



CHRISTCHURCH'S HEROIC PERIOD: DISCUSSING THE CITY'S IMPORTANT CONCRETE ARCHITECTURE OF THE 1950S TO 1980S

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SUMMARY

Christchurch has a well-deserved reputation for the quality of its architecture. From the time of post-colonial settlement through to today, the city's architects and designers have often pushed at the edges of prevailing architectural theories, technologies and building techniques. Nowhere has this been more apparent than in the use of concrete materials. And now, with so much of the city's architectural heritage having been lost following the earthquakes of 2010-11, it seems appropriate to reflect on what had been achieved during one of the country's richest periods of architectural development.

The paper looks at buildings designed in and around the city between the 1950s and 1980s, a period considered by many to be the most enlightened for the use of concrete. The period saw a growth of interest in the architectural potential of the material, influenced by trends overseas but always looking to ground the work in the New Zealand vernacular. Creative architectural ideas were paired with innovation in structural engineering and manufacturing processes.

It would be impossible to offer a complete history of the period, even by limiting discussions to a single material, but the paper will present several key projects and ideas that underpin the legacy of this heroic period of architecture using the medium of concrete.

Keywords: Christchurch architecture, concrete architecture, critical regionalism, New Zealand architectural history

INTRODUCTION

The period following the Second World War is widely acknowledged to have been a rich period in New Zealand's architectural history (Clark and Walker 2000). From the late 1940s there was widespread interest among architects to develop design responses that were appropriate to New Zealand conditions, taking into account and expressive of the unique cultural and social characteristics of the country as well as being responsive to environmental conditions and potential of the local materials. Leading up to this period Modernism had gained a foothold as the touchstone for design at all scales of structure and functional use typologies. Many examples of Art Deco architecture were created in the 1920s and 30s, not only in and around Napier following the 1931 earthquake but also throughout other parts of the country. The International style of Modernism was widely used in large-scale infrastructure, commercial and medium/high density housing projects developed from the latter part of the 1930s. This period coincided with the influence of several notable European immigrants such as Ernst Plischke and Frederick Neumann [later Frederick Newman] working in the country. Many of these immigrants worked in the Department of Housing Construction, while others worked with the Public Works Department, developing the

country's infrastructure. Projects such as the Berhampore Flats and Dixon Street Flats, both located in Wellington, and the Star Flat scheme, built in many locations across the whole of the country, were influential in promoting the virtues of Modernism. Refer to figures 1 & 2.



Figure 1: The Star Flats, attributed to Frederick Neumann, were built extensively throughout New Zealand in the post-war period



Figure 2: The design of the Dixon Street Flats was linked closely to Austrian architect Ernst Plischke

Although concrete was widely used in the larger scale projects, it really did not feature as an architectural medium. This was noted by Neumann not long after he arrived in 1938. He used every opportunity to advise architects that they were wasting timber and not making sufficient use of concrete in their buildings (Newman and Leach 2003). The structural properties of concrete were by then highly regarded but architects thought of the material simply as a means to an end, as materiality was not important in the International Style. What really mattered were purity and simplicity of architectural form and space. In order to achieve their aims the structural substrates were often plastered and painted white. The task of reflecting New Zealand culture and conditions through architecture would fall to the architects who followed in the 1950s. It was during that period that architects began to recognise the architectural potential of concrete.

This discussion is centred on the important architectural projects in and around Christchurch, dating from the 1950s through to the early 1980s. One motivation for the paper is to highlight the importance of some of the buildings that were lost following the Canterbury Earthquakes of 2010-11. Several of those referred to in the following pages follow exist no longer. While concrete was not the only material to be explored during this period, on the occasion of the New Zealand Concrete Society's 50th anniversary it seems appropriate to consider the contribution concrete made to this rich period of New Zealand's architectural history.

