

PEER-REVIEW W



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ARTICLES





Peer-Reviewed Articles

INTRODUCTION

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The peer-reviewed section of *Asylum* 2022 comprises five papers on architectural and urban research, built-project investigations and pedagogical innovation, and collaboration with communities and industry. The papers are grouped both thematically and based on their research category, stated on the first page of each paper as: Original Research Article, Short Communication – Preliminary Original Research Article, or Commentary/Critique/Polemical Article.

“*Asylum* 2022 comprises architectural and urban research, built-project investigations and pedagogical innovation, and collaboration with communities and industry.”

Cameron Moore and Milica Mađanović’s paper “The Design of the Dilworth Building” opens the issue. The paper identifies a gap in the knowledge about Gummer and Ford’s Dilworth Building, as the building remains under-researched in current architectural discourse. The most written about the building has been in newspaper articles from the 1920s. Moore and Mađanović investigate the Dilworth Building’s design and

construction methods, carefully examining the brief, the client’s motivations, and the site’s limitations, budget and typology, and provide a thoroughgoing analysis of the architectural language deployed. Discussion of the design is closely tied to Gummer’s training and, in particular, his time in London in the office of Edwin Lutyens, which was influential in developing the idea of the Urbis Porta. This work is part of the ongoing research project devoted to Gummer and Ford and announces the 2023 centenary of the firm’s establishment.

In “Courtyard Housing: A Mid-Density Alternative House-Type,” David Turner discusses an important housing topic in Aotearoa New Zealand, and presents an opportunity for the country’s housing industry to diversify the way it designs medium-density housing by considering the courtyard house typology. The paper suggests that this “third house-type” – the “mid-density courtyard” – would diversify market options and could provide good-quality private external space while still providing easy access to public spaces. The author indicates that this would demonstrate that the housing units need to be designed together to achieve these outcomes; and believes that this typology could be more widely used.

In “Auranga Abodo Seating Pavilion,” Adam Collett, Kyah Suckling and Yusef Patel tell the story of a series of student-designed timber structures and locate this 2022 project within a line of Unitec initiatives since 2017 – to turn construction waste into human connection. The main emphasis is on: embedding of circular-economy principles; the learning and application of aspects of social resilience and construction practices with respect to reusing construction waste; and creating a sense of place and identity. The paper presents the technical development of the designs, and the development of a way to use waste timber by showing how students worked with recycled timber from offcuts to then create well-designed architectural outcomes for Auranga’s town square and community in South Auckland. The authors emphasise that this hands-on work with material suppliers within the architectural industry to create sustainable projects for private clients and communities enables students to learn how to embed theoretical principles and practices within real-world projects.

In “Tau-utuutu: The Development of a Living Vision for the Unitec School of Architecture Te Kura Hoahoanga,” Kerry Francis, Maia Ratana and Renata Jadresin-Milic provide an insight into an initiative



within Unitec's School of Architecture that generated a vision statement for the School. The paper offers a reflection on a process that started in 2020 with a series of staff engagement workshops and on the draft of a Living Vision document – seen as the current state of the journey and the outcome of this extensive staff feedback. The authors show that fundamental to this process is a partnership – the development of a high-trust relationship between tangata tiriti and tangata whenua, and an approach that values people, the sharing of authority, and the establishment of values to develop a vision and strategy together.

The peer-reviewed section of this issue concludes with Hamish Foote, Bin Su, Lian Wu and Trina Smith's paper "The School of Architecture e-Newsletter." This paper summarises and reflects on the history of the School of Architecture's e-newsletter – established in 2013, edited by Senior Lecturer Hamish Foote, and traditionally published bi-annually to keep alumni and industry contacts informed of the work and developments in the School and its communities. To bridge the gap created by Aotearoa New Zealand's Covid-19 interruption, when the publication of the e-newsletter

was paused, the paper shares with readers four recent projects conducted in the School and announces a forthcoming international conference planned for 2023. The paper shares details of the projects' outcomes, the benefits of the research conducted, and the impact architectural and landscape designs have on these.

Our special gratitude goes to the Advisory Committee and peer reviewers, who, again, have contributed significantly to *Asylum* 2022. The generous and constructive feedback for the papers' authors and the *Asylum* editorial team was greatly valued and sincerely appreciated.

Dr Renata Jadresin Milic



The Design of the Dilworth Building

Cameron Moore and Dr Milica Madanović

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Abstract

The Dilworth Building was architecture firm Gummer and Ford's first significant building. It was completed in 1927 and sits on one of the most prominent locations in Aotearoa New Zealand, the corner of Queen Street and Customs Street East in downtown Tāmaki Makaurau Auckland. The Dilworth Building has been referred to as one of this country's finest examples of classical architecture by critics such as Miles Warren, Bruce Petry, Peter Shaw, John Stacpoole and Peter Beaven, among others. It holds a Category 1 rating from the New Zealand Historic Places Trust. Paradoxically, this building remains under-researched in current architectural discourse – the most written about it has been in newspaper articles from the 1920s. This paper aims to bring the building's design and construction methods to light, investigating the brief, the client's motivations, the limitations of the site, budget and typology, and the application of William Gummer's design principles to maximise sunlight and air circulation, and with efficient circulation and structure. The building's materiality, design of the façades, and spatial sequences will also be analysed to discover their contribution to the building's overall composition and character. It is hoped that today's architecture students can benefit from formal and practical analysis and use a similar approach in their own architecture and writing.

Keywords: Gummer and Ford, the Dilworth Building, heritage architecture, classical architecture.



Figure 1. The Dilworth Building. Photo: Cameron Moore

Introduction

The Dilworth Building sits on one of the most prominent locations in Aotearoa New Zealand, the corner of Queen Street and Customs Street East in downtown Tāmaki Makaurau Auckland. It has been referred to as one of this country's finest examples of classical architecture by critics such as Miles Warren, Bruce Petry, Peter Shaw, John Stacpoole and Peter Beaven, among others. It holds a Category 1 rating from the New Zealand Historic Places Trust. This article discusses the design of the building, what motivated the client, how the architect, William Gummer, approached architectural design, both in theory and in practice, and how these design principles and influences are evident in the building.

Client

James Dilworth, an Irish-born Auckland businessman, died in 1894, bequeathing £100,000 (approximately \$20million in today's terms), mainly in the form of a property portfolio. This endowment was used to establish a school for boys of sound mental and physical health, either "orphans or sons of people of good character ... in straitened circumstances," to be "instructed in areas of learning to become good useful members of society."¹ The Dilworth Ulster Institute was the organisation that was set up to administer the estate. James Dilworth had an affinity with architecture: according to historian Martin Jones, Dilworth had stated his intention of erecting buildings of a worthy character."²

Brief

For over fifty years, the buildings sitting on the corners of Queen Street and Customs Street East, and Queen Street and Customs Street West, the Thames Hotel in the Tyrone Building, and the Waitemata Hotel, had

been the symbol of James Dilworth's legacy. By the early 1920s, the two biggest income earners in the portfolio needed an upgrade. The two distinct possibilities were either to replace both buildings with matching structures on each side of Queen Street or to renovate each building. The former would be the costliest, and would increase the portfolio's value the most, and was followed through seriously enough to have a note in the *Auckland Star*.³ The latter option was the least costly, but without as much of an increase in the portfolio's value.



Figure 2. Urbis Porta (City Gates). Architect William Gummer's solution to the first upgrade option. Image: Gummer and Ford Collection, GF33, Architecture Archive, Libraries and Learning Services, University of Auckland.

A middle ground was reached in which the Tyrone Building, on the Corner of Queen Street and Customs Street East, was to be demolished and replaced with an eight-storey office block, while the Waitemata Building opposite was to be kept and renovated. The

construction cost came to £113,717, an amount just short of the cost of all permitted work per month in Auckland in 1925.⁴ Nearly all the £100,000 was borrowed.⁵

The limits and opportunities presented by the brief were two-fold. It was a retail and office building whose core contribution to the Dilworth Ulster Institute was to increase the value of its endowment. Thus, efficient use of the site's area to maximise the number of rent-producing offices and shops was crucial. A limit was imposed on the over-commercialisation of the architecture by the board, which "felt it was their duty to erect a building to be a credit to Auckland."⁶ And "the building was to be a memorial to the founder [James Dilworth]."⁷ There was a substantial budget to achieve both outcomes. Thus, the architect's responsibility lay in finding the balance between the two. After the construction of the Dilworth Building was complete, the board still hoped to be able to erect a similar building across Queen Street, as seen in Gummer's famous *Urbis Porta* watercolour (Figure 2).⁸

Site

The site of the Tyrone Building, also known as the Thames Hotel, was on the corner of Queen Street and Customs Street East. It was approximately 935 square metres in a slight parallelogram, roughly 41m × 23.5m. The corner boundary of the site was set back about 1.5 metres and sold back to Auckland City Council "so as to give a fine curve of a pathway from Queen Street into Customs Street."⁹ Architectural historian Milica Madanović notes that the site's proximity to John Campbell's new Auckland Post Office building also made the site more attractive to retailers and businesses looking for office space.¹⁰ The site had been reclaimed

¹ Murray Wilton, *The Dilworth Legacy: The First One Hundred Years of Dilworth School 1905–2006* (Auckland: The Dilworth Trust Board, 2007), 20.

² Martin Jones, "Search the List | Dilworth Building | Heritage New Zealand," accessed September 17, 2021, <https://www.heritage.org.nz/the-list/details/4600>

³ "Proposed New Structures," *Auckland Star*, September 25, 1925, sec. Real Estate.

⁴ "Dilworth Trust Structure," *New Zealand Herald*, September 14, 1925, sec. Building in the City.

⁵ "Luncheon for Workers," *New Zealand Herald*, March 25, 1927.

⁶ "New Building Finished," *Auckland Star*, September 28, 1927.

⁷ Ibid.

⁸ Ibid.

⁹ "Queen Street Entrance," *New Zealand Herald*, April 2, 1925, sec. Auckland's Gateway.

¹⁰ Milica Madanović, "Architectural Historicism Revisited: The Case of Twentieth-Century Traditionalist Architecture in Queen Street, Auckland" (PhD thesis, The University of Auckland, 2020). Research Space Auckland <https://researchspace.auckland.ac.nz/handle/2292/52752>

from the sea only sixty years before, as neatly summed up in a New Zealand Herald article: “the place where an iron shed stood above the mud sixty years ago, must be handed over to the modern builders as a site for a noble structure.”¹¹ Constructing one of the tallest buildings in Auckland on land that had been in the sea comparatively recently presented issues for the design and construction of the foundation, but didn’t appear to restrict the height of the building itself.

Architects

The Dilworth Building was the first significant built structure designed by Gummer and Ford. The firm was established in 1923 by William Gummer and Reginald Ford. Gummer, the lead designer for the Dilworth Building, was educated at the Royal Academy of the Arts in London, where he also spent eighteen months in Edwin Lutyens’ office. He returned to New Zealand in 1912, where, as a partner in the Wellington architectural firm Hoggard, Prouse and Gummer, he designed



Figure 3. The site for the Dilworth Building, the Tyrone Building to the left, and the Waitemata Hotel to the right. Corner of Queen and Customs Streets, Thames Hotel and Waitemata Hotel. Vaughn Collett Cooper, 1880–1966, photographer, Auckland Museum Archive PH-NEG-B1995.



Figure 4. An obvious precursor to the Dilworth Building. State Fire Insurance Building, Wellington. Gordon Onslow Hilbury Burt, 1893–1968: Negatives. Ref: 1/1-015440-F. Alexander Turnbull Library, Wellington, New Zealand. /records/22668283.

the Guardian Trust Building in Auckland’s Queen Street (1913–17), the Wintergardens in the Auckland Domain (1916–29), and the now-demolished State Fire Insurance Building in Wellington (1917–19). The latter was an obvious precursor to the design of the Dilworth Building. The firm went on to be responsible for the Auckland Railway Station, the Remuera Library, Auckland’s Mayfair Apartments and the Carillon in Wellington (1930–32), and the National Art Gallery and Dominion Museum in Wellington (1936). Their last major architectural work was the addition to their State Fire Insurance Building in Wellington (1938–40). Both William Gummer and Reginald Ford contributed significantly to the architectural discourse in New Zealand in the 1920s and 1930s. Gummer wrote primarily about architectural design, whereas Ford’s interests were far more eclectic – from prefabrication to earthquake design to professional practice. The firm

¹¹ “Early History Recalled,” *New Zealand Herald*, August 10, 1925, sec. The New Auckland.



Figure 5. Trustees and officials at the opening of the Dilworth Building, 1927. Note William Gummer top left and Reginald Ford top second from left. Next to them is the contractor, W.J. Fletcher. In the centre bottom row is Archdeacon George MacMurray. Source: Murray Wilton, *The Dilworth Legacy: The First One Hundred Years of Dilworth School 1905–2006* (Auckland: Dilworth Trust Board, 2007), 184.

continued into the 1960s and is commonly regarded as one of this country's most influential architecture firms.¹²

Design Influences for the Dilworth Building

Born in 1885, William Gummer was articled¹³ to Auckland architect W. A. Holman for seven years, between the ages of sixteen and twenty-three. He travelled to London in 1908, at twenty-four, where he would spend the next three years. Gummer first attended design, architectural history and structural mechanics classes organised by the London County Council, attended lectures at the Architectural Association, and was accepted into the Royal Academy of Arts in early 1909.

The Royal Academy was a prestigious institute where architectural instruction was modelled on the French *École des Beaux-Arts*. There, an emphasis was placed on the importance of the plan as a manifestation of a functional programme. When analysing the site, social and urban functions were considered, while adhering to formal expression in materials and construction methods. The design was presented by the student with quick concept sketches and highly finished presentation drawings.¹⁴ Architectural history was taught by typological studies that rendered “classical forms unhistorical and established them as modular proportions.”¹⁵

At the Royal Academy Gummer studied under Reginald Blomfield and was inspired by the writings of William Lethaby, was mentored by Richard Phené Spiers, and worked for Edwin Lutyens.¹⁶ He returned to New Zealand in 1912 after a three-month stint in Daniel Burnham's office in Chicago.

His Royal Academy education and Lutyens' influence gave Gummer an appreciation of a traditional method of design best summarised in his 1914 address to first-year students called “The Study of Architecture.”¹⁷ The first lesson he imparts he calls “The Art of Reason,” in which he implores the students to consider the function of the building, to understand the possibilities and limitations of the materials used in its construction – “a stone should not be subject to tensional strain ... know how a bridge spans by trussing timbers ... where to use piles or a raft formation in its foundation” – and have the architectural design respond to the site – “a true architectonic feeling obtained by allowing the nature of the site and its position with regard to the compass.” He asks the students to become familiar with the habits of

the people using the building, and to express themselves fully “using mass, line, proportion, light and shade, scale, etc.”¹⁸ This casual use of ‘etcetera’ obscures the more advanced design training he got at the Royal Academy and under Edwin Lutyens on axial composition, a modular approach to design informed by the Greek and Roman orders; a knowledge of architectural elements, and how to incorporate them in a larger composition; an obligation to consider the visual effect of structural elements; and an understanding of proportion in order to imbue a building with a humane, cheerful character.¹⁹ Gummer's attitude to ornamentation was that it ought only to be used to emphasise the already pleasing proportions of the structure of the façade.²⁰ Gummer's most specific influences can be found in the design books he recommends to students, employees and fellow practitioners: Nathaniel Curtis's *Architectural Composition* and John V. Van Pelt's *The Essentials of Composition as Applied to Art*.²¹

Reginald Ford eloquently summarises Gummer's design philosophy thus:

He has been a keen student of classical architecture and of the later neo-classic forms. He loved classical architecture, but he was a master and not a slave of its forms, which, when he used them, he used with restraint, judgment, and taste. He never let those forms or elements dominate his design or interfere with the functional requirements of the building.²²

Analysis of Plans and Sections of the Dilworth Building

The ground floor comprised thirteen retail stores, five on Queen Street, one on the corner, and six on Customs Street East (one through an entrance). The only store without street access was located at the end of the

¹² Milica Mađanović, Cameron Moore, and Renata Jadresin-Milic, “An Untraditional Perspective of Tradition: The Lessons of Gummer and Ford in Architectural Education and Designing for New Zealand. A Unitec Research Project,” *Asylum* 1 (2021): 206–213. <https://www.unitec.ac.nz/eypress/wp-content/uploads/2021/03/An-Untraditional.pdf>

¹³ To be articled was similar to having an apprenticeship.

¹⁴ Arthur Drexler, *The Architecture of the Ecole Des Beaux-Arts* (New York: Museum of Modern Art, 1977).

