

**Full paper template for Retrofit 2012 Conference:
Evolution and adaptive re-use: A study of a successful model,
the conversion of the North Kowloon Magistracy into the
Savannah College of Arts and Design**

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Abstract:

This paper reports an innovative study of adaptive reuse of a heritage building as a socially sustainable education project. This study relates to the need for many universities throughout the world the need to expand the education platform to meet the growing need of evolving industries and careers. This has created a financial challenge for these institutions as well as presenting an opportunity to work with existing buildings that represent a significant element of the local historic and heritage architecture. In the urban environment, the expansion of Universities often comes at the cost of losing older campus structures or the loss of neighbouring housing or commercial architecture. The adoption of adaptive reuse provides a vehicle for both the retention of contributing historic architecture, a continuation of community life as well as presenting a cost saving to the institution. The very concept of sustainability and the preservation of heritage infers that something is to be allowed to continue, such as a building. This study will identify successful planning methods and review the relevant technological solutions, which support the concept of successful reuse and sustainable design. It will also make recommendations for future practice.

Keywords:

Heritage Conservation, Adaptive Reuse, Sustainable Development

1 Introduction

The concept of adaptive reuse is a theme inherent to the study of how society can rehabilitate its existing buildings. The concept focuses upon buildings which have outlived the original use. In many countries this is not new and often a typical part of the life cycle of a building. However, the study of adaptive reuse and the benefits it

brings is beneficial to many professionals in the building sector, whether these be property owners, designers or members of the construction team.

In this paper, we examine a recent case study located in Hong Kong, itself a region that is undergoing a review of its building management policy and redefining its cultural heritage by the examination of its building legacy. The aim of this paper is to review this case study and determine the recommendations for future practitioners in the region.

The emergence of the value of heritage and the skills that are needed to achieve successful and sustainable building developments is an emerging area of interest in Hong Kong. The Revitalisation of Buildings Through Partnership Scheme highlights the growing value placed upon the SARs cultural heritage. The scheme launched in 2007 (Hong Kong Development Bureau, 2008) highlights that there is value in the refurbishment of buildings and if undertaken carefully such schemes can revitalise economic and social activity. The Chief Executive's policy address of 2009 placed further importance upon the conservation of the HKSAR's cultural heritage.

Whilst planning and the listed control of buildings is undertaken in Hong Kong and follows that of the established British system of planning. The commercial pressures upon property and buildings in a thriving city region has placed the focus upon good practice and the definition and preservation of the identity of Hong Kong. To aid this process the Hong Kong government has sought to control the future of a range of landmark buildings that serve to define the region's heritage. This is to be achieved using a policy of relevant and sustainable approaches with regard to the public interest, budgetary control and coloration and engagement with the wider society. This policy is achieved via a package of government supported economic incentives to achieve the preservation process and financial assistance for the future maintenance of the properties. The Hong Kong policy has been enacted in the launch of a series of batch of buildings which are open to social enterprises to bid for the use of the buildings. The first batch was launched in 2008 and in this paper the case study building is one of the first buildings to be successfully completed under the scheme. The objectives of this paper were therefore to reflect on the experiences of the project and to examine the effectiveness of the policy with respect to the wider impact of the works.

2 Literature Review

In definition of what is classified as heritage we may refer to The International Council on Monuments and Sites (ICOMOS) which offers advice to UNESCO on World Heritage Sites. The Athens Charter of 1931 introduced the concept of international heritage. In 1964, the Second Congress of Architects and Specialists of Historic Buildings (Charte de Venise, 1964), meeting in Venice, adopted 13 resolutions. The first resolution created the International Charter on the Conservation and Restoration of Monuments and Sites, better known as Venice Charter; the second, resolution put forward by UNESCO, created ICOMOS to carry out this charter. The focus of ICOMOS is that the cultural and natural heritage as a priceless and irreplaceable asset, not only of each nation, but of humanity as a whole. The loss, through deterioration or

disappearance of any of these most prized assets constitutes a loss of the heritage of all the peoples of the world. Parts of that heritage, because of their exceptional qualities, can be considered to be of “*outstanding universal value*” and as such worthy of special protection against the dangers which increasingly threaten them.

ICOMOS is a useful definition it that the articles of the charter proceed to define the management and long term operation of such sites, such that heritage sites and buildings are those of not only conservation, but of education and the societies that hold these sites.

Approaches to adaptive reuse are now becoming standardised or at least guided by principles of design and control. In the United States, standards for rehabilitation were published by the Secretary for the Interior in 1977 (36 CFR Part 67, Historic Preservation Certifications). The standards relate to both the building and its related landscape setting, they are applied to rehabilitation projects to ensure the character of the property is maintained and preserved in the context of the building’s time, place and use. This encompasses the change or removal of materials and components which is not permitted. The regulations seek to control strictly the character of such buildings and their future use including future changes and uses.