ARCHITECTURAL DESIGN CONTEXT

In the early 1980s historian Kenneth Frampton and others began to write about critical regionalism, referring to an architectural design approach seeking to reinterpret Modernist ideologies in the local condition (Frampton 1983). Reflecting on what he had observed over the previous 30 years, Frampton was keen to distinguish critical regionalism from simple, nostalgic vernacular design. He'd have done well to look for examples of regionally critical work in New Zealand, as the motivations in this country were tied up with a more widespread search for national identity. The conclusion of World War II saw New Zealand riding a wave of international modernity, linked closely to the war effort. At home, architecture also sought to be modern, which was in part enabled by the influence European immigrants had had with

their design work. At the same time “international architectural culture began attending to the specificity of particular locations. The conjunction of the local and the modern is a fundamental issue in New Zealand architecture.” (Clark and Walker 2000 p7).



Figure 3: The quadrangle at Christ's College, defined around the perimeter by a collection of neo-Gothic and contemporary structures. **Figure 4:** The Canterbury Museum by Benjamin Mountford

Efforts to develop a regionally critical modern architecture were particularly evident in the South Island, where development was taking place at a great rate to make up for a generation of minimal construction activity. The architects whose work would contribute to the quality of this period were well acquainted with New Zealand's architectural history and also able to draw on their experiences of other places. Accordingly, their work reflected a mix of inherited architectural traditions animated by their own personalities and thoughtful reflection about key architectural concerns of the day (van Raat 2005). The quality of work being produced in Christchurch at this time was particularly high. Paul Walker (2005) suggests that this could in part be attributed to the willingness of clients to commission young designers and in part to the wide variety of projects that were being commissioned. Beaven (1967) attributes it also to the amount of time architects were able to lavish on their work. It seems that architecture enjoys higher social stature in the city. Canterbury buildings are seen in relation to their largely fabricated, urban context rather than with their natural setting, as is the case in other New Zealand cities. There are no distant views to celebrate, no natural landscapes to relate to; instead the outlook of every building must be constructed (Mitchell and Chaplin 1984 p47). According to one historian, Christchurch architecture had attained a mythical status by the 1960s (Walker 2005).

The two key players during this period were Miles Warren and Peter Beaven and it is mainly their work cited by this paper, if only due to space constraints. There were of course other architects contributing to a development of a *Christchurch School*. Don Donnithorne, Holger Henning-Hansen, Don Cowey, Paul Pascoe and Trengrove & Marshall were each also interpreting the local in a modern idiom to add to the richness of development during the period 1950-80.

Miles Warren worked in London for a period in the early 1950s where, among his many other experiences, he witnessed the emergence of the unfortunately named *Brutalist* movement in architecture. During this time he also ventured to Scandinavia to see the work of Arne Jacobsen, Gunnar Asplund and others whose work would later influence his. On returning to Christchurch in 1955 he set up practice on his own before being joined by Maurice Mahoney to establish the Warren & Mahoney partnership. Mitchell & Chaplin (1984) recount that

Warren was influenced by the aesthetic approach taken by the Brutalist architects, who always sought after ways to express the way a building was made. Warren also acknowledged being influenced by the 'straightforward' approach taken by the Group Architects, a loose and influential cluster of designers who preceded him through the Auckland Architecture School. However, it was only their spartan methods that appealed to him, their methods of building, based on lightweight and uninsulated timber were unsuited to the harsher climate down south. The shallow roofs employed by the Group were also unsuitable to the landscape of Canterbury, flat and seemingly boundless. Buildings, and particularly houses, needed a substantial roof in such a setting he argued (Warren 2008). Of course by having grown up in this most English of cities he was also aware of the steeply pitched roofs of the neo-Gothic structures built by the colonial settlers and their followers. This would go on to become one of the enduring features; expressive roofs would be incorporated into the design of all Warren & Mahoney buildings.

While these men are joined by their status as Christ's College old boys, Peter Beaven was in most ways the architectural counterpoint to Miles Warren. As much as Warren was a Classicist and rationalist, Beaven was committed to romanticism (Mitchell and Chaplin 1984). He drew his architectural inspiration from Benjamin Mountford, John Ruskin and everything Gothic. Having grown up around the family engineering business he was also comfortable with the honest reality of the grain stores and freezing works built by his grandfather. In practice he became fascinated with the potential of precast concrete, an industry that had grown quickly in Canterbury, with its rich supply of aggregates and flat topography (Beaven 1967, 2002). Leading in to the 1962 national conference of the New Zealand Institute of Architects, Beaven wrote to educate his colleagues on the exciting aesthetic possibilities that he could see emerging with concrete construction techniques (Beaven 1962). He was particularly taken with prestressed, precast concrete elements.