¹⁵ Werner Szambian, “Durand and the Continuity of Tradition,” in *The Beaux-Arts and Nineteenth-Century French Architecture*, ed. Robin Middleton (Cambridge, MA: The MIT Press, 1982), 19–33.

¹⁶ Bruce Petry, “The Public Architecture of Gummer and Ford” (master's thesis, The University of Auckland, 1992), 69–75.

¹⁷ William Gummer, “The Study of Architecture,” *N.Z. Building Progress* X, no. 9 (May 1915): 293–298.

¹⁸ Gummer, “The Study of Architecture,” 294.

¹⁹ Petry, “The Public Architecture of Gummer and Ford,” 74.

²⁰ William Gummer, “Bridge Architecture,” *N.Z.I.A. Journal* (October 1929): 88–95.

²¹ Petry, “The Public Architecture of Gummer and Ford,” 97.

entry vestibule. This shop, with natural top lighting, was intended to be a flower shop. "It is an admirable site for such a purpose and will provide a garden-like effect to the shopping display in the corridor."²³

Level 1 was a mix of offices and retail, and Levels 2–7 were office space. Each floor had fifteen offices totalling about 750 square metres, with two bathroom blocks on each floor. Of these fifteen offices, twelve overlooked the streets outside. The caretaker's apartment (a position that attracted 567 applicants²⁴), another office and plant rooms were found on Level 8. The top level contained the boardroom for the Dilworth Ulster Institute, the administrator of the Dilworth Trust.

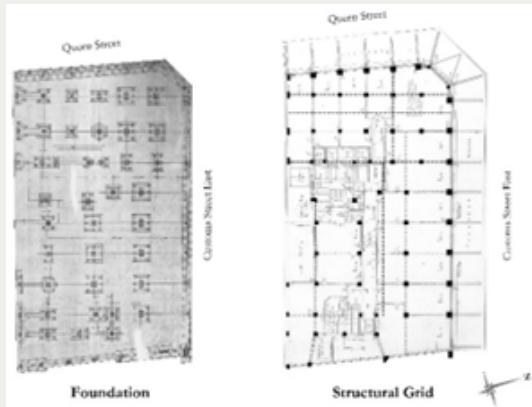


Figure 7. Foundation and Structural Grid of the Dilworth Building, Gummer & Ford Collection, GF33, Architecture Archive, Libraries and Learning Services, the University of Auckland.

The internal composition of the building was primarily organised to maximise the number of offices and shops with access or views from Queen Street and Customs Street East. The structure was ferro-cement posts and beams laid on an irregular grid of approximately 6m x 4.5m with 150mm concrete floors. The floors were layered on top of each other without variation, and the structure was fireproof throughout.²⁵

²³ "Queen Street Entrance."

²⁴ Wilton, *The Dilworth Legacy*, 183.

²⁵ "Queen Street Entrance."

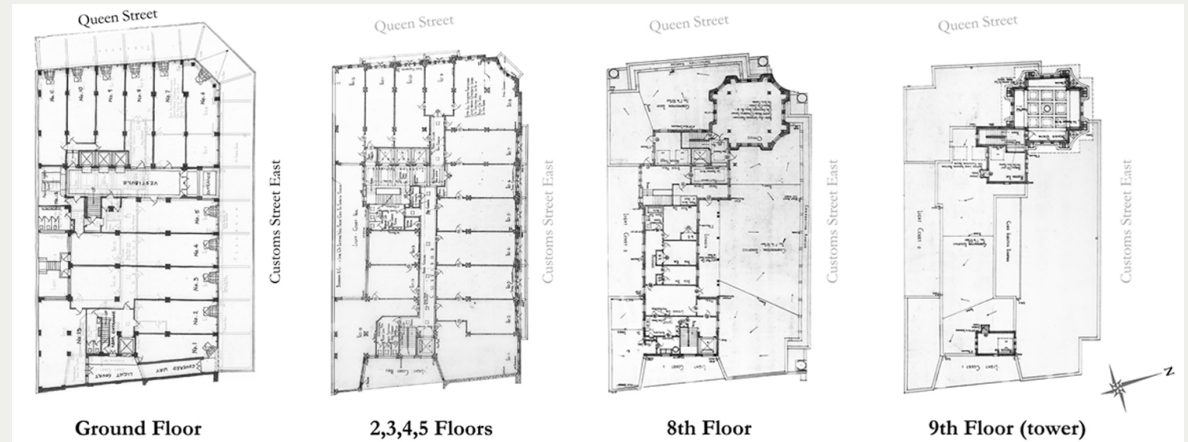


Figure 6. Selected floor plans of the Dilworth Building, Gummer & Ford Collection, GF33, Architecture Archive, Libraries and Learning Services, the University of Auckland.

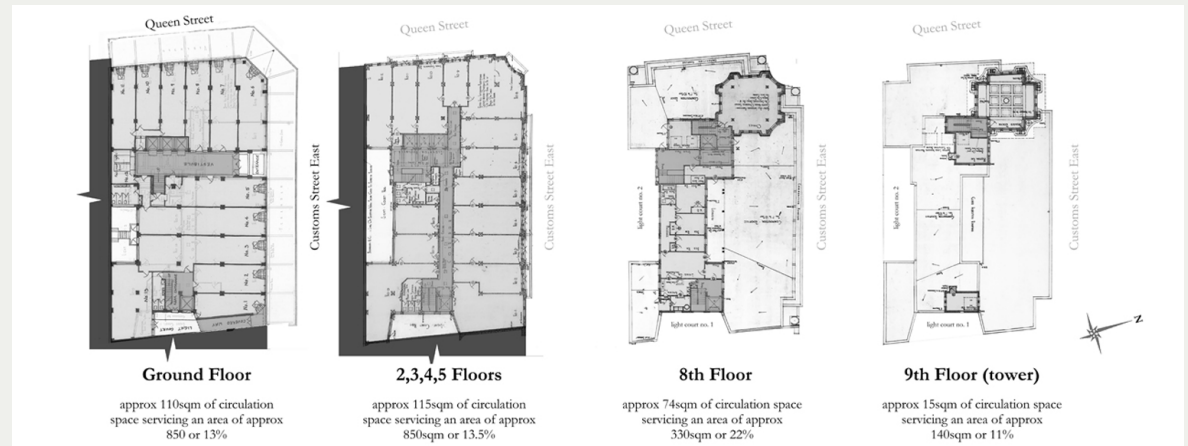


Figure 8. Selected floor plans illustrating circulation, ventilation and sunlight access of the Dilworth Building, Gummer & Ford Collection, GF33, Architecture Archive, Libraries and Learning Services, University of Auckland.

The irregular grid meant the Beaux-Arts conventions of axial composition and well-defined, symmetrical room shapes were not perfectly resolved in the plan. Despite the constraints, there was a subtle but pleasing sequence of spaces in the central circulation of the building. One entered the entrance vestibule – 3.5m wide with a 4m-high barrel-vaulted ceiling and marble walls – and there were large shop-front windows on either side,²⁶ and a flower shop straight ahead.²⁷ At the flower shop, there were three elevators on the right and a generous, sweeping marble-clad staircase on the left. The design of the staircase allowed a vertical visual connection from Level 1 to Level 7.²⁸ At Level 1, the stairs landed on the elevator vestibule with a 3.6m coffered ceiling. The 2.1m-wide main corridor was found by turning around 180 degrees. At the end of this corridor was another elevator on the axis and the secondary staircase overlooking a light court.

At Level 2, the coffered ceiling dropped to 3.3m, and the stair design became simpler. The stairs and corridors continued in this fashion until Level 7. As the spaces became humbler further into the building, so did the internal treatment. The marble of the entrance vestibule gave way to white plaster with cement dados and picture rails in the public spaces, and finally, brick partition walls separated the private offices.

Light and ventilation were primarily achieved through the two façades of the building. On the ground floor, the shading effect of the verandah is mitigated by a high 4.5m ceiling to allow clerestory windows above the canopy. In the upper levels, the 3.3m ceiling heights allow for large windows for each office space (approximately 3.5m x 3m), even though, as Errol Haarhoff points out, “in the Dilworth surfaces predominate, incised by openings in a manner more reminiscent of Lutyens than the Chicago School.”²⁹ Additionally, two light courts to the interior provide light and ventilation to the rear offices, the secondary stair and the two bathroom blocks.

²⁶ The ceilings and finishes have all since been demolished.

²⁷ “Queen Street Entrance.”

²⁸ The stair was removed in the 1980s in what Peter Shaw calls “an act of conspicuous vandalism.” Peter Shaw, *A History of New Zealand Architecture* (Auckland: Hodder Moa Beckett, 2003), 114.

²⁹ Errol J. Haarhoff, *Guide to the Architecture of Central Auckland* (Auckland: Balasoglou Books, 2003), 25.

³⁰ Nathaniel Cortlandt Curtis, *Architectural Composition* (Cleveland, OH: J. H. Jansen, 1935), 117.

³¹ Miles Warren, “The First Fifty Years,” in *Exquisite Apart: 100 Years of Architecture in New Zealand*, ed. Charles Walker (Auckland: Balasoglou Books, 2005), 27.

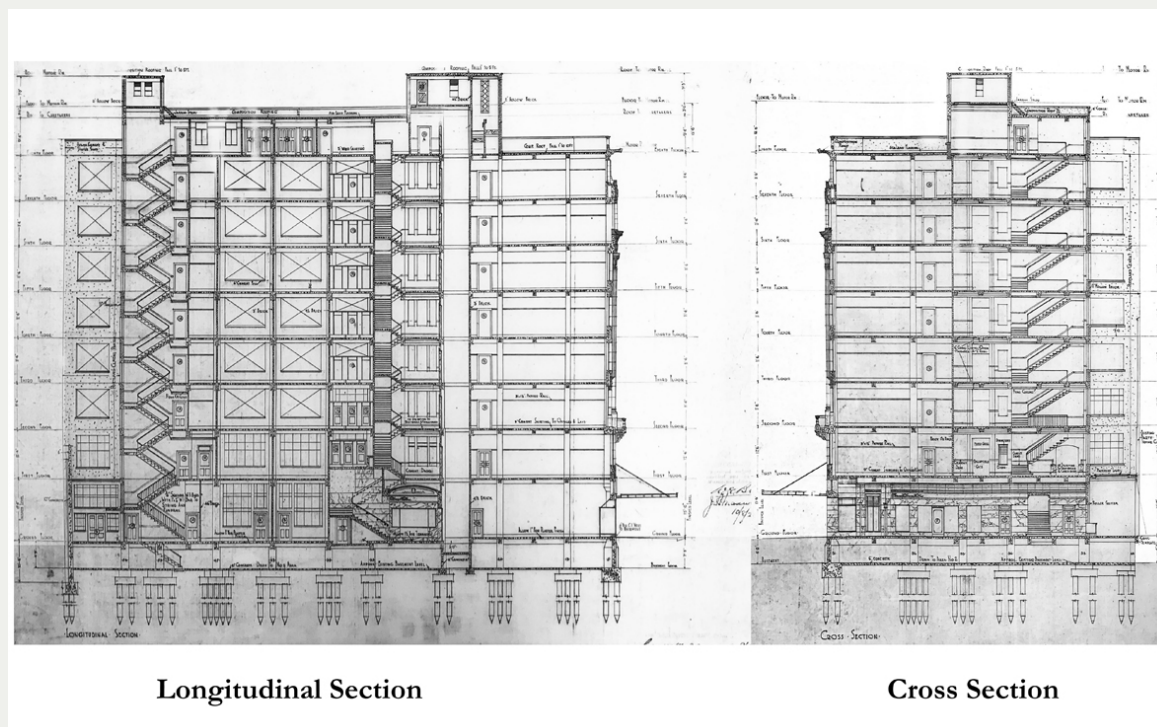


Figure 9. Selected sectional drawings of the Dilworth Building, Gummer & Ford Collection, GF33, Architecture Archive, Libraries and Learning Services, the University of Auckland.

Analysis of the Façade

Renowned architectural educator Nathaniel Curtis claimed that a building's façade resulted from its plan and structural system, but this still allowed “ample latitude for the expression of character.”³⁰ In the Dilworth building, the celebration of the corner is the building's most noticeable character trait. Miles Warren, perhaps New Zealand's most celebrated architect, wrote of it, “In turning and celebrating the corner, Gummer shows

a mastery of form. The corner starts with recessed and curved planes, sets back further and runs up into a delightful pyramid roofed pavilion, all modelled with a sure hand.”³¹ The mastery Warren is referring to is Gummer's ability to make the corner the focal point of the building without it either dominating or being dominated by the façades. It both stands out and is incorporated into the overall composition.

There are five general design principles that Gummer follows³² that shed light on how he achieved this.



Figure 10. Customs Street East, Auckland Central, 1989, by Paul McCredie, Auckland Libraries Heritage Collections 273-MCCo98.

The first principle is the tripartite grouping of elements.³³ In this case, the massing is organised vertically by the two façades and the corner. Gummer separates the corner from the façades by positioning the tower on the corner, setting it back from the façades, then concaving the wall from Level 2 up to Level 6, where it is set back even further. This series of setbacks lets the façades on either side have their own separate compositional logic while also informing the corner's own logic. There is also a horizontal tripartite grouping



Figure 11. Analysis of the Dilworth Building's façades. Image: Cameron Moore

of elements where, as Peter Shaw notes, "it is also clear that the architect has followed Louis Sullivan's three-part ordering of high buildings."³⁴

The second principle is that of overlapping compositional elements.³⁵ In the Dilworth Building, the corner tower is incorporated vertically into the building's overall composition by continuing the façade's horizontal features – the verandah, the balustrades, the moulding at the Level 7 roof line, and the subtle difference in colour in the stone course at the floor plates on both façades and the corner.

The third principle is to achieve balance through symmetry. In the Dilworth Building, the primary axis is on the centre of the corner, with the façades reflecting each other (albeit the Customs Street East façade has an extra three bays). Each façade also has a central line of

symmetry, as do nearly all other elements in the façades (the pilastered colonnades, windows, balconies, etc.).

The fourth principle is establishing a dominant focal point in the composition.³⁶ The corner tower is the clear focal point, rising two storeys above the façades. In turn, each façade has its own focal point – the Corinthian colonnade that starts with the balustrade on Level 2 and finishes with just the architrave at the top of Level 6. The Corinthian colonnade is the only significant element in the façade informed by classical historical canon. The pilasters are 10 diameters high and 2.5 diameters apart – the same on both façades. This ratio sets the proportion for the rest of the composition.

The fifth principle is the expression of the *apparent* vertical and lateral loads inherent in the building on the façade.³⁷ In the Dilworth Building, the ferro-

³² Milica Mađanović, Cameron Moore, and Renata Jadresin-Milic, "The Role of Architectural History Research: Auckland's NZI Building as William Gummer's Attempt at Humanity," *Proceedings of the Society of Architectural Historians, Australia and New Zealand. ULTRA: Positions and Polarities Beyond Crisis* 38 (2021): 533–543, <https://doi.org/10.55939/a4007piywz>

³³ John Vredenburg Van Pelt, *The Essentials of Composition as Applied to Art* (New York: The Macmillan Company, 1913), 78, <http://archive.org/details/essentialscmpoo00goog>; Curtis, *Architectural Composition*, 123.

³⁴ Shaw, *A History of New Zealand Architecture*, 113.

³⁵ Curtis, *Architectural Composition*, 124.

³⁶ Van Pelt, *The Essentials of Composition as Applied to Art*, 70.

³⁷ Steven W. Semes, *The Future of the Past: A Conservation Ethic for Architecture, Urbanism, and Historic Preservation*, illustrated edition (New York: W. W. Norton & Company, 2009), 51.

cement structural system is represented on the façade by the pilasters. The façade is clad in Portland stone,³⁸ imported from the United Kingdom “at considerable extra expenditure,”³⁹ and the detailing is cast plaster with Portland stone dust to match the stonework.⁴⁰ Between the pilasters are windows with bronze spandrels between them hiding the concrete floor behind. Gummer gives the impression that the glass and bronze are protected by apparent lateral loads by the solidity of the bays on either side of the colonnade. These bays also give the impression that they are protecting the corner tower and holding it upright.

However, significant elements of the Dilworth Building defy a traditional, classical reading. Stacpoole and Beaven describe the building as “pure Lutyens and splendid.”⁴¹ Edwin Lutyens delighted in reinterpreting traditional classical forms in what he called the “high game,” allowing him to freely use architectural elements in entirely new ways while still firmly embedded in the traditional architectural canon. This approach is evident in Gummer’s treatment of the large windows and verandah on the ground floor. Both are essential elements to improve the experience of pedestrians but don’t fit easily into the established classical canon – Gummer uses the shadow formed by the verandah to provide a visual base for the building that the large windows would otherwise compromise. Another example is framing the colonnades by running the architrave to the base on either side of the colonnade, and reinterpreting Level 6 as the frieze as it, in turn, frames the colonnade. Then Level 7 becomes the cornice of the entablature – this works because the setback foreshortens its height, and the roof provides the cymatium and casts a shadow on the rest of the Level 7 cornice.