In the United Kingdom, whilst the historic heritage of the royal palaces, religious and government buildings has been accepted the reuse the vernacular and industrial heritage is a challenge. To fully understand what heritage is, is to question history, culture and identity. Our heritage continually evolves, but our attachment to it, provides value, provides a focus for our life style, where we live and play. Successful projects can attract people and add to the quality of life. A range of historic societies such as English Heritage, the Victorian Society, the National Trust and the Ancient Monuments Society exist to promote interest and the appreciation of the wider environment. The conservation or and control of the built environment is achieved by placing a building on the statutory list of buildings of special architectural or historic interest. This listing was originally formalised under the Town and Country Planning Act of 1947 and more recently the Planning (Listed Buildings and Conservation Areas) Act 1990.

In Hong Kong planning legislation closely follows that of United Kingdom practice (Tang and Leung, 1998). The planning process is guided by the government policy for large scale town planning, which has been in place since the early 1970s. Planning policy in the HKSAR has focused upon the economic development of the region and the building of infrastructure to support the resultant impact of population growth and economic expansion and thus prone to place pressure upon its built heritage. This activity was reviewed by Lai and Leung (2005), who sought to study a series of 60 residential development projects in the region, noting weaknesses in the planning process, wherein developers could omit key stages of the planning process. The complexities of financial, environmental and social issues focus sharply in respect of adaptive reuse projects. Langston, Wong, Hui and Shen (2007) comment upon this interplay with particular respect to the refurbishment potential for redundant buildings.

In summary, whilst a range of controls and priorities can be set the development heritage projects can be prone to financial pressures and weaknesses in the planning process, which are often exposed in large scale or financially sensitive cases.

3 Research Methodology

The methodology employed in this paper involves an iterative review of the planning and design process with regard to the case study building. The key focus relates to the origins of the approach based upon previous adaptive reuse projects. The study then focuses upon the case study building and its setting and importance to its surrounding environment. The following process phases are then consider, including: design, change of use to education, change of use to conference rooms and the integration of health, safety, environmental and mechanical features.

4 Findings and Discussion

4.1 Origin of the Model

For thirty years, the Savannah College of Art and Design (SCAD) has followed a model of adaptive re-use of both historic and non-historic structures to meet the needs of a growing campus. This model has been carried to its newest campus in Hong Kong, where the former North Kowloon Magistracy has been transformed from a judicial centre into a thriving university of arts. For the university, (SCAD) the model of adaptive reuse is not a new solution to the problem of expansion. For over thirty years the school has followed a practice of purchasing, rehabilitating and using historic or contributing structures as a class space for all of its course and degree programs. The by-product of the reuse formula is a reduced carbon footprint for the institution and saving in construction costs, which are transferred on to keep tuitions low and to ensure the purchasing and implementation of state of the art technologies into the classroom space.

The school's first building stands today as the finest standing example of Romanesque revival architecture in the port city of Savannah, Georgia, United States. Constructed in 1892 and designed by noted Boston architect William Gibbons Preston, the Volunteers Guards Armoury served as a headquarters for an early state militia. The building was essentially abandoned in the 1960's and was purchased by SCAD as its first and now flagship structure in 1978. Since its rehabilitation it has housed a diverse number of studios and facilities that included the school's first library. It now supports the admission program and illustration and graphic design programs.

What has followed the first purchase and re-use is a text book example of successful expansion and preservation of architecture. Since 1978, the university has purchased and re-purposed over 90 buildings on three continents. A majority of the buildings, over 70, are either listed as historic or as contributing structures to a historic district. Nearly three million square feet of architecture is now used for studios, classrooms and administration and of that number, a majority would have been lost to wrecking ball if it

were not for a far reaching vision that included adaptive re-use. Montgomery Hall, a former coach factory and lumber mill now houses computer related programs.

Within the city of Savannah the college program of re-use has provided a matrix for the coherent evolution of a colony city from the former industry of shipping and agriculture to an advanced and interactive city of university life, contemporary culture and forward thinking citizens. As a model, the process of evolution followed by SCAD (2010), the responsive urban planning carried out by the city and the refinement of building codes to permit sensitive rehabilitation has been closely followed by other cities that wish to ensure the protection of architecture and betterment of their society and communities. In addition, the school received numerous national and international awards and recognition for its work and now stands as a successful model for other universities.

4.2 The Challenges of Hong Kong

Hong Kong has been famous for its pursuit for economic growth and for over six decades there has been an overwhelming favour for unfettered development in both the urban and rural areas. There have been sad losses of many historic buildings of both European and Chinese origin. However, in recent years there is a positive change of direction and the administration is giving conservation of historic heritage buildings more attention and resources.

