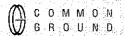
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Knowledge Management for the South African Architectural Profession, based on a Local Case Study

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Abstract: Traditionally, architectural archives serve as a repository of knowledge which supports architects in developing a frame of reference. They also have the function of preservation. In the developed world, these archives of architectural knowledge have been established for public use, whilst the developing world generally lacks these repositories. With South Africa being a developing country in a third world, its history of architecture is scarcely documented. Therefore, core knowledge-assets for the profession in this part of the world have been neglected. This paper explores the challenges facing Architecture libraries, professionally and academically, in maintaining service excellence considering the special user needs of architects and planners, in the context of digitisation. Recently published material is reviewed to provide a broad international perspective of challenges facing libraries generally, and then applied in a review of cases i) internationally, and ii) locally of libraries servicing the Built Environment. These are then considered for the case study experience of the University of the Witwatersrand Built Environment Library, in reshaping its resources to add value to its service by making a contribution to the digital environment. 'Visual thinking' as part of the design process is supported and stimulated by the use of 'visual' impressions. These specialist information needs of architecture- and planning professionals, lecturers and students are not readily catered for by South African libraries. Digitisation as a method of preservation of the South African building heritage is underdeveloped, or even non-existent in Africa. Digitisation attempts by several South African Architectural Institutions are explored in this paper, with reference to existing websites, highlighting specific examples. Digitisation projects for the University of the Witwatersrand Built Environment Library are then suggested. Through collaboration on international level, a portal website is proposed for managing this knowledge. The paper illustrates how core assets knowledge captured in relevant design examples and research articles - retain their value by being used in new ways. These assets are thereby preserved and also used for re-structuring key-relationships. In the process, value is extracted from core

Keywords: Architectural Archives, Architecture Libraries

Introduction

RCHITECTURE IS A form of knowledge; regardless of the instrument it uses (significantly, pencils or tools). In this sense we can also say that architecture does not exist as an autonomous discipline, always contaminated by other fields, by linguistics, by philosophy and other disciplines. We can also say that architecture cannot exist without its drawings, or words, or events. Above all, today there can't be any opposition between drawings, words and architecture (building). They simply are different modes of interpretation. Here the notion of process is critical. Completed architecture is integral with its drawings. The construction process is but one aspect of architecture. Concepts are turned into buildings and buildings into further concepts. If the built work is understood as only one moment in time, then it represents neither the beginning, nor an end, but rather a fragment in some discontinuous process, a fragment of time. (Quek 2005)

Background

A pictorial method of communication was used to create architectural hieroglyphs for the erection of the great monuments of Ancient Egypt. During the Amarna Period (1375-1350 B.C.) a style of drawing which combined plan and elevation developed, of which papyrus and limestone examples were preserved, as well as clay tablets in Babylonia and Assyria. In Europe between 1200 and 1800 master masons built monasteries and cathedrals of which the Frenchman Wilars de Honecort left a vellum sketchbook with recorded details of plan sketches, elevations and pseudo perspectives. These records were kept for personal use as well as for the instruction of students. (Halse 1960) The invention and availability of paper further stimulated drawing during the Renaissance Period, followed by the development of the printing press in the 1440s and of the concept of perspective in art. These allowed architectural ideas to be better communicated in books.

Eurocentric architecture in South Africa was influenced by classic styles, the norm for public buildings under the influence of Western concepts at the time.



But early in the 20th century the distinctive Modernist Style made its entrance especially in Johannesburg which at the time, as today, was the economic centre of the country following the discovery of gold and the subsequent mining activities.

It was during these years that architectural activities in Johannesburg became pronounced. The first modern style buildings in Johannesburg were only built after the 1930s although in Europe, Behrens and Gropius had then been designing modern buildings for two decades. In Europe, the 'modern movement' and the 'international style' was already a reality. (Fransen 1981) One of the first Johannesburg buildings in typical contemporary style was by an architect and lecturer at the Wits Architecture School, Stanley Furner, who designed the Plaza Theatre for Johannesburg (1931) in line with the 'international bioscope style' of the time.

