scope
Contemporary Research Topics

Art & Design 27: Architecture

August 2024

Art & Design 27: Architecture

(special issue)

https://doi.org/10.34074/scop.1027

Published by Otago Polytechnic Press.

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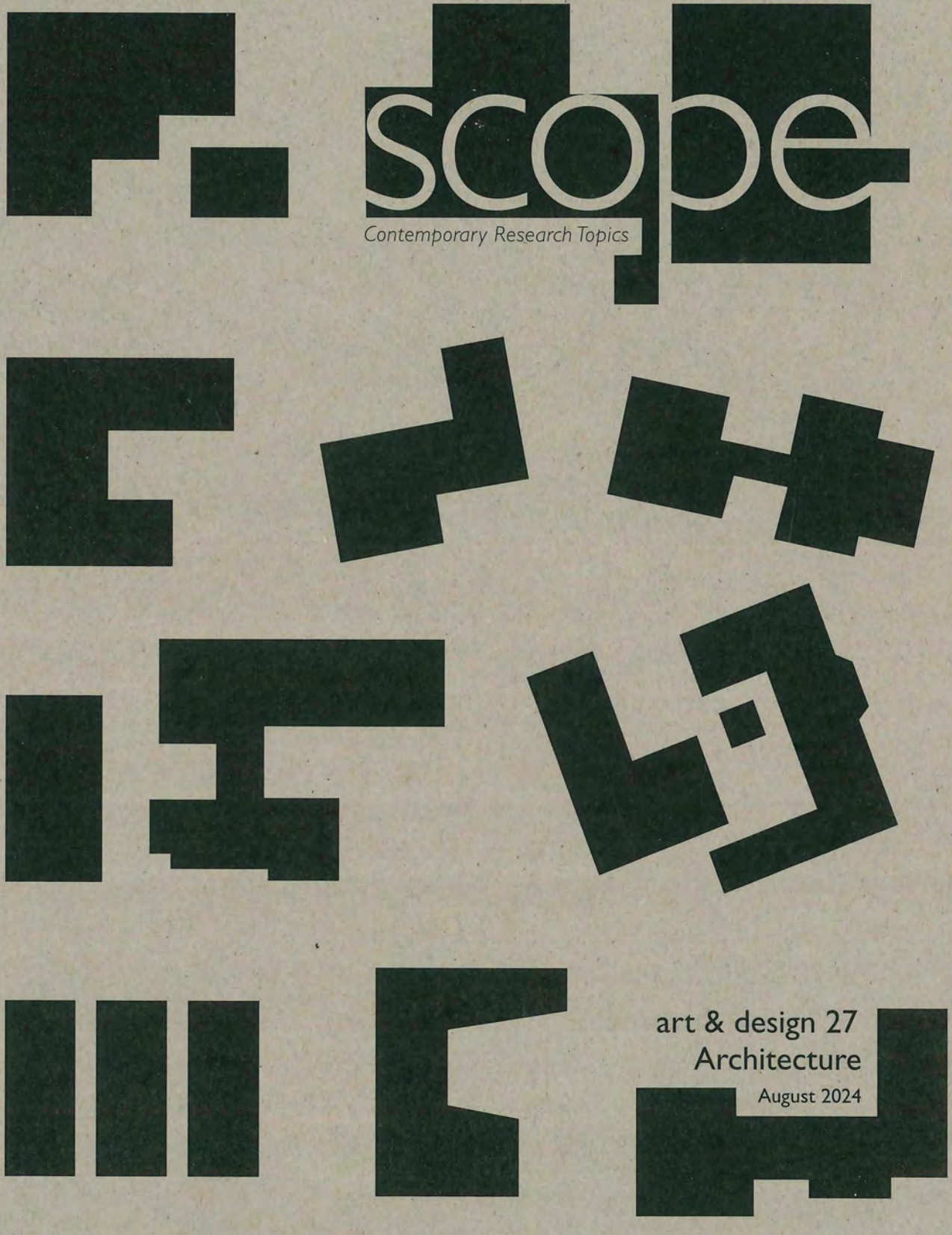
Contemporary Research Topics



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Scope: Contemporary Research Topics (Art & Design) Architecture Special Issue is peer-reviewed and published annually by ***Scope: Contemporary Research Topics***, Otago Polytechnic Press.

The series *Scope (Art & Design)* aims to engage discussion on contemporary research in the visual arts and design. It is concerned with views and critical debates surrounding issues of practice, theory, history and their relationships as manifested through the visual and related arts and activities, such as sound, performance, curation, tactile and immersive environments, digital scapes and methodological considerations. Within Aotearoa/New Zealand and its Pacific neighbours as a backdrop, but not its only stage, *Scope (Art & Design)* seeks to address the matters which concern contemporary artists and arts enquirers in their environments of practice.

EBSCO Database: *Scope: Contemporary Research Topics (Art & Design)* is catalogued on the EBSCO Database in recognition of academic quality and alignment with international peer review processes.

An online version of the journal is available free at https://thescopes.org/journal/
ISSN (for hardcopy version): 1177-5653;
ISSN (for online version): 1177-5661.

August 2024

Copy Editing: Paul Sorrell

Design & Typesetting: Joanna Wernham

Cover & Designer's Pages: Gilbert May @ GE/STUDIO

Printing: General Editions Studio. Cover printed on Neenah Evergreen Environment Concrete 270gsm recycled cardstock. 'Reflections' pages printed on Neenah Evergreen Environment Concrete 104gsm recycled cardstock. Remaining pages printed on New Era Natural 100gsm. Printed and bound at GE/STUDIO using carbon zero electricity. Residual embodied and downstream carbon emissions offset with the Carbon Neutral NZ Trust.

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https://doi.org/10.34074/scop.1027022

THIS IS ARCHITECTURE, BEYOND THE GLOSS

col Fay and Sarah McCallum

Defined by accelerating technological advancements, the aftermath of a global pandemic, widening wealth disparities, and urgent climate imperatives, the field of architecture finds itself at a crossroads of adaptation and innovation. This special issue of *Scope Art & Design 27: Our Built Environment* seeks to unravel the interplay of these transformative forces, examining how contemporary architectural practices respond to and shape our landscapes, structures, and theoretical frameworks. At the heart of this issue lies an examination of flux—a condition emblematic of our time. Within this dynamic context, architects, designers, and theorists are tasked not only with envisioning physical spaces but also with conceptualizing frameworks that respond sensitively to diverse cultural contexts and ecological imperatives.

This inaugural architecture edition comprises a range of contributions that challenge traditional disciplinary boundaries, fostering a dialogue that is broad and diverse in nature. By embracing this multi-disciplinary approach, we aim to highlight the interconnectedness of architectural practice with wider systems of knowledge production and societal change.

SYSTEMS: SPATIAL JUSTICE AND THE POLITICS OF ARCHITECTURE

This section delves into the role of architecture as a mediatory between politics, policy, and people. In particular, the authors focus on socio-economic disparities and the right to adequate housing, as aligned to the United Nations' 2030 Agenda for Sustainable Development.[1] Angela Foster unpacks Aotearoa New Zealand's housing crisis as a reaction to changing policies over the last forty years, posing a challenge to our government to ensure future legislative and policy changes uphold their obligation to protect the right to housing for all citizens. From a ground-up perspective, Campbell McNeill identifies the complex negotiation of the everyday struggle to maintain a quality of 'sheltering', and the matrices of compound and tightly interwoven mechanisms that create restrictions on the ability of architects to *do better*.

ASSEMBLAGES: THE CRAFT, AND CRAFTING, OF SPACE

Technology: "science of craft", from Greek τέχνη, techne, "art, skill, cunning of hand"; and - λόγια, - logia.[2]

Architecture, as praxis, facilitates the crafting of space. Articles in the assemblages section explore this notion from a diverse range of perspectives, evaluating the tectonics, craft/ing, and performance of architecture. Fronting this dialogue, Tobias Danielmeier traces the underpinning principles of tectonics as mechanisms of assemblage, with foci on both the science and the poetics of constructing space. Blair Isbister reflects on his teaching practice, discussing pedagogical approaches for teaching tectonics (technology) and how these mediate between workforce expectations and educational contexts. Transitioning from the craft, to the crafting of space, Nathalie Bäckström and Stella Lange consider the construct of domestic architecture, questioning inequalities in the programming of spaces for leisure which are heavily informed by gendered sensibilities. Expanding on the politics of gender, Gina Hochstein delves into the intersection of craft practices and the subjectivity of architecture, namely a theoretical lens linking body, architecture and object.

REFLECTIONS: ARCHITECTURE AS A REFLEXIVE PROCESS

This section is a collation of individual musings from a range of practitioners, makers, and thinkers at various stages in their careers. These personal narratives reflect the contributors' creative agility in our changing environment, and the ways in which this manifests through architecture as an active process. Themes explored range from concepts of identity; the role of facilitation as a two-way relationship; grappling with the uncertainties of how to marry a theoretical ideology with the realities of architectural practice; considering the linkages between place and architecture through a phenomenological lens; and an exploration of materiality as a visceral condition of architecture.

ENCOUNTERS: [DIS]LOCATED IDENTITIES

Architecture, as a (physical or theoretical) construct, responds to social, cultural, political and environmental conditions that define a particular time and place. Voices represented here are linked through personal investigations into what identity means for both self and the collective, and how this is manifested through relationships with architectural form. The dialogue between cousins Karyn and Heni Paringatai tease out nuances of assumed identity, obligation, dislocation and re-connection. The concept of home as an embodied experience is expressed through a comparative recording of two homes with vastly different haptic qualities, as Leana Scheffer questions the concept of transplanted identity and rootedness. Mark Baskett reflects on his 2021 artwork *The Neighbourhood* as an account of the cumulative traces of one specific location, acknowledging the multi-layered evidence of memory, contamination, territory and culture that are embedded in the landscape over time. This concept of time is picked up in Georgia Pope's article which considers the temporal nature of architecture as a living entity, through a theoretical review of the symbiotic connection between land, architecture and culture. Delving deeper into the context of collective identity, Meaghan Christensen examines what biculturalism means for Aotearoa New Zealand in a contemporary sense, and how it may be considered as a framework for 'togethering' through our built environment.

INTERVENTIONS: DOING WITH A CAPITAL D

The final section provides four examples of the transformational potential of architecture to enact change. Alison Breese recounts, from a local perspective, the implied morality of concealed spaces and notions of safety, gender and inequality. These three themes are also interrogated through Lisa Pike's discussion on a recently developed toolbox for supporting architects in the design of safer public spaces. Devon Sanson and Natalie Allen identify the value of a participatory process in elevating engagement and action. They report on the Uptown Futures project, which engaged architecture students from across Auckland in the active 'visioning' of their community. Community visioning is also explored in Irene Boles' article on the contribution of grassroots movements in post-quake Ōtautahi Christchurch. These interventions range from gap-filler installations aimed at re-centralising the city, through to permanent urban artworks and community-driven policy development.

Reflecting on this first architecture-themed issue, we acknowledge and celebrate the diversity presented in these pages. We are proud to re-present such a broad and authentic range of voices that transcend the often-portrayed messaging that architecture is defined through exclusivity and status. We hope this issue serves as a catalyst for continued, transformative and real dialogue within the field of architecture and beyond.

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https://doi.org/10.34074/scop.1027001

A PLACE TO CALL HOME

Angela Foster

> *A home is not a mere transient shelter: its essence lies in its permanence, in its capacity for accretion and solidification, in its quality of representing, in all its details, the personalities of the people who live in it.*
>
> Henry L Mencken, Prejudices: Fifth Series[1]

For citizens, an effective social contract between a government and its people is integral in generating solidarity and providing a platform for economic progress. The social, economic and political divide increases when a political system falters. In New Zealand, like many Western democracies, trust in public institutions to provide social and economic security is decreasing. While the issue is multifaceted, the lack of affordable housing lies at its core. It is a problem New Zealand has inherited as a result of small political moves over many generations. Affected by policy, regulation and economics, society's most fragile structure ultimately influences every facet of individual well-being. Having a place to dwell affects many aspects of life, providing security, stability and community. When housing strategies break down, so too does society.

In 2024, New Zealand is facing these issues. Commonly reported as the "housing crisis," increased housing and rental costs have resulted in a shortage of affordable housing stock and a rise in homelessness. This, coupled with a spike in the overall cost of living, has left its citizens feeling overwhelmed that the quality of life for many is declining, reinforced by the rise in property crimes, thefts and burglaries.[2]

While this may feel like a recent dilemma, it results from incremental policy changes that began in the 1980s. Policies are now entirely focused on housing value, financial controls and resource regulation, gearing home value solely around asset appreciation and wealth creation. The tax system, finance sector and monetary and social policy have all been adjusted over time and, along with them, societal expectations. This has created a situation where house and home ownership as a value proposition are privileged above the social context of a safe and secure place to reside. The media reinforces this perspective, reporting on the positive effects of increased property prices on personal wealth. While wealth increases for the few, land's social value diminishes. The result is a cycle of gentrification, and those who can no longer afford to buy or rent are displaced.[3]

THE HOUSING CRISIS

The phrase "housing crisis" can be considered descriptive of New Zealand's societal condition. While central government looks to implement policy to repair the problem, we must understand the contributing factors to identify the root cause. If we fail to recognise the circumstances leading to where we are, any solutions could become a mere band aid. The Kiwi dream of home ownership may persist into the next decade, along with the social disruption it causes.

If we look back at the significant policy changes in the 1980s, we find that the Labour government of 1984 took office at a time when economic conditions were dire. As a result, it scrutinised services it no longer saw as core state business. Affordable housing was seen as one of the main areas for reform to cut back government spending. Treasury provided advice that the private sector better addressed rental housing and loan schemes for housing. Presented as a single issue, the Labour government saw the sale of existing state housing as having the ability to refurbish the government books and thus began selling off its housing assets. The following National government continued this process in the 1990s. While there has been an increase in the construction of new houses over the last decade, the number of new state houses is nowhere near the number produced in the 1970s.[4]

The consequence was that both Labour and National governments, over the coming years, looked to establish other methods for those in need, such as housing and rental income supplements. Inspired by the 'housing voucher' system established in the United States, they focused on the private sector providing social housing, and rental subsidies were applied. However, this system invites discrimination as landlords do not necessarily see those on welfare as ideal tenants.[5] The result is that many beneficiaries can often only obtain substandard housing. While also being subjected to private sector market rents, they face the added burden of claiming back additional costs through a bureaucratic system. The extent to which assistance was required was underestimated and, consequently, significant budgetary investment in social welfare benefits was required. In reality, however, targeting social services and assistance had the opposite effect on family finances. Eligibility targets for welfare meant that poverty and racial and gender inequality grew as many faced obstacles in applying for and seeking that assistance.[6] The result was that inequity increased with unaffordable housing and the falling home ownership rate. In 2022, New Zealand had one of the highest rates of inequality in the OECD.[7]

Policy changes meant that home ownership began declining, although not uniformly, with 1.4 million people living in rental accommodation according to the 2018 census. As in other statistical reports, Pasifika and Māori were over-represented in the declining home ownership rate, falling below 50 percent compared with other demographics at 70-80 percent.[8] A further 100,000 people experienced homelessness.[9] Today, alongside falling home ownership, property crime, theft and burglary rates are all rising. The incidence of these offences on a per capita basis overlap with areas characterised by lower home ownership rates and issues with rental affordability.[10] While a direct correlation has not been established, much of the recent literature on home ownership points to the importance of secure tenure for the family unit to avoid the breakdown of the community and the surrounding social structures.

THE IMPORTANCE OF HOME

The *Review of Housing Statistics Report 2009*[11] identified the importance of a stable home. A home provides certainty, security and a feeling of control over one's environment. Stability enables social links to develop and engenders a sense of community. These connections take time to foster and grow. Community is the cornerstone of our society as it generates social responsibility, creating an environment where individuals can develop their identity within a group. The 2018 General Social Survey[12] asked respondents to document their connection to their neighbourhood and the value they placed on these relationships. It found that those who owned their home placed much more value on connections with the surrounding community than those who did not.

In New Zealand, rental accommodation is associated with a transient lifestyle and, while considered acceptable for those establishing careers and looking for a lifestyle, the same trajectory is not expected of the family unit. The rental culture in New Zealand is not set up for families in that tenures are short; typically, leases are for up to one year. New Zealand's Residential Tenancies Act, while protecting the quality of accommodation and tenants' rights during their tenure, has no parameters around a continued or perpetual lease that enables long-term inhabitation. As a result, few tenancies are occupied for more than five years.

The literature on the transient nature of renting associates the corresponding lack of security and permanence with poor health and well-being.[13] The residential mobility of young families is higher among those in rental accommodation. Research results from the Growing up in New Zealand study[14] found that Māori more subject to frequent moves than those identifying as European.