One of the recent initiatives is the Revitalisation of Historic Buildings Through Partnership Scheme (Revitalisation Scheme) launched in 2008. Under the Revitalisation Scheme, vacant government buildings were offered to Non-Profit-Making Organization at notional rental. The government will finance all of the improvement costs and can provide subsidies up to five million Hong Kong Dollar to selected NPOs to operate social enterprises at these historic buildings. At the launch of the scheme over 120 applications were received from various NPOs and institutions. Amongst the range of buildings offered was the North Kowloon Magistracy, located at Tai Po Road, Shamshuipo, Kowloon.

4.3 Background of the District and the North Kowloon Magistracy

For many centuries Shamshuipo has been a rural area supporting cottage industries, fishing and farming. At the beginning of the 20th century the area became a part of the British colony of Hong Kong. Between 1920s to 1930s successful administrations built up military facilities for defence purposes. During the Japanese invasion, the invading forces entered Kowloon by way of Tai Po Road and the British army barracks turned into prisoner of war camp.

In the post war years and following the civil war in China, the area became home to many refugees from the Mainland. In 1953 a major fire broke out on the Christmas day, destroying homes and subsequently large part of the Shamshuipo area was turned into low cost public housing estate providing homes for the local population.

The North Kowloon Magistracy was designed by private firm Palmer and Turner Architects and was completed in 1960. Once construction works were completed the Magistracy started to function as a lower court house and government office. It has dealt with both civil and criminal cases, matrimonial cases and minor offences such as traffic offences, loitering and other civil cases. It ceased operation in January 2005 and remained vacant up to 2008 due to opening of modern and improved court house facilities in neighbouring districts and consolidation of Judiciary office departments.

The selection process for a suitable operator was conducted under the supervision of the Advisory Committee on Revitalisation of Historic Building (ACRHB). Because of the intense competition for the building, selection has to be conducted in an open and fair manner. Finally SCAD was selected and they have decided to make use of its own funding in carrying out all capital works and declined to accept start up cost subsidies.

4.4 North Kowloon Magistracy Building

Constructed in 1960 the building is a modest example of classical revival in government architecture. It is comprised of over 70,000 square feet over seven floors. It was used as a single purpose design with court rooms on three of its floors, reception and payment offices on the ground floors and various administration offices thorough the upper floors. Although only fifty years old, the building had seen many upgrades and modifications of interior spaces by the former occupants. Original environment controls included an early air conditioning system for main courtrooms and the addition of windows units as needed throughout the building. Overall the building was cooled by open windows and doors through cross ventilation and an interior light well making use of natural convection. The building is constructed of concrete with floor systems composed of concrete and ceramic block. Although structurally sound, the engineering of the building minimally met standards, however, it has stood the test of time and appeared to be suitable for its proposed use as an educational environment.

The Revitalisation Scheme under which the magistracy was to be repurposed reflected a great deal of planning and research that had attempted to both define the building condition and project a new use for the former court house. In line with the government goal, education was seen as an excellent fit for its future use.

4.5 Design Options

All too often the process of rehabilitation or re-use fails either commercially or through poor design due to simple fact: that the building integrity, original function and layout are deemed to be secondary to a new design and purpose. The SCAD approach is very much ground up, simply asks the question, “What is this building best suited to do” ? Fortunately, SCAD has such a diverse and varied range of degree programs there are always a multitude of options to choose from as to what course of study is best suited for a building. Theatre arts spaces require high ceilings, fashion or architecture course may require natural light while industrial design or product may require industrial grade structural systems. Many lower level lecture classes can be placed in office former like environments and some require total darkness for projection systems. A well built

building with a variety of spaces is an excellent starting point for educational adaptive reuse and the nature of the magistracy was recognized both by government and SCAD.

4.6 Courtroom to Classroom

The adaptive transition from one former space to a new intended use can be either simple or complex. At the heart of the SCAD model is the retention of historic integrity and where feasible, the simplicity of design, the durability of materials and their adaptability. An excellent example of this model is found in the reuse of four primary courtrooms of the magistracy. As described by the Antiquities and Monument Office, one the governmental agency responsible for protection of historic relics, it viewed the courtrooms were deemed to be significant and worthy of conservation. Since there were four identical courtrooms on the second floor, a decision was made by the authorities to keep one courtroom intact, retain all of the moderately ornate door and entries which entered on to the central lobby intact, but to allow for the re-purposing of three of the courtroom spaces for classroom or studio.