Earlier construction methods and materials were proven to be inappropriate for use in the ruthless New Zealand climate and he expressed dissatisfaction with 30 years of depression and wartime standard building. Architecture, he wrote, has a role of excitement and fitness for purpose that must come with more flexible and expressive methods of building. Building with precast concrete elements was conceived by Beaven to be large-scale masonry, where each unit could have a plastic and expressive form. Over the course of their parallel careers, the expressive use of precast concrete elements would be another area their architectural design work would overlap.

With this background, the paper now proceeds to discuss several key architectural projects that came to enrich Christchurch's built environment over a 30 year period. Rather than being arranged chronologically, the projects are arranged according to building type in order to facilitate comparisons.

Residential projects

Having not long been back from England, Warren, together with three other bachelor friends, got together to buy a site in Dorset Street, on the city side of Hagley Park. There they built a set of eight flats that would become the prototype for the whole school of Christchurch architecture in the decades that followed (Clark and Walker 2000, Warren 2008). With the flats arranged in pairs and stacked on two levels (fig 5), the clarity of the plan was remarkable and was the key to the project's efficiency. Access to the ground floor units was through a private garden and to the upper level flats via a shared stair. The concrete slab between floor levels was lined using timber boarding on the underside, but otherwise the concrete surfaces were left exposed, inside and out.

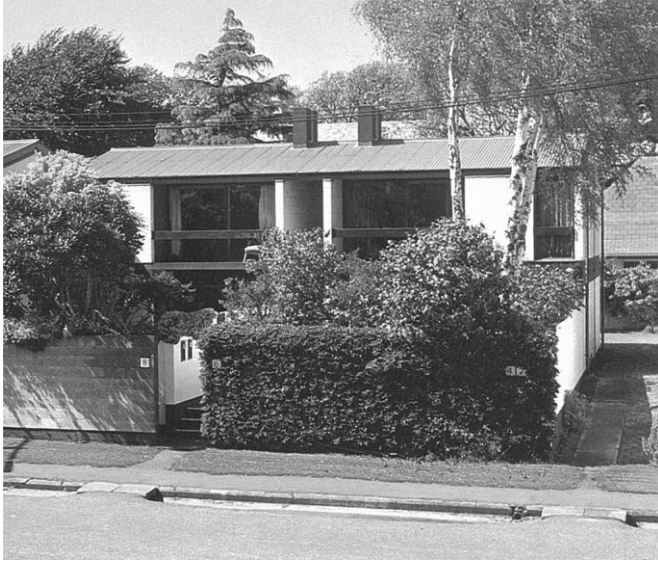


Figure 5: The Dorset Street Flats were the first to be built using concrete masonry exposed inside and out in combination with fairface concrete beams and slabs.



Figure 6: Peter Beaven was influenced by European hill towns and medieval laneways with the planning of Tonbridge Mews.

This was the first Warren project to employ fairface concrete structure and white painted concrete masonry infill. While the project was not loved by all [apparently tour buses regularly passed by to observe 'Fort Dorset'] it quickly gained favour among architects and then the city's cognoscenti. There were clear references, acknowledged by Warren himself, to the English Brutalism, but perhaps no further than in the use of materials. Clark & Walker (2000) note that this method of building, in the capable hands of Beaven and Warren, would also be shown to be suitable for institutional and other building types.

Warren was not entirely happy with the low pitch of the flats, claiming that in the flat Christchurch suburbs it seemed inadequate. Taking influence from the simple cottages he observed in the Danish countryside, a series of houses by Warren & Mahoney were developed in the early 1960s. For his own parents, Warren nervously built a house in the 'pixie' style, as it had been dubbed. These houses articulated each of the three wings [living, sleeping and garage] under separate gable forms. The principal material was again concrete masonry units, painted white. Concrete structural frames were not used but the lintels above doors and windows were picked out as fairface concrete, conforming to the rigorous masonry module.