The first group of students who completed their architectural studies in South Africa in 1930 included Rex Distin Martienssen (1905-1942) and Norman Hanson (1909-1990). They developed great admiration for the Bauhaus architecture of Gropius and for the work of le Corbusier and started to design in Cubist style. They initiated correspondence with le Corbusier and Fernand Leger, both of international fame. Both Martienssen and Hanson became editors of the South African Architectural Record and were co-producers of Zerohour, a journal in which modern aesthetics became the mouthpiece, 'the function... to bring into closer relationship the public consciousness of architecture in its many manifestations, and the achievements of our active contemporaries in this field.' (McIntosh et al 1933) These historical facts are important in the contexts of planned projects.

The Context of Architectural Archives

Architects always felt the need to bridge the gap between their own imagination and those of non-architects and to explain their complicated thoughts in a comprehensible manner.

Traditional architectural archives serve as repositories of knowledge which support architects in developing a frame of reference. This is in line with the traditional sketchbook of the architect which was used as a portable 'museum' of memories and experiences along the way. (Harris 1992:17 in Kotze 1998) 'Architectural drawing collections moved from private to public' when architectural training moved from 'private apprenticeship' to 'a public institution based process'. (Kotze 1998) It brought a new purpose and direction to collections. For the 'dissemination, classification, restoration and protection of the stored knowledge, components such as public lecture and exhibition spaces, information cataloguing and

retrieval systems and archival storage, restoration and reproduction systems are usually added to form a complete whole.' (Kotze 1998)

Due to the young Eurocentric architectural history of Johannesburg (122 years) and the important role the first architecture school played, valuable original architectural drawings are being donated to the school by practicing architects or architectural firms. As this is a natural and logical development, a public repository with access to these documents should therefore be created, adding original resources of diverse nature to the library collection.

Libraries and Knowledge Management (KM)

KM in libraries manages the knowledge gained from professional and other work experience and sharing it in creative ways to obtain set goals. New skills, new ways of working, knowledge gained through work experience during service delivery, knowledge acquired about library stock and its contents as well as understanding users' needs - all of these form the basis of KM for librarians. 'Librarians do not manage knowledge about their organisations as they manage their other resources.'(Townley 2001) and therefore neglect opportunities to develop in line with developments in the commercial sector. Libraries risk losing their role as the primary academic information provider if they do not address the knowledge that most users are requesting electronic formats in the provision of resources and services. (Townley 2001) This has to be addressed.

Subject specific libraries have to share subject knowledge in a meaningful way in order for work processes to be successful. In architecture and planning, this is complicated by the nature of the resources; digital format of drawings and other images. Shared knowledge supports communities of practice in creating new knowledge and further creates value from the knowledge assets.

The three classic objectives for success in business are: Improved efficiency, greater effectiveness and innovation in products and processes. (Davenport et al 2003) This also applies to libraries. Subject librarians are in a position to apply subject knowledge and create 'smart' products by defining the core assets (brand capital) in the subject collection, based on tacit knowledge in the occupational group (profession) they serve. In industries core assets can be defined as the industry's resources, knowledge and brand capital. (McGahan 2004) It appears that there may be a correlation between the knowledge element shared by both 'smart products' and 'core assets.'

In order to redefine the traditional library Brindley suggests amongst others to open up legacy print collections to digital channels and reveal them through digitisation and to invest more in innovation and digital activities. (Brindley 2006)

Architectural Drawing Archives

Examples of well established physical- and digital architectural archives include:

The Irish Architectural Archive, the greatest single source of information on Ireland's buildings and those who designed them. (Irish Architectural Archive)

The Victoria and Albert Museum (V&A) Architecture Study Room. The V&A is working in partnership with the Royal Institute of British Architecture (RIBA) to provide access to the outstanding collection of architectural drawings and manuscripts in the RIBA Architecture Study Rooms. (V&A Collections; Architectural drawings)

The Croatian Museum of Architecture. The collection has about 18 000 copies of various archival materials: plans, drawings, models, photographs, slides, correspondence and other documents related to the history of Croatian architecture. The data on the museum holdings have been computerised and are available to all researchers. (Croatian Museum of Architecture 2005)