Renting comes with more affordability issues than home ownership. The costs associated with home ownership are reasonably stable and predictable, depending on mortgage rate tenure and Reserve Bank fluctuations in interest rates. Renting, however, is subject to the immediate market conditions and generally increases in line with wages; in some areas, such as Wellington and Auckland, rent increases typically outstrip wage rises. Supply and demand can affect pricing directly, with particular times of the year often determining rental values. As a result, renters often experience higher costs, with average spending on housing being 30 percent of their total income, compared to 20 percent for homeowners.[15]

Social costs can be high, too. When households struggle to meet immediate housing costs, living conditions deteriorate and can have an adverse effect on access to education and health. In particularly dire situations, this can lead to people living in transient accommodation and often to homelessness. This lack of stability affects social cohesion and, ultimately, leads to the breakdown of the social fabric, where well-being is affected, and the societal construct deteriorates.

FINANCE SECTOR POLICY

Housing is increasingly viewed as an investment rather than a home. Households have become a frontier of capital accumulation, not just as producers and consumers but also as financial traders.[16]

Another contributor to the widening gap between demographics can be directly linked to changes in finance sector policy. Before 1980, home loans could be obtained through a state-run mortgage facility, enabling those who did not fit the private sector qualifying criteria to obtain some form of assistance to buy a home. These loan schemes were disestablished alongside the privatisation of PostBank and the Bank of New Zealand. Foreign-based financial institutions were also introduced to the market, allowing for new partners in the banking industry as Australian-owned banks began to invest in New Zealand. Along with a shareholder-focused investment strategy came the need to de-risk portfolios. A finance strategy was followed where much bank lending was targeted towards residential property, with residential mortgage rates accounting for 68.9 percent of ASB lending, 67.1 percent of ANZ, 51.6 percent of BNZ and 62.3 percent of Westpac lending.[17] The high proportion of residential lending had a twofold impact: it limited business finance and assisted in elevating the residential property market, encouraged by the banks, ultimately increasing their profitability.

An under-regulated mortgage lending system now fuelled the New Zealand housing market, coupled with the tax-free capital gains environment, meaning that property speculators cashed in on rental properties, and the home as an asset grew in value. Eligibility criteria also meant that mortgage credit became the purview of the wealthy, turning the property market into an investment strategy for many. From a bank's risk perspective, standalone houses and their associated land were also seen as a less risky proposition, driving up prices, while apartment prices remained relatively constant. Coupled with the lack of affordable rental development by the state, the investment property market drove up house prices. This transformed the notion of home ownership into a polarising social environment of renters and owners.

LAND-USE POLICY

For a nation once considered an egalitarian society, the investment market has increasingly drawn New Zealanders towards an individualistic, rights-based environment.[18] As home ownership became the purview of the privileged, protecting their individual property rights became necessary, and the NIMBY (not in my backyard) disposition was fostered. This change in attitude was strengthened by planning policy when the RMA (Resource Management Act) was introduced in 1991. It gave considerable weight to individual owners and legitimised avenues for objection to neighbouring developments based on the adverse effects of potential land use.

While the RMA replaced more than 50 existing laws relating to town planning and resource management, and initially brought numerous benefits in the area of natural environment compliance, legislation around the built environment was largely ignored. The following decades and numerous amendments to the RMA led to increased bureaucracy and poorly managed development, leading to "increasing difficulty in providing affordable housing, worsening traffic congestion, greater pollution and reduced productivity." [19]

Although the apartment market was a cheaper investment option, development has been slow to keep up with demand. The RMA's objection process limited the ability to intensify in both urban and suburban environments when the adverse effects of any development were assessed, rather than the project's contribution to the housing stock. According to Rachelle Alterman, "By impacting the use of land and space, planning laws and development control can deeply influence the existing sociocultural and economic order. They may have dramatic implications on personal health and safety, housing prices, employment opportunities, family life, personal time (spent on travel), and accessibility to public services."[20] Going further, John Mangin coined the term "the new exclusionary zoning" – "[t]he anti-development orientation of certain cities is turning them into preserves for the wealthy as housing costs increase beyond what lower-income families can afford to pay."[21] Mangin describes how the stringency applied to zoning, historic preservation and environmental regulations and the rise in veto processes have combined to reduce both the quality and quantity of development proposals.

Kāinga Ora, a government-run housing agency recently mandated to increase the housing stock, is also running into resistance from a privileged few who have the means to use the Resource Management Act against proposed developments. Millwater[22] and Halwell[23] are two housing projects recently rejected by their neighbourhoods and are symptomatic of the lack of moral discourse around the issue of housing. Those blocking Kāinga Ora developments in their suburbs forget that between the early 1900s and the 1980s public housing initiatives housed thousands of families under loan schemes, public–private partnerships and public housing schemes dating back to the turn of the nineteenth century.[24] These policies kick-started homeownership for many New Zealanders, in turn enabling stable communities to develop and future generations to thrive.

Housing has become the new focus in other parts of the world. The Centre for Cities recently identified Japan[25] as very successful in supplying affordable housing. Simple planning laws that encourage development in response to need and favourable property taxes are part of its approach. Furthermore, collaborative housing strategies developed in northern European countries like Holland, Denmark and Germany are also finding favour and becoming an international movement in cities in the US, England and Australia.[26]

New Zealand's 2022 Medium Density Residential Standard policy represents an attempt to introduce new strategies. It is acknowledged that developments adding density to existing neighbourhoods can provide a much-needed intergenerational housing model to carry us into the next century. Such developments can benefit from existing infrastructure and create a strong sense of community, re-establishing the social construct and stabilising the construct of home. However, as planners are in the initial stages of incorporating these strategies into local District Plans, there is a need to know more about their effectiveness in increasing the housing stock.

CONCLUSION

Home is the "crucible of our modern society."[27]

Mobility that interferes with children's academic performance is, at its core, a housing problem. To that end, housing policy is education policy.[28]

There is a desperate need in New Zealand for equal opportunities for people to reside in quality, affordable, life-long housing. Permanence offers the opportunity for self-governance, the development of a broader whanau culture and the growth of a community culture.[29] Home is an expression of identity, where privacy and the familiar give rise to stability. The loss of the familiar can bring about the loss of identity, interrupting the ability to relate to a community and, ultimately, leading to a breakdown in security, which ultimately erodes cultural and social frameworks.[30] Family is an essential aspect of society and, without a home for a family to operate from, the next generation is negatively affected by the resulting instability and displacement.

The process corresponding to the socialisation of children is one of repeated transactions within networks of social relations, as discussed above. These networks contain economic and legal relations from which certain economic benefits and legal rights are derived. Without (domestic) privacy, such networks would dissolve, and the consequence would be a loss of significant sociability leading to homelessness and vagrancy, lawlessness and, ultimately, totalitarianism.[31]

Having one's own home is the predominant mechanism for creating stability. It fosters upward mobility[32] and engenders community, collective responsibility and prosperity. Having a home or base of operations is critical to human flourishing. Home is not just a physical space. Situated at the centre of family life, it is a place for social and personal development; for society to operate effectively, there is an inherent need for a secure environment that one can call home.[33]

Home is the social glue that enables culture to develop, and the permanence that comes with home enables the family unit to prosper. For these reasons, our political and social policymakers must recognise the ramifications of the housing crisis and the benefits generated by focusing on providing shelter. Legislation must protect the basic need to house New Zealand's population and establish ways that society can meet the nation's housing needs. Legislation must be framed so as not to draw more members of society into a poverty cycle.

It has been 40 years since New Zealand underwent radical housing, environmental and financial policy reform, and it has had a resounding effect on the culture, health and well-being of the nation. This paper touches on some of the contributing factors and the complex issues surrounding housing affordability to highlight the societal concerns that run parallel with the "housing crisis." Just as it has been a slow process to dismantle New Zealand's existing housing policy framework, it will require long-term, focussed objectives to narrow the social, economic and political divides that this process has created.

Angela Foster is a director of foster+melville Architects, specialising in commercial, hospitality, and multi-residential developments across Auckland and Wellington. Having been involved in the industry for over 35 years Angela recently expanded her practice to include urban design, presenting at the City and Complexity Conference, London, and subsequently publishing her paper in *The Complex City: Social and Built Approaches and Methods* (Vernon Press). Angela went on to complete a MArch (Urban) in 2022 and is currently a regular contributor and advocate on urban issues locally. Angela was recently made a Fellow of Te Kāhui Whaihanga New Zealand Institute of Architects (FNZIA).

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https://doi.org/10.34074/scop.1027021

FUTURE EQUITY: DUNEDIN HOUSING

Campbell McNeill

Ōtepoti Dunedin, like many cities across the motu and overseas, has a housing issue. It is not a unique situation, but does take on local nuances which require local solutions. Te Kāhui Tika Tangata, the Human Rights Commission, has identified the inequities present in the Aotearoa New Zealand housing system and has aligned their inquiry, *Right to a Decent Home,* with the seven housing principles outlined by the United Nations.[1] This paper will review four of these principles – habitability, accessibility, security of tenure and affordability[2] – and discuss the role that Community Land Trusts (CLTs) might play as an alternative supply model aimed at addressing inequities within the housing system.

THE PRINCIPLES

Habitability

To address habitability, we should expect that houses are warm, dry and healthy. However, prior to legislative change in 1978 which updated insulation standards, fewer than 20 percent of houses in Aotearoa New Zealand had ceiling and wall insulation. Considering that a significant portion of Ōtepoti Dunedin's existing housing stock was constructed prior to 1978, many households could be experiencing cold and damp living environments. Statistically, these conditions tend to affect Māori and Pacifica ethnicities disproportionally.[3]

Accessibility

Accessible housing meets all peoples' needs without discrimination. Although this principle includes affordability (see below), accessibility is commonly aligned with the principles of Universal Design, an element of inclusive design ideology that addresses issues of disability and 'ageing in place' strategies.[4] This is particularly relevant to Ōtepoti Dunedin as the over-65 population is the only group projected to significantly increase over the coming decades, with other age brackets either stabilised or gradually declining,[5] evidencing both an immediate and growing need for housing and cities which are accessible to all.

Security of tenure

This principle is defined by the ability of people to 'put down roots', integrating into communities and having the choice of whether to stay or move – whether owning or renting a house. Security of tenure enhances wellbeing, as well as removing barriers to accessing basic necessities such as work and education. In Aotearoa New Zealand, security of tenure is significantly worse for those unable to own their own house, with renters moving house an average of 5.9 times between 2013 and 2018, compared to house owners moving only 0.7 times in the same period.[6] Lack of security of tenure, coupled with declining rates of house ownership, contributes to the destabilisation of communities.

Affordability

Affordability can be measured in several ways. The most common is through overburden rates, which measure gross household income against the cost of accessing a house – whether renting or by mortgage repayments. A widely accepted threshold for determining affordability is whether household costs are 30 percent or less of household income after tax. This measurement exposes the imbalance between wage inflation and housing cost inflation when tracking changes over time. In Ōtepoti Dunedin, mean household income inflation has seen a 38 percent increase over the decade from March 2013, whereas house value and rental price averages have increased by 117 percent and 68 percent respectively over the same period. This trend (which is not unique to Ōtepoti Dunedin) shows a widening gap between the cost of accessing housing and the ability to pay for it, locking in a grim financial future for many.

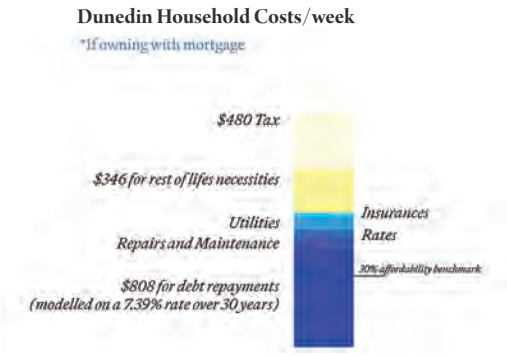

Figure 1. Diagram:
Actual Household Costs /week in Dunedin
based on average house prices if owning with mortgage.

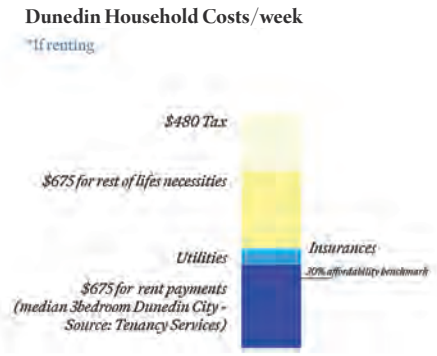

Figure 2. Diagram:
Actual Household Costs /week in Dunedin
based on average rental costs.

Reviewing the overburden rate in relation to the current mean household income in Ōtepoti Dunedin of $101,010 per annum (gross), on a weekly basis a household would pay around $480 in tax and $577 in rents or debt repayments, in addition to repairs and maintenance, insurance, rates and utilities.[7] This leaves approximately $865 for all of life's other necessities (food, education, travel, medical bills, etc.)

Based on statistical evidence as illustrated through the two graphs in Figures 1 and 2, it is clear that the average household in Ōtepoti Dunedin, and by extension Aotearoa New Zealand, is overburdened. Such low margins may drive households to turn off heating, tighten their grocery spend and avoid other necessary services. Although the evidence of household costs shows that the rental matrix has more marginal potential, this fails to consider security of tenure, where a household may find itself relocating more often, resulting in shifting economics around transit costs as well as inconsistency in access to utilities, education and work.

There are several historical and current factors impacting the affordability of housing in Aotearoa. In 2020, UN Special Rapporteur for housing, Leilani Farha, visited Aotearoa New Zealand to investigate what the UN described as the country's housing crisis. In Farha's view, a leading cause of this crisis was the shift of social housing into the private sector and a speculative housing market which seeks profits over an adequate and affordable housing supply.[8]

Looking beyond the effects of those who aggressively seek to turn a profit on the housing market, the system is inherently set up to treat housing as an asset class. When most people need to access a mortgage to purchase a house on a freehold title, it creates an uncomfortable relationship between debt liability and the desire for the housing market to keep on increasing in value to avoid a negative equity scenario – something to be avoided at all costs.

This mechanism is explained at a systemic level by Elham Bahmanteymouri, who refers to the "commodification of the problem," whereby scarcity of affordable housing plays a role in inflating asset value. Bahmanteymouri describes this as a hegemonic condition,[9] suggesting that the market is inherently flawed in that no property investor or developer will ever supply enough housing to meet demand due to the destabilising effect this would have on asset value and its relationship with debt. Furthermore, it is not just the house which rises in value; the land it sits on also escalates, based on infrastructure and planning policy constraints. More broadly, as Figure 3 shows, supply and demand are out of balance when comparing the growth in population and new dwellings,[10] a situation which further inflates housing prices.[11]

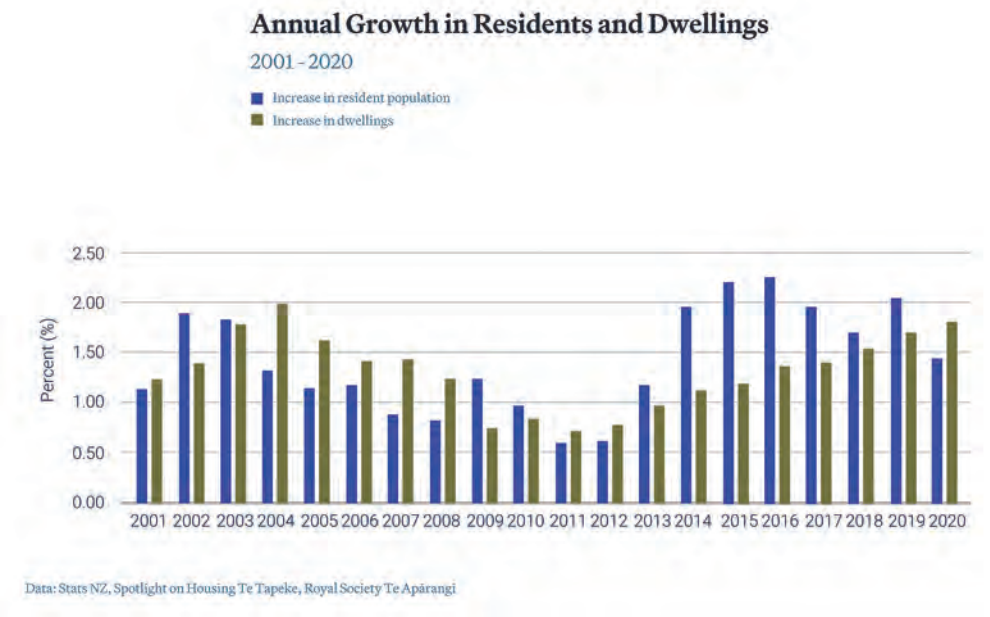

Figure 3. Diagram: NZ Population Growth and Growth in Residential Dwellings.