Tonbridge Mews (fig 6), in the suburb of Merivale, is a lovely 18 unit collection of townhouses organised around several small the project takes inspiration from Christchurch's Gothic past to create an intimate walkway through the site, linking the two streets the site faces out onto. The buildings are built using the standard 400 x 200 concrete masonry module with steeply pitched roofs clad in standing seam metal. Rejecting the rational planning that underpins the Warren & Mahoney work, Beaven created a complex and picturesque residential settlement (Gatley 2008). It can be noted that the masonry module helps establish a sense of order across the site, which freed the architect up to articulate the forms. A similar project developed around the same time in Wellington by Beaven was described as the best development of its kind in the country (Mitchell and Chaplin 1984 p57-58).

Many other individual residential projects could be cited as exemplary of this period, such as the Millbrook Apartments and Cambridge Court by Don Donnithorne or the Warren & Mahoney offices, built as a dwelling because of the prevailing zoning restrictions at the time. The three that have been discussed demonstrate the introduction and early use of fairface

concrete in combination with masonry, which would be representative of this period along with an evolution of forms. We turn now to look at more public forms of building.

Civic and cultural projects

Peter Beaven was given the opportunity to build a new administration building for the Lyttelton Tunnel Authority (fig 8). The design has been widely discussed, animated perhaps by the architect's own statements that the building metaphorically represents the fifth ship on which all Cantabrians unable to trace their ancestry to the first four, could tie their colours to! There are loose visual connections to a vessel being tethered to the hills, as the principal volume floats above its reinforced concrete structure (Hodgson 1990). The proportions of space and structure are grand, expressive perhaps of the widespread pride felt by Cantabrians with the completion of the vehicle tunnel linking the port and the city. Historian Ian Lohead has noted that the confident use of materials and formal expression also signalled a new maturity in New Zealand's modern architecture (Gatley 2008).

Another local interpretation of the Brutalist style is by Holger Henning-Hansen and Stewart Minson. Their building for the Canterbury Society of Arts (fig 7) designed in 1965 remains a valued part of the city's art scene today. It is perhaps renowned more for its architectural rigour and stunning interior spaces than for the contribution made to the Gloucester streetscape, as the upper level of the façade comprises solid exposed aggregate concrete panels.



Figure 7: The Canterbury Society of Arts building is a commanding presence in Gloucester Street with beautifully daylighted exhibition spaces

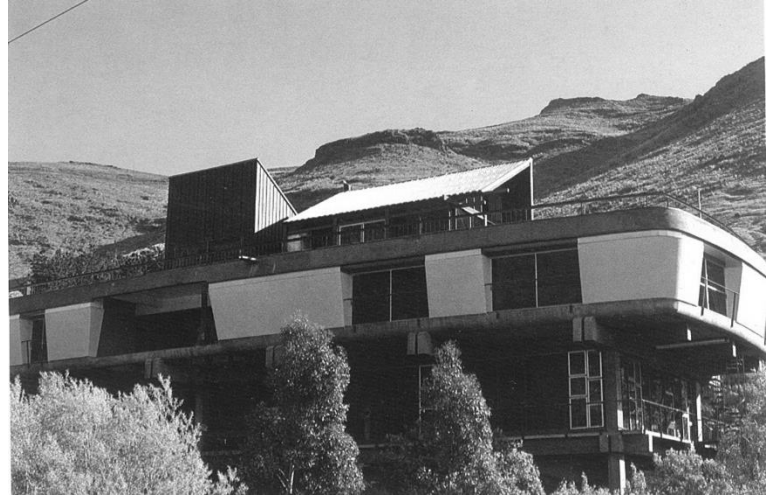


Figure 8: Beaven's 'Fifth Ship' was moored to the Port Hills at the city end of the Lyttelton Tunnel, the administration of which was the main purpose for the building.