Museum of Finnish Architecture, 'a homogenous culture of architecture, and yet... such diversity and quality'. Kenneth Frampton in 1998. (Museum of Finnish Architecture)

Bauhaus-Archiv/Museum fur Gestaltung in Berlin erforscht und prasentiert Geschichte und Werkungen des Bauhauses (1919-1933), der bedeutendsten Schule fur Architectur, Design und Kunst im 20.Jahrhundert. (Bauhaus-Archiv Museum for Gestaltung)

Schinkel's Bauakademie. Scholarly literature devoted to the study of Schinkel's architectural projects, drawings, paintings, sculpture and furniture design and an image bank of approximately 75 built projects. (Schinkel's Bauakademie)

Digital Archive of American Architecture. Materials reproduced include architectural and mechanical drawings, specifications, correspondence and accounts, and spans Alexander Parris's career, from 1803 to 1851. (Digital Archive of American Architecture)

South African Architectural Archival Initiatives

South African Heritage Resources Agency (SAHRA)

The South African Heritage Resources Agency is a statutory organisation established in terms of the National Heritage Resources Act (No 25 of 1999)

as the national body responsible for the protection of South Africa's cultural heritage resources. (South African Heritage Resources Agency)

The University of Pretoria, South Africa has created UPSpace, a digital research repository. The Pretoria University Collection consists of plans, drawings and presentation drawings, rendered perspectives, photographs, documents and related material of the Departmental Archives of the Department of Architecture. The Geoffrey Pearse Collection is on loan for digitisation. Digitised collections with limited access include the Gerhard Moerdyk, Norman Eaton, Sir Herbert Baker and Pioneer Buildings collections. (University of Pretoria. UPSpace)

The University of Cape Town (UCT) Manuscripts and Archives Department

A historic architectural collection of UCT Groote Schuur Campus for the Years: 1900 – 1949, and 1950 – 1969 is available in digital format. Finding aids to several architectural collections are displayed on the Homepage. (University of Cape Town. Manuscripts and Archives)

University of the Witwatersrand (Wits) Architecture School Collection

Wits School of Architecture has original architectural drawings by Herbert Baker 1862-1946, including Groote Schuur drawings and drawings of the SA Art Gallery. Original Geoffrey Pearse 1885 – 1968 drawings date back as far as 1908. The collection includes student drawings by John Fassler 1910 – 1971, Monty Bryer 1912 – 1987, Norman Hanson 1909-1990 and Rex Distin Martienssen 1905 – 1942. These students, the first group of South African qualified architects, were leading figures in the architectural profession in SA and their work reflects the period of transition from styles of Classicism to Modernism. The elements of a period of transition render this collection of particular significance. The archives are being established.

Important also are the Sophia Gray drawings held in the Wits Library Historical Papers Collection. (University of the Witwatersrand Library) Based on Sophia Gray's contribution to the South African Architectural history, the Sophia Gray Memorial lectures have been instituted as a regular annual event. The purpose is to create community awareness of architectural heritage.

Challenges

Although historical architectural drawings and related documents are integral parts of our cultural heritage and must be preserved as such, these items are not generally regarded as essential and important resources for the following reasons:

- Records management used to be low on the priority list of architectural firms, and even if management did exist, little was done in the past to provide public access. A much greater awareness exists amongst today's contemporary architects.
- Misconception exists amongst the public that all records are available at the planning offices of local/municipal authorities where, in fact, only a limited number of final drawing plans are available. These records do not display the process of conceptualisation of the buildings and such isolated items are not contextualised.
- Librarians are hesitant to take on additional responsibilities of collecting and managing such collections. It may be seen as an additional responsibility, not included in the job description and there may be a lack of essential professional knowledge necessary in the processing of such collections. It may also be seen as distracting from a librarian's core functions. Senior library management expects branch heads to gain authorisation before devoting a large percentage of work time to such activities, indicating that it is not a core function for branch heads.
- Donations of such collections often are stored for many years in unsuitable rooms where the quality of the material deteriorates because of inadequate preservation. For instance, temperature and humidity control is essential for paper preservation.
- Lack of funding is another reason why such collections are not processed and made accessible.
 However, once identified as a priority, budgeting does not seem to be a problem in large organisations such as universities.