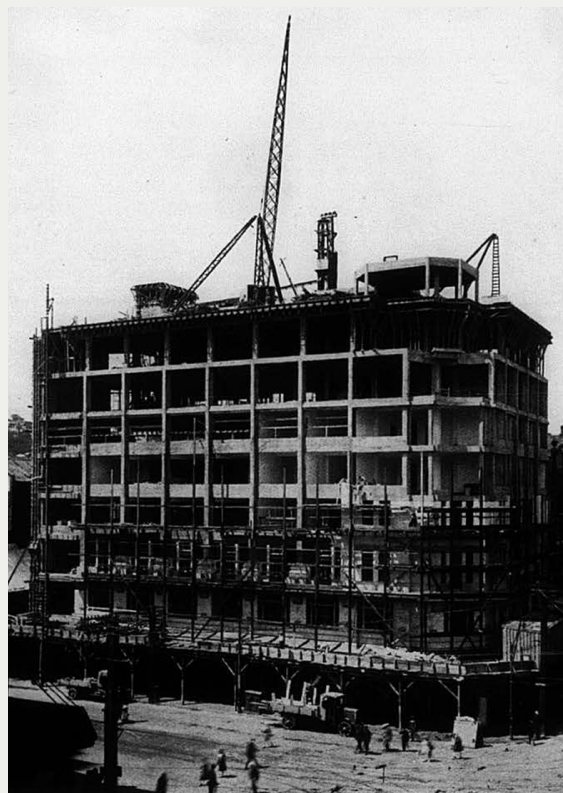


Figure 12. The Dilworth Building, N.Z. *Architectural & Building Review*, January 31, 1927. The structure can be seen behind the stone façade.

Construction

The Fletcher Construction Company was responsible

for the Dilworth Building’s construction. It took the company six months to complete the foundations and get the build out of the ground. The foundation consists of 24 concrete piers and 306 reinforced concrete piles.⁴² The foundations were required to reach good ground under the original seafloor, the deepest nearly 13 metres. The *New Zealand Herald* described the construction of the piers at the time: “[they] are rather like inverted mushrooms. They are made by sinking a shaft 15ft to 25ft deep, then widening it to 9ft at the bottom, inserting steel reinforcement, and filling the whole cavity up with liquid concrete.”⁴³ The piles were driven into the ground with a heavy iron weight called a monkey. To get to the required depth, the average pile required over 400 blows from the monkey; in one instance, 656 blows were needed. The blows were heard outside the high construction fence “in a regular cadence”⁴⁴ over the six-month time frame.

The other notable event during construction was the roof shout, in which a feast marked the completion of the roof for the 120 men working on the project. The board chairman, Archdeacon MacMurray, thanked the workers for their co-operation and labour, and reflected on James Dilworth and his arrival in New Zealand: “whose foresight after 50 years’ toil had made possible the erection of the great building in which they were seated.”⁴⁵ Reginald Ford also gave a speech on the history of ‘raising the roof’⁴⁶ and that “the final success of the Dilworth Building would be dependent upon the mutual assistance of every man connected with the work.” He expressed his thanks for the “hearty co-operation displayed in the completion of a strenuous task so far.”⁴⁷

³⁸ Portland stone is a limestone that is both durable like granite and easy to carve like sandstone.

³⁹ “Queen Street Entrance.”

⁴⁰ Shaw, *A History of New Zealand Architecture*, 114.

⁴¹ John Stacpoole and Peter Beaven, *New Zealand Art: Architecture 1820–1970* (Wellington: A. H. & A. W. Reed, 1972), 74.

⁴² “Dilworth Trust Structure.”

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ “Luncheon for Workers.”

⁴⁶ According to Ford, ‘raising the roof’ is custom from the thirteenth century.

⁴⁷ “Luncheon for Workers.”

Conclusion

A formal, practical analysis of the building – from the client's motivations and values that inform the design brief, to considering the architect's limitations and opportunities of site, budget and function, and contractor's issues with building the structure – allows for a clear-eyed evaluation of the building.

The purpose of the Dilworth Building was to make money for an endowment to support the education of underprivileged and orphaned boys. What stopped the building from being a cold profit-maximising endeavour was both the wishes of the board of The Dilworth Ulster Trust that the building was to be “a credit to Auckland,” a proper memorial to the Trust's founder James Dilworth; and William Gummer's knowledge of classical architectural canon and his imagination and skill in delivering innovative solutions to modern issues while still firmly embedded in the classical tradition. The building that resulted was a very profitable and civic-minded structure that celebrates one of the most prominent corners in Aotearoa New Zealand. Gummer's attentiveness to the humanity of the workers, shoppers and pedestrians is still felt today, ninety-five years later.

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Courtyard Housing: A Mid-Density Alternative House-Type

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Abstract

The main objectives of housing policy in Tāmaki Makaurau Auckland are to increase the city's density and to increase its total stock of affordable housing. In the current market, family housing for lower-priced mid-density intensification projects is typologically limited to two low-rise alternatives. These are terraced housing at the lower density ranges and small walk-up apartment blocks in the higher scales. From recent practice it is apparent that both typologies have reached their maximum possible site densities, and that further increases can only be gained at the cost of unacceptable residential standards.

To diversify market options, this paper suggests that a third house-type, the mid-density courtyard, could be more widely used. Although a rarity in Aotearoa New Zealand's cities, it is a house type well-suited to our climate, and it is characteristically private, secure, and buildable using standard practices in the housing industry. The paper argues that in a period of domestic price indicators rising but property price inflation showing signs of receding, architects and developers could consider an additional house-type: one that is widely used elsewhere and that has advantages in Aotearoa New Zealand's culture of urban housing. Conclusions suggest that the courtyard house-type has not been sufficiently explored in mid-density developments and that more examples would prove the merits of this alternative.

Keywords: Housing density, courtyard housing, medium-density housing.

Introduction

At a time when housing markets in Aotearoa New Zealand are slowing down there might be an opportunity to revisit some of the regulations that direct our urban housing policies. Present policies are intended to ensure a sustainable form of urban development: they aim to increase urban density and to increase stocks of affordable housing. Family housing for lower-priced mid-density intensification projects in the current market is typologically limited two alternatives. These are terraced housing at the lower densities and small walk-up apartment blocks in the higher density range.

These typologies are the established models for higher-density low-rise urban housing. Following a research-based review, this paper suggests that a third house-type, the mid-density courtyard, could be used to diversify the typological range. Although a rarity in Aotearoa New Zealand's cities, it is a house type well-suited to our climate, and it is characteristically private, secure and buildable using standard practices in the housing industry. Courtyard housing has a good record of providing durable housing in many OECD countries and can thus also be regarded as an alternative and affordable house-type that meets the general criteria of sustainable architecture.

Terraced housing in mid-density developments appears in two- and three-storey variations, which, with parking, achieves up to 60 dwelling units per hectare (du/ha) and up to 80 du/ha using a narrow-fronted two-bedroom plan type with remote parking. Small three-storey walk-up apartment blocks with one- and two-bedroom units yield densities of between 80 and 130 du/ha. Larger apartment blocks up to six storeys, with basement parking and lifts, also contribute to housing supply, but for this study are not considered to be affordable or suitable for family occupation.

The study starts with a definition of 'privacy,' seen as a leading attribute of the courtyard house-type, followed by a summary of characteristics that define courtyard housing. From the few examples found in Aotearoa New Zealand, three developments are selected to illustrate the environments possible with courtyards, and their potential in the context of housing architecture. A concluding discussion argues that the house type aligns with our suburban culture of housing and can be designed to meet the densities expected in intensification programmes at lower levels of density.

A Brief Definition of Privacy in the Twenty-First Century

Every housing culture defines privacy in some form, with interpretations that vary according to social traditions but with meanings that have underlying commonalities. Privacy is a social construct governed

by custom and habit in which its perceived presence or absence is treated as a social 'fact' in some sociological studies¹: its absence is identified as the source of discontent, relating to loss of private space owned and controlled by the individual affected, and loss of value, sensed as the result of greater crowding in suburban environments.² However, manifested in the conventional housing dialogue in practice and legislation, the phenomenon of privacy is related exclusively to spatial proximity: it has an instrumental function but no extended interpretation.³ ⁴ Concepts of 'personal space,' based on proximal factors (such as overlooking, the aural environment, or a sense of crowding), are experiential and thus considered to be individual perceptions rather than perceptions common to all experience.

Such perceptions contribute to privacy but do not account for all aspects of the phenomenon. In our urban culture, privacy embraces a concept of 'ownership' that includes property in all forms and extends to include 'affective' privacy.⁵ By extension, other social constructs, such as personal rights, self, identity and, in terms identified in Enlightenment philosophies, the concept of liberty are also included. As Sofsky observes, such concepts lead naturally from a sense of self to an assurance of security, which can be interpreted spatially but are constructs that originate in affective perceptions about personal freedoms: these may be understood as socially derived conditions that define individual privacy.

The relationship of density to a construct of privacy as a social fact (and the shared cultural understanding of privacy formed over generations in low-density suburbs) has a major influence on the perceived quality of a new housing development at densities higher than those in the suburban tradition. For this study, in which it is argued that the courtyard house-type can be designed to provide a high standard of privacy, the social fact of privacy – its function as a social 'good' of great value – is a prominent factor in the case for revisiting the typology as a variant for mid-density developments.

Courtyard Houses: A Summary Definition of the House Type

Courtyard houses are fundamentally different from the detached house paradigm of the suburbs: courtyards enclose private space where detached houses externalise it, and they make efficient use of land when built in continuous forms. Detached houses claim territorial space on all sides of the building and express separation and individual privilege by setbacks: courtyards exactly reverse this exclusion of the other, expressing concepts of privacy and independence but within the community of the neighbourhood.

In a study that discusses the 'modern courtyard' as a generic house-type, Duncan Macintosh describes courtyards in mid-density layouts as an "urban type of dwelling":

[they are] introspective ... its external walls can be shared with neighbouring houses, and it can be built right up against the public domain. Grouped

together, courtyard houses generate a dense urban fabric with a clear separation of public and private open spaces ... [they were] developed to achieve privacy in the garden and a good orientation of the rooms.⁹

Macintosh traces the origins of numerous developments in post-war Europe using the house type, not to ancient Mediterranean cities (where courtyards have been a common house-type for centuries) but to Hugo Haring and Hannes Meyer in their Bauhaus studies in the 1920s:

In 1931 Ludwig Hilberseimer at the Bauhaus ... produced an improved L-shaped courtyard house, with sleeping and living rooms grouped in the two wings of the block. It is this plan which is most used today.¹⁰

In this plan form, courtyards are distinguished by the position of the courtyard, which is necessarily internal, is not a shared space with any adjoining house, and which is not overlooked by other property. Rooms within the house depend on the courtyard alone for external wall functions of light and ventilation to all the habitable rooms, leaving the perimeter of the plan unobstructed. Macintosh goes on to explain:

The most common form of the courtyard house-type seen in Western applications is a two-sided plan forming an 'L'-shaped house, the two 'wings' of rooms embracing a courtyard space oriented towards the sun. Other configurations enclose the private courtyard with domestic accommodation on one, two, three or all four sides.¹¹

1 Emile Durkheim, *Rules of the Sociological Method*, trans. The Macmillan Press (New York: Simon and Schuster, 1982 [1895]).

2 Anne Dupuis and David Thorns, "Home, Home Ownership and the Search for Ontological Security," *The Sociological Review* 46 (1998): 24–47. Also David Thorns, "Housing Policy in the 1990s – New Zealand: A Decade of Change," *Housing Studies* 15, no. 1 (2000): 129–138; Harvey Perkins and David Thorns, "House and Home and Their Interaction with Changes in New Zealand's Urban System, Households and Family Structures," *Housing, Theory and Society* 16 (1999): 124–135.

3 David Levitt, *The Housing Design Handbook: A Guide to Good Practice* (London: Routledge, 2010).

4 Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press, 1958).

5 Amos Rapoport, "Toward a Redefinition of Density," *Environment and Behaviour* 7, no. 2 (1975): 133–158.

6 Edward Feser, *Locke* (Oxford: Oneworld Publications, 2007).

7 David Turner, "Planning for Higher Density: Concepts of Privacy in Auckland's Culture of Housing" (PhD thesis, The University of Auckland, 2010).

8 Wolfgang Sofsky, *Privacy: A Manifesto*, trans Steven Rendall (Princeton, NJ: Princeton University Press, 2008).

9 Duncan Macintosh, *The Modern Courtyard House: A History* (London: Lund Humphries, 1973), 7.

10 Ibid, 8.

11 Ibid, 10.

Courtyard houses using this L-shaped plan are a single-access, single-aspect house type, accessed from a public space through a single opening that controls access and security. Site plan configurations allow horizontal and vertical adjustment between units to accommodate irregular landforms, notably demonstrated by some of Jorn Utzon's projects in Denmark in the early 1960s.¹²

The space of the internal courtyard becomes the focus of the household's private social and domestic functions. Walls on the external perimeter can have other window openings for light and ventilation, and are sometimes included to express a sense of social connection; however, all windows to habitable rooms are oriented towards the internal courtyard, which is oriented to the sun. The enclosed space functions as an outdoor room, and while the prospect from all rooms is the same, none are compromised by overlooking from adjacent properties. Courtyard houses are thus intrinsically private and protective of their occupants: a form that distinguishes them, as Macintosh argues, from other generic urban house-types.

Courtyard House-Types: Density and Variants

The summary above defines the single-storey version of the house type, which, in practice, limits its use to low-density development: it is difficult to achieve more than 25 du/ha in the L-shaped single-level plan form, particularly where vehicular access is required.

Other variations that preserve the primary function of the courtyard have been developed to increase yields by reducing access options in the site planning and by adding an upper floor or part-upper floor. Courtyards can also be adapted for site layouts that provide access from one side of the plan in a back-to-back terrace formation (Figure 1) reducing the space needed for external circulation by half. These variants can yield densities of 40–50 du/ha and have the potential to be an alternative to terraced housing, albeit at the low end of

urban-density scales. David Levitt, for example, includes a two-storey courtyard design in a recommended range of generic two- and three-storey terrace house-types. Levitt's L-shaped courtyard plan is arranged to provide living-room windows onto a street elevation, and two adjoining walls with no other openings, of the four in an 8.3m by 9.4m rectangular plan. This plan can be used for a site layout of back-to-back and terraced units that offers a density potential of up to 68 du/ha.¹³



Figure 1. Aerial image: part of the Bishopsfield courtyard development, Harlow, UK. Source: Google Maps. Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2022.

In addition, there are small-scale North American courtyard projects noted here as experiments with a typology in use at the time in Europe and being tested for suitability in an American context. Examples are the multi-level development at Alvarado Avenue, in Davis, California, by Sam Davis (1982), and the extraordinary project at Penn's Landing, Philadelphia, by Louis Sauer (1974), in which a stacked courtyard house-type is used

in a hybrid three-storey double-unit form surrounded by a perimeter of three-storey town houses fronting onto the inner-city streets.¹⁵

The Davis housing reflects habits of low density in California but also makes a clear reference to the American condominium housing paradigm; Sauer's scheme in Philadelphia adopts a higher-density urban form to provide a city-block redevelopment with a core of courtyard units set in a pedestrianised central space. While densities and local contexts vary, the basic criteria of the courtyard house-type are met in both schemes.

Courtyards in Intensification Programmes

With these examples, courtyards have been found to suit housing customs and conditions in urban locations for cities from Scandinavia to California, and in New Town and overspill housing in Britain. Applications of the house type are found at density levels between 25 du/ha and 100 du/ha, and in a variety of housing supply systems.

Experiments with the typology in Australasia, however, have been rare. The paradigm of the detached house, which offers privacy and territorial security, alongside a strong sense of individuality – the sense and fact of independence – is a low-density suburban house-type that progressively loses its advantages at densities higher than about 20 du/ha. But the demand for higher-density housing continues to grow, and although terraced housing design has manifested numerous variations, its limitations have become apparent, in two ways: firstly, terraced housing cannot replicate stand-alone suburban housing characteristics because repetition is unavoidable, and secondly, it is suggested that typological diversification by plan configuration has reached its limits in recent New Zealand developments.

To compete with the currently favoured alternatives to

¹² Jorn Utzon, *The Courtyard Houses*, ed. Mogens Prip-Buus, vol. 1 (Charlottesville, VA: Edition Blondal, 2004).

