be possible to use work done by the Cambridge University instance of DSpace. However, the function was not supported by the version of DSpace used in the Architecture Studio Archive project. This has been noted as a desirable future enhancement to be made when resources become available.

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