RESPONDING TO THE CHALLENGE

Various policies, subsidies and supply models have been developed in Aotearoa New Zealand in an attempt to respond to this dilemma. Models of supply are typically characterised as a binary between the private market (rental or ownership) and social or community housing. Looking more widely, there are a variety of existing development models which sit along a housing continuum, offering more equitable and sustainable outcomes through utilising alternative governance, ownership and management solutions.[12]

Alternative supply models are gaining traction in Aotearoa New Zealand, including cooperatives,[13] co-housing,[14] papakāinga[15] and Community Land Trusts (CLTs). CLTs are non-profit organisations that manage land on behalf of a community, allowing residents to purchase houses on the land in a leasehold arrangement. Importantly, the land is held in trust, ensuring that housing remains affordable over time because the cost of houses is not affected by rising land prices. It is important to note that CLTs, and other alternative supply models, are not intended to replace the traditional housing supply model whereby people build equity through acquiring housing assets. Rather, they sit in parallel, easing the pressures of the market by providing a diversity of options that are cost-controlled into the future, and building community resilience through the development of sustainable housing infrastructure.

Supply and maintenance of habitable standards for housing in a CLT's portfolio can occur in a variety of ways. In new developments, CLTs can ensure quality through the acquisition of land suitable for housing. Policy can be built into the organisational structure of a Trust to pursue best-practice building solutions, ensuring healthy, energy-efficient houses with minimum spatial requirements. When considering existing housing, CLTs can embark on renovation and upgrade programmes and require residents to participate in maintenance initiatives, thus building a strong educational component into a Trust's relationship with its community and encouraging self-management and custodianship.

Accessibility issues can be met through the utilisation of Universal Design standards (such as the Lifemark Design Standards), and achieving a fit-for-purpose outcome for residents can emerge from understanding the demands of a local area, as well as working in partnership with residents to establish a needs-based assessment on a project-by-project basis.

The remaining two principles – security of tenure and affordability – are where CLTs excel. By separating land ownership from housing, CLTs ensure that homeowners have a secure place to live, even if they face financial difficulties. The leasehold model removes the capital cost associated with land and establishes a very long-term leasehold arrangement. For example, the Kāinga Tuatahi Papakāinga model pioneered by Ngāti Whātua Ōrākei has a 150-year leasehold arrangement.[16] This approach encourages long-term community resilience and supports residents in building connections within their neighbourhoods.

The graph in Figure 4 presents a comparative analysis of the cost of delivering a three-bedroom house and land package[17] on the outskirts of Ōtepoti Dunedin in the traditional market against the CLT model.

Comparing the two models, in the first place the CLT house is cheaper due to the not-for-profit nature of the CLT entity. Instead of a typical developer's margin, a Trust only needs to retain a small percentage of capital to recycle into additional housing. In terms of marketing, housing delivery in the CLT model is based on a needs assessment and a waitlist, eliminating the need to promote the property (excluding the cost of a conveyancer to transfer the title). Construction costs can be broadly attributed to the quality of the house, the material and product selection, the simplicity of construction and the mode of delivery. With CLTs committed to exceeding New Zealand Building Code standards, the focus falls on the quantity, and size, of houses being provided. Sensible spatial planning and working with building partners to pursue simple, efficient and economical construction methodologies could bring costs down between 10 and 20 percent.

While regulatory costs are largely identical between the two approaches,[18] consultant costs can be reduced using standardised plans with a geographical focus, resulting in work only needing to be done to site the projects. As already mentioned, leasehold tenure results in a removal of the capital costs associated with the land. This model assumes that the land has been donated to the Trust, and a small margin is shown to represent the cost of leasing. Finally, finance for delivering housing through CLTs can be sourced from Impact Investment Funds[19] (instead of through bank debt), with the benefits of below-market interest rates.

The above comparison demonstrates a nearly 50 percent reduction in cost between the two supply models. While at current market interest rates the CLT model house still fails to meet the 30 percent overburden test, which would require the price to sit at around $335,000, it is accessible to a larger portion of society than the traditional market model house we started with at $980,000 (see figure 4, above).

Depending on the model of tenure adopted, it is clear that affordable housing delivery can be achieved either through the CLT model or through alternative approaches such as shared equity schemes, income-related rental subsidies, government housing delivery funds or inclusionary zoning. Inclusionary zoning is a mechanism whereby local regulation requires new market developers to contribute a percentage of new development in the form of land, finance or housing supply for affordable outcomes.[20] The example considered here is a standalone house on

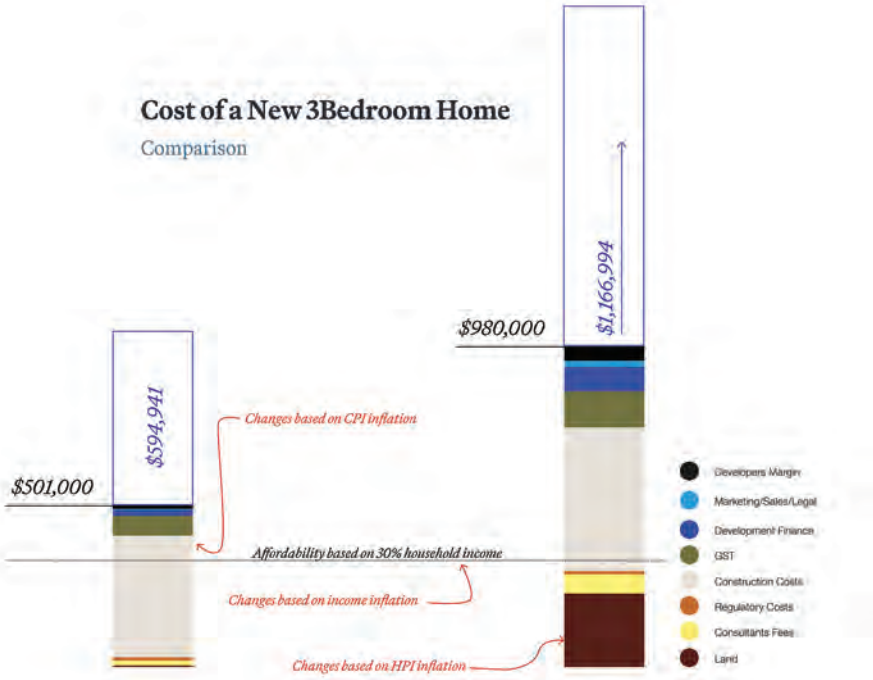

Figure 4. Diagram: Comparison of costs for a New 3bedroom Home from Market and Community Land Trust.

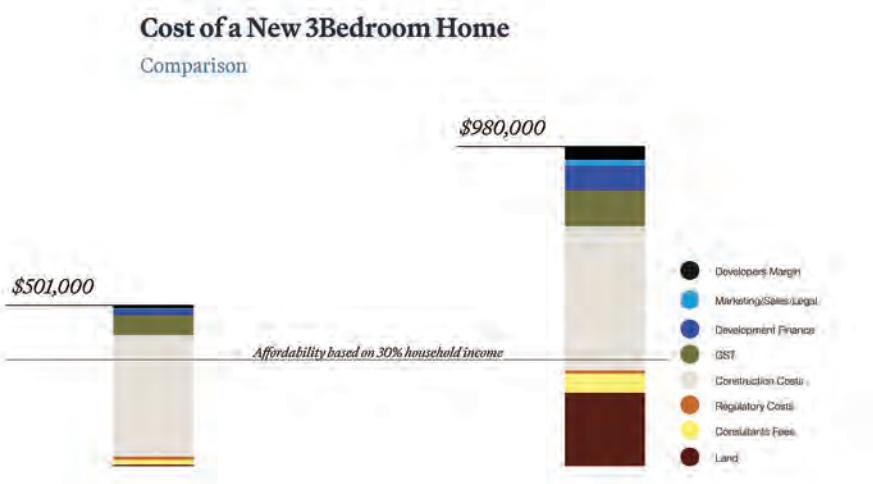

Figure 5. Diagram: Cost Variables Over Time.

the outskirts of Ōtepoti Dunedin. There are benefits in medium to higher density housing where the economy of scale reduces build and infrastructure costs and shares them across a larger number of properties. Adding mortgage costs for a purchaser to access these houses,[21] it is apparent that the true lifecycle cost has a gap which is further exacerbated.

Returning to the context of wage inflation as compared to housing price inflation (HPI) – which stand at 38 percent and 117 percent respectively in the Dunedin area – it's hard to see how wage growth will keep up with market housing prices into the future, based on historical trends. This is where the control of land cost inflation (LCI) is important to the model of a CLT; instead of LCI being uncontrolled, it is anchored to a variable such as the Consumer Price Index (CPI). We see a smaller margin of growth imbalance when comparing wage inflation to CPI inflation, which stood at 4.1 percent and 5.6 percent, respectively, in the year ending September 2023. This result suggests the potential to utilise a mechanism which controls capital gains, giving hope that a housing model anchored to CPI might offer an attainable notion of affordability in perpetuity.

FUTURE EQUITY

CLTs often go beyond the delivery of housing to provide community and commercial developments which respond to the needs of the city where clients reside. They play a crucial role in equitable city-making by providing access to basic amenities; building thriving neighbourhoods which are defined through the participation of the communities they serve; and ensuring a respect for cultural diversity and inclusion while providing fit-for-purpose outcomes. A key aspect of their function is to take private gain out of the economics of property development and replace it with community gain. This is already being played out through initiatives in Aotearoa New Zealand such as the Waikato Community Lands Trust and, from 2023, the Ōtepoti Futures Trust in Ōtepoti Dunedin.

The Ōtepoti Futures Trust has recently begun its journey toward a more equitable city. Evidence of local support for its purpose and goals was seen when the Otago Pioneer Women's Memorial Association gifted its hall in Moray Place to the Trust. This act of generosity underlines the possibility of people driving change within their own communities and gives hope that an increase in housing options, and community assets, is both possible and able to be driven by the specific needs and aspirations of people and place. The health and wellbeing – in the broadest sense of the term – of our communities depends on initiatives such as this.[22]

Campbell McNeill – "I see architecture as an opportunity to deliver better outcomes for cities and meaningful housing at scale. My work crosses practice and academia: designing, developing and facilitating urban developments, whilst also educating the next generation of architectural designers. I know that by working in partnership with others, it's possible to undertake transformational change, and deliver regenerative places for everyone."

Figure 6. Visual of Design for Hall Redevelopment at 362 Moray Place.

1 Te Kāhui Tika Tangata Human Rights Commission, *Right to a Decent Home,* https://tikatangata.org.nz/human-rights-in-aotearoa/right-to-housing (accessed 9 April 2024).

2 Access to services, facilities and infrastructure, access to location and respect for cultural diversity will be discussed throughout the essay.

3 Bin Su and Lian Wu, "Occupants' Health and their Living Conditions of Remote Indigenous Communities in New Zealand." *International Journal of Environmental Research and Public Health,* 17:22 (2020), 8340, doi:10.3390/ijerph17228340; "Stop Building Unhealthy Houses," *Scoop,* 13 May 2021, https://www.scoop.co.nz/stories/GE2105/S00064/stop-building-unhealthy-houses.htm; University of Otago, Wellington, "Damp Homes Play Big Part in Respiratory Infections," *Health Research Council of New Zealand,* last modified 15 August 2019, https://www.hrc.govt.nz/news-and-events/damp-houses-play-big-part-respiratory-infections.

4 Universal Design is used to shape environments can be accessed, understood and used to the greatest extent possible by all people regardless of age, size, ability or disability.

5 Dunedin City Council, *Significant Forecasting Assumptions | Matapae Ōhaka Nui,* last modified 3 April 2023, https://www.dunedin.govt.nz/council/annual-and-long-term-plans/10-year-plan-2021-2031/section-4/significant-forecasting-assumptions; DCC, 2020 post Covid-19 growth projections.

6 Stats NZ Tatauranga Aotearoa, *The State of Housing in Aotearoa New Zealand,* last modified 15 December 2020, https://www.stats.govt.nz/infographics/the-state-of-housing-in-aotearoa-new-zealand/.

7 Although the inclusion of utilities within the 30% overburden measurement is not universal, it is included here on the basis that energy is needed to access an adequate and functioning house. Either way, the numbers are worsening.

8 Eva Corlett, "UN Special Rapporteur Calls on NZ for Bold Human-rights Approach to Housing Crisis," *RNZ,* last modified 19 February 2020, https://www.rnz.co.nz/news/national/409900/un-special-rapporteur-calls-on-nz-for-bold-human-rights-approach-to-housing-crisis.

9 Elham Bahmanteymouri, Michael Rehm and Fred Astle, "Can We Ever Solve Aotearoa's Housing Crisis?," *University of Auckland,* last modified 16 May 2022, https://www.auckland.ac.nz/en/news/2022/05/16/taking-issue-housing-crisis-ingenio.html.

10 Philippa Howden-Chapman et al., *Spotlight on Housing – Te Tapeke: Fair Futures in Aotearoa,* Royal Society Te Apārangi, 19 October 2021, https://issuu.com/royalsocietynz/docs/spotlight-on-housing-te-tapeke-digital.

11 Population growth is determined by many factors, with significant shifts occurring due to net migration.

12 Natalie Allen, Meredith Dale and G O'Donnell, *The Future of Urbanism in New Zealand and Some Lessons from Europe*. The Urban Advisory, 2019.

13 There are a variety of cooperatives ranging from rental and limited equity to equity cooperatives. In Christchurch, the Peterborough Cooperative is an example of one model – see https://peterborough.nz/.

14 Toiora High Street Co-housing Project is a local example in Ōtepoti Dunedin.

15 An example of papakāinga is Ngāti Whātua Ōrākei Whai Rawa – see https://www.ngatiwhatuaorakeiwhairawa.com/land-property/papak%C4%81inga/ (accessed 15 April 2024).

16 Ibid.; While papakāinga housing is distinctly different from Community Land Trust models, especially culturally, the leasehold structure is very similar, and both will benefit from increased awareness by the property industry and new models of finance and legal structures which will evolve over time.

17 G.J. Gardner. Homes, *Otago House & Land Packages,* https://www.gjgardner.co.nz/franchises/otago/listings (accessed 15 April 2024).

18 With standardised plans, a multi-proof consent can be granted for the design, requiring only siting and infrastructure consents if needed. Theoretically, this should save further price reductions.

19 The Centre for Social Impact and the Ākina Foundation, *Impact Investment – Part One: An Introduction to Impact Investing,* 2017, https://www.foundationnorth.org.nz/downloads/assets/319/Impact%20Investment%20-%20Part%20One:%20An%20introduction%20to%20impact%20investing (accessed 15 April 2024).

20 Inclusionary zoning is currently in the final stages of hearings in the Queenstown Lakes District, where a recommendation should be provided to council soon.

21 Modelled at 7.39% over 30 years, as per the earlier example.

22 The People's Project in Hamilton has recently run a Housing First programme. "Over five years, hospitalisations fell by 44 percent, the number of nights spent at mental health units reduced by 63 percent, and there were 43 percent fewer criminal charges. Meanwhile, incomes grew, as did the number of months people paid tax." Lauren Crimp, "Housing Programme Leads to 'Impressive' Long-term Change in Health and Wellbeing," *RNZ,* 18 April 2024, https://www.rnz.co.nz/news/national/514618/housing-programme-leads-to-impressive-long-term-change-in-health-and-wellbeing#:~:text=Over%20five%20years%2C%20hospitalisations%20fell,of%20months%20people%20paid%20tax.

https://doi.org/10.34074/scop.1027016

EXPLORING THE TECTONIC DIMENSION: PAST, PRESENT AND FUTURES OF THE USE OF TECHNOLOGY IN ARCHITECTURE

Tobias Danielmeier

Architecture production is foremost a tectonic process: vital elements for the creation of architecture include structural considerations, materiality and the associated dimensions of building elements and the constructive assembly of sheltering envelope components, as well as placement of façade penetrations. Architecture is intricately linked to time, place and the topography of locations, while also providing agency to embody and convey meaning.

This essay traces the development of tectonic principles from their ancient origins to contemporary applications, highlighting the significant impact of technological advancements and programmatic integration. Additionally, the rise of digital technologies has shifted traditional tectonic strategies, allowing for more complex shapes, innovative structural solutions and the ability to challenge traditional, authentic material uses. This progression enables new architectural expressions and functionalities, while also allowing designs to become more responsive to environmental requirements and the pressures of affordability.

This paper reflects on future challenges and opportunities for tectonic architecture, including the ethical implications of material choices, the pursuit of sustainability and the role of tectonics in architectural discourse. It advocates for a forward-looking approach that respects tectonic heritage while embracing innovation, urging the ongoing exploration and advancement of tectonic principles to address global architectural demands. In other words, it reaffirms the lasting importance of tectonics in shaping the future of architectural design.