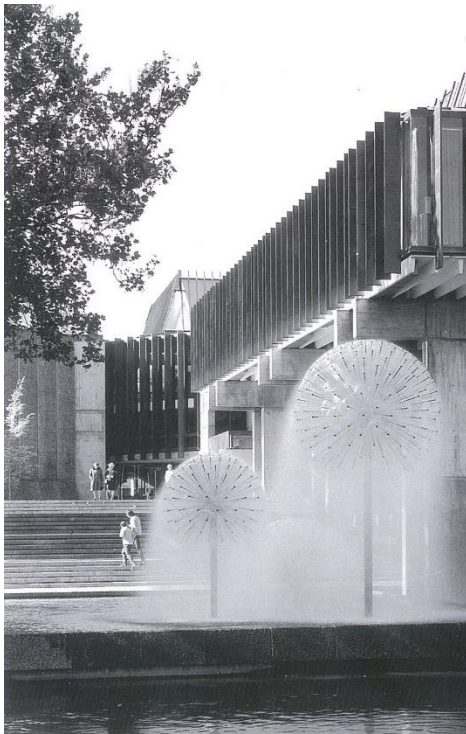


Figure 9: The Christchurch Town Hall relationship with the Avon River creates a stunning, picturesque moment in the gridded city

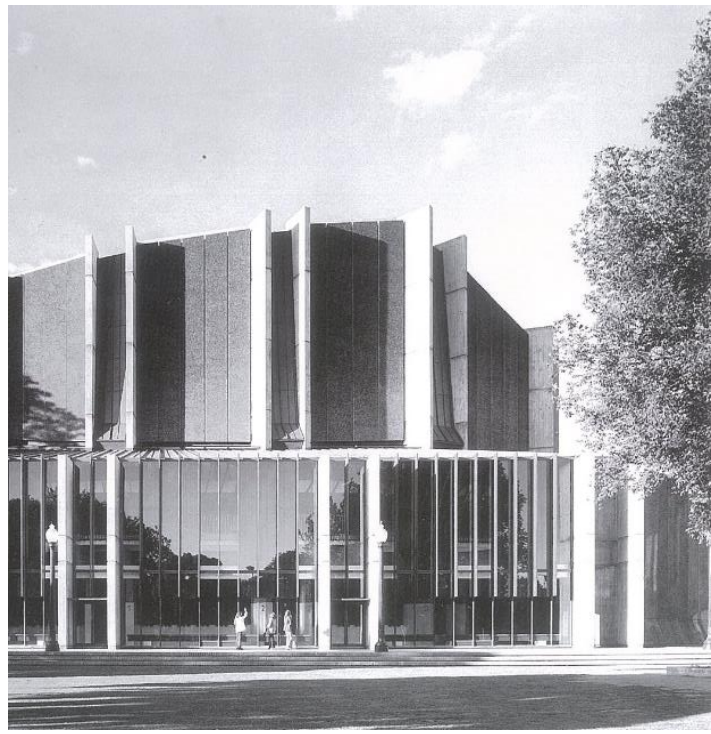


Figure 10: The Town Hall's elevation to Kilmore Street reflects the shape of the main auditorium in Modernist fashion

Perhaps the country's most famous 20th century building, the Christchurch Town Hall has been discussed widely since the winning entry to the national architectural competition was announced in 1966 (figs 9 & 10). The seemingly disparate collection of forms, each housing one of the primary functions of the complex, is held together by a strong, bi-directional axial plan. Concrete elements feature throughout the building. Miles Warren notes that concrete was the only material that could effectively be used to clad the auditorium, which had to acoustically separate the sensitive interior environment from an increasingly busy Kilmore Street.

Cast in-situ concrete columns are arranged in pairs throughout. In the conference centre/restaurant wing the proportions of the structure are even more elegant than elsewhere, as the building cantilevers out over the Avon River. The painted precast concrete double tee flooring units hover lightly over this structural frame to complete the cantilever. The setbacks of other building elements, such as the glazing fins, are all tied back to the module of the flooring ribs. The view of this part of the complex has become symbolic of Christchurch, the city. At the main auditorium and in the smaller James Hay Theatre the concrete columns support exposed aggregate concrete cladding panels. Again, the structural proportions are elegant. Modern in the sense that the building forms are expressive of the interior functionality it is nevertheless a New Zealand building, robust through the use of different forms of concrete in combination with other locally sourced materials. The experience of attending a concert in the main auditorium is second to none.