Now in its present form, the retained and conserved courtroom is used as lecture hall for art history or for public lectures. One courtroom has been taken down to its original wall surfaces and subdivided to create two classrooms and one court has become a sound design and mixing studio following the introduction of engineered walls, doors and sound proof glass windows. The final court room has been reduced to bare walls and now holds a green screen wall that takes advantage of the eight plus meter ceiling height. The green screen is used by a variety of major such as stop motion, video, photography as well as game design and animation. Prior to construction, all spaces were thoroughly documented by measured drawings and perspective corrected photography. High level original materials were numbered, dismantled and remain in storage. The re-purposed space can, if indeed, be returned to their original conditions as courtrooms, however this is not considered likely due to the prior consolidation process of the judiciary by the government.

4.7 Jail to Conference Room Transition

An example of retention rather than demolition can be found in the design program for jail cells occurring at the ground floor of the new campus. Cells that once housed up to forty prisoners were constructed of concrete with concrete benches and latrines. Steel doors and reinforcement ensured that prisoners and detainees could not escape or move to public sections of the building. In the requirement conditions of the scheme, one jail cell of six was to be retained to ensure that an exact example of the cell and condition would survive for public viewing through the heritage program. Realizing that the space created by the cells were suitable for office and meeting rooms, the college decided to retain five of them in original configuration yet add special lighting, climate control, data and carpeting. The original concrete benches were removed to increase floor space. Latrine areas were enclosed and capped. The conserved cell which displays original graffiti and has also had no improvements is retained for interpretation. The one cell that was completely dismantled, excluding its iron work and doors which face the jail hallway, is now a very secure and climate controlled data server room.

4.8 Integration of Health and Safety, Mechanical, Data Features

The integration of health and safety features and new technologies is one aspect of the re-use process that appears to confound not only architects and designers but also government agencies. Essentially, all city building agencies will require any building that is being adaptively re-used to be brought up to current building standards. A change of use will be particularly troubling as it will not require upgrading a system, but rather the introduction of a new system that was not intended in the original design of the building. More troubling yet, is the fact that many historic structures cannot be tested or calculated to determine structural efficacy where there is no flexibility or lenience for historic or re-purposed structures the usual outcome is excessive solutions that overshadow and diminish the character of a building.

The former magistracy is a case of compromise in design and heritage, but not in safety. To ensure meeting requirements of means of egress for fire safety codes three new staircase systems were constructed within the building, all of which make use of former stair shafts and meet or exceed code requirements. The former elevator shaft now houses a new elevator functioning on a side lift system increasing car capacity and weight for users.

The former magistracy now has a complete environment control system for the entire building. Due to the new educational technologies introduced, numerous computer lab spaces, data servers, offices and classrooms are required to operate year round in controlled environments. Spot zoning of air conditioning reduces cost and increases efficiency. Lavatories are designed for high efficiency and minimal water uses. Lighting is either LED or T-5 efficient florescent. Classrooms where computer work occurs make use of engineered light to reduce screen glare. Design solutions for classrooms with high windows include the use of cloud ceilings. This simple and novel design keeps drop ceiling system an average of 20 inches off perimeter walls of room allowing for air circulation, a feeling of great space as there is no hard termination point or line at the upper wall and most importantly allows for irregular windows to protrude above the ceiling line yet light to enter the classrooms and shade to function effectively. An example of a simple design choice benefits the efficiency and aesthetic of a room.

5 Conclusion and Further Research

The model of adaptive reuse used by SCAD at its Hong Kong campus is based on many prior design exercises on buildings at three other campuses. The design process that the institution follows takes into account and balance historic fabrics, structural conditions, requirements of building codes and the capacity of a building to lend itself to a new use. Most urban environments offer a great variety of architecture including former commercial and industrial sites as well as office buildings. With the evolution of a city over time, original needs and uses changes in architecture and spaces can be adapted to meet modern needs. The expansion of a university and similar related fields of endeavour provide new occupants for properties that formerly would be demolished for new construction. The adaptive re-use of historic or contributing architecture is essential to sustain design and contributes to the coherent growth of communities.

In recognition of SCAD's effort in conserving and in adaptive re-use of the former Magistracy building, UNESCO has under its Heritage Award program given a honourable mention to SCAD on 1 September 2011. This is the first award given to the completed historic building project under the Revitalisation Scheme.

In 2009 a second batch of historic buildings were offered to NPOs and in 2011 a third batch of historic buildings are scheduled to be offered to NPOs for operation as social enterprises. Similarly the aim of the Revitalization Scheme is to provide all capital cost in building works and subsidies up to five million Hong Kong Dollars in start up costs and financing the operation. Along with other positive measures such as financial assistance to owners of graded buildings, and other incentives for historic building owners to maintain historic buildings, there is a major shift in policies towards better protection of historic buildings and sustainable development in the territory.

6 Acknowledgement

The authors wish to acknowledge the Savannah College of Art and Design, the Revitalising Heritage Buildings Through Partnership Scheme, the Hong Kong Heritage Commission and the Hong Kong Development Bureau for their kind assistance.

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