PAST

The concept of tectonics in architecture goes well beyond the assembly of structural elements; it is an expressive art form that incorporates technology, form and programme. The foundational principles of architectural tectonics – characterised by the integration of structure, materiality and technique – have deep historical roots tracing back to ancient civilisations.[1] Originating from the Greek word *tektōn,* meaning builder or carpenter, tectonics embodies a construction philosophy that highlights the expressive potential of architectural elements.[2] These principles have consistently influenced architecture, shaping its form, function and aesthetics from ancient times to the present.

In ancient Egypt, the monumental pyramids and temples showcased early tectonic principles through their massive scale and precise masonry, symbolising concepts of the divine and the eternal.[3] In classical Greece and Rome, tectonics was evident in the proportionality and harmony of the orders, where structural elements like columns and pediments also held deep cultural significance, blending engineering with aesthetic ideals. The Middle Ages saw a shift through Gothic architecture's flying buttresses and pointed arches, enhancing structural support and spiritual luminosity through architectural form.[4] The Renaissance revisited classical tectonics with a focus on symmetry and human-scale integration, reflecting a return to rational architectural form aligned with humanistic values.

The modern era introduced industrial materials like iron, steel and reinforced concrete, profoundly impacting tectonic design. Architects like Le Corbusier utilised these materials to meet new functional demands and achieve greater spatial freedom, significantly altering architectural spaces.[5] At the same time, a new demand for honesty of materials tasked designers to expose and arrange building elements in accordance with material properties. This architectural trend faced challenges as the belief grew that technology could provide solutions to our earthly problems.

Structural integrity involves engineering buildings to withstand gravitational forces and environmental stresses, requiring a deep understanding of material properties and structural behaviour.[6] Historically, this is visible in the enduring domes of Roman architecture like the Pantheon, a testament to ancient engineering prowess. In modern architecture, structural integrity includes advanced engineering and dynamic modelling to achieve complex forms.[7]

Material manifestation carries the potential to enhance the sensory experience of spaces by using materials that not only express architectural ideas but also demonstrate their inherent qualities, as expressed by Louis Sullivan's adage that "form ever follows function."[8] This principle has evolved in recent decades to not only emphasise aesthetics but also sustainability, as seen in the use of timber and engineered timber that also aim to address environmental consciousness.[9]

Throughout these historical periods, tectonic principles have adapted to new cultural contexts, technologies and materials, continuously engaging with the changing human condition. This ongoing evolution highlights tectonics' enduring relevance in architecture, bridging past and present while laying foundational philosophies for future explorations in architectural design.[10]

PRESENT

Today's discourse on architectural tectonics focuses on core principles such as structural integrity, material manifestation and constructional modularity, forming a conceptual framework for designing buildings that are structurally sound, aesthetically coherent and contextually relevant.[11]

Constructional modularity leverages systematic module use for efficient and economical construction, a practice dating back to ancient structures like the Parthenon and extending forward to modern prefabricated houses designed to address urban housing needs efficiently.

Both historically and in the present day, these tectonic principles have pushed architectural boundaries, influencing how structures address functional needs and environmental challenges while appealing to human aesthetics. The ongoing application of these principles not only honours the legacy of past innovations, but also drives future advancements in building technology and design theory, making tectonics a central element of architectural education and practice.[12] This dynamic interplay between tradition and innovation continues to profoundly shape the built environment. In contrast, the "leaky building syndrome" that plagued the New Zealand building industry in the 1990s demonstrates that if tectonic principles are not well understood, or executed, serious problems will result.

The interplay between technology and tectonic design forms a dynamic and reciprocal relationship that significantly influences contemporary architectural practices.Technological advancements facilitate new architectural expressions and redefine tectonic principles such as structural integrity, material manifestation and constructional modularity.[13]

Technological innovation in materials science has introduced a spectrum of new materials, broadening both the creative and functional possibilities of architecture. For instance, the development of high-performance concrete allows for thinner, more durable structures with enhanced load-bearing capacities. Additionally, the introduction of tensile materials and technologies has encouraged the exploration of lightweight structures over vast spans.

Frei Otto's work, for example, exemplifies how tensile fabric membranes supported by minimal steel frameworks can create new tectonic forms that merge aesthetic appeal with functional effectiveness.[14]

Further revolutionising tectonic architecture are digital fabrication technologies such as 3D printing and CNC milling. These technologies have enabled the precise and efficient realisation of complex digital designs into tangible structures. Today's digital tools can generate intricate forms previously deemed unfeasible or cost-prohibitive, enabling the promotion of sustainable building practices through the use of biodegradable materials.[15] For example, the use of 3D-printed components in constructing the GAIA Pavilion by WASP demonstrates how digital tools can generate intricate forms previously rejected as unworkable, promoting sustainable building practices through the use of biodegradable materials. The integration of Building Information Modelling (BIM) and parametric design tools has also transformed the tectonic design process, making it more integrated and responsive. These tools allow for a holistic design approach that can simulate the real-world behaviours of buildings, enhancing both design quality and construction efficiency.

As most contemporary architects strive to embrace new tools and materials, the principles of tectonic design are continually reinterpreted and expanded, accommodating new challenges and opportunities. This symbiosis of technology and tectonics enriches the architectural lexicon and contributes to the evolution of building practices that are sustainable, efficient and attuned to both contemporary needs and future possibilities.[16]

CONTEMPORARY CHALLENGES AND OPPORTUNITIES IN TECTONIC ARCHITECTURE

In the evolving landscape of architecture, tectonic principles confront a spectrum of contemporary challenges that reflect broader societal and environmental concerns.[17] Yet, these challenges also present significant opportunities for innovation and advancement, particularly through interdisciplinary collaboration and research.

One of the principal challenges facing tectonic architecture today is sustainability.[18] As environmental crises escalate, architects are increasingly tasked with designing buildings that minimise energy consumption, reduce carbon footprints and promote ecological balance. This involves navigating the complexities of material sourcing, energy efficiency and long-term building performance, requiring not only the adoption of green technologies but also a fundamental rethinking of design philosophies to embrace ecologically sound practices.[19] Adaptive façade systems that respond to sunlight and temperature – such as those in the Al Bahar Towers in Abu Dhabi, designed by Aedas Architects – showcase how tectonic principles can enhance energy efficiency and indoor environmental quality through dynamic façades inspired by traditional Islamic *mashrabiya* designs.

Affordability remains a major hurdle to the widespread adoption of innovative tectonic solutions. Advanced materials and construction techniques often come with higher initial costs, making them inaccessible for lower-budget projects or in regions with economic constraints. Furthermore, the complexity of some tectonic designs can lead to increased labour and maintenance costs, posing long-term financial challenges for clients and users.[20]

The field of architecture has increasingly embraced interdisciplinary approaches to tackle complex design challenges. Collaboration between architects, engineers, environmental scientists and technologists can lead to innovative tectonic solutions that address the multifaceted demands of modern buildings, such as integrating smart technologies and bioclimatic design principles to create structures that are both environmentally responsive and aesthetically compelling. This collaborative approach extends beyond the design phase to include construction professionals, ensuring that tectonic innovations are practically and sustainably executed.[21] The Edith Green-Wendell Wyatt Federal Building in Portland, Oregon, demonstrates these principles through its retrofit with a vertical garden façade that regulates temperature and promotes urban biodiversity.

Furthermore, research plays a crucial role in advancing tectonic architecture, particularly through the integration of new materials and digital fabrication technologies. Ongoing research into sustainable materials, such as mycelium-based composites or recycled construction waste, promises to lower the environmental impact of buildings while maintaining architectural integrity. Additionally, advancements in digital fabrication, including 3D printing and robotic assembly, offer the potential to streamline construction processes, reduce waste and create more complex geometrical structures cost-effectively.[22] A prime illustration of this transformative potential is the Elytra Filament Pavilion at the University of Stuttgart, a collaborative endeavour by architects Achim Menges and Jan Knippers, with engineering expertise supplied by the university. Exhibited at London's Victoria and Albert Museum, the pavilion embodies biomimetic design principles and robotic fabrication techniques, drawing inspiration from the intricate fibrous structures of beetle wings. The pavilion's design was optimised through advanced computational algorithms, while robotic fabrication enabled the on-site assembly of its complex, lightweight structure. This paradigmatic example underscores the profound impact of digital technologies on tectonic exploration and the enduring interplay between artisanal legacy and technological innovation in architecture.

Enhancing educational programmes to focus more intensely on sustainable tectonic design can prepare future architects to meet the challenges of our time. Meanwhile, engaging with policymakers to advocate for regulations that support innovative and sustainable construction practices can facilitate the broader adoption of advanced tectonic solutions. This includes lobbying for building codes that recognise and encourage sustainable design principles and advanced construction methodologies.[23]

While tectonic architecture faces significant challenges in terms of sustainability and affordability, these challenges also present unique opportunities for growth and innovation. By fostering interdisciplinary collaboration and investing in research, the architectural field can expand the capabilities of tectonic design to meet contemporary needs. Through these efforts, tectonic architecture can continue to evolve, not just in the service of aesthetic and structural goals, but as a pivotal contributor to a more sustainable and equitable built environment. In the realm of tectonic architecture, ethical considerations are central to creating practices that are environmentally sustainable and socially equitable. Sandra Barclay and Jean Pierre Crousse's projects in Peru exemplify how the selection of materials, availability of craftsmanship and the overall design process carry profound ethical implications that can positively affect communities.[24] Furthermore, the utilisation of locally sourced materials can also decrease transportation emissions and support local economies.[25]

Ethical tectonic design also prioritises high-quality craftsmanship, which enhances the durability and functionality of buildings while respecting the labour involved in their construction.[26] High standards of craftsmanship ensure that buildings are safe and maintainable, extending their useful life and minimising the need for alterations and maintenance.[27] Ethical practices require that architects and builders uphold fair labour practices and safe working conditions throughout the construction process.[28]

Tectonic design has a significant capacity to influence social structures, making social equity an essential ethical consideration. Architectural decisions must ensure inclusivity, making buildings and public spaces accessible to everyone, regardless of physical ability, economic status or social background.[29] This approach includes designing adaptable spaces that can accommodate diverse user needs. Moreover, engaging with local communities during the design process, or using co-design strategies, helps ensure that projects reflect their needs and aspirations, fostering community ownership and place-based identity.[30] Architects and planners are uniquely positioned to advocate for ethical practices in tectonics. This advocacy can include pushing for stricter material sourcing regulations, promoting sustainable construction practices and supporting community-led planning processes. By participating in these discussions, professionals can help shape a built environment that adheres to high ethical standards, promoting sustainable and inclusive development.[31] The various building certifications available – for example, LEED, BREAM, Green Star, HomeStar, Passive Haus – are prime examples of how industry can actively promote improvements and regulatory changes.

As tectonic design intersects with advanced technologies and methodologies, it is crucial to maintain a focus on ethical implications to ensure that advancements in architectural practice contribute positively to contextual and environmental outcomes.[32] Ethical considerations in tectonics necessitate a commitment to continuous evaluation and adaptation, ensuring that the discipline not only meets aesthetic and functional demands, but also upholds principles of justice, sustainability and inclusivity.[33]

THE FUTURE OF TECTONIC ARCHITECTURE

The trajectory of tectonic architecture is set to be profoundly influenced by advancements in materials science and digital technologies and a robust commitment to sustainable practices, which promise to enhance both the functional capabilities and aesthetic possibilities of buildings, while redefining the principles of construction.[34]

Future developments in tectonic architecture are expected to leverage advanced materials like self-healing concrete, translucent wood and aerogels, which offer enhanced durability and energy efficiency, thereby reducing the environmental impact of buildings.[35] These materials enable buildings to adapt more dynamically to their environments, responding to changes in temperature, humidity and light, and are crucial in reducing the ecological footprint of construction projects.[36]

Digital technologies such as parametric modelling, artificial intelligence (AI) and virtual reality (VR) are transforming tectonic architecture, enabling more precise simulations and modelling and allowing architects to explore complex forms and structures which were previously unachievable.[37] The integration of AI and machine learning has the potential to optimise material usage and structural configurations, enhancing the efficiency of buildings throughout their construction and operational phases. Robotic fabrication and 3D printing exemplify how construction processes can become faster, more accurate and less wasteful.[38]

As challenges like climate change and resource scarcity intensify, ecologically sound practices will become increasingly crucial in tectonic architecture.[39] Future designs will need to prioritise energy efficiency and occupant well-being, incorporating elements of biophilic design to enhance indoor environmental quality.[40] A focus on the lifecycle of buildings will promote sustainable construction and demolition practices, encouraging the use of materials that can be reused or safely decomposed.[41]

While embracing innovation, it is also important that tectonic architecture respects historical contexts and architectural heritage. Future designs should harmonise new technologies with traditional aesthetics, creating buildings that reflect a profound understanding of place and history. This respect for heritage, combined with contemporary technologies and materials, can foster a rich, multi-layered architectural agency that allows the expression of place signifiers and identity.

The future of tectonic architecture demands a forward-looking approach that embraces innovation and adapts to new challenges and opportunities. Architects, engineers and designers are encouraged to push the boundaries of what is possible, exploring how new materials and technologies can redefine the relationship between human spaces and the natural environment.[42] Guided by ethical considerations and a commitment to sustainability, these advancements carry the potential to positively contribute to societal needs and environmental health.[43]

Tectonic architecture holds immense potential for the future, promising innovative expressions and heightened responsiveness to human and environmental needs. As the field continues to evolve, it will bring forward solutions that are as innovative as they are necessary, marking a new chapter in the enduring narrative of architectural progress.

CONCLUSION

In this paper, I have explored the multifaceted nature of tectonic architecture, tracing its historical roots and analysing its foundational principles. Each facet of the discussion has highlighted the profound influence of tectonic principles on the evolution of architectural design, underscoring their role in meeting both aesthetic and functional demands across eras and cultures.

The historical exploration of tectonics reveals a continuous transformation, shaped by technological, contextual and environmental changes. From ancient structures that emphasise materiality and structural integrity to modern constructions leveraging advanced materials and digital fabrication techniques, tectonics have consistently served as a foundation for innovation in architecture. This progression not only reflects an adaptation to new challenges, but also a deep respect for architectural heritage and context.

The ethical considerations inherent in material choice, craftsmanship and social equity further highlight the role of tectonics in promoting sustainable and inclusive development. As we face global challenges including climate change, resource scarcity and increasing urbanisation, the principles of tectonic design offer pathways toward more resilient and environmentally responsive architectural solutions.

Looking forward, the potential of tectonic architecture is boundless, with advances in material science and digital technologies opening new avenues for exploration.[44] These innovations present opportunities to further push the boundaries of what is possible in architecture, from achieving greater sustainability and efficiency to enhancing the human experience within built environments. However, as we embrace these possibilities, there is a compelling need to balance innovation with the preservation of local contexts, ensuring that new developments respect and enrich a sense of place.

In conclusion, the call to action for the architectural community is clear. The profession must continue to explore and advance tectonic principles, embracing interdisciplinary collaboration and cutting-edge research to address the pressing demands of our times. By doing so, we can ensure that tectonic architecture remains a vital and progressive force in shaping not only the physical environment, but also the social and environmental fabric of future generations. In this endeavour, forms, programmes and technologies are, and will remain, the key drivers for the innovation of architecture.

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https://doi.org/10.34074/scop.1027002

CONSTRUCTING BUILDINGS, BUILDING KNOWLEDGE

Blair Isbister

INTRODUCTION

My journey began five years ago as a facilitator in the Bachelor of Architectural Studies (BAS) program at Otago Polytechnic in the Otago region of New Zealand. This was driven by a passion for digital technologies and Building Information Modelling (BIM). Transitioning from my role as a senior architectural technician in industry to academia presented a challenge, as it required me to transform my practice-based methodologies into methods and tools for experiential learning. This transformation was centred on my belief that architectural education should develop key practical skills and knowledge for learners that employers in industry can leverage and grow.

DEFINING BUILDING INFORMATION MODELLING (BIM)

The digital evolution has infiltrated many parts of modern life, including the realm of education. In architectural education, the shift towards digitalisation began with the development of AutoCAD in 1982 and is now encapsulated in the integration into the discipline of Building Information Modelling (BIM), a tool that has transformed how architects and technologists design, collaborate, visualise and think about buildings. BIM has been taken up by the Architectural, Engineering and Civil fields as a term to differentiate between traditional 2D computer-aided design (CAD) software applications and newer CAD applications. These newer applications incorporate graphical, parametric and relational database technologies designed to create integrated, data-rich 3D models of buildings, systems and infrastructure.

BIM has significantly changed architectural practice in recent years, allowing designers to digitally simulate and analyse proposed building designs. Subsequently, it has had an impact on architectural education, specifically within technical courses such as Documentation Studio, which I facilitate. Michael Ambrose captures this evolving state: "Building Information Modelling (BIM) has the potential to radically transform the way in which architectural education engages issues of design and representation and creates opportunities to question the roles and rules of the traditional architectural conventions of visual communication."[1] At Otago Polytechnic, we use BIM not just as software, but as a pedagogical tool to bridge the gap between theory and practical application within our BAS program.