Commercial buildings

Although it can be difficult to appreciate this now, with the central area largely empty, Christchurch earned a well-deserved reputation for the quality of its office buildings. Many of those that were most highly respected were built during the period covered by this paper. Up until the last few years before the 1987 sharemarket crash, office buildings were built for those who would be working in them (Warren 2008). Organisations such as Canterbury Frozen Meats and Colonial Mutual commissioned buildings that they planned to own, that needed to provide for their ways of working and that would often go on to represent the company in the eyes of the public. Three important projects from this era are those undertaken for SIMU, Manchester Unity and General Accident. Only the latter remains standing.

These projects are all linked by their facades, where precast concrete has been used to great effect (fig 11). All of these buildings predated widespread use of air-conditioning and the architects each realised that overheating could be the main cause of discomfort in large office buildings. While three-dimensional modelling of the façade panels helped provide all-important shading it did much more than that in architectural terms. These buildings have a generosity of depth and high levels of visual interest generated by the repeating patterns that is unmatched in this country or elsewhere. The façade designs and construction materials were each important factors in the development of an architectural language that became synonymous with the Canterbury region.

The structural solution for the SIMU building (fig 13), designed for a site facing onto Latimer Square, adopted Lyall Holmes's technique of concentrating lateral support into a stiff core [in this case two cores], allowing the outer columns to be relatively light as they were only required to support gravity loads (Warren 2008 p88). Spanning between floors, the precast concrete cladding panels used at SIMU have an exposed aggregate finish and adopt a tight rhythmic spacing. Although Warren & Mahoney remained committed to the expressive potential of roofs in the Canterbury landscape, SIMU was given a light, almost ethereal conclusion. The vertical mullions of the panels below stretch upward causing the building to literally merge with the sky. At the urban scale the building served to define the edge of the square, something the [at the time] prevailing lower height buildings were unable to achieve.



Figure 11: Detail of the precast concrete cladding panels on the SIMU building



Figure 13: The SIMU building, seen from Latimer Square



Figure 12: Manchester Unity, certainly one of Peter Beaven's finest buildings in the city. Prior to the earthquakes the building had undergone extensive renovation.

In 1964 Peter Beaven broke new ground on several fronts when designing the Manchester Unity building on the corner of Worcester and Manchester Streets (fig 12). He conceded that it was the first time he had consciously addressed the local context and in this case his design clearly references Mountford's Trinity Congregational Church on the opposite corner. The project was built using the lift-slab method, innovative at the time in Canterbury although its use was short-lived (Gatley 2008 p155). The key design feature developed by Beaven to link this building with the Trinity Church were the articulated precast concrete mullions, which extend the full height of the street facades. The depth of the mullions allowed the architect to manipulate the alignment of the glazing and the floor structure over the height of the façade. This articulated façade contrasts with the thin curtainwall systems being used elsewhere at the time.

With a generous, largely glazed ground floor and copper clad roof the building adopted the classical tripartite composition. Along the shopfronts the design revealed 'Y' shaped columns, which were used by Beaven to 'collect' adjoining pairs of mullions from the upper levels, and running them to the ground. With this building Beaven provided punctuation to an important corner of this gridded city. He also brought a sense of European elegance to Christchurch (van Raat 2005) but tempered this through references to local buildings and by using his beloved precast concrete innovatively.

Arguably, the General Accident building is one of the most important buildings in Christchurch. It is important not because it is the most ornate or because of the tenants housed there. Its importance is attained through its quiet presence on the corner of Hereford Street and Oxford Terrace, a threshold one passes through along Hereford Street and into the heart of the CBD. It is important due to its pleasant proportions, the depth of the façade and the connection this building makes with the space around it. Now that many of its companion buildings are gone its relevance is even further elevated. The General Accident building extended the design of façade panels, begun a decade or more earlier, by introducing diagonal splays at the sill and in the mullions. As a result the sunlight plays across the façade even more vigorously throughout the afternoon.