¹³ Levitt, *The Housing Design Handbook*, 43.

¹⁴ "Donnybrook Quarter," Peter Barber Architects, <http://www.peterbarberarchitects.com/donnybrook-quarter/>

¹⁵ Antonino Saggio, Louis Sauer: *The Architect of Low-Rise High-Density Housing*, trans. Christopher Houston, 2nd ed. (Rome: Department of Architecture and Urban Design University of Rome), 2014. (First published as *Un Architetto Americano Louis Sauer*.)

the detached paradigm, the courtyard house-type's divergence from the conventions of suburban housing is an initial consideration. The courtyard must offer a measure of the same qualities that characterise suburban housing or substitute other qualities of equal or greater attraction. Another typology in the market, however, would introduce greater choice. Beyond this issue, there are questions relating to higher density that need to be brought into the discussion. The question for this study is then whether courtyards are a practical possibility as a third generic model, and if so, what densities would be compatible with housing traditions in the New Zealand culture of housing?

Precedents in Aotearoa New Zealand

Three courtyard developments illustrate the housing industry's occasional and perhaps tentative interest in the typology. The two state-housing blocks in Mosgiel were built in the 1950s as a Department of Housing Construction (DoHC) experiment with a house type that it was thought could make better use of land. The second example is a small mid-density project, Melview Place, that forms part of the Ambrico Place intensification programme in New Lynn, Auckland (1998), and the third scheme is at Seatoun in Wellington (2008).

The 'atrium flats' occupy a site near the former Mosgiel airport on the Taieri Plains south of Dunedin, probably the closest to the city that flat land could be found (for construction economy, a flat site is an advantage for courtyard clusters). This development consists of two housing blocks on two 'double' sections to provide eight units, shown in Figure 2. The western block has four dual-aspect three-bedroom houses, each with a semi-enclosed rectangular courtyard accessible from both the unit and the perimeter (Mk 1 layout, c.1958), while the eastern block (Mk 2 layout, c.1959) uses a similar dual-aspect bungalow plan but internalises the four courtyards in the core of the plan. Both layouts rely on windows placed on the perimeter of the unit plan for light and ventilation to at least one of the principal habitable rooms, and in the Mk 2 iteration, the living rooms are placed on the external corners of the block, facing away from the courtyard.

The architect was Frederick Newman, an émigré from Austria working in the DoHC. His account of the project includes the suggestion that "(t)his design may be considered an indication of things to come."¹⁶ Newman's interest in courtyards is justified by the increase in density that rises from about 12 du/ha in the

immediate neighbourhood to 24 du/ha in this layout, with a 44 percent footprint.

Newman advocates for the house type, recognising its potential for private and territorially independent living. However, neither of the two blocks respects the basic layout principles of courtyards in their classic L-shaped plan form. In spite of Newman's claim that these houses provide high standards of privacy, the grouping together of the private spaces in the centre of the Mk 2 block reduces or eliminates acoustic privacy, and also limits optimal solar orientation to half of the houses.

External space – the footpath or vehicle access-way – can be planned as a social space shared by all units in the group: a collective function that further identifies both the community and the public-private divide. At Murray Street, some units are entered from doors visible from the street, but other doors are tucked away on the far side of the block in a wasteland of unmade tracks leading to garages (unnecessarily detached from the buildings) and open land with no defined ownership: the epitome of modernism's problem of anonymous space, neither public nor private. The urban nature and potential of the courtyard typology is not used to advantage in the internal plan detail, nor in the location of these prototypes on the edge of a suburb in a small settlement 15 kilometres out of Dunedin. In summary, this experiment is a highly compromised example of the typology.

Ambrico Place in New Lynn is a 400-unit brownfield development forming part of Auckland's large-scale intensification programme in the late 1990s. Melview Place, a street within the development, is one of ten tranches by different developers, all products of the private housing sector. Although this is a hybrid courtyard model, it meets the primary conditions of the house type. The layout uses a single-aspect wide-frontage unit plan with a half-storey upper floor to

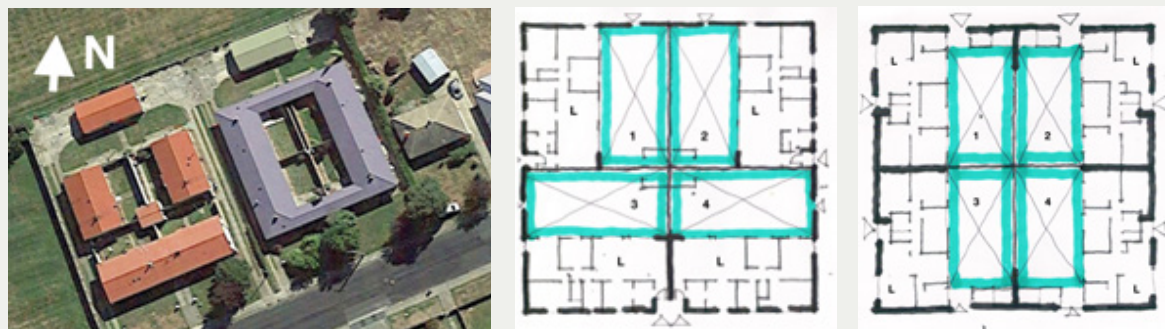


Figure 2. Murray Street, Mosgiel. Left: Aerial view, 2022. Source: Google Maps, imagery © 2022 CNES / Airbus, Maxar Technologies, map data ©2022. Right: Mk 1 and Mk 2 plans. Source: Author.

¹⁶ Andrew Leach, *Frederick H. Newman: Lectures on Architecture* (Ghent: A&S Books, 2003).



Figure 3. Melview Place, New Lynn, Auckland (1998). Left: Auckland Council GIS image. Right: Courtesy of Ray White.

provide twenty-two houses in short terraces, achieving a density of 46 du/ha.¹⁷ The widths of access lanes are minimal, and a slope across the site imposes some awkward ramps into the double garages, but each unit has internal garage access, acknowledged as an important amenity in suburban housing.

Courtyards in the space between the terraces are divided by alternating diagonal and perpendicular garden wall partitions that taper the spaces on plan (Figure 4). Privacy in the courtyard is due to the staggered positioning on plan of the main living rooms. Windows to the kitchen and a third ground-floor bedroom looking onto the access lane, and a dormer window on the upper floor, activate the public elevation, which is otherwise dominated by the garage door. Melview Place succeeds as a typological variation and offers a compact mid-density house type.

Seatoun, the third project's location, is a low-density harbourside suburb on the eastern fringe of Wellington (Figure 5). Studio Pacific Architects describe their development of thirteen courtyard houses on a "medium density" site as follows:

Clustered together, they form a series of interlocking sheltered, private and sunlit courtyards that challenges the suburban archetype of detached

houses on discrete sections, offering instead a new way of thinking about contemporary suburban life. ... living and bedroom spaces are shifted to the edges of the section, maximising space and creating a ... sheltered courtyard with which the rooms of the house directly engage. ... The houses comprise two basic models; the single-storeyed 16m (120m²) houses are spaced between the two-storey 20m (160m²) houses so that views and sun are maximised. Living spaces face to the north, and clerestory windows ensure good light and connection to the outside, with second-storey spaces carefully arranged to allow views out to the harbour and hills with minimal overshadowing.¹⁸



Figure 5. Studio Pacific Architects' Boardwalk Lane, Seatoun, development. Left: Aerial view of the site. Source: Google Maps, imagery © Airbus, CNES / Airbus, Maxar Technologies, Wellington City Council, map data © 2022. Right: Boardwalk Lane street view. Photo: Author.



Figure 4. Melview Place, diagram showing crossover access to courtyards. Image: Author.

In the context of Wellington's housing culture, the architect's reference to "the suburban archetype of detached houses on discrete sections" is correctly seen as the market's preferred model in residential areas beyond the city centre. The architect acknowledges the planning principles of the courtyard typology and notes the way the house type uses external space, essentially reversing the detached house paradigm of the suburbs. The density achieved is 32 du/ha.

¹⁷ David Turner, John Hewitt, Cesar Wagner, Bin Su, and Kathryn Davies, *Best Practice in Medium Density Housing Design* (Wellington: Housing New Zealand Corporation, 2004), Case Study 8, 49.

¹⁸ "Courtyard Houses," Studio Pacific Architecture, <https://www.studiopacific.co.nz/projects/2003/courtyard-houses/>

These houses are introspective in Macintosh's definition, but with concessions to the street, as some habitable rooms connect to the public domain through screened front-patio enclosures or across the recessed external front courtyard. A part two-storey variation is used on alternate sections, a device that increases the total accommodation; design details such as the positioning of a large upper-floor window-louvre screen enrich the scheme's urban quality and avoid the potential monotony of single-storey housing at street level.

Boardwalk Lane benefits from being part of a larger waterfront development in an up-market part of Wellington, where high-quality urban design is manifested in paving, lighting and planting detail. Much attention has been paid to materials and finishes, and all the buildings' many refinements. The design offers buyers a visibly different house-type, and the result is an excellent urban housing development by any criteria, further illustrating the potential of the typology at mid-density on suburban sites.

This paper has identified the potential contribution of courtyards to affordable mid-density housing typologies. The three projects discussed illustrate the primary characteristics of the typology: their courtyards are internalised in accordance with Macintosh's definition, their individuality is assured by direct access from public spaces, and they each achieve a strong sense of privacy and security. The exemplar projects achieve increased densities at various levels.

To begin a discussion about the potential for wider use of the courtyard house-type, however, it should first be noted that each of the projects appears to be the sole example of the typology in the respective developers' catalogues: the private-sector developers of Boardwalk Lane and Melview Place have not used courtyard house-types in other schemes, and Newman's enthusiasm did not apparently lead to more projects for the DoHC in the

1950s. To explain this, it is suggested that a brief analysis of qualitative factors of social 'fit,' and quantifiable factors (particularly potential density) is useful.

Housing habit, or the customary social relationships provided by low-density suburban layouts is challenged by all forms of higher-density housing. Issues that emerge from social studies are the progressively greater sense of privacy lost, and the sense of loss that accompanies smaller territorial ownership; both perceptions contribute to anxiety about security and identity.¹⁹ Overseas studies offer detailed definitions of privacy in the context of higher density,²⁰ but for this paper the repositioning of privacy as a dimension of "liveability" is adopted, noting that from recent research privacy is rated as "quite or very important," in particular "other people not seeing in my windows" by three-quarters of the respondents. The same studies relegate the importance of "noise and hearing neighbours or the street" to insignificant concerns. EBOSS research based on responses by architects to questionnaires notes the absence of "a sense of community," and issues of "proximity due to over-development." These issues can be counteracted by site planning that recognises the value of shared external spaces for making social contacts possible.²¹ None of these studies either promotes or precludes courtyard house-types in the mix that could provide mid-density alternatives.

Density comparisons form a central consideration in most analyses of intensified housing. At one level, comparisons are necessary as an element of competition between developers in a market-driven system of housing supply. At another, the compromises imposed by design decisions about private and public external space, house-types selected, service and parking provisions, and, indeed, architectural quality are all factors influenced by the density demanded by the developer at the design stage. In this context the examples above suggest that courtyards are usually

excluded as a result of their density limitations. The reference to "medium density" in the architect's summary of Boardwalk Lane omits to compare this project, at 32du/ha, with the average density of the suburb of 15du/ha. However, when this comparison is made it becomes clear that Boardwalk Lane, built as courtyard housing, more than doubles the site density. The city thus benefits from additional housing, and (in theory) the developer has higher profit from a larger number of saleable properties. The Seatoun project illustrates the way density is at once competitive, and contextually defined by both environment and local custom; within this design calculation typology acts as a contributing rather a determining factor. It is also an important balancing act for the architect: a plan that doesn't achieve a commercially viable level of density is not developable, and neither is one that over-intensifies, inducing perceptions of crowding.

Melview Place (46du/ha) is similarly contextualised by the density range of its neighbours in Ambrico Place, which include three-storey terraced housing layouts at over 90du/ha. The density of several of these tranches misses the opportunity to demonstrate the potential for mid-density layouts to offer high standards of housing; collectively, they demonstrate the sense of loss associated with higher density, perceived as the absence of privacy referred to earlier. Melview Place, however, avoids this perception, both by its use of private courtyards in the unit plan, and through the density of the layout, which is similar to that of the most successful terraced examples in the development. These include the largest single tranche, "Tuscany Towers", which uses dual-access dual aspect terraced house-types for all of its 97 units, at a density of 42du/ha.²²

Murray Street's density at 24du/ha reflects the relatively low density of sub-urban courtyard housing in Europe but is double the local density in Mosgiel. In each case, whether higher or lower than its neighbouring developments the densities achieved contribute to

19 Susan Vallance, Harvey Perkins, and Kay Moore, "The Results of Making a City More Compact: Neighbours' Interpretation of Urban Infill," *Environment and Planning B: Planning and Design* 32 (2005): 715-733.

20 Anthony Radford and Teresa Sarris, *Trends and Strategies in the Design of Medium Density Urban Housing* (Adelaide: AHURI, 2003).

21 Anca Belu, *EBOSS Survey* (Auckland: EBOSS, 2021).

22 Turner, Hewitt, Wagner, Su, and Davies, *Best Practice in Medium Density Housing Design*, Case Study 7, 48.

urban intensification at the lower end of the range but are seldom higher than about 40du/ha., lending credibility to the suggestion that density limitation reduces the typology's appeal to developers.

Conclusion

This paper has argued that the courtyard house-type can be designed to align with social habits based on the detached house-type and established over a century of low density living. In conclusion it is suggested that the courtyard house-type is one of a short list of alternatives that have stood up to a critical enquiry in other countries, and have emerged with an intact reputation for durability, and for use on mid-density schemes in the lower range of the density scale. They could be aimed at particular market sectors such as buyers down-sizing their property, single-person households when security is a priority, and other occupants seeking low maintenance housing. Present-day housing developers have similar pre-occupations to those that generated the courtyard house-type in history: its declaration of ownership and of spatial independence while still being part of the community supplies an answer to many of those pre-occupations. These characteristics support and justify new tests of the courtyard house-type, which in the first instance should be carried out by non-profit agencies.

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Auranga Abodo Seating Pavilion

Adam Collett, Kyah Suckling, and Dr Yusef Patel

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Abstract

Sustainability within the built environment has become a significant issue with the design and fabrication of architecture. Construction waste is just one of many issues that need to be resolved. To tackle this problem, Unitec's School of Architecture's fabrication classes have integrated an approach to work with industry partners such as Abodo Wood and Made Group to design and deliver architectural products made out of construction waste. The results of the programme have led to students designing and producing a pavilion for the Auranga community in South Auckland. To ensure the most appropriate architectural outcome was produced, students worked with community representatives to design a functional structure that met the requirements of their selected site.

Keywords: Building and sustainability, community design, construction waste, street furniture.

Introduction

Over the last few years, Unitec's School of Architecture has worked with material suppliers within the architectural industry to create sustainable projects for private clients and communities. This enables students to learn how to embed theoretical practices within real-world projects. This paper has three main research outcomes:

1. To understand how circular-economy principles can be embedded into a design-build elective.
2. To learn the aspects of social resilience and construction practices with respect to reusing construction waste means embracing life-cycle thinking and helps to achieve circularity goals.
3. To design street furniture that is well integrated into a public space and to create a sense of place and identity.

To achieve the research outcomes, the paper will primarily review how students can work with recycling timber from offcuts to then create well-designed architectural outcomes for Auranga's village town square.

Circular Economy

Scholars and practitioners define circular economies as

reducing, reusing, and recycling. There are entrepreneurs across the globe that are looking to redirect waste by adding value to it through upcycling and creating new products. In Aotearoa New Zealand, Critical Design founders Rui Peng and Andy Crowe have developed valuable and usable products from soft-plastic waste, such as plastic bags, shampoo bottles, milk bottles and ice-cream containers. Their products enable designers and makers to create beautiful furniture and interior architectural spaces.¹ Victoria University of Wellington Architectural PhD candidate Ged Finch's XFrame construction system is designed to introduce circularity into the architectural and construction sector. Finch's approach to circularity within architecture is to design a construction system that can be disassembled and reassembled countless times. The product currently offers a modular framing and commercial fit-out system of thirteen standard CNC plywood parts.²

Background

The Auranga Abodo Seating Pavilion stems from past projects conducted within the school. In 2017, students within a special elective class collaborated with Prefab NZ and Carter Holt Harvey to create the 'interactive pod' for the Build NZ | Designex expo, Festival of Architecture and NZ *Life and Leisure* magazine's "In Your Backyard"

¹ Shani Williams, "Students' Recycling Business Creating Works of Art from Waste Plastic." *Stuff*, September 26, 2017. <https://www.stuff.co.nz/auckland/local-news/auckland-city-harbour-news/97102288/students-recycling-business-creating-works-of-art-from-waste-plastic>

² "About Xframe," Xframe, accessed November 29, 2022, <https://xframe.com.au/about>

edition (Figure 1).³ The purpose of the project was to demonstrate how students can work with digital fabrication technology to create a CNC plywood 'kit of parts' to be assembled at a variety of architecture and construction expositions. The project explored themes of mass customisation and modular prefabrication principles to allow the design to be adapted, transformed, and customised to suit different functions and spaces.⁴

In 2018, a special elective summer-school course in collaboration with Prefab NZ and Carter Holt Harvey (CHH) led to the creation of the BRANZ Modular Road Show exhibit (Figure 2). This project used a form of interior plywood from the CHH range and the modular Prefab NZ principles. The project brief required students to create an interactive experience that visitors could touch, with areas for staff to display product literature and store personal items, that could also act as plinths or tables to engage with customers.⁵ Much like the 2017 project, the learning outcomes of this project were to explore themes of CNC production and modular prefabrication design principles.