BIM is often misunderstood as software for architects and engineers. In reality, BIM represents a shift in design and construction communication, offering a single coordinated digital representation of the physical and functional characteristics of place and objects. BIM also offers a collaborative process for communication and information exchange among stakeholders typically involved in a building project. In an educational context, BIM can serve as a tool for experiential learning, allowing learners to engage directly with the complexities and variety of architectural projects in a simulated environment at a level appropriate to them.

DEFINING DOCUMENTATION STUDIO

Architectural design/studio practice develops concepts for the buildings that surround us, but without detailed construction drawings a building itself cannot be realised. This is where the BAS program's Documentation Studio comes in to provide the framework, tools and knowledge that learners require to communicate key technical aspects required for physical building construction. Documentation drawings transform a conceptual building design into tangible reality, ensuring that the original design intent is conveyed with clarity.

An educational framework designed to deliver technical knowledge, while developing a holistic understanding of architectural structures and systems, is essential. Reviewing how this relates to the industry as a professional body requires a clear understanding of the intersection between these worlds. Learners grapple with the idea of architecture as a complex system that gathers layers as the original design idea becomes a realised physical outcome. In order to negotiate this process with them, we approach the learning environment as a simulated office 'scenario.' In this sense, learning activities mimic the process of 'doing' architecture and are designed to teach some of the soft skills that industry is seeking in graduates, as well as the more technical elements that are introduced progressively as projects unfold. Documentation Studio is the vehicle for this learning to occur – this is established through the introduction and use of the tools of the trade, such as CAD and BIM. In this setting, skills and knowledge expectations are not presumed, but rather built from the ground up through a collaborative process.

PHASE ONE: THE LEARNING ENVIRONMENT AS A SIMULATED OFFICE 'SCENARIO'

Developing a 'cradle-to-construction' culture (the process of taking a concept sketch design to detailed construction tender documents) is essential for architectural business, and every design office culture is unique due to the range of personalities, communication styles, skills and knowledge of staff. This is also true for learning environments, and Documentation Studio is no exception. It provides the raw ingredients for the educational framework.

Provision of a safe learning environment to support the 'doing' process is key to the simulation scenario. Any question, no matter how simple or obvious, must be safe to ask within a formal or informal setting. Learners must develop confidence in their environment as a safe place and also in their peers' ability to support them in the context of the aggregation of knowledge available among them at the time.

As BIM can be a complex tool, the approach begins with a simplified BIM model, like a simple shelter, with very simple construction. In this way, the complexity of bespoke design does not inhibit fundamental learning. For learners, the process involves testing and mastering the nuanced digital tools available to create and refine 3D BIM objects; researching manufacturers' information, codes and standards; and coordinating these elements with structural BIM data.

Success is anticipated to vary within this process, and learners are urged to share research methodologies, product information, codes/standards and processes. They are required to integrate these 'layers' into a comprehensive BIM solution, not just in theory but as an assessable digital 3D/2D constructable outcome. Learners actively construct their understanding and knowledge through engagement with digital modelling tasks. This hands-on interaction with their own architectural project allows them to process and synthesise information and apply concepts.

Active discussion of experimentation, failures and technical issues among peers and facilitators while in the midst of the 'doing' is key to establishing the learning environment as a simulated office 'scenario.' The facilitator's role in this is to promote information sharing among peers, identify gaps and common issues among learners and to validate outcomes using industry best-practice examples where possible.

This approach intersects and overlaps professional practice, where diversity of skill and experience is shared to deliver the whole. For example, junior members of an architectural practice might offer advanced representation

techniques for graphic presentations, while experienced practitioners share proven technical solutions such as exterior flashing detailing for bespoke roofing and wall-cladding solutions.

PHASE TWO: 'BUILDING' BUILDING COMPLEXITY

As stated above, the starting point needs to be (technically) simple so that fundamental understanding of and familiarity with the BIM tools can be developed, uninhibited by the complexities of design and construction.

Once these fundamentals are established as the first step in the staircased learning process, we can leverage increased learner confidence in BIM tools to develop additional scale, complexity and detail built on the knowledge developed during the creation of the simple shelter. In practice, this learning outcome materialises as a much larger, multi-storied building project which is used within the educational framework as a case study, activity/experimentation model and summative assessment model.

Learners start with a blank slate or site and, just like a 'physical' construction team, they construct/assemble/digitally model 3D building elements from foundations to roof, sequenced (when possible) in alignment with typical onsite construction phases.

This process unfolds over the course of a 16-week semester and, upon completion, results in a highly detailed 3D description of architectural form and structure (see Figure 1). The entire process is broken down into chunks of sequenced building categories and elements. Learners create construction elements such as concrete foundations, precast walls, steel reinforcing and structural wall connections (see Figure 2).

The cyclical approach involving doing and reflecting that was discussed above in relation to the 'shelter' phase is repeated through this process. The added layers of information incorporated during this phase prompt learners to examine and evaluate relationships between the digital versions of various construction elements. The types of questioning that follow suggest a deeper level of understanding of the component relationships newly created within the building model. Examples of such questions are: How far should the reinforcing steel be from the exterior surface of the concrete? What materials and methods are used to join walls and foundations? What might determine the quantity and type of reinforcing used?

Approaching the 'building up' (staircasing) of the model sequentially means that learners are continually advancing their knowledge and developing already established collaboration and communication pathways. Learners have the advantage of these skills being subconsciously embedded within the process of 'doing.' As each cycle is repeated, efficiency, analysis and knowledge relating to the 'simulated office' is honed.

PHASE THREE: DISCOVERING BUILDING SYSTEMS

Continuing the cyclical process that learners have developed through phases one and two, we can now introduce the next layer of complexity: building services and systems. The advantage of introducing this subject last is that, by this stage, most learners have developed a robust foundational knowledge of the structural and architectural elements that make up a building.

Building services can significantly influence architectural and structural planning. These services include networks for water, electricity, air conditioning, fire safety and communications, collectively known as MEP (mechanical, electrical and plumbing). All of these building services and their associated infrastructure occupy significant space within a building. Considered integration, design and coordination of these systems can prevent major construction issues occurring during real-world construction,[2] saving time and money.

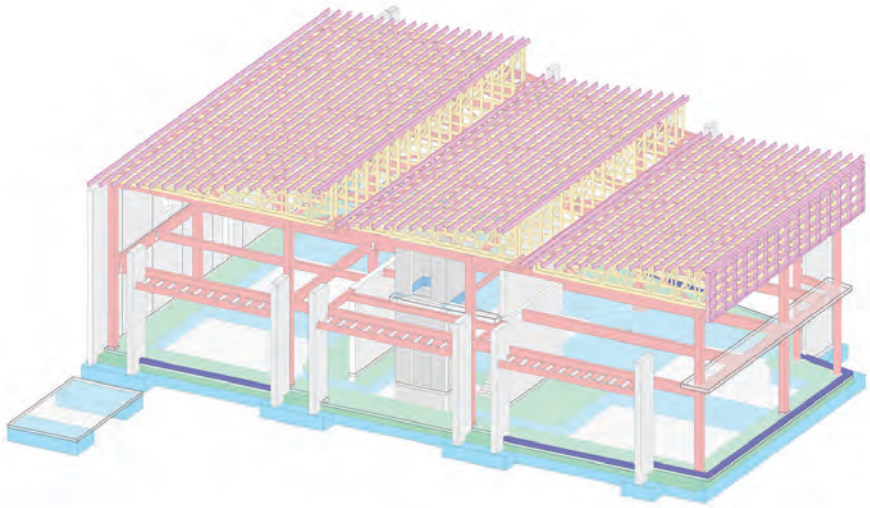

Figure 1. Sample of a BIM structural model used to support learning about architectural form and structure.

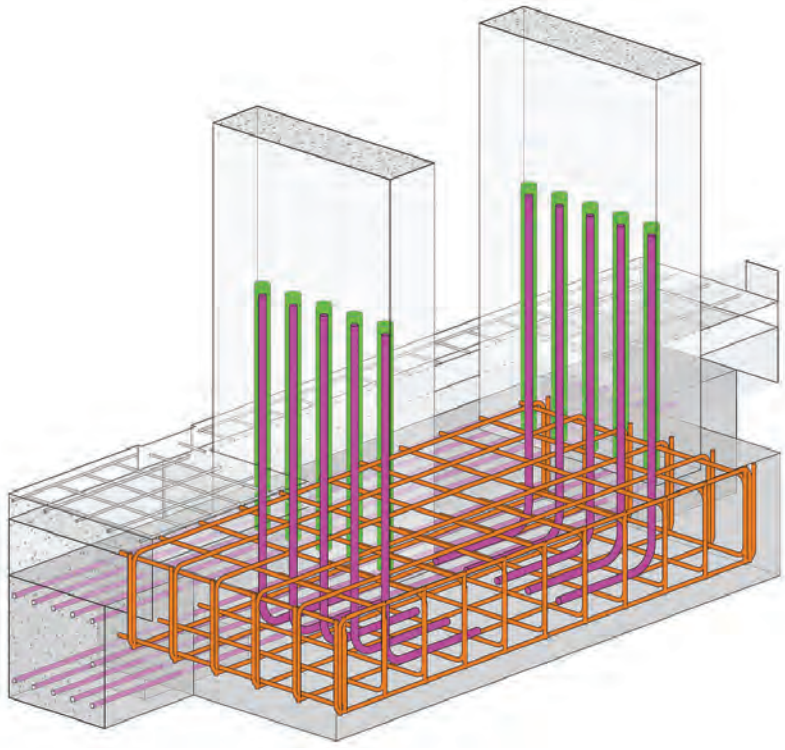

Figure 2. Detail of a BIM model describing precast concrete connections and reinforcing.

There are two critical learning objectives that are revealed through this process in the class scenario that are regularly encountered in practice. They are the identification of the actual space required for the infrastructure and distribution of services, and resolving coordination issues – such as two service elements potentially occupying the same space (for example, a ventilation supply diffuser and a lighting fixture, or ductwork intersecting a structural beam).

One of the primary uses of BIM is to identify and resolve potential clashes between structural elements and services systems before actual construction begins. Through an automated digital process known as clash detection, BIM software verifies space clearances around objects that may or may not intersect or interfere with each other within the model. This information is automatically extracted and summarised so that each clash can be addressed and resolved. Contemporary BIM combines this technology with communications and resolution tracing among consulting disciplines.

Utilising a digital library of components, learners are required to assemble and place various horizontal and vertical infrastructure elements and fixtures. The building up of the system means that learners receive a deeper understanding of various components and their composition. Also, most critically, they develop an understanding that services should be integrated into a building, as opposed to applied post-design. What also occurs in this 'discovery and problem-solving phase' is an appreciation of design as a collaborative process, activating discussions around communication issues in a multi-disciplinary environment. These discussions often revolve around complex questions including: Which element or building system takes precedence and why? How do respective engineers communicate and resolve this? What are the contemporary BIM tools used in industry to resolve these issues? This process, and the discussions that flow from it, highlight the importance of coordination and collaboration – which learners will encounter in practice – as consultants and designers working on a single project are often geographically separated.

CONCLUSION

Documentation Studio within the Bachelor of Architectural Studies program at Otago Polytechnic utilises Building Information Modelling (BIM) as a pedagogical tool to bridge the gap between theoretical architectural education and practical application. By creating a simulated office environment where learners sequentially build upon their knowledge and skills, the program aims to develop both the technical expertise and the collaborative, problem-solving abilities that are essential for success in the architectural profession.

This approach involves starting learners with a simple building model designed to help them master the fundamentals of BIM software and processes. Complexity is then progressively layered, by modelling a larger, multi-story building, and then by incorporating building services and systems. This staircased learning approach allows learners to develop a holistic understanding of how the different architectural elements and disciplines must be coordinated.

Through this experiential process, learners gain practical experience of converting conceptual designs into comprehensive construction documents. Equally important, they learn to navigate the collaborative nature of modern architectural practice, identifying conflicts, communicating with peers, resolving issues and developing skills that are critical for success in the industry.

Blair Isbister is a licensed building practitioner and senior lecturer at Otago Polytechnic. Specialising in Building Information Modelling and healthcare design, he is passionate about software and building systems technology. With over 15 years in the design and construction industry, he enjoys bringing practical insights to his practice and fostering a dynamic learning environment for aspiring professionals in architecture and construction.

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https://doi.org/10.34074/scop.1027011

MAKING SPACE FOR NEEDLEWORK

Nathalie Bäckström

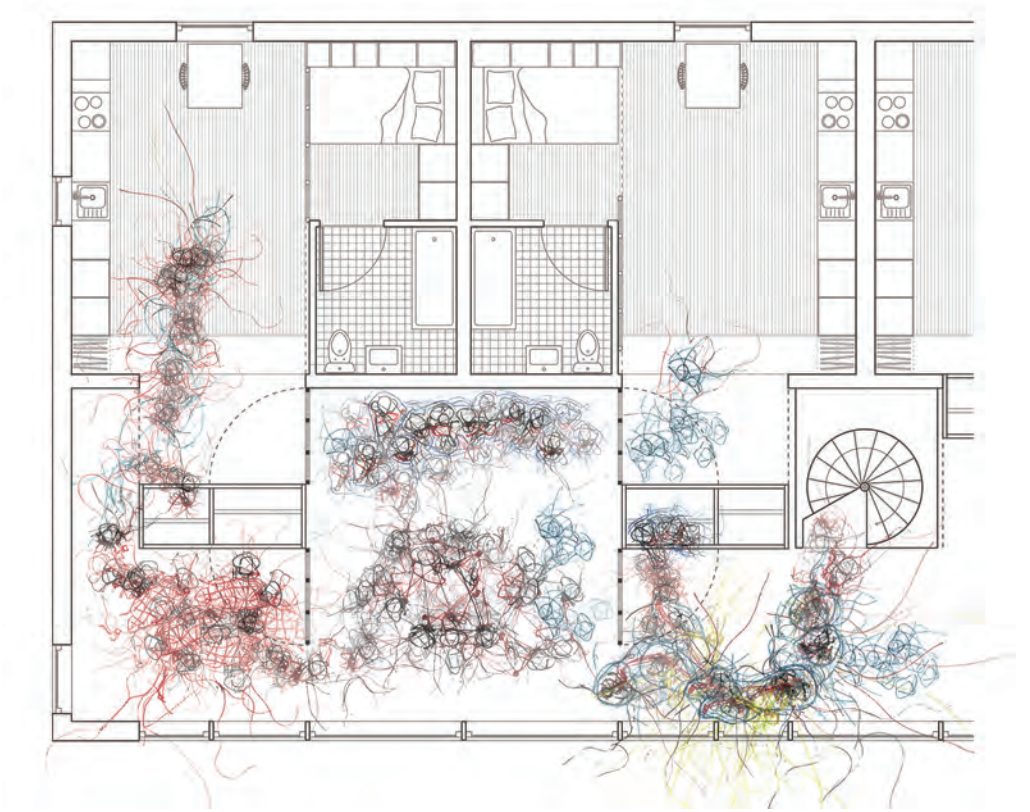

Figure 1. Scanned embroideries layered upon the plan drawing of the collective dwelling from author's thesis proposal *Do you see her when they stitch?*

"Do You See Her When They Stitch?" was the title of my thesis project, finished in 2022 at the School of Architecture at Umeå University in Sweden. The final design proposal consisted of a collective dwelling with a shared space for needlework as the core of the building. In my thesis, I used an interdisciplinary approach to investigate needlework as both the topic of research and the means of spatial exploration. I aimed to underpin the relevance of engaging with needlework in the architectural design process as a way of maintaining the craft and finding new paths for exploring architectural space. The project gave me a deeper understanding of the power of *slow making,* putting an emphasis on the process rather than the final product, and became a good excuse to spend time knitting together with my grandmother.

In his article "The Life and Death of Residential Room Types," Mattias Kärrholm investigates the appearance and disappearance of room types, looking at Sweden as a case study. Kärrholm presents two examples of rooms dedicated to needlework, the sewing room and the weaving chamber, both of which haven't appeared in a building plan for many years.[1] As a knitter, crocheter and sewer of garments, I know that these activities require space, and can't help but feel that this has been neglected in current domestic architecture. Contemporary feminist architectural practice argues that the practices of everyday life, such as needlework, have been hidden through the design of modern architecture.[2] With this loss in mind, the aim of the thesis became to explore how spaces for needlework could *reappear,* making the practice visible.

In her feminist study *The Subversive Stitch: Embroidery and the Making of the Feminine,* Rozsika Parker sets out to reveal the neglected history of embroidery, making its historical impact and meaning visible. Parker argues that embroidery, on one hand, has been a means to ensure that women obtained and sustained the feminine ideal and, on the other hand, has been utilised as a tool of resistance to these stereotypical constraints. This constitutes the dual face of needlework.[3] The theory of subversive stitching, as discussed by Parker, presents needlework as a political tool – used, for example, during the women's liberation movement in the hand-stitched suffrage banners, where the 'slow stitch' became a subversive act and a sign of commitment to the cause.[4] This idea inspired me to perform my own silent resistance through slow making.