Institutional buildings

College House, or Christchurch College as it has also been known, is in many ways the crowning glory of Warren & Mahoney's self-acclaimed constructivist phase of work. Although the white painted concrete masonry and fairface concrete structure would be used again, this project provided several high points in this idiom, according to the designer himself. Firstly, there is the quadrangle (fig 14) around which this college for 120 students is arranged, with Warren calling it in 2008 the finest space the practice ever designed (Warren 2008 p70). Critic David Mitchell agrees, noting that although the Oxbridge model may be an outdated model for use in the colonies, at College House it is incredibly well executed (Mitchell and Chaplin 1984 p52). Others are more willing to accept the model in the antipodes, as in the hands of Warren the layout of the building organises students' rooms into small, manageable clusters around stairs, eliminating the need for long, dreary corridors which were typical of New Zealand hostels at the time.

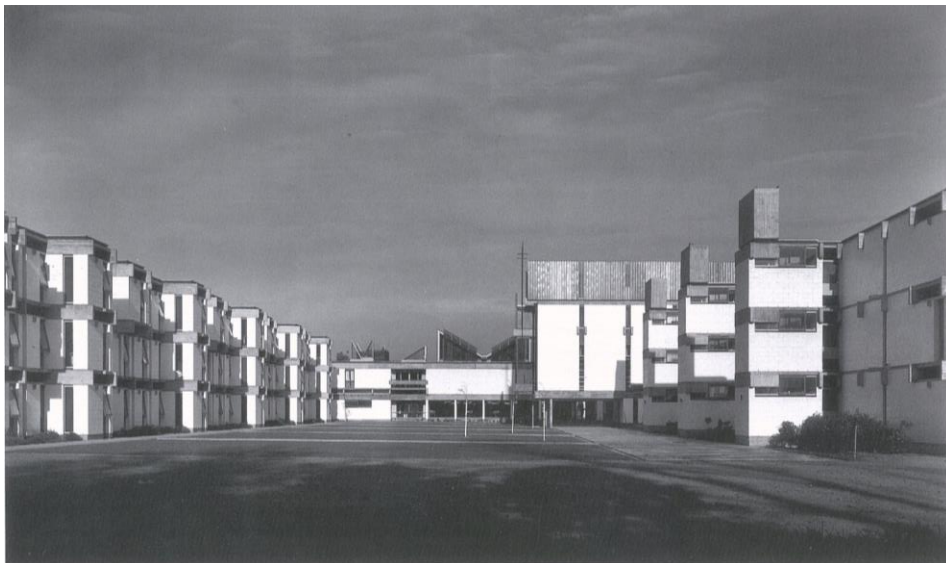


Figure 14: the concrete buildings of College House form a quadrangle, considered by Miles Warren to be the firm's finest space.

The project also contains what Warren considers to be the firm's best room, the College Chapel (fig 15). This space is both Modern and Gothic at the same time with painted blockwork walls, concrete structural beams and dark stained timber roof structure. The roof is inverted from the traditional gable used by Gothic architects but soars nonetheless as a steeply pitched butterfly form. As the culmination of a process of experimentation with painted blockwork and off the form concrete that began more than a decade earlier with Dorset Street flats, this project stamps an exclamation point on an important period of architectural development in Christchurch. The Christchurch school, as it is often referred to, would go on to develop in new ways over the following decade and a half.



Figure 15: The chapel at College House, an inspired fusion of Modern and Gothic design in the one space, according to one critic.

CONCLUSION

The post WWII period was a very rich period of development for the New Zealand architectural profession. The wartime years generated awareness of how unique this country was amongst its peers and a sense of nationalism developed. Architecture played an important part in the search for a national identity during this period. New Zealand architects, like many practicing elsewhere, were sensitive to how Modernism tended to squash local differences in the name of sweeping theories and principles. Architects were interested in how Modern philosophies could be interpreted through design responding to local conditions and culture. Perhaps the most coherent example of these activities was in Christchurch.

This paper has traced some of the key influences on the development of a *Christchurch school* or language of architectural expression. Concrete played an important role in its development. In the hands of Warren & Mahoney, Peter Beaven, Don Donnithorne, Holger Henning-Hansen, Paul Pascoe and others the city's built environment gained beautiful examples of how concrete in different formats could inform and enhance a locally responsive design. Projects like the Christchurch Town Hall, buildings for General Accident, the Canterbury Arts Society and the Anglican Church all remain standing as a testament to this rich period of innovation. Sadly, many of the others cited in this paper as well as those not able to be discussed here have been lost in tragic circumstances.

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