It would appear as if negligence in preservation of, as well as lack of accessibility to historical architectural drawings and records can be placed squarely at the door of management structures in large organisations. Also, ignorance may play an important role.

Conclusion

Subject knowledge is used and managed to address challenges facing professional libraries in the 21st century. Generally, Built Environment Schools and their libraries have special collections of visual material; drawings, plans, photographs, slides, etc. Many of the collections are digitised for accessibility and ease of use as teaching aids and research material. The re-shaping of such resources turns these valuable core assets into new products, marketable for collaboration and alliances which will benefit the larger organisation. To 'create collaborative organisations

that have major institutional missions and responsibilities' (Townley 2001) discussions between a Dutch initiative, ArchiAfrica, and Pretoria University Built Environment and Witwatersrand University Built Environment were initiated at the end of 2007 and some structures were put in place and further developments will follow.

On the Wits Library Homepage subject portal development has been established to create effective navigation of complex, multiple and disparate collections. (University of the Witwatersrand. Library. Subject Portals) In the same way a portal for South African Architectural drawings is being suggested, hosted initially on the Wits Library Homepage, later to be developed to a broader national structure. This will serve as a gateway to various digital collections of relevant architectural drawings held at different institutions in South Africa and possibly Africa. Not only will such collections enrich the South African digital environment as educational and research resources, but they will also preserve the cultural material in a new format. The librarian has a changing role in '... educating the digital researcher in how to become a lifelong learner' and to become '... rapidly-evolving professionals who select, collect, add value to, organize, preserve, and provide access to information in many media, to many communities of users.' (Roijen 2007)

More projects to collect original architectural drawings for/from South Africa are suggested, starting in closer vicinity to local campuses. The mentioned South African collections are Eurocentric, and wider variety of work reflecting the varied nature of South African and African styles would enrich collections. Criteria and standards still have to be established.

The Society of Architectural Historians (SAH) the leading international learned society which promotes the study, interpretation and preservation of the built environment worldwide, through funding from The Andrew W. Mellon Foundation has begun to develop the SAH Architecture Visual Resource Network (SAH AVRN) an online library of architectural and landscape images for research and teaching. To develop content for SAH AVRN, SAH is collaborating initially with scholars and librarians from partner institutions MIT, Brown University and the University of Virginia where librarians will, instead of developing separate, independent collections of architectural images for each institution, contribute images and metadata to SAH AVRN, a shared resource that will be widely available. Librarians and institutional leadership will join together to create a shared online resource that will both enrich the field of architectural history and create a new collaborative work model for visual resources and art/architecture libraries. Instead of creating repetitive digital archives at each individual university, the SAH AVRN will enable collaboration resulting in the creation of a highly authoritative resource with global coverage that will support new research and scholarly publications, and enhance university-level teaching. Issues around digital collection building in which many libraries are already involved, such as standards for describing digital content, and the ability to harvest metadata through standardised protocols, such as the Open Archives Initiative (OAI), will all be put to the test throughout Phase 1 of the SAH AVRN. (Society of Architectural Historians)

It is hoped that the SAH initiative will develop globally, accommodating groups of librarians working together. Contextualised architectural drawings and related documents, processed and captured in an accessible format is an essential part of research material in an architectural collection. The academic population is no longer the only user, but lifelong learning in the profession is essential, aiming at continuing research at its core. (Fincher 1993) Demands to gain access to core resources are expanding because communities of practice have expanded

beyond boundaries. Yet, local community involvement remains as important as ever. Although it is the commercial sector driving change in the information industry, it cannot replace the educational and cultural role of the professional library.

Recommendations for short term action:

- Create/establish inventories for existing collections.
- Identify and collect scattered drawings to add to main collections.
- Digitise and capture by theme, using the existing collection as well as links to dispersed collections.
- Decide on various themes to enrich the collection e.g. cultural influences, socio-political influences, specific building projects, monographs, etc.
- Determine criteria, standards, code of practice and a collection policy.
- Advocacy and marketing are necessary to generate interest and contributions.
- Budgeting and fundraising are essential in order to enhance and maintain the collection.

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