While these projects successfully worked with plywood, the designs did not push the boundaries as to what was possible and allowed a lot of leftover material to be sent to landfill. To avoid additional material being sent to landfill, the use of circular-economy principles became a major teaching opportunity to be embedded within fabrication courses. The added benefit of working with upcycling and processing waste material is that it allows students to engage with tacit skills they would not otherwise be introduced to when working with plywood. Subsequent projects, therefore, worked towards a more sustainable approach to material use.



Figure 1. 'Interactive pod' designed and built by Unitec students, 2017, featured in *NZ Life and Leisure* magazine's "In Your Backyard" edition. Photo: Unitec Marketing.



Figure 2. BRANZ Modular Road Show exhibit. Photo: Yusef Patel.

In 2018, the school's Women in Fabrication 2.0 team worked with Futurebuild LVL to design and fabricate a product stand (Figure 3) for the 2019 NZIA Insitu Auckland conference, out of 'reject' laminated veneer lumber (LVL) material from their plant.⁶ This project celebrated LVL by revealing the glue lines of the lamination. The required lengths of LVL were cut down to 45mm strips and laminated to create a panel. After lamination, each panel was planed and put through a CNC machine to create the tessellated surface patterns. Other tools used include thicknessers, table saws, clamps, hand planes, chisels, and electric sanding tools.



Figure 3. Futurebuild LVL stand at the NZIA conference. Photo: Yusef Patel.

3 Priscila Besen, Yusef Patel, Alice Couchman, and Peter McPherson, "Architecture as a Tool for Inclusion and Community Building: Women in Fabrication at Zayed College for Girls," *Asylum 1* (2020): 175, <https://www.unitec.ac.nz/epress/wp-content/uploads/2021/03/Architecture-as-a-Tool.pdf>

4 Alice Couchman, Yusef Patel, and Peter McPherson, "Women in Fabrication: A Platform for Inclusive and Diverse Design," in *Meeting the Challenges of Higher Density: 52nd International Conference of the Architectural Science Association*, ed. Priyadarsini Rajagopalan and Mary Myla Andamon (Melbourne: Architecture Science Association, RMIT University, 2018), 457.

5 Gemma Campbell, Yusef Patel, and Peter McPherson, "Intensive Design Building Studio: A Collaboration with Industry," in *Meeting the Challenges of Higher Density: 52nd International Conference of the Architectural Science Association*, 467.

6 Besen, Patel, Couchman, and McPherson, "Architecture as a Tool for Inclusion and Community Building," 175.

Through the preassembly exercise, it was discovered how difficult it was to put the panels together. A lot of time and attention were required for a successful outcome. The final product showcased a brand-new application of LVL timber with an aesthetic appeal that can be applied to other visual applications. From the learning outcomes of this project, the EDFAB 4.0 research team worked with offcut material to create the kitchen for their research house (Figure 4).⁷



Figure 4. EDFAB 4.0 kitchen. Photo: Sēmisi Potauaine



Figure 5. Installed bike pod in use. Photo: Yusef Patel.

In 2021, students in the undergraduate Digital Fabrication course collaborated with Made Group to design and develop a pop-up structure that embedded ideals of circular economies to produce a piece of street furniture for Auranga's village town centre. The brief for this project asked students to work with offcuts provided by Abodo's factory. Prototyping led to the production of laminated panels and glulam beams made from Abodo's Vulcan cladding product. The final design was a 'bike pod' structure that enables members of the community to store their bikes and provides a place for rest (Figure 5).⁸ This project became an exercise to investigate what possible added-value developments could be made to recycling efforts with local material suppliers. Although the bike pod was a success, several critical failures plagued the project and led to the following issues:

1. The delamination of the panel material due to the incorrect specification of outdoor glue.

2. The pod was too small and did not offer enough seating.
3. The quality of craftsmanship was low.
4. Better structural systems and fixings were needed.

Outside of courses, the students were required to learn software packages such as Rhinoceros 3D and fabrication workflows; they faced various challenges throughout the project. It was anticipated that students could collect waste material from the Auranga building site. Unfortunately, this exercise could not take place due to Covid-19 restrictions. As a response, the students and their course lecturers approached the industry for support to fill the gap. A positive outcome of this action led to students forming relationships within the architectural and construction industry. The same industry connections became essential stakeholders for the 2022 project iteration.

⁷ Neill McCulloch, Yusef Patel, and Sēmisi Potauaine, "EDFAB: Design and Building of a Plywood Research House," *Asylum* 1 (2020): 185, <https://www.unitec.ac.nz/eypress/wp-content/uploads/2021/03/EDFAB.pdf>

⁸ Yusef Patel, "Unitec Students Create Street Furniture for an Auckland Housing Community During Covid-19," *NZIA Community Kōrero: Conversations with the Auckland Branch*, March 2022, 5–6, <https://www.researchbank.ac.nz/bitstream/handle/10652/5712/Patel%2c%20Y.%20%282022%29.pdf?sequence=3&isAllowed=y>

Project Brief

Students from the 2022 Digital Fabrication class had another chance to collaborate with Made Group to create a new, more permanent, feature piece to replace the multi-functional bike pod. Instead of starting from scratch, the students were given the previous course designs to develop and add their concept ideas. To ensure the students were provided with support, scheduled meets were planned with the project client, Made Group, and the material sponsors, Abodo Wood. The key points that needed to be updated for the 2022 design were:

1. Push the design complexity and increase the size and scale of the pavilion.
2. Add more durable and permanent pavilion structural elements.
3. Resolve issues around the glue and lamination fabrication, material layering.
4. Community involvement to emphasise place and ownership.

Abodo provided the project with unlimited amounts of offcut material from their production line. The only limitations of this was the majority of offcuts were from Abodo's Vulcan cladding range, and the number of offcuts produced was proportional to the number of product orders they had in a given month. To ensure the project was viable, it was determined we were to only use Vulcan cladding offcuts for the project. The advantage of this design constraint would allow for an efficient production process.

While initially a simple brief that gave a lot of flexibility to the students, it went through four design iterations. Made Group developed the brief alongside the students in regard to the structure, which became a gateway structure that would create a greater connection with the community. This made the whole process difficult, due to the ever-changing brief that kept altering the parameters of what the project was meant to achieve.

Developed Design and Prototyping

The design and development of the 2022 Auranga Abodo Seating Pavilion underwent four distinct phases. The first was a 'mini' design competition for all the digital fabrication students to design, develop and produce scaled 1:10 prototypes of their version of the bike pod. The students had the opportunity to discuss and present their work to Made Group and the Auranga community. The winning design (Figure 6) was selected for its angular, dynamic form. Key feedback asked the students to consider the following:

1. Increase the scale and size of the structure. The students need to push themselves to create a gateway-like structure.
2. Remove the need for panels, as it was an issue with the previous iteration concerning wind loading and delamination.
3. Find ways to include patterns and designs representing the site and material sponsor.
4. Increase the amount of seating.

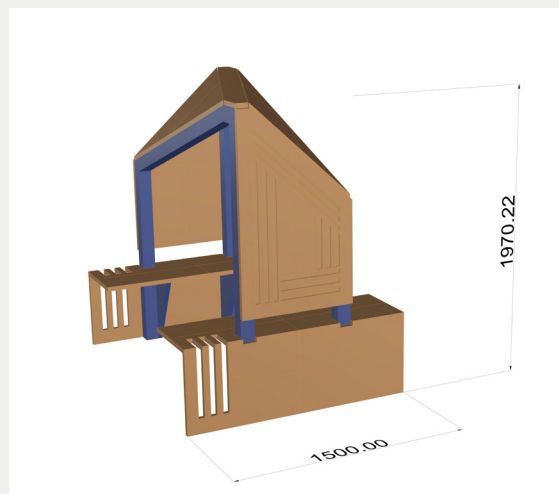


Figure 6. Selected winning design. Image: Esha Patel

The second design iteration was developing and prototyping the winning design from the feedback provided. It resulted in a concept (Figure 7) that used three times the amount of recycled Abodo product. The development of the design led to the plan of having a series of vertical laminated square-profile lengths to match the angular form and including more seating space. The concept incorporated awa (stream) design motifs that define the Auranga site, the community's growth, and the story behind upcycling the Abodo material. The seats were designed to face each other, to encourage conversation between strangers. The incorporation of steel joints allowed for better durability. The cross-grain timber beams also allowed for better durability.

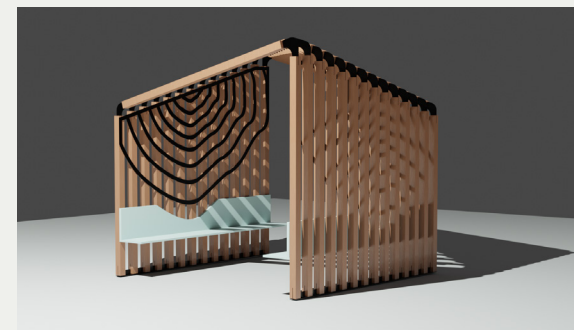


Figure 7. Developed design render. Image: Yusef Patel.

The second design stage also asked the students to prototype the concept. The process of developing a method to laminate the beams took time. The offcut size also limited the dimension of the beam to 90mm. To make offcuts useful structurally, five layers of Vulcan cladding needed to be laminated together to create a beam depth of 90mm. Three layers of the beam had the wood grain running vertically, while the other two had the wood grain running horizontally. This choice was made to increase the structural integrity of the beams and create a unique aesthetic quality. With the help of Abodo, the specification of waterproof PVC glue from Hinkel was used to laminate the beams together.

Figure 9 describes the processing and fabrication of the Vulcan glulam beams. In Step 1, the students collected Abodo's Vulcan cladding boards, which had a tongue-and-groove interlocking system on the sides. These were shaved off to create a square profile using Unitec's workshop equipment. In Step 2, students cut timber to the appropriate length. The horizontal pieces were cross-cut to roughly 90mm x 90mm, and the vertical-grained lengths were sorted and preserved to make up the 3-metre lengths (Figures 8 and 10). In Step 3, students placed laminated offcuts within jigs. These jigs used a compressive clamping method where two sides were fixed, and the other two were adjustable. The students wrapped the jigs in paper to ensure the they were protected from the PVC glue (Figure 11). Clamping with applied pressure on each side of the beam kept the timber in place and straight as the PVC glue expanded like foam (Figure 12). In Step 4, the beam was thickened down to ensure inconsistencies of thickness were eliminated. It also ensured the finishing of the beam was straight, smooth and square. In Step 5, the 3-metre lengths were cut down to their final sizes, which varied in length between 600mm and 1200mm. These final lengths were then ready to be pocketed, drilled and detailed for the final construction of the portals.



Figure 8. Processing Abodo wood offcuts. Photo: Glenna Taulilo-Makaea.

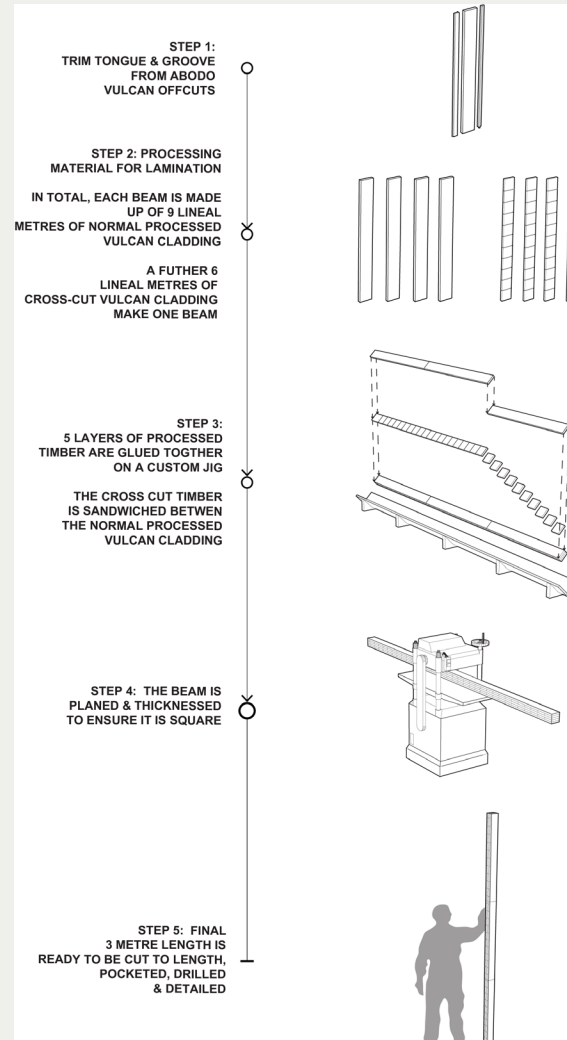


Figure 9. Process of beam construction. Image: Yusef Patel.

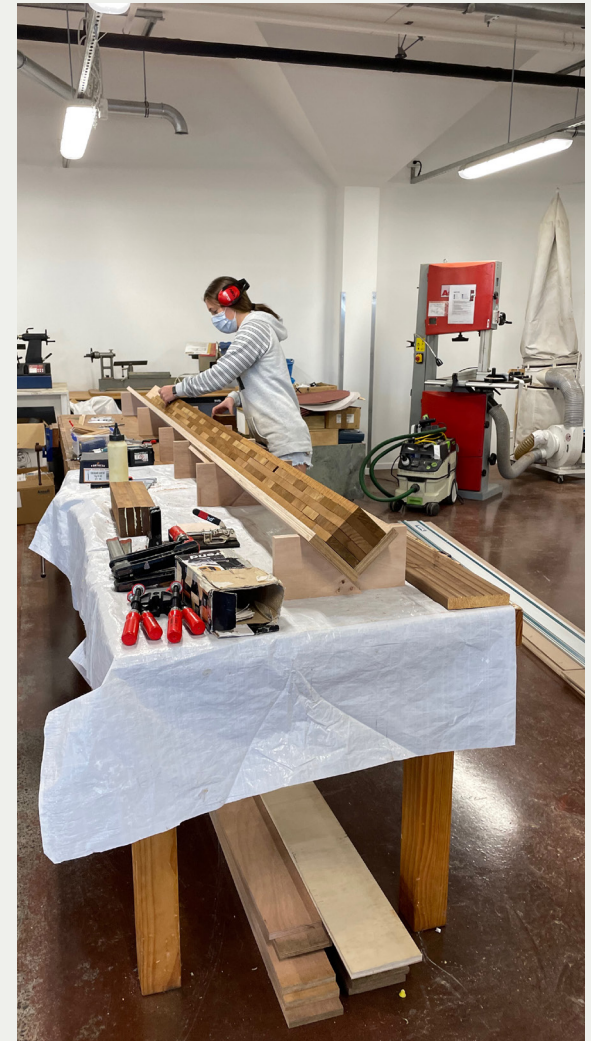


Figure 10. Grouping timber. Photo: Yusef Patel.



Figure 11. Applying Loctite glue. Photo: Yusef Patel.



Figure 12. Clamping beams in the jig. Photo: Kyah Suckling.



Figure 13. Abodo's Sarah Buckley, and authors Kyah Suckling and Adam Collett presenting the prototype at Whakaora – Our Thriving City Regenerative Design Jam. Photo: Yusef Patel.

The prototype of the structure at 1:1 was tested at two industry events: the 2022 BuildNZ Mega event and Whakaora – Our Thriving City Regenerative Design Jam at AUT University (Figure 13). The limitations of budget led to all the steel elements being prototyped with plywood or Perspex. The prototypes highlighted a number of issues that needed to be resolved:

1. Refinement of the metal joining elements, specifically in the areas of tolerance and bracing.
2. The community voice was missing, and we needed to gain their feedback via Auranga's community forums.