"When I was growing up, all the women in my house were using needles. I have always had a fascination with the needle, the magic power of the needle. The needle is used to repair damage. It's a claim to forgiveness. It is never aggressive, it is not a pin." [5]

The quote above is by Louise Bourgeois, the artist whose work has done the most to ensure needlework's place within high art.[6] Growing up, Bourgeois worked in her parents' tapestry workshop mending tapestries, an activity which later had a great influence on her art.[7] In the quote, Bourgeois describes her memories of needles and of others around her sewing. In this way, needlework becomes infused with memory.[8] For me, needlework is strongly connected to my grandmothers, to memories of them knitting, sewing and weaving. To the many gifted socks, sweaters and mittens received during my life. Through them I learned the value and power of *making,* and how it becomes an authentic act of love and care.

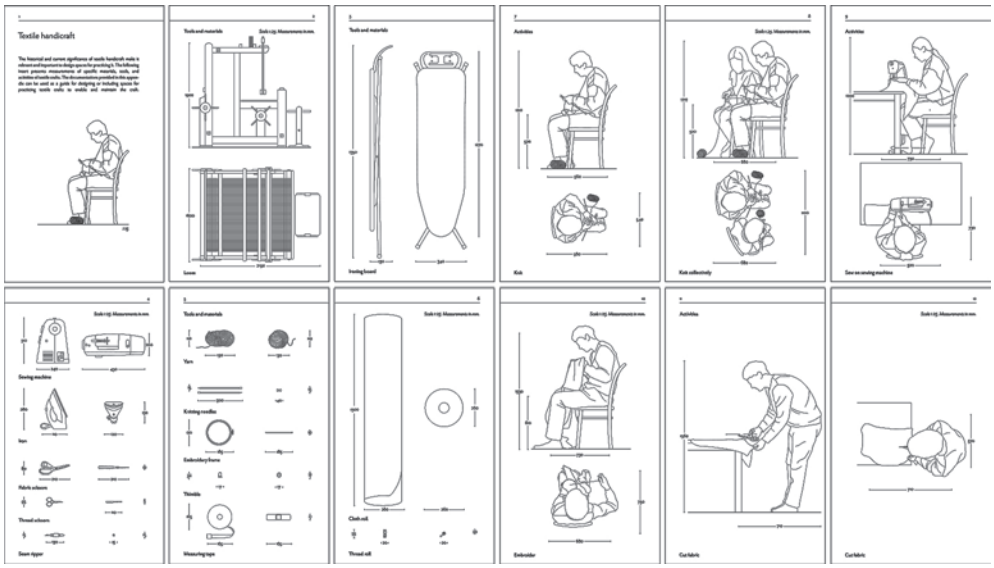

Figure 2. Documentations of needlework made as an insert to *Arkitektens Handbok* (The architect's handbook).

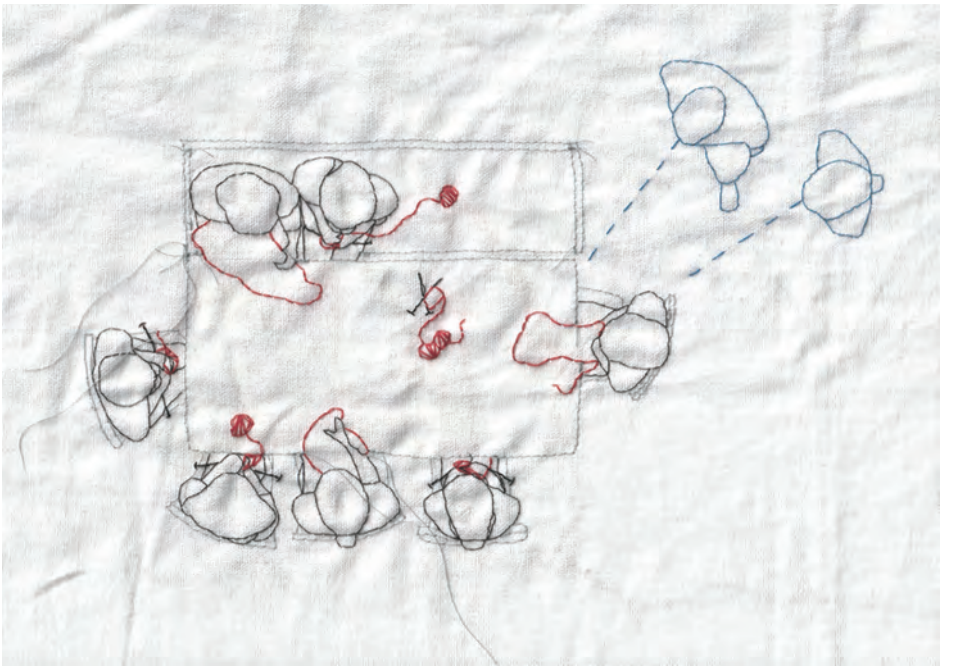

Figure 3. Embroidery investigating a sewing circle.

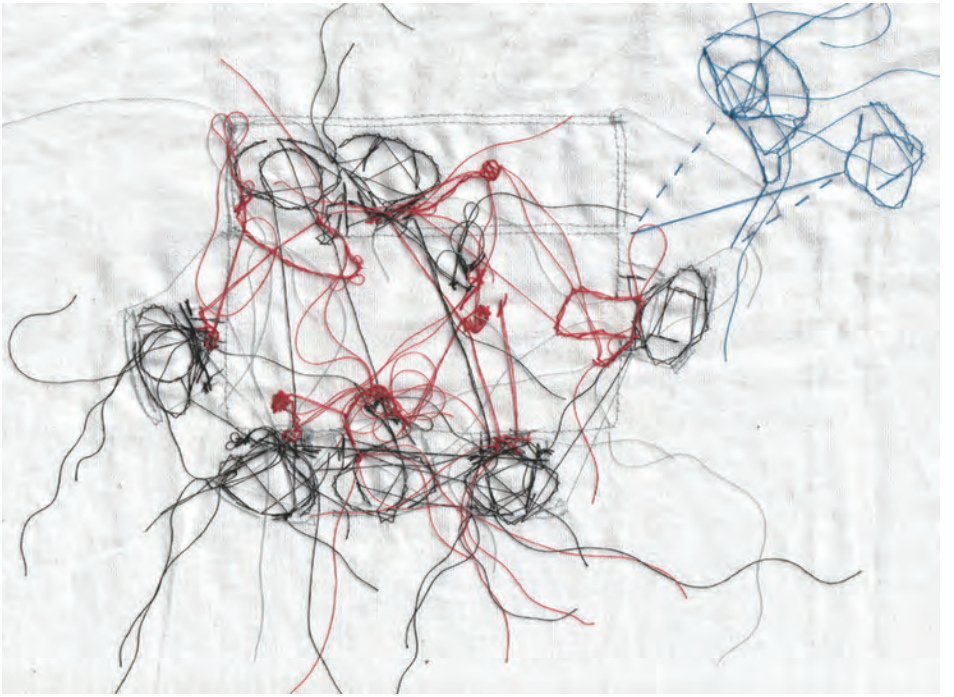

Figure 4. The back of an embroidery investigating a sewing circle.

And so the research for my thesis began with my grandmother, and the documentation of her knitting. The image of grandma was then inserted into the 2018 edition of *Arkitektens Handbok* (The Architect's Handbook, containing Swedish building norms)[9] as a critical exploration, questioning the presence of everyday life (and needlework) within Swedish architecture. I later extended this idea by documenting additional dimensions of the subject, and by creating an insert in the *Handbok* that could be used as a tool for designing space for needlework. This insert acted as a means of silent resistance, and aimed to make the practice of needlework visible.

To further engage with the practice, I organised a small *syjunta* (sewing circle), knitting together with my grandmother. I then explored the spatiality of our meeting through embroidery, stitching diagrams of our movements and other spatial aspects of the room where we worked. Following this, I moved on to document more of these gatherings using the same method. In the process of stitching, unexpected things emerged. For example, I found the back of the embroidery to be more interesting than the front. The back became more spatial and tactile, resembling an architectural model. By engaging with needlework, I found I could gain a deeper understanding of the practice. The process of stitching offered time for reflection and created a deeper connection with the craft. It became a commitment.

Needlework is, in its nature, slow. The slow process involved indicates that its importance doesn't lie in the finished object, but in the *time* and the *space* of making.[10] When knitting together with grandma we would sometimes talk, and sometimes focus on our work in silence. Time would pass, and the light in the room would change. The yarn got warm in our hands and the repetitive movements of the needles synchronised with the sound of our breathing. With bent necks we watched as our work slowly grew, one stitch at a time. When the last thread of my embroidery is fastened, I'm reminded that it doesn't end there. A thread can be unpicked. A garment can be worn, torn, patched, ripped and mended again. It can be passed down through generations. Needlework is soft and forgiving. After finishing my thesis, I'm convinced that architecture should give time and space to needlework. The architectural process could learn something from the slow making that marks the practice. This slowness becomes an act of resistance to the current ideal of efficiency. When emphasis is put on the process, it becomes a commitment, an act of love and care.

My thesis culminated in a design proposal for a collective dwelling with a shared space for needlework as its core. This dwelling constitutes an exploration of how spaces for needlework could "reappear" and become visible through architecture. It critiques the efficiency of modern architecture and questions the way that everyday life has been hidden by design. My proposal is a celebration of needlework, allowing for the craft and its practitioners to take and make space.

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CRAFTING SPACES – A CRITIQUE

Stella Lange

Nathalie Bäckström asks: "Is the practice of needle work being considered in *contemporary* architecture?"[1] and, in response, I ask if craft is being considered in contemporary domestic architecture.

Domestic architecture sets out to design spaces for living or, in the language of Paris Hilton, "sliving" or living your best life. In "sliving," one is successful, self-empowered and fulfilled. For many people, their best life is one where they have time and space to follow their interests, and engage in activities that are relaxing, provide accomplishment and allow for creativity. For some people, this occurs through leisure time, and in hobby activities that are colloquially termed craft. This paper seeks to interrogate the visible intersection of leisure craft activity and domestic architecture through a location lens.

Here, craft refers primarily to non-commercial making – that is, carried out in the home as a leisure activity. In academic and non-academic spaces other terms are used for this activity, including amateur craft, hobby and leisure craft. Each of these comes from different fields, and in this paper each term is used where it fits best, on the understanding that they refer to similar practices. I do not consider the value and worth of amateur craft practices here – that discussion exists, and continues, elsewhere.[2]

HOME AND HOUSE

Our homes were designed to be lived in, with spaces to prepare, store and share food, spaces to store belongings, spaces to rest, spaces to care for ourselves and spaces to socialise.

Importantly, our homes serve as 'not work,' although that is changing as many adapt to a world of WFH (work from home), so many homes also have office spaces.

While most of us may never be involved in the process of designing our own homes, all our homes have, nevertheless, been designed. Houses are possibly the most expensive 'possession' that many people will own or rent in their lifetime. Architecture is one of the design forms that we interact with most over a lifetime, perhaps the other being our clothing. Architecture provides us with the designed form we call home. Beyond the idea of the financial value or capital of our homes, our homes can also provide social capital. The way we share our homes connects us to others in our community, and for crafters this plays out through our ability to make, repair, gift or share knowledge through our crafting.

This paper is shaped by the politics of my own situation or location, as described by Buckley, who suggests that thinking or theoretical understanding cannot be detached from one's personal histories and lived experiences.[3] My own location, my history, is as tangata tiriti, born into a working-class family with two working parents who had hobbies and interests at home. My Mum, when not working as a secretary, sewed many of our clothes, and Dad used his mechanics training to maintain the family car, restore bicycles and toys, and repair fishing boats in exchange for fresh fish. The value they placed on these activities is a clear memory. Long before that, my tipuna | grandparents turned wood, sewed and knitted in their homes.

My home is a twentieth-century house, and there is little doubt that in the twentieth century some types of leisure were positioned as both domestic and gendered.[4] In particular, the leisure pursuits of women as portrayed in media seemed to narrow to comprise those that supported or enhanced the domestic sphere, such as needlework, cooking, gardening and other aesthetic activities that enhanced the experience or look of the domestic space. Women were encouraged to work on the garden, food, decorative textiles and clothing to enhance the lives of those who lived in the home (e.g., sewing, knitting, crochet, quilting, embroidery, macrame/tatting, spinning, weaving and many others). Other crafts that have been practiced in the domestic sphere include woodworking, painting, drawing, photography, the assembly, refurbishment and production of furniture, and model railroads, but the gendering of crafts influences the way that craft is perceived and accommodated in architecture.

My home, my house, built in 1939 for my father-in-law and his first family, was designed by Dunedin architect Cecil Gardner Dunning. The home was then, and is now, a family home, a modest 100m2 single-storey brick building with large, clear windows. The original plan (see Figure 1) shows two bedrooms, a drawing room/sunroom, lounge room, breakfast room, kitchen, bathroom, water-closet and a laundry with outdoor access. As was typical in 1939, there is no storage built into the living or bedroom spaces, and no provision for a 'spare bedroom,' a quiet indicator of wealth for much of the twentieth century.[5]

The major change that has been made to modernise the house in the twenty-first century reflects a trend towards open-plan living to replace smaller, discrete spaces. Our kitchen, dining and living spaces have been opened into one larger space, the laundry has internal access, and the house has a separate back door.

The house functions well, and generations of my whānau have lived here since 1939. At first and second glance, the plan lacks any indication of the home being a site of craft leisure – so how does one craft in a space where no provision has been made for craft?

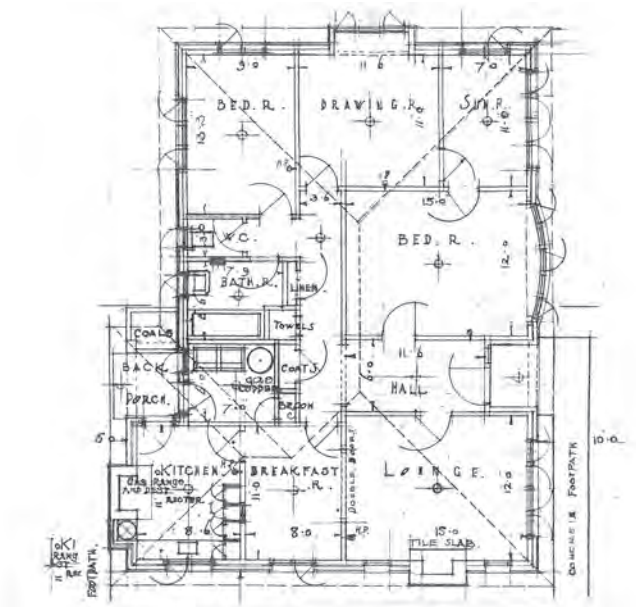

Figure 1. *Baughen Family Home, circa 1939, plans by Cecil Gardner Dunning.*

TEMPORARY AND PORTABLE

All the sewing machines used in my family have been portable models with handles and cases. The implication of these handles is clear – these are tools that are to be lifted and carried to the workspace and then put away after use. Buckley situates this architecturally as flexible space.[6] The most common flexible space in crafting is the kitchen table, but flexible space can be any spaces that double as crafting spaces. What is important here is the idea that craft is a temporary and portable activity. This is denoted in two ways, through the design of craft equipment and through architecture.

It is this flexible space that sets up a tension, at once positioning craft as both visible and temporary. This positioning holds true even when craft spaces are legitimised by being allocated permanent positions in the home. Where the crafting equipment is granted a permanent space, perhaps in an alcove, often this is as a secondary, rather than primary, use. An example from my own location is the spare bedroom that doubles as a sewing space. The room may be used more for sewing than guests, but it carries the name of guest room or spare room.

SELVEDGE

One conceptualisation of leisure crafting is as a selvedge activity. A fabric selvedge is found where the outer warp threads of a width of woven cloth are packed together to form a self-finished and durable edge that is resistant to fraying. At this edge, the weft turns and wraps around the outermost threads, compressing them so that their spacing becomes slightly denser than the threads in the central section of the cloth (Figure 2).

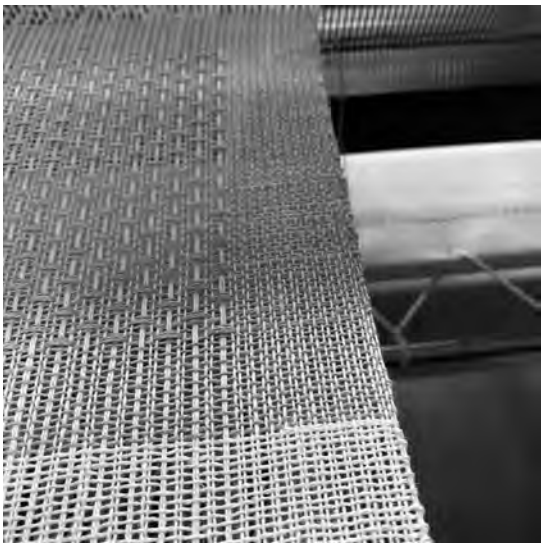

Figure 2. Woven fabric selvedge, edge, an increased density is a key feature of craft spaces.