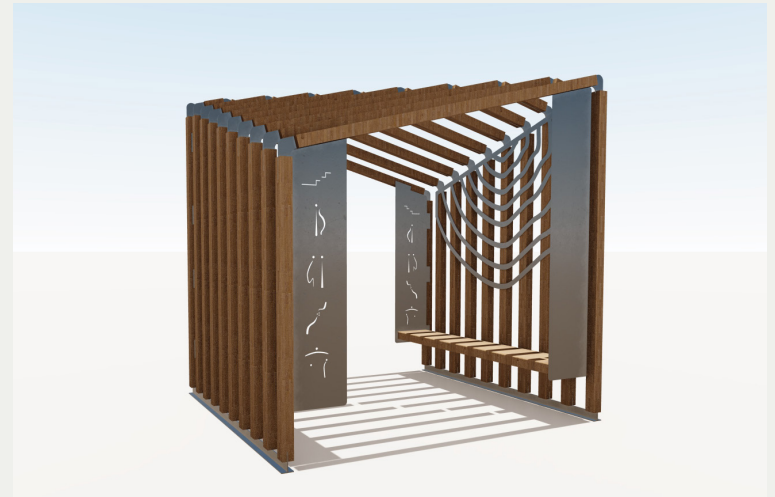


Figure 14. Render of the third iteration, with value symbols. Image: Kyah Suckling

The third iteration of the project engaged the Auranga community by giving them a voice in the design of the pavilion's privacy panels. After consultation, the panels were decorated with the five values symbols of the Auranga community. The developed design concept (Figure 14) incorporated refined metal jointing and bracing elements. It was important to showcase the values that underpin the Auranga development

and Made Group's aspirations for the community. The five values symbols represent:

1. Courage: To trust the unseen reality.
2. Integrity: To stand the test of fire.
3. Humility: To serve people where they are at.
4. Wisdom: To find the ingenious way through.
5. Love: To give our best to others unconditionally.



Figure 15. Render of the fourth iteration – black carbon steel. Image: Kyah Suckling.

Made Group requested two changes after looking at the proposal:

1. Material options need to be explored. The goal was to select a metal that looked rustic and matched the neighborhood's style.
2. Value symbols need to be distributed between the metal panels. Each panel would then represent each value of the community, with written values corresponding to it, as it would be a better way to educate and engage the community.

The students took the feedback and made changes. The use of simple renders enabled the students to

explore different steel options for the aesthetics of the project, these being stainless steel (Figure 14), black carbon steel (Figure 15), and Cor-Ten steel (Figure 16). Throughout the process of developing these iterations, we discussed the reality of producing the awa rings design. The students concluded that we would take these rings away from the design, as the expense to fabricate this element was unreasonable with the budget given. Observation and discussion with Made led us to remove one seating side to allow for a practical and usable bike stand. The multiple evaluations of the third and final design iterations has pushed out the final delivery of the pavilion being built in Auranga to early February 2023.

Evaluation and Future Progress

Overall, the last two years of the Digital Fabrication course advocated teaching students to think about circular-economy principles rather than just producing design-build outcomes that push the limits of digital fabrication technology. By investigating the excess-material streams and engaging in conversations with local communities, students understood how to create projects that are socially responsive to their surroundings. Students also learned strategies to ensure that their projects did not end up in a landfill in the long term.



Figure 16. Render of the final design – Cor-Ten steel. Image: Kyah Suckling.

Upcycling waste materials promotes circularity and sustainability and frees up resources. This is important, as Aotearoa New Zealand's building industry is currently facing long delays and increasing material costs due to issues that have stemmed from the Covid-19 pandemic.⁹ In fact, the project was delayed due to issues procuring the glue specified by Abodo and design issues during the client consultation stages of the project. Not all the recycled timber products for the project came from Abodo, as the students sourced all the seating timber material from Auranga's housing developments.

Using the offcuts of Abodo wood, students were able to create a series of beams for the pavilion, demonstrating how timber can be recycled and kept out of landfill. This demonstrates how Abodo's wood products can have an extended life cycle by being reused and recycled for other purposes.

Placing the pavilion in the square by the Better Way Café encourages Auranga locals to use the space. The pavilion acts as an extension of the green space, giving locals the opportunity to enjoy the pre-existing public space while encouraging friendly conversations in a subtle way.

By using offcuts of Abodo's exterior cladding, the amount of construction waste is reduced as students are able to divert it from going to landfill. Instead, offcut materials are repurposed to create beams. This helps to extend the life cycle of the timber by creating a piece of street furniture that locals can enjoy for many years. While glue-laminating the beams with alternating wood-grain direction created a unique aesthetic quality, the time required to produce the beams was larger than if the wood grain had been running in one direction. Alternative methods of glue-laminating could be explored to find more efficient ways to construct the beams.

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9 Ipsos, *The Covid-19 Pandemic and its Impact on Building System Actors*, Summary Report September 2021 (Wellington: MBIE, 2021), 9–10, <https://www.mbie.govt.nz/dmsdocument/17754-summary-report-covid-19-pandemic-and-its-impact-on-building-system-actors-research>

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Tau-utuutu: The Development of a Living Vision for the Unitec School of Architecture

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Abstract

Late in 2019 a small group of Pākehā staff at Unitec School of Architecture organised an initiative to review the course structure after relocating to a different building on campus. Gifted a name, Tau-utuutu, by Kaihautū Kimoro Taiepa, they facilitated a series of staff engagement workshops, and from this extensive staff feedback developed a draft Living Vision document that identified the interconnected issues of the climate emergency and colonisation. However, it became evident that the process to that point had lacked genuine partnership with tangata whenua. Subsequent, kōrero with Ngā Ia Vai, the Māori and Pacific caucus within the school, resulted in a collaborative presentation to the Unitec Research Symposium in December 2021. This paper records the process of getting to this presentation phase and suggests that a deeper understanding of the responses might be gained through the twin languages of drawing and kōrero. The paper acknowledges the significance of Te Noho Kotahitanga, an existing partnership document at Unitec, and calls for action to implement the ideals and values of te Tiriti o Waitangi in order to decarbonise and decolonise the Unitec Architecture programme.

Keywords: Architectural education, Unitec School of Architecture, Te Noho Kotahitanga, Te Tiriti o Waitangi, co-design, decarbonisation, decolonisation, partnership, drawing.

Introduction

Construction and its ally, design, are major contributors to carbon emissions, the consequent acceleration of climate change and loss of biodiversity. A recent article in *The Architectural Review* articulates this contribution in powerful terms and in relation to architectural education.

The climate emergency is inextricably linked to the exploitation of non-humans, humans and nature, for the maximisation of profit and accumulation of capital by the privileged few. Architecture and the building industry are culpable for this exploitation and are complicit in climate destruction; design decisions profoundly impact communities and ecosystems both nearby and thousands of miles away. It comes as no surprise that architectural education reflects these exploitative values too: not only in content, but also in the way architecture is taught.¹

Alongside the destruction of the land lies the exploitation and devastation of Indigenous communities by the British Empire. In Aotearoa, colonisation brought about extensive land, culture and language loss for Māori, who were then expected to assimilate into a system based on individual wants rather than communal needs. This dominant colonial mindset has promoted significant consumptive growth and created immense pressure on our ecosystem. Furthermore,

Māori world views have been suppressed when in fact they are fundamental to how we might develop a deeper understanding of the relationship between people and place.

At the beginning of 2020, the Unitec School of Architecture relocated to Building 48 as part of the Unitec Campus consolidation. This relocation entailed significant changes, including a working-culture shift from individual offices to open-plan office space, as well as much less space for students. A small group of staff sensed the need and the opportunity to collectively imagine ways to better locate the school in place (Te Moana-nui-a-Kiwa) and time (a world battling with the impacts of climate change) and ultimately achieve a thriving school culture.

They contacted the Kaihautū at the time, Kimoro Taiepa, and invited him to contribute to the kōrero. He offered a kupu Māori that would embrace the process of developing a vision for the school. Kimoro suggested Tau-utuutu. As he explained in an email:

Tau-utuutu is a form of Kawa (protocol) where there is an exchange of kōrero (dialogue) whakaaro (ideas), mātauranga (knowledge), a forming and strengthening of whanaungatanga (relationships.) In essence, tau-utuutu means reciprocity.

¹ Essi Nisonen and Sofie Pelsmakers, "Architectural Education in the Climate Emergency," *The Architectural Review*, September 15, 2022, <https://www.architectural-review.com/essays/architectural-education-in-the-climate-emergency>

Used only by the tribes of Te Arawa and Tainui on our marae as the protocol for whaikōrero (speech-making), tangata whenua (hosts) and manuhiri (guests) sit adjacent to one another and the dialogue exchanges to and fro until the dialogue is exhausted. The dialogue is usually initiated and concluded by the tangata whenua.

However, in this context we will use the kawa without the sequential formalities but operate against the principles and practices inherent in the notion of tau-utuutu. When premised within the principles of Te Noho Kotahitanga we adhere simultaneously to the values of kaitiakitanga (guardianship), ngākau māhaki (respect), whakaritenga (balance), mahi kotahitanga (collaboration) and rangatiratanga (authority and responsibility).²

At Unitec we are privileged to be guided by Te Noho Kotahitanga principles established in 2001 between Unitec and Te Roopu Mataara, Māori staff members at Unitec. These values are: Rangatiratanga (Authority and Responsibility), which is about ensuring Māori knowledge is used and respected; Wakaritenga (Legitimacy), which acknowledges the value of all knowledge; Kaitiakitanga (Guardianship), which calls upon people to act as guardians of knowledge; Mahi Kotahitanga (Co-operation), which is about working together; and Ngākau Māhaki (Respect), which ensures everyone is welcome and respected.³ They are embedded in the programme documents for both the undergraduate Bachelor of Architectural Studies (BAS)⁴ and postgraduate Master of Architecture (Professional) (MARCP)⁵ degrees. Further recognition of the interests of tangata whenua and sustainability are evident in the graduate profiles of both degrees.

In the BAS, Table 2: Graduate Profile in Relation to Courses identifies six characteristics of a successful graduate. The last two are as follows:

Demonstrate an understanding of taha Māori, the Treaty of Waitangi and Māori perspectives and values in general as they relate to the professional practice of architecture.

Propose strategies for assuring the environmental sustainability of architectural projects.⁶

Through the process of developing the living vision, staff members clearly stipulated that these characteristics are not just important, but are in fact integral to the curriculum and the learnings that students leave with if they are to contribute responsibly in the industry. This paper outlines the process the staff group took to gather this information and ultimately land at this positioning. It argues that, rather than being at the bottom of the list, our Tiriti and environmental responsibilities should be a priority.

Methodology – The Process

Once the name Tau-utuutu was established, the staff group organised a series of workshops designed to develop a Living Vision that would inform the future direction of the School of Architecture at Unitec. Tau-utuutu was advertised as a series of formal and informal meta-inquiries into the culture of Design Studio at the Unitec School of Architecture (Figure 1).

The intention of these sessions was:

- To inspire a collaborative way of generating teaching content based on common values.
- To reflect on what we're doing well and how we're doing it.
- To identify what is unique about our School and how it manifests in Design Studio.

The first workshop in early February gathered all staff into one of the studio spaces. The session began with a karakia, followed by a drawing task. This involved two people holding either end of a piece of string

with a whiteboard marker tied in the middle. The intention was to draw with the whiteboard marker on a sheet of paper placed on the table between them. Called the Tug of Peace, this task models the idea of reciprocity. The drawing that results is not as important as the process. The process builds a relationship through mutual responses of give (relaxation) and take (tension) to guide the marker around the paper to achieve a collaborative drawing.



Figure 1. First Tau-utuutu workshop, invitation poster. Image: Kerry Francis and Magdalena Garbarczyk.

The second task asked the staff, now in small groups, to represent their ideal Design Studio culture. The task was introduced with a brief discussion of some of the material and non-material elements of culture (language, norms, rituals and ceremonies) and an invitation to use drawing as the preferential medium.

² Kimoro Taiepa, personal communication with Magdalena Garbarczyk, October, 2019.

³ "Te Noho Kotahitanga and Unitec," Unitec – Te Pūkenga, accessed October 2022. <https://www.unitec.ac.nz/about-us/te-noho-kotahitanga-and-unitec>

⁴ Unitec – Te Pūkenga, *Programme Document: Bachelor of Architectural Studies (BAS)*, October 2007; Updated Programme Document Ver:3.2 [June 2021], 14–15.

⁵ Unitec – Te Pūkenga, *Programme Document: Master of Architecture (Professional) (MARCP)*, October 2007; Updated Programme Document Ver:1.7 [June 2021], 14–16.

⁶ Unitec – Te Pūkenga, *Programme Document: (BAS)*, 17.

What resulted was a series of annotated drawings. A number of them appeared to incorporate a temporal condition, in that they moved along a horizontally oriented sheet or down a vertically oriented one. These drawings were scanned and recorded (Figure 2). The original intention was to weave all this workshop material into a framework ordered by the values of Te Noho Kotahitanga. However, as tauiwi, the group struggled with this intention, possibly because they lacked a nuanced understanding of those values. Subsequently, the annotations were ordered into non-material (relationships and values, rituals, and design process) and material categories that had been introduced earlier. The ideas and categories generated by this workshop were intended to form the foci of further workshops. Shortly after, Aotearoa went into a two-month lockdown and all attention became focused on survival – on simply maintaining some version of teaching and learning under unprecedented conditions. Work on the Vision kaupapa ground to a halt.

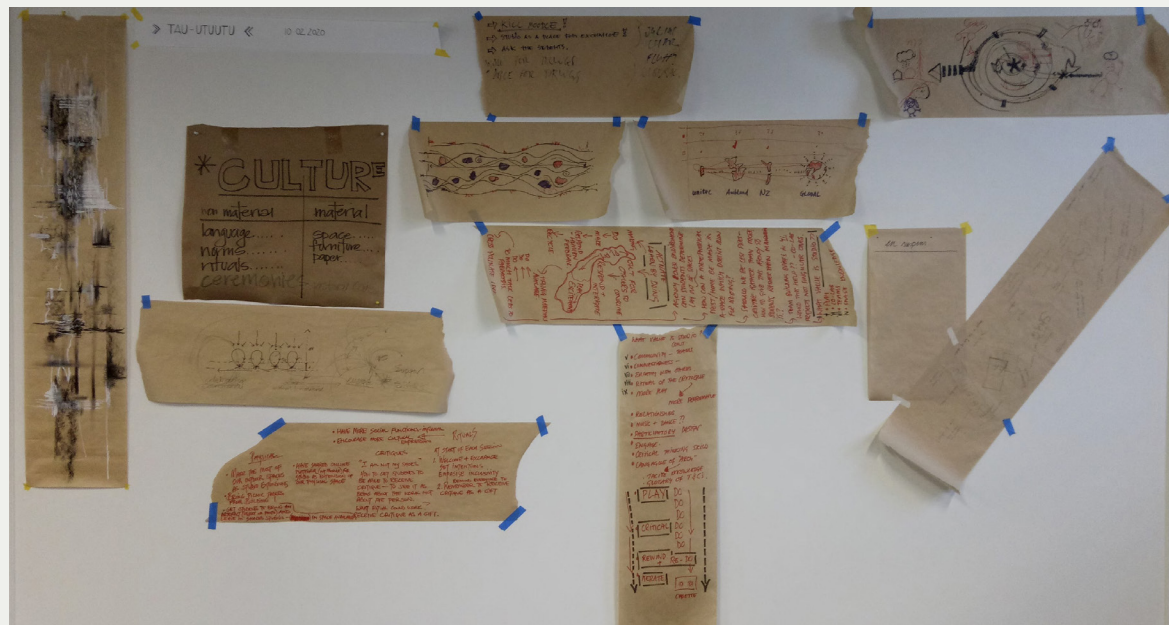


Figure 2. First Tau-utuutu workshop, drawings and diagrams by School of Architecture staff.

At the beginning of the academic year in 2021, the project was regenerated in a new format with the same intentions guiding the first Tau-utuutu workshop of the previous year. Over ten weeks, staff received regular updates, with reflective questions that prompted them to engage and respond either by email or in person. The intention was to keep it simple, without filling in timetables, and allow everyone to contribute whatever time they had available.

The first email repeated the provocations from the first Tau-utuutu workshop:

- What do we do really well?
- What makes us different from other schools of architecture in Aotearoa New Zealand?

The second round of emails attached the table of feedback from that original Tau-utuutu workshop and sought to tease out more specific responses:

- What are some of the elements/values/principles

listed (from Tau-utuutu #1) that you think should contribute to the general school vision document?

- Is there a particular one you would like to develop?
- What is missing?