As a weaver, I liken craft space to a selvedge, a space where the elements are crammed closer together at the edge. Unlike other domestic furniture that is positioned centrally in a room, the furniture and appliances used for crafting tend to occupy the edges, the corners; craft items are peripheral to the objects that define rooms.

There is political tension in space used for crafting. Stalp discovered that quilters are criticised by their families for the time they spend on hobbies, and that families expected quilters to restrict their crafting time to fit around family leisure and social needs.[7] The ability to engage in a hobby, spend funds and use space was to be negotiated, even when a crafter was nationally recognised in the field of quilting or earning their own money. These expectations reinforce the notion that craft is secondary, and temporary.

CRAFTING IN NON-FLEXIBLE SPACE

In my location, my lived experience, this temporary and portable concept has proved true only for some crafts, and for some of the time. The largest room in my home houses an 8-shaft Countermarche Loom. At 200kg, my loom is the largest piece of furniture in my home, and so cannot be neatly tidied away into a storage cupboard. My loom cannot, and does not, occupy flexible space. The room is my Loom Room, and also houses associated equipment that is needed to set up and work the loom: a vertical mill, temples, shuttles, bobbin/quill and pirn winders, lease sticks, raddles, various sizes of reeds, and warp sticks.

This example is at odds with the concept of flexible space, and also highlights the practice whereby rooms are named and their inhabitants directed as to their intended usage by architects. My loom occupies what was originally the larger bedroom, which has not been altered in layout, but its usage is very different from what the architect originally considered.

Figure 3. The loom room with its 200 kg of loom.

CRAFT CONSUMPTION AS ACTIVISM AMID CONSUMERISM

This location of craft at the selvedge of rooms and homes, the edges, is reinforced by the positioning of the products of crafting as leisure. Amateur production circulates in spaces that are not commercial and have low visibility – in social spaces as gifts, and in the home as decoration, and only rarely in museums and in commercial spaces.[8] Crafting, outside of indigenous craft, requires materials to be sourced, found and, mostly commonly, purchased. This is described by Campbell as craft consumption.[9]

Crafting, although identified as a form of consumption, is very different to the mass consumption that fuels much of a contemporary 'lifestyle'. Garber found that with crafting, the *act* of crafting is the key element, and not the artefact being produced.[10] Elsewhere, I have described crafting as a deliberate choice to make, rather than purchase ready-made, as a subversive rejection of a dominant consumer approach to living.[11]

Hackney sets out the potential and practice of home craft as quiet activism.[12] In this respect, craft serves as both a recognisable marker of a crafter rejecting aspects of contemporary consumerist living and, perhaps more meaningfully, as a search for authentic connection and autonomy over what we eat, how we dress and our domestic environment. Knott hypothesises that the home/domestic/amateur craft space is differentiated within the "normative structures of capitalism, "confirming what it is to be middle class at the same time as "stretching its boundaries."[13] Recognising the peripheral position of crafting and craft production provides impetus for architecture to respond, to ensure that crafting, crafts and crafters are not left at the edges.

STASH, STORAGE AND STUFF

In describing my loom as occupying non-flexible space, I detailed the additional materials, equipment and resources that those tools required. Knott discusses three elements required for amateur craft activity: bases (materials/surfaces), carriers (tools), and arbiters (books, technical manuals).[14] Each element is important, and leisure crafters require spaces to house the bases, carriers and arbiters of their craft. The element described by Knott as 'materials/surfaces' is known to textile crafters as 'stash' – the yarns and other materials required to make fabric or work with fabric.

Stalp sets out the tensions involved in textile stashing and storing materials in domestic spaces.[15] Space is, of course, important. Not only is there a need for space to be available, but the use of that space must be negotiated, and that negotiation can be tricky. Stalp also provides evidence that financial investment in materials is a contentious issue for many crafters, who must downplay the cost, sneak supplies into the home or hide their stash.[16]

Storage and access for arbiters requires both physical and digital space. In a world where books are increasingly replaced by digital content, it is not unusual for crafters to own a small physical library of significant texts, alongside a dedicated computer and printer set up to access digital content, with the aim of planning craft projects or communicating with online craft communities.

THE POLITICS OF THE HOME

The contemporary middle-class home, as portrayed in media, is a tidy, clean, neutral space – a container for living. This image seems little changed from the modernist ideals of the mid-twentieth century, expressed in terms of white, form-revealing walls.[17] In this machine for ideal living, the detritus of living (the dry washing waiting to be folded, the cutlery and crockery discarded from cooking and eating, evidence of crafting) has no place. A place for everything and everything in its place. The alternative is a hoarder house, terrifyingly full of an excess of stuff.

Knott provides a background for crafting in domestic spaces, and outlines a history where crafting is designed to be concealed and tidied away, or managed into something that is in keeping with contemporary ideals of domestic space and home.[18] The pegboard is identified by Knott as a key historical element of domestic craft spaces, intended to ensure safe storage, timesaving and precise, aligned-to-the-grid organisation. The Masonite Corporation's Presto Pegboard of the early 1960s has become the default craft organising system, with a promise of easy, tidy and aesthetically ordered storage.

Knott sets out a commercialised development of hobby-as-leisure in Western societies, of twentieth-century magazine articles and images setting a goal of clutter-free, organised and tidy craft spaces.[19] Knott and Buckley both describe the reality of craft spaces as being more "fragmented" and less important than typical domestic spaces. For Buckley, the lack of permanent homes for craft activities speaks to the inherent "non-necessity" of such practices in home life.[20]

For Knott, this temporary, portable craft practice denotes something that is interesting but visibly less important than other aspects of home life.[21] Ikea's Raskog trolley is the contemporary embodiment of dedicated craft space, an assumption that craft can be contained in a small, efficiently organised space to be wheeled out of sight (Figure 4).

Figure 4. Raskog trolley,
the 21st century crafters default storage system.

What is notable here is that the politics of design set out to provide space for sleeping, eating, meal prep, personal care and socialising, but with no mention of space for craft. Instead, there is an assumption that the contemporary home is presented not as a site of production, but one of display. That display suggests a generic lifestyle, of people who exist, to misquote a pop-culture reference, "to make the house look good."[22] This phenomenon presents as part of a wider practice of seasonal home décor, shorthand for home decoration. Homes are places to display purchases, not places for showcasing the handmade achievements of homemakers.[23]

MODERNISM – A DOMESTIC LEGACY OF PRODUCTION AND CONSUMERISM

Modernism, from which architecture seems to still take its primary cues, is about production, commercialisation and the distribution of better-designed outcomes for the benefit of all.[24] While domestic architecture sits in an uneasy space between custom design for particular clients and the larger-scale development of multiples, contemporary domestic architecture draws visibly on its modernist foundations in the lack of ornament and reliance on form and abstraction over other aspects of design. This focus on form, and subsequently on the display of the designed form, results in a domestic architecture that fails to consider the role of craft in the lives of the inhabitants, those who live daily in the spaces created. Ironically, the flexibility promised by modernity has resulted in a fixed, rather than fluid, domestic architecture.

The default designed white-paint colours (oyster, alabaster, pearl lustre) of contemporary interiors are, at the core, extensions celebrating architectural form. In contrast, crafters require a neutral colour to backdrop their mahi | work space. Neutral tones, often grey, provide better backgrounds when comparing colours.[25]

Bäckström's plate, "Dimensions of the body, Mormor sitting" (Figure 5), critiques architectural planning through its appearance in the *Arkitektens Handbok*.[26] This reveals that the tools of architecture, and underpinning notions of modernism, mass production and rationalism, have failed to provide space for crafting – in this case, knitting.

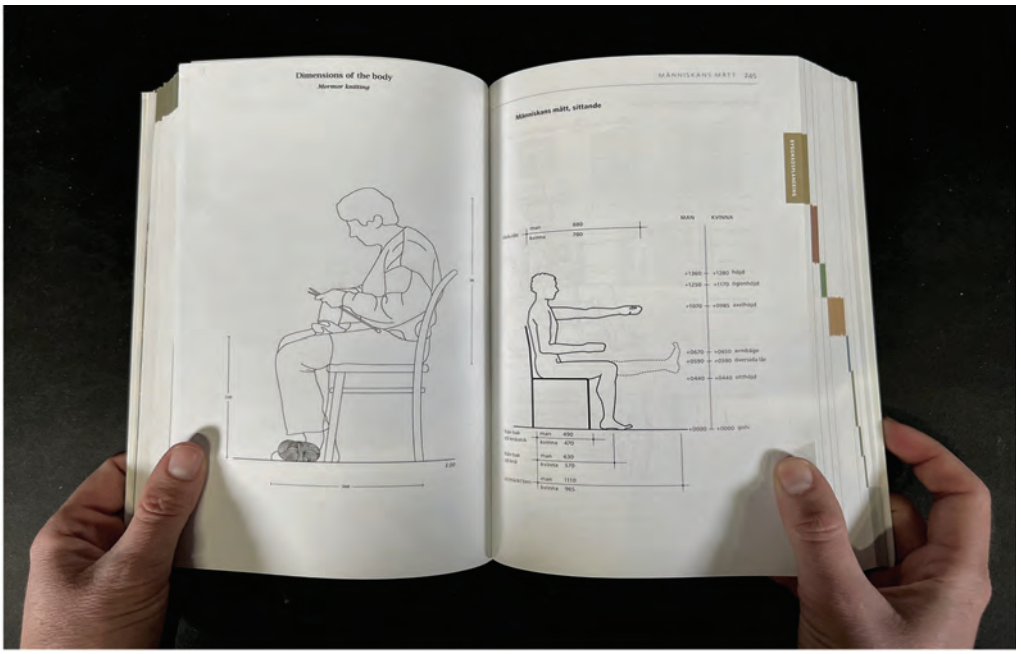

Figure 5. *Dimensions of the body, Mormor sitting, highlights how the needs of crafters are not part of the architectural toolkit.*

DUST

I can't help but see craft conceptualised in architecture as household dust, detritus from living and somehow outside of design. Other forms of household 'dust,' such as the compost bin, have been given a clean, modern solution (hidden in a drawer, compartmentalised to allow for recycling of various types of refuse) yet craft is ignored and metaphorically swept away from flexible spaces. Dust is residue from repurposing spaces primarily for something else more accepted or understood. Craft, as dust, is a metaphor that explains the selvedge position, the temporary flexible space and negotiated position of craft and, perhaps most of all, the lack of architectural planning to accommodate it.

RETURN TO LOCATION AND IDENTITY

Crafting is important to my identity; crafting is informed by my Location, and whakapapa. I am a Knitter not a knitter, a Weaver not a weaver. Yet when I must first challenge the way space in my own home is demarcated, my ability to craft my identity is challenged.

Faud-Luke positions designers as able to advocate for real change, to propose and make choices leading to a better world.[27] Design provides opportunities to change the way things are done. Building on earlier work on the role of craft in fashion activist practice,[28] I suggest that the practice of architecture should open to show the possibility of craft, not as decorative and aesthetic artifacts, but as messy, permanent spaces requiring normal domestic practice. I propose that architects consider specifically designing for leisure, rather than assuming spaces can be adapted for leisure.

If architectural practice made craft space and craft activity more visible then, in the words of Fuad-Luke, "a counter narrative, aimed at generating and balancing positive social, institutional, environmental, and or economic change"[29] would result.

Architecture that allows humans to live their best life must present design solutions that are open to a range of ways to live. For crafters, this means allowing for space to be inhabited as needed, not predetermined in terms of approved uses. This requires architects to reconsider how houses can be used, and to be open to uses beyond mere consumption and display. Architecture that allows for "sliving."

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ORNAMENTING THE BODY – CREATIVE PRACTICE EXPLORING THE RELATIONSHIP OF THE BODY POLITIC AND SPACE

Gina Hochstein

INTRODUCTION

In this essay, I set out to explore the multiple facets connecting the politics of space to the politics of bodies. Objects surround our bodies, sized to varying scales. We wear and display them. They are all crafted and designed, yet we fail to acknowledge the political significance of our engagement with them. The political dimension is evident in the design process. Regardless of an object's scale – even architecture can be viewed as a form of object – its design is typically tailored to a single standardised body.

Scale is a constraint for both jewellery and architecture. Both are designed and bound by spatial context, and the body is the inherent factor to which scale relates, including consideration of how the body moves within space. Small and monumental spaces alike use the human form as a reference point.

This paper explores the ways that scale shifts and adapts in relation to the emotional realm by examining the utilitarian and societal functions of objects and imagining and reproducing pieces that are made visually.

I analyse pieces of my creative practice that explore the spatial practices that emerged across the span from craft to building, developing what can be called a 'body politic,' one that uniquely welds landscape concerns with corporeal–expressive repertoires that test and afford modes of belonging and identity in complex ways. My creative practice research investigates the complex intersection of craft practices and architecture in the context of a consolidating émigré community that made its home in Titirangi, Aotearoa New Zealand, in the 1950s.

My focus is on the suburb of Titirangi in West Auckland, named by Māori as the "fringe of heaven," in Tāmaki Makaurau Auckland. This association comes from the forested coastal range that separates the Tāmaki Isthmus on which Tāmaki Makaurau Auckland has been established, from the exposed Tasman Sea to the west. Titirangi is known for the high rainfall that the separating range draws from the Tasman weather patterns. The suburb is also known for its diverse social character, formed since the 1950s as an enclave of intellectuals, arts practitioners and their newly built modernist houses for which design, painting, sculpture, furniture, ceramics and weaving were binding referents in shaping counter-suburban lifestyles.

A key facet in my research is the convening of a creative community of women makers linked to European migration in Titirangi through the 1950s and 1960s. This is familiar territory for me, as I grew up in this environment, and my parents, themselves immigrants from Europe, likewise knew and socialised with this community more broadly. The establishment of creative careers and home far from Europe, had a notable effect on design and art practice here, no less than it linked the newly consolidating suburb of Titirangi on the slopes of the Waitakere Ranges with a certain bohemianism and lifestyle that ran counter to the homogeneity and social conformity typifying suburbanisation elsewhere across Auckland's Tāmaki Isthmus at this time.

My creative practice aims to explore the spatial practices that emerged across this historical period, spanning craft and building, where my pieces, as body ornaments, are designed to reflect how women occupied space in these modernist houses and understand why ornamentation is of such value. Modernism in the 1950s and 1960s elevated the profile of women in the domestic sphere from the isolated kitchen into an open-plan environment that shifted the gender dynamic by way of aesthetics that were mirrored in interior and exterior architectural schemes.

A core idea of my practice is to connect the history of domestic space with broader, macro-level histories. Design history, often not viewed as political, can be intertwined with nation-building and democratisation, as I aim to illustrate through my creative outcomes in this paper.

ARCHITECTURE / JEWELLERY

Modernism led to a change in roles for women who, in the pre-feminist period, were often viewed as domestic home-keepers. On occasion, they were themselves understood as objects of desire, an objectification further underscored by the wearing of jewellery. Yet jewellery and architecture in its modernist reframing sets up new relationships to the decorative and the dwelling. Women themselves began to reshape and determine living and working in spaces that were aspirational and open to structural innovations. Modernism considered the possibility that design and technology would transform society, raising standards of living and initiating a future for women where feminism had an opportunity to flourish.

Architecture is not isolated; there is a connection to the natural environment and the surrounding buildings.[1] Similarly, jewellery has a connection to the body, with movement and placement. Architecture and jewellery are both spatial arts practices that attend to surfaces, territoriality and placement. Both architecture and jewellery share the importance of site, location and setting. Just as landscape has colour, surface, shape and texture, so does the human body. A dwelling, by its nature, is bound and sited on the landscape as jewellery is placed and worn on the body.

Architectural intent is more than decoration; it comes from shaping form and crafting spaces with considered materials and is balanced between practicality and art. By using aesthetics sensitively, architecture can elicit profound and abstruse emotions, as can jewellery. Both relate to the human form, in contrast to other art forms that one is unable to inhabit or wear. Architectural objects have three-dimensional form, scaled to interface with the body and are inhabited within. Both architecture and jewellery can become objects of joy and delight and have a relationship to their setting, be it the landscape or body form. Wilhelm Lindemann's *Thinking Jewellery* (2011) clarified my thinking about jewellery and its context in cultural history.[2] Here, the theory of "auteur jewellery" is used to examine the traditional decorative function of jewellery, its social implications and the development of jewellery as an art form.