These questions were open-ended qualitative questions, and staff were encouraged and welcomed to contribute in any way they considered appropriate and valuable.

Following this period of email communication, the core staff group made themselves available in the staff room every Tuesday lunchtime during the second quarter of 2021. These weekly 'Biscuit Sessions' became the site of more personal and interactive staff engagement. The timing of these sessions in the lunch hour meant they were often unplanned, and consequently less formal. The staff engagement was significant. Altogether, twenty-four staff members took part in these workshops, email exchanges and face-to-face meetings during the ten-week period. This resulted in complex and unstructured data; a relatively small but detailed data set, and open-ended discovery. Qualitative data analysis first involved descriptive coding and in vivo coding. The material was then grouped into more subtle themes. This collective knowledge was recorded and assembled into an active, working digital document that continues to evolve.

It was clear that, by engaging with a wide range of staff to understand their vision for the school, this core group had gathered rich and important knowledge. The next task was to bring together all these aspirations into a coherent Living Vision document. This first version, intended for presentation to the wider staff, is recorded in the *Living Vision Document Draft*.

The group used Te Noho Kotahitanga framework as a foundation for the document, but referred more directly to the way these values are applied in the School of Architecture.

Living Vision Document Draft

[Architecture and Aotearoa New Zealand]

- The School acknowledges the legitimacy of Indigenous knowledge of place.
- The School commits to the values embodied in living Te Noho Kotahitanga.
- The School commits to a culture and curriculum that authentically align with a deep understanding of the Tiriti o Waitangi.

[Architecture and non-architecture] Mahi Kotahitanga

- The School acknowledges that architecture is connected.
- The School commits to actively engage with other schools of architecture (in Aotearoa and overseas), other disciplines, the wider professional body, the community, mana whenua iwi and the living systems it is a part of.

[Architecture and us] Whakaritenga

- The School recognises the diversity of its people and experiences.
- The School commits to developing its programmes in a way that is inclusive (culture, ethnicity, gender, age) and adapted to this diversity.

[Architecture and me] Ngākau Māhaki

- The School commits to be a safe place of personal growth and integrity where deep care for the people and the land is inspired through the teaching and learning of architecture.

[Architecture and the ecological crisis] Kaitiakitanga me Rangatiranga

- The School acknowledges that architecture in its built form has been and continues to be

a critical contributor to the global ecological crisis.

- The School commits to reviewing its current teaching and learning methods to ensure that its graduates become equipped to contribute to the betterment of the profession in a way that is beneficial to communities and the ecosystems they are part of.

According to staff, decarbonisation and decolonisation are the most pressing issues Aotearoa New Zealand society is facing and should be at the forefront of the curriculum.⁷ There was also an understanding of how these two concepts were interrelated, although this awareness needed much more consideration and knowledge growth. The Living Vision document demonstrates this viewpoint; however, it was at this point that the group realised that as a Pākehā-led initiative, they were yet to recognise their responsibilities under te Tiriti o Waitangi and engage more directly with tangata whenua.

Partnership

While the group had spoken with Māori staff throughout the process thus far, they knew that a fundamental part of growing a Living Vision would be the building of high-trust relationships between tangata Tiriti and tangata whenua. The Unitec School of Architecture has a Māori arm, Te Hononga, which has been implementing Māori pedagogies into design teaching for over twenty years, and a more recently formed Māori and Pacific staff collective called Ngā Ia Vai. It was important that the next phase of the vision acknowledged and involved these groups.

The staff group sought advice from Ngā Ia Vai, who agreed to meet regularly to discuss the future of the Living Vision document. While Ngā Ia Vai is made up of members from across Te Moana-nui-a-Kiwa, the group

focused on the obligations the Pākehā staff members had to tangata whenua, with the understanding that by being grounded in Indigenous knowledge, this document would also benefit tangata moana – those who whakapapa to the greater islands of Te Moana-nui-a-Kiwa.

Much of Ngā Ia Vai's advice was based on a document they developed in 2020 for the School of Architecture as a response to new strategies that Unitec had implemented to support Māori and Pacific students. It set out ways in which Moana students could be better supported to succeed academically and in their personal wellbeing. The document identified the following ambitions:

To uplift academic success for Moana students achieving equitable education for Moana students by 2022;

To build capability, capacity, and will for School of Architecture staff to teach cultural content;

To develop frameworks, pedagogies, and processes to embed Mātauranga Māori and Kaupapa Pasifika content in to the School of Architecture.⁸

Ngā Ia Vai identified te wheke (the octopus) as an appropriate symbol for the strategy. Te Wheke represents migration, connection and belonging that connects the past, present, and future.⁹ Taking the analogy of navigation, students are the navigators and staff are the currents of vai (water) who provide the rhythmic movement (support) to help them determine their direction and heading.¹⁰ The text identifies challenges and opportunities, and responds to the students' needs by linking each of the strategic ambitions to the fluid arms of te wheke.

It became clear through these discussions that significant work had already been done to create

⁷ The core group and the authors of the article, in the process of analysing and thematic coding the feedback from staff, identified the main foci of those original responses as decarbonisation and decolonisation. The use of these terms aligns with discourse in recently published research that recognises that attention to these issues is critical to the design of an architecture programme that will address the injustices of colonisation and the climate emergency.

⁸ Rau Hoskins, Carin Wilson, Tuputau Lelaulu, Maia Ratana, Ofa Cocker, Sibyl Bloomfield, and Venus Mataia, *Ngā Ia Vai: Foundation Document*, 2020, 3.

⁹ Ibid, 1–3.

¹⁰ Ibid, 1–4.

strategies for more authentic partnership and the implementation of Indigenous values at the school. Further conversation also recognised the ground-breaking work of Ngā Aho and the Tiriti-based relationship they have with the NZIA and other design professional bodies, as well as the advocacy of Te Rōpū Mataara in 2021, which resulted in Unitec becoming the first tertiary institute in Aotearoa New Zealand to have co-leaders (tangata whenua and tangata Tiriti). There are, in fact, various sources of information and precedents that need to be better understood in order to create authentic, treaty-based relationships between tangata Tiriti and tangata whenua at the School of Architecture.

The Drawings

Having developed a draft Living Vision document, and through further conversation with Ngā Ia Vai, the critical question for the School of Architecture became: How do we work collectively as tangata whenua and tangata Tiriti to bring this Living Vision into being in every day of the School of Architecture's programme?

We now turn to the drawings as a beginning exploration of the task provoked by this question. The first drawing (Figure 3) was an attempt to contextualise and fuse the two thematic concerns of decarbonisation and decolonisation. The drawing was made as an attempt by one tauwi member, after group discussions, to organise the text of the Living Vision document as a spatial and possibly temporal formation. The first Tauutu session used drawing to build relationships and generate ideas. Here, again, the group was using the familiar medium of drawing to understand and communicate the ideas embodied in the text.

This diagram locates the ecological crisis oppressively above the school and the context, Aotearoa New Zealand. While this diagram could claim to represent the significant threat of the climate crisis, it remains abstract, and possibly negative and depressing. It also places the individual at the centre of the image, at the centre of the school and at the centre of the discipline.

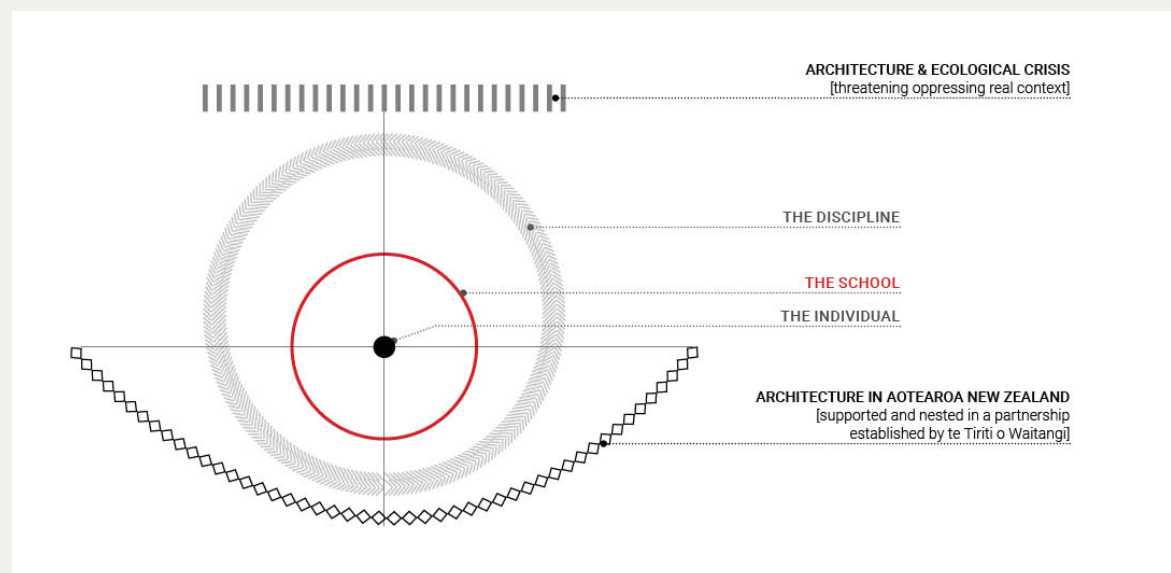


Figure 3. Living Vision diagram #1. Image: Magdalena Garbarczyk.

Collective discussion with Ngā Ia Vai, which followed, pointed to a more place-based connection that located the Unitec whareniui, Ngākau Māhaki, at the centre as the embodiment of the Te Noho Kotahitanga values. What resulted was a series of drawings by another tauwi group member that were attempts to explore this positioning. Figure 4 describes the whare, using a long section. This orthographic projection type partially records the dimension of time as embodied in the whare. We say partially because, as a two-dimensional (orthographic) drawing, while showing the pou on the side wall and revealing their pūrākau (stories), it does not record the significant temporally projective qualities of the interior back and front walls.

The circular images that follow down the same page attempt to organise the draft Living Vision document and Te Noho Kotahitanga principles radially around the elevation of the façade of Ngākau Māhaki. The upper image locates the Vision material adjacent to the

whareniui image, with TNK values mediating between that document and the outside world. This organisation seems to constrain both systems. The lower image reverses this pattern and places TNK values in what feels like a more natural relationship, immediately adjacent to the whareniui image. Architecture, or architecture as idealised in the Vision document draft, is inflected first by the radiating pulse, the humble heart of the whareniui and subsequently by TNK values. Architecture remains on the outside, a web, supported and caring, having the strength to embody TNK values in all its work.

These drawings, or diagrams, record attempts by tangata tiriti to understand the nature of the discourse with tangata whenua. They record a process. They are part of an ongoing process of dialogue. They employ a language (of drawing) that may be shared. There is rich potential to further use this language to draw out the key issues and to contextualise the concerns of this kaupapa.

Conclusion

This paper has identified that staff within the School of Architecture at Unitec are eager to work on ways to learn about and practise architecture that reflects the place and the time in which we currently live, but equally to help prepare our graduates for their future. As a collective of staff, we have begun to try and imagine ways to put these ambitions into place. We have begun to explore our understandings of these ambitions through discussion and through the medium of drawing, something akin to a language of the field of architecture. We are aware that we have much more work to do in bringing this vision to light and that this is merely a stepping stone. As a staff group, we need to begin constructive kōrero to explore how we might operationalise the ideas presented in this paper and create a school that is realising authentic Tiriti partnership. We must act now to implement changes that will maintain the continued vitality and relevance of the programme.

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The authors acknowledge the enormous contribution made by Rau Hoskins and Carin Wilson (Te Hononga) and Tuputau Lelaulu (Ngā la Vai) to the Unitec architecture programme. We also acknowledge the contribution of Magdalena Garbarczyk in initiating this phase of the project and ensuring its continued momentum. Finally, the authors acknowledge the School of Architecture staff who contributed time, energy and ideas, and Ngā la Vai, whose active presence is the necessary foundation for any proposed change.

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The School of Architecture e-Newsletter

Dr Hamish Foote, Dr Bin Su, Dr Lian Wu, and Trina Smith

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Introduction

The School of Architecture at Unitec publishes an e-newsletter biannually, keeping alumni and industry contacts informed of developments in the school and its communities. The publication also provides an opportunity to share details regarding continuing professional development (CPD) opportunities for practitioners and calls for papers published in the school's peer-reviewed journals, such as *XSection* and *Asylum*.

This biannual communiqué, established in 2013, is a valuable mechanism for maintaining and strengthening ties between academia, alumni and professional practitioners. This large community has learned of events and workshops, community-based studio projects, graduate successes, staff research, milestones, invitations to attend master's workshops, and teaching collaborations with other institutions. Academics and practitioners have also offered commentary and critique on historical, contemporary or topical themes.

The e-newsletter, edited by Senior Lecturer Hamish Foote, supports the school in meeting the aims of its Architecture, Landscape Architecture and Interior programmes: grounding in the historical and theoretical foundations of our disciplines; knowledge of professional, social and environmental responsibilities; development of appropriate communication skills; ability to analyse work critically; and an overview of

taha Māori, the Treaty of Waitangi, and Māori perspectives as they relate to our disciplines.

Publication of the e-newsletter was paused during Aotearoa New Zealand's Covid-19 outbreak, and the following items were compiled this year to share recent developments and the return to everyday life.

News from the School of Architecture, Unitec, Te Pūkenga, 2022

Unitec Welcomes the Digital Heritage Research Centre

Associate Professor Renata Jadresin-Milic founded this facility in August 2022 to help sustainably preserve our heritage. This work is gathering national momentum and is in an area of high value to Aotearoa New Zealand's architecture and heritage. The practice of dealing with heritage buildings and sites in this country can, and should, be enhanced using modern digital technologies. The Centre will initiate the greater use of modern digital technologies in domestic conservation practice – preventive protection of architectural heritage through its digitalisation and documentation procedures.

This Research Centre, which will operate in a transdisciplinary manner and include national and international collaborations, will ensure Unitec

continues to grow its reputation as a high-quality applied research institute and will contribute meaningfully to the education of architects.

3D-Modelling of Heritage Buildings Transforms Digitally Driven Conservation

The inaugural project of Unitec's new Digital Heritage Research Centre is a leading-edge 3D-modelling exercise focused on capturing historical and heritage buildings. It exemplifies collaboration between academia, community and industry, and sets a new bar for digital technologies in domestic conservation practice. The School of Architecture project involves the scanning (using LiDAR and photogrammetry technology) and 3D modelling of Building One on Unitec's Mt Albert campus. This heritage building was formerly Carrington Hospital and is currently unoccupied. Although Building One will require earthquake strengthening work, it must not be left in an abandoned state for too long.

"The outcomes and benefits of the project are numerous," says the project's leader, Associate Professor Renata Jadresin Milic from Unitec's School of Architecture. "Many of New Zealand's landmark and heritage buildings have been abandoned or become so degraded as to be officially deemed dangerous. A number are earmarked for demolition or recurring sale," she says. Modern digital technologies facilitate and improve conservation practices and processes,

and enable the creation of a digital database. Among the benefits are the following: an active preservation approach is developed so that the continuity of the heritage building is maintained; a digital library of information is created, which could be used to remediate the building in the case of natural or other disasters; digital data enables the creation of digital models and virtual tours, which allows remote access to inaccessible or dangerous areas by specialists nationally and across the world through virtual reality; the precision of measured survey for assisting future seismic and fit-out design; reduced hours spent manually measuring; high level of detail obtained; file sharing opportunities; and many others.

School of Architecture students also gain specialist skills and experience in the Digitalisation of Heritage elective course, which is unmatched in the extent of digital-capture technology and methodology it provides for the heritage buildings. The Unitec project has been done in partnership with surveyors, architects and engineers from the construction sector, such as asBuilt Digital and Survis Ltd. It is supported by the Ministry of Housing and Urban Development and Auckland

Council's Heritage Unit. This work for Building One will be shared with the end users: Ngā Mana Whenua o Tāmaki Makaurau, the Ministry of Housing and Urban Development, and the community body Point Chevalier Social Enterprise Trust.

This story has recently received media attention with in-depth content featured on Radio New Zealand¹ and *ArchitectureNow*.²

Papa Kāinga – Housing for Māori Communities

Unitec's cross-disciplinary (Architecture and Public Health) Māori housing research group finished the critical part of the National Science Challenge-funded project Toitū te Kāinga, Toitū te Ora, Toitū te Tangata: Healthy Homes, Healthy People.³ It was focused on occupants' health and the living conditions of Māori communities in remote areas of Aotearoa New Zealand and was published in the *International Journal of Environmental Research and Public Health* in 2020.⁴ The research drew on data and qualitative feedback, utilising a mixed methodology including field studies of indoor microclimates, dust-mite allergens, and mould growth. Researchers undertook a Respiratory

Health Survey of several sample houses of Māori communities in Minginui, Te Whaiti, Murupara and Rotorua. The study identified unhealthy indoor thermal conditions, ranges of indoor micro-climates related to different levels of dust-mite allergen and mould growth, and correlations between these. The data determined that the poor health of occupants is closely associated with inadequate living conditions. It also identified the threshold of indoor micro-climates to maintain indoor allergens at acceptable levels. It can be used as a guideline to maintain or improve indoor health conditions for future housing developments or retrofitted older housing. The study has helped toward funding a papa kāinga (thirty-three houses) by Te Puni Kōkiri for the Māori communities at Tāwhitiwhiti, Te Whaiti. The aim is to start on the infrastructure before the new year, and the six houses will be built in April 2023. The Building Advisory Group, including panel member and Unitec School of Architecture Professor Bin Su, is an essential part of the management structure. The new houses can be used for further comparative study with this research. Details regarding this exciting initiative have appeared in media publications.⁵



Figure 1. Point cloud of the main façade of Building One. Source: Unitec Research Project “Digitalisation of Heritage in New Zealand.”

- 1 “3D Technology Being Used to Save Heritage Buildings,” *Radio New Zealand*, May 25, 2022, <https://www.rnz.co.nz/national/programmes/afternoons/audio/2018843369/3d-technology-being-used-to-save-heritage-buildings>
- 2 Amanda Harkness, “3D-Tech Helps Preserve New Zealand’s Most Important Buildings,” *ArchitectureNow*, July 5, 2022, <https://architecturenow.co.nz/articles/digitally-driven-conservation>
- 3 Bin Su and Lian Wu, “House Occupants’ Health Conditions and Their Living Conditions,” in *Toitū te Kāinga, Toitū te Ora, Toitū te Tangata: Healthy Homes, Healthy People, Report for Building Better Homes, Towns and Cities Kāinga Tahī, Kāinga Rua*, ed. Tepora Emery and Ian McLean (Porirua, New Zealand: Kāinga Tahī, Kāinga Rua Publications, 2019), 28–46.
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Interdisciplinary Collaboration and the Community

Early this year, the joint architecture and landscape architecture studio, run by Lúcia Melchior and Xinxin Wang, worked with the Māngere community and Kāinga Ora to develop ways to build resilience to future flooding in Māngere. Te Ara-rata Stream care volunteer Julia Tuineau says, “Our community group commends the students involved in the project because of their efforts to include other community people and us.”

Ngāti Whātua Ōrākei invited the Tāmaki Makaurau landscape architecture community, including students from Unitec, to join them in a wānanga on their ancestral whenua at Ōrākei on September 19. This is the first time that this type of hui has been called. This wānanga offered a rich and rare opportunity for the landscape community to come together on a common kaupapa that will benefit us all by providing a deeper insight into one of the most dynamic and influential of Tāmaki Makaurau’s iwi mana whenua. Students received a guided tour through their awesome māra kai, designed and built by Matua Rob Small, a Unitec Master of Landscape Architecture graduate – a food production and cultural regeneration machine that nourishes Ngāti Whātua Ōrākei.

Alan Titchener, Di Menzies and Josephine Clarke organised a collaborative one-day design wānanga for landscape architecture students from the Wellington School of Architecture, Lincoln University and Unitec on October 11. Students worked with Whaea Tania White from Ngā Kaitiaki, Te Noho Kotahitanga, to help protect Te Wai Unuroa o Wairaka, especially from contamination by future developments caused by flooding due to climate change. The results of the wānanga will be exhibited at the 2022 NZILA Firth Conference Tāmaki Makaurau. The conference marks the fiftieth anniversary of the founding of the New Zealand Institute of Landscape Architects Tuia Pito Ora.

Protecting Our Unique Flora and Fauna

Trina Smith, an ecologist teaching in landscape programmes at the School of Architecture, Unitec, is

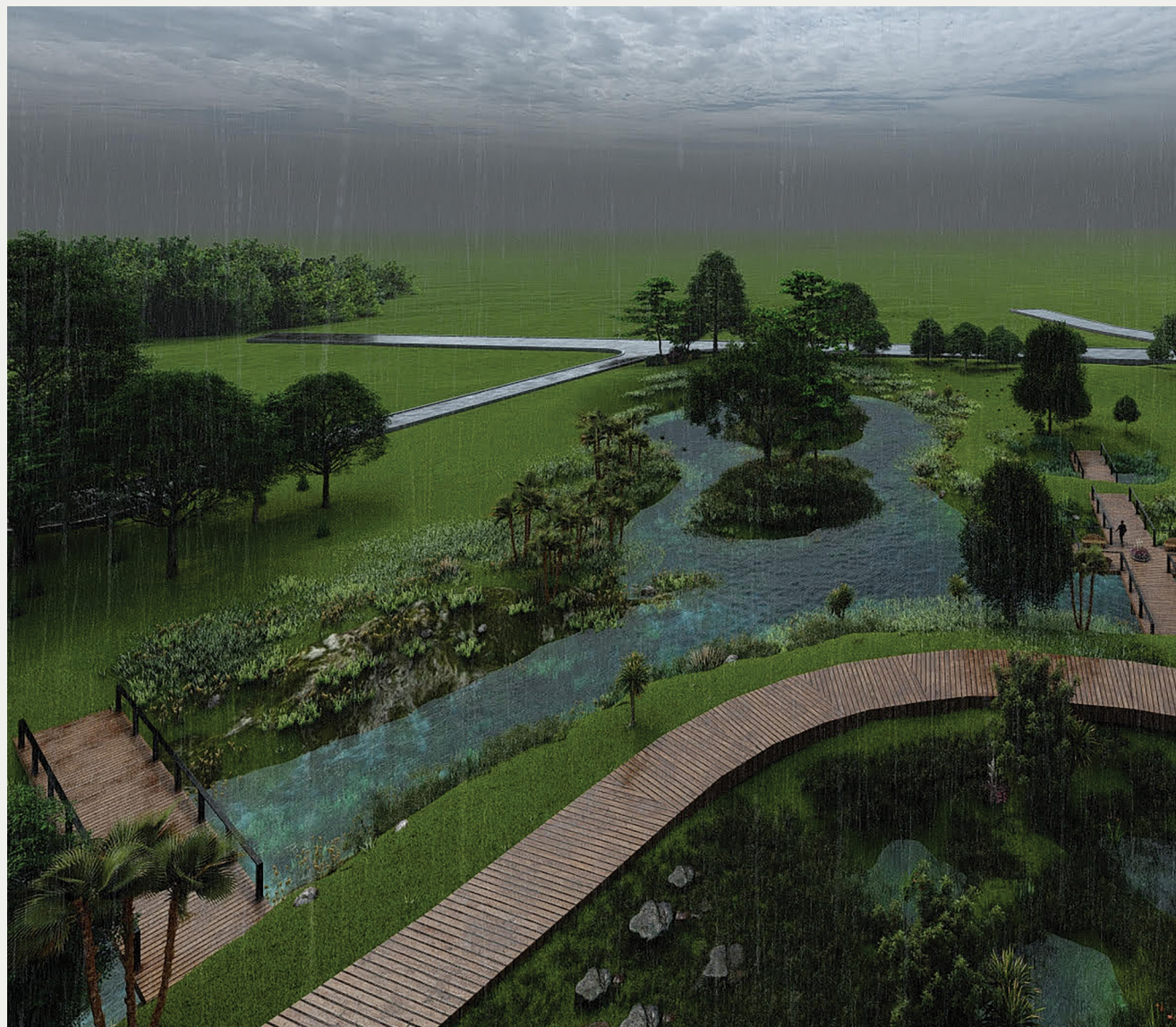
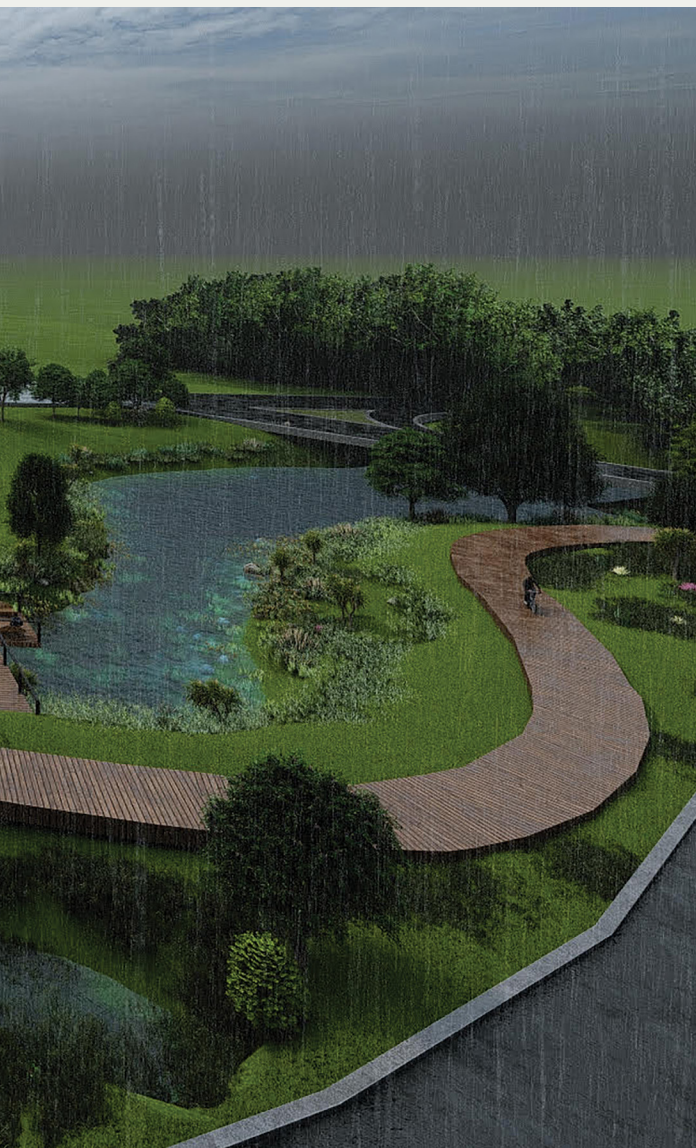


Figure 2. Māngere flood retention pond. Image: Bachelor of Landscape Architecture student Catherine Correia



working with community groups and schools to raise awareness of our unique variety of shorebirds and their threats.

Trina has been monitoring the distribution of birds and habitat use on Te Atatū Peninsula and Central Waitematā for many years as part of the National Wader Census and in her work representing the Auckland Branch of Birds New Zealand (The Ornithological Society of New Zealand) in the area. She has identified trends in populations and distribution, which is vital to conservation science; this is action that counts and that requires locals to get intimate with the environment.

Trina worked with students from the University of Auckland's Master of Architecture Timber Tech Studio and their tutor Matt Liggins to ensure a closer relationship between the community and birds. This fruitful collaboration focused on designing bird-monitoring towers for Harbourview-Orangihina Park. Trina says, "I had advocated for bird viewing towers for some time, primarily to monitor birds, as the vegetation was beginning to impede views. They were included in the 2019 Park Masterplan. I pushed for these to also be in the Ecological Restoration Plan so we could facilitate some funding."



Figure 3. After being disturbed by beachgoers at Spinnaker Reserve, a mixed flock of godwits and knots takes to the skies. Photo: Stefan Marks



Figure 4. Student designs for bird-monitoring towers at Harbourview-Orangihina Park. Photo: Trina Smith.

Students were tasked with designing and placing into the landscape timber structures suitable for monitoring wading and wetland birds that could also be utilised for educational purposes. Using primarily timber was challenging, with towers and platform designs ranging from small, intimate and discreet bird hides to tall multi-tiered towers.

Trina is currently involved in a science communication project with Community Waitakere and their Wild About Te Atatū programme. Her local knowledge of bird migration patterns, population trends and disturbance ‘trouble spots’ has been invaluable as the group initiates and donates funds towards a science and art project, The Flock. Information about this project is available on the Pūkoro Mirānda Shorebird Centre website.⁶ Students from Peninsula Primary School and Te Atatū Intermediate School unveiled their painted kuaka flock in November, adjacent to one of the best wading-bird foraging habitats on the

Te Atatū Peninsula, at Spinnaker Reserve, where they will be left out until the birds leave for their breeding grounds in the Northern Hemisphere in March.



Figure 5. A student presents a design for a timber structure suitable for education and monitoring wetland birds. Photo: Trina Smith.

Trina says, “While I enjoy surveying shorebirds to map their distribution and habitat use, we must share that knowledge to allow the community to develop their local knowledge. Shorebirds are easily disturbed by the recreational use of tidal mudflats, beaches, shell banks, salt marshes and coastal pastures. We are already seeing significant recreational pressure on the area’s coastal parks, which will only continue to increase under intensification, so we need investment in the education of shorebird ecology to minimise disturbance events.”

Resilient and Responsible Architecture and Urbanism (RRAU) – Fifth Edition

The School of Architecture is pleased to announce that the fifth edition of the international conference, Resilient and Responsible Architecture and Urbanism (RRAU), will be held at Unitec’s Mt Albert Campus from 19 to 21 April 2023, in collaboration with IEREK – International Experts for Research Enrichment and Knowledge



Figure 6. Kuaka flock in situ on the coastal walkway at Spinnaker Reserve. Photo: Trina Smith.

6 “The Flock,” Pūkoro Mirānda Shorebird Centre, <https://shorebirds.org.nz/the-flock>

Exchange. The conference will feature informative discussions about incorporating resilience in architecture, city, urban and community design among researchers and architects. The call for abstract submissions and registrations is open now until January 2023. As the school is now part of Aotearoa New Zealand's largest tertiary education provider, Te Pūkenga – New Zealand Institute of Skills and Technology, strengthening our international engagement and networks on multiple levels, including research, is more critical than ever. It is also time to invite international scholars back to Aotearoa New Zealand to participate in face-to-face dialogues, share international experiences, and discuss potential solutions to enhance the environmental, social, and economic resilience of our built environments and communities in light of the world's recent experiences with a catastrophic series of natural disasters, epidemics and conflicts, in addition to the intensifying effects of climate change.

Accepted papers will have the chance to be published in the Scopus-indexed *Advances in Science, Technology, and Innovation* book series by Springer. The conference is supported by Tourism New Zealand and Auckland Council – Te Kaunihera o Tāmaki Makaurau.

Information about the conference is available on the conference's official page.⁷



Keep In Touch

We would love to stay in touch, so please respond to this email and let me know if your details have changed.

Mā te wā,
Hamish and the team
School of Architecture



Unitec Institute of Technology – part of Te Pūkenga
Te Whare Wānanga o Wairaka
Unitec.ac.nz

Conclusion

The e-newsletter provides an invaluable means for sharing and manifesting the vision of our school, developing the highest standards of design and scholarship, and producing accomplished and highly motivated graduates who can create inspiring architecture, landscape architecture and interior design. To this end, the newsletter provides a forum for debate and learning for students, staff and the profession within and beyond the campus. It fosters research in diverse critical, professional and technological areas, contributing to the local and global discourse in architecture, landscape architecture, interior design and education. It encourages diversity in the staff and student bodies and the school's educational options. It also fosters relationships with other institutes through travel and participation in national and overseas education experiences.⁸

The newsletter will resume a routine of spring and winter publication in 2023. The editor looks forward to sharing stories and connecting people.

⁷ IEREK Research and Knowledge Enrichment, Resilient and Responsible Architecture and Urbanism Conference (5th International), April 19 – Apr 21, 2023, <https://www.ierek.com/events/resilient-and-responsible-architecture-and-urbanism-rrau-5th-edition>

⁸ "Programme Document: Bachelor of Architectural Studies (BAS), October 2007; Updated Programme Document Ver:3.2 [June 2021]." Unitec – Te Pūkenga.

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Asylum 2022 intends to refine and encompass our initial ideas of evolution and identity, which fuse to derive the design intention of metamorphosis. We define metamorphosis as the collective and natural transformation from a foundational understanding to a wholly reimagined one through stages of development. Metamorphosis can take place throughout life, but is immediately apparent when completing tertiary education. Metamorphosis can, therefore, relate to the processes involved with the progressive education at Unitec's School of Architecture and the evolution of personal identity throughout. Such growth breaks down into an organic cellular form, which represents the process both in a biological and a spiritual sense. Metamorphosis emphasises the journey undertaken by a student within the School of Architecture and is represented this year through the conception to production of Asylum 2022. Organic forms represent sustained growth, while strict geometry grounds principles and morals. Demonstrated through Asylum 2022, a reader can experience the maturation and evolution underpinning students and their projects throughout the year.

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