TITIRANGI

Given this context, and beneath ideals of image-commodification, I seek to articulate the recalled realities of a female Titirangi community similarly dwelling within and bringing about modernist counter-dwelling. On the bush-clad slopes of Titirangi, the lived experience of domestic International Style modernism mostly eluded the media gaze. The International Style arrived in this context via émigrés and a few local modernist architects who collectively engendered a significant cluster of locally adapted modernist houses.[3] Titirangi has hosted a cosmopolitan and design-aware community that was less concerned with status and happier to engage with the new architectural language. Louis McIvor recalls that "creativity and the aesthetic feeling in Titirangi was quite remarkable and very unusual at the time."[4]

The city fringes and its cheap land, with often difficult sites, attracted an artistic community with a taste for architectural and artistic experimentation. Modernism and its architectural concepts offered integration of all arts. The extensive creative community living in Titirangi in the 1950s included Tibor Donner, Len Castle, Doris Lusk,

John Crichton, Lois McIvor, Maurice Shadbolt and Colin McCahon, who all explored modernism in their different creative fields. Modernism and its practitioners in Titirangi have been the focus of exhibitions such as the Auckland Art Gallery's "1950s Show" in 1993 and (former) Lopdell Gallery's "Western Lights" exhibition in 1992. This artistic community joined in merging the new architectural language with other aspects of the arts including painting, sculpture, furniture, ceramics, writing and weaving.

Building primarily on recollections of Titirangi women, my thesis aims to uncover the complexity and agency that this emerging community and spatial enclave permitted – a subject which oral history-making, as a growing form of architectural research, is particularly well suited to articulate. My work has also given me the opportunity to further examine my subject at the varying scales carried by bodies and houses through multidisciplinary fields combining research, oral history and making.

PIECES

I look to Andrew M Jones and Nicole Boivin, who write about how artefacts "have agency."[5] I believe we can construct meaning in relation to an object and, furthermore, can embody material culture through representational qualities. This aspect is clarified by Arthur Berger, who maintains that imputing an agentive power to an object and attributing meaning to it is fetishism, pure and simple. However, cultural studies has shown that objects' meanings are not intrinsic features of the objects themselves, but are bestowed upon them in the context of specific relations.[6]

Copper Head Wrap

My core concept is that art is a form of action and that making art provides meaning and is associated with aesthetic experiences. When a precious object is worn on the body, the inference is that it becomes jewellery. By my making and presenting work in an exhibition format, I seek to demonstrate that my art is a form of action and inhabits the space of material culture. Each disc in this piece represents a woman's story and is a connector of language. Language used as a connector needs to be interrogated; otherwise, it may conceal further differences. It is a way to examine my thinking about the community at the core of my research. The relationships between people and their visible and invisible needs may mesh, weave or interconnect, yet differ in either their starting or end point.

With *Copper Head Wrap,* I seek to better understand the notion that objects can touch, feel, smell and hear one another. The idea is to wrap this piece around your head and feel the cool metal strips pressing in and across your skin and hair.

Figure 1. Copper head wrap.
Copper and brass solder.
Model: Jess O'Reilly. Image: Emma Bass.

The modalities of communication between my work and the community are the commonalities of language and self-expression between jewellery and modernism in this design-rich enclave. The steel and glass modernist house is an outward expression of identity; but so at a lesser, but no less important, scale is the wearing of jewellery or any other form of personal adornment.

The Landscape Ring

The Landscape Ring examines the sloping, bush-covered sites that characterise the Titirangi area, where many important mid-century houses were built,[7] affording significant architectural innovation, as highlighted in 2008 by Bill McKay's *Block* Itinerary No. 13.[8] The ring is made with lapis lazuli, fine silver and bezel-cut shapes to acknowledge the terrain of Titirangi that leads down to the surrounding bays and sea. Some taller elements are intended to acknowledge how land was divided up into buildable rectangle sections. These have smooth sides, and the use of lapis acknowledges the layered geology beneath, with the steep building sites above.

I link the blue in lapis to the term "heaven" within the translation of Titirangi. *The Landscape Ring* is sizeable (in plan it covers three fingers) and, though smooth to the touch, does not allow for the fingers to sit comfortably on either side. This is a nod to the tensions created by colonialism and the limited land that the local iwi, Te Kawerau a Maki, the Māori tribe, have to their own ancestral land. In Māori tradition body and land have a profound relationship. Papatūānuku is considered mother, earthbound to the land, and is seen as the birthplace of humankind. Land claimed was also customarily named after parts of the body by tangata whenua. For example, the chief Tia saw the location named Rangiuru and called the hills and the land to the south "the belly of Tapuika."[9]

The Corset Ring

In terms of theory, I respond to Beatriz Colomina who considers that an interior space has traces left by a former occupant,[10] by way of an extension of Walter Benjamin's saying that "To live is to leave traces."[11]

I wanted to create a ring to be worn on the traditional wedding ring finger that could leave a trace of the stories of a gendered way of living post-second-wave feminism in Titirangi during the 1960s. My conversations with the women involved discussed the roles of being a mother, wife and creative. All had their creative work firmly placed in third position, after the responsibilities of mother and wife. At this time, prior to the second wave of feminism, being a wife according to Sara Ahmed was "to accommodate yourself to someone else's story, a story in which you are not an artist."[12]

Figure 2. Landscape Ring.
Pure silver, Lapis lazuli, resin and 999 gold.
Model: Isabella. Image: Emma Bass.

Figure 3. Corset Ring.
Pure silver and 50% copper/50% silver alloy.
Model: Isabella. Image: Emma Bass.

Researching corsets and lingerie in New Zealand during this time suggests that fashion no longer required a corset and whalebone structure to be worn daily. In 1953, for the first time a full-colour Berlei lingerie advertisement was printed on the back cover of *The Mirror*. It features nylon bras and girdles (not corsets) prominently displayed in pure white.[13] While these Titirangi women understood what wearing a corset had meant to their mothers and felt sufficiently emancipated to wear lingerie for comfort, they felt that a corset was designed to reshape the body and constrict the waist into an idealised form or shape.

In *The Corset Ring,* I was responding to the idea of constriction or lack of comfort in an undergarment and, through sketching, suggested this as a metaphor for these women's creative output being socially relegated to an inferior position.

Based on my sketching, the stays extended beyond the end of the finger and are held firm in smaller and smaller wedding rings, suggesting that the further from the wedding ring finger, the more air the stays have between them. As an elongated element, the "texxtured" (see below) ring component restricts the ability to bend the proximal interphalangeal joint or the first finger joint. The bodily sensation of constricting natural bending movement and having a ring that extends past the natural extremity is intended to deepen our understanding of the gender roles of a married woman during this period of modernism who wished to play a more prominent creative role in her life. In the production of *The Corset Ring,* the ideology of my personal feminist praxis is unpacked and reveals the thinking and making process behind my work.

THE BODY POLITICS OF SPACE

In his book *The Production of Space,* Henri Lefebvre classifies space into various spatial representations where "lived space" corresponds to a tangible engagement with space, "conceived space" is a representation of space, and "perceived space" is composed of representational spaces which are experienced through images and culture.[14] All of these definitions are nuanced and yet when put together, it is only through the body that perception of space and, therefore, location can be experienced. Fingers and knuckles covered by skin form the terrain where a ring or jewellery piece is sited architectonically. The ring rests on a finger, yet if the ring is taken off and displayed in a museum, the same ring no longer carries an architectonic connotation. However, the mark of the absent ring on the skin, caused by oxidisation, leaves a green tone where the ring once was and patinas the body. This also applies to metal elements that adorn buildings and leave a stain that can still be recognised as a "shadow ornament."

For this reason I believe that jewellery can be intensely personal. Hence, the ring finger, through the impression of the flesh, becomes ornamented with the outline of the wedding ring that once adorned it. This is my personal embellishment or "texxture," where I still have a groove left from many years of marriage which continues to ornament my body. This essential haptic quality of a wedding ring gives us a memory of time and place. In Renu Bora's essay "Outing Texture," the term texture becomes "texxture" with an extra 'x.'[15] Dense with symbolism and texxture, the ring inherently references an event and emotion accompanying that event – in this case, a wedding. The location is one's wedding ring finger, and the contact with our body intensifies its communicative value.[16] Jewellery can be a mnemonic symbol where the piece brings back recollections of a time or place when it was purchased, given or worn.[17]

THE BODY AS EXHIBITION SPACE

The act of wearing and the inherent knowledge it carries have emerged as central themes and areas of exploration in this essay. I look to Lisa Walker's work which, I believe, exemplifies how jewellery can be inherent in almost anything. While she challenges conventional assumptions and demonstrates that everything can be made "wearable," she also offers an intellectual commentary on value, consumption and our emotional connections to objects.[18]

Architecture and jewellery share an emphasis on the importance of site, location and setting. According to architectural historian Mark Wigley, "buildings are worn rather than simply occupied,"[19] and the complex relationship embodied in the term "wearing" connects jewellery and architecture. If the human body is seen as a site for the display of jewellery, it becomes a site-specific habitation. Thus, a ring can be worn only on a certain finger with a specific dimension; it therefore cannot be worn by others (who have bigger or smaller fingers) or on a wrist as a bracelet.

CONCLUSION

My pieces are to be seen as innately architectural jewellery – by this I mean that my output is inextricably informed by a common understanding of form, function and making. Both building projects and artworks embody a purity of purpose in addressing the requirements and needs of their inhabitants; my pieces exemplify an architectural aesthetic of functionalism. Examining my jewellery in conjunction with architecture helps to reframe perspectives on jewellery practice, encouraging us to view art as ornamentation of the body and also as a form of construction. Even without changing our viewpoint as radically as this, parallels emerge between architecture and jewellery as constructed objects.

I hope that the politics of gender embodied in my pieces will be viewed through the lens of both conscious or unconscious agency, with the aim of making a mark for the creative modernist women of Titirangi and moving the viewer or wearer emotionally.

Gina Hochstein comes with practice-based and academic publication experience. She is a Lecturer at Unitec, whilst finishing her PhD at the University of Auckland. Her PhD by creative practice combines research and written scholarship with a creative output investigating the complex intersection of craft practices and architecture which results in items of adornment on the female form for an exhibition.

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3 Marc Bonny, *Titirangi: Fringe of Heaven* (Auckland: Oratia Media for the West Auckland Historical Society, 2011), 106.

4 Leonard Bell, *Strangers Arrive* (Auckland: Auckland University Press, 2017), 36.

5 Andrew Meirion Jones and Nicole Boivin, "The Malice of Inanimate Objects: Material Agency," in *The Oxford Handbook of Material Culture Studies,* eds Dan Hicks and Mary C Beaudry (Oxford: Oxford University Press, 2010), 3.

6 Arthur Asa Berger, *What Objects Mean: An Introduction to Material Culture* (Walnut Creek, CA: Left Coast Press, 2009), 9.

7 Bonny, *Titirangi,* 106.

8 Bill McKay, "Modern Houses in the West", Itinerary No. 13, *Block: The Broadsheet of the Auckland Branch of the New Zealand Institute of Architects,* 4 (2008), https://static1.squarespace.com/static/5ea25fd3aab117351ac972d0/t/5eb37a4a56fa2a6cdffab254/1588820561306/Itin_13_Modern+Houses+in+the+West.pdf.

9 Esther McCoy and Elizabeth Smith, *Blueprints for Modern Living: History and Legacy of the Case Study Houses* (Los Angeles, CA: Museum of Contemporary Art, 1989), 13.

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11 Walter Benjamin, "Paris, Capital of the Nineteenth Century," in his *Reflections,* trans. Edmund Jephcott (New York, NY: Schocken Book, 1986), 155-6.

12 Sara Ahmed, *Living a Feminist Life* (Durham, NC: Duke University Press, 2017), 87.

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14 Henri Lefebvre, *The Production of Space* (Oxford, UK: Blackwell, 1991), 362.

15 Renu Bora, "Outing Texture," in *Novel Gazing: Queer Readings in Fiction,* ed. Eve Kosofsky Sedgwick (Durham, NC: Duke University Press, 1997), 94-127, at 95.

16 Simon J Bronner, "The Haptic Experience of Culture," *Anthropos,* 77:3-4 (1982), 351-62, at 359.

17 Lindemann, *Thinking Jewellery,* 100.

18 Lisa Walker and Liesbeth den Besten, *Lisa Walker, Wearable* (Munich; Wellington, NZ: Braunbook Publications, 2011), 82.

19 Mark Wigley, *White Walls, Designer Dresses: The Fashioning of Modern Architecture* (Cambridge, MA: MIT Press, 1995), 12.

REFLECTIONS

I AM A TECHNICIAN

SUE HILLERY

Assisting others has been instrumental to how I understand composition and the making of things; how parts are assembled and how construction really is a series of elements finely thought out and fitted together. Many captive and seminal moments key to this criticality of sorts, have been formative to my relationships, connections and friendships that continue to run parallel to my gradual awareness and piecing together of how building works. As an activity foremost, for myself, the world of collaboration is the negotiation and brokerage of ideas, the accumulation of discreet transactions and significant exchanges that then enables larger projects to be realised. Here are four types of collaborative projects that have been instrumental to my own appreciation of making and working with others.

NO.1 JONATHAN COOTE

Voluntarily, I became the technician and support person for Jonathan, a new friend who I collided with at the Architecture School at the University of Auckland. At that time, Jonathan who is now a sharp and savvy practitioner of architecture, was submerged into his 5th year all-consuming final project. I was following closely behind in my 4th year.

As the outside world temporarily ceased to exist, we all lived and breathed 'Architecture School' in this rabbit warren of partitioned cul-de-sac like spaces and semi processed half-baked tectonic schemes. It was in this deconstructed habitat, our unpreserved utopia, where magical thinking and ideas were drawn and modelled. Impossible structures conjured from cardboard, fine wires and laminated veneers were our domain, secured by miniature clamps and weighted down by large, oversized library books to reinforce and stabilise all outside forces.

The pinnacle of our lives was the completion of this final model. What we saw as the masterpiece. Idolised as the ideal compact and scaled version of a somewhat crazy building design, the model to us represented our struggle and survival of those months. Then with fingers crossed, assured our rapid accent into the world of architecture.

This creation needed to contain all of the complexities, the craft and refinement of not only as a built

 https://doi.org/10.34074/scop.1027018

object in three dimensions, but also as a final homage or swansong to school life.

Beautifully fashioned purpose made small props and wedges.
Strange, cantilevered fins.
Set out and taped while the drying process was completed.
Thin sections of wood spliced, laminated and formed.
Each part sequentially processed.
Sanded and layered with white modelling compound.
Sanded again/ repeatedly.
Finished with gesso.
And then polished into final glory.
Large hand drawings on over-sized acetate sheets.
Pencilled and drafted as the 1st phase.
Then matched by ink with a defined hierarchy of line weights.
Ochre, white titanium and black glazes applied to plans and their cross-sectional cousins to match the strictly thought-out colour palette. Again, these painterly layers were also buffed and varnished with lower case text pushed into the background.
I finally surrendered my coveted stash of red + white Letraset that marked the floor Level numbering systems:
FFL 0.00m, + 4.80m, + 9.80m, and so on.

By being a willing apprentice, this loosely defined role of an understudy also expanded into the shaping + assembly of the final presentation. Jonathan's finale.

Mounting drawings with exact precision. Ensuring the model base gleamed. Rehearsing the spoken presentation. Manoeuvring jigs and planing edges.

Learning by helping a more experienced and determined colleague, entertaining long maddening conversations that seamlessly transcending into ranting, we became close friends. Inspired and bonded by the process.

It was all about the making.

About the manufacturing of a small-scaled dream world.

From this experience, I then too in my 5th year brought forward and applied these techniques. My addiction secured for the love of handcrafting, the layering of tapes, and the solicited techniques of composition and patience.

NO.2 GIOVANNI INTRA

Exhibition Lifestyle Morte. The Fish Shop Gallery. 186 Ponsonby Road. Auckland. September 1991.

Oscillating between the art world and the making world is the 2nd illustration of becoming A Technician, that describes an account of assisting Giovanni with his 1st solo show at Myfanwy Rees gallery in Ponsonby Road. The venue, a converted retail store with a glazed tile shop frontage offered a tightly packed gallery space that when curated by Giovanni contained an eclectic range of readymade pieces and treasures. My part was the figuring-out of how to interpret a series of rough sketches offered by Giovanni. The deciphering of sheets of inky workbook lines and shapes to ways these could be translated and fabricated into number of prototypes and differing forms.

Giovanni and I first crossed paths in a co-joint show between the Ilam and Elam Schools of Fine Art at the old Artspace in Customs Street Auckland. He was the hair tousled scruffy art student with taped up reading glasses of Auckland, and I was the competitor from the South with my blackened jeans + chrome zipped leather jacket. It was an instant attraction of rebellious souls.

The show contained a collection of distinct yet related objects:

10mm. glass display cabinet to protect a worn pair of studded doc martens.
A large wall sized section of mirror propped up against the white painted gallery partition etched in cursive text.
Thick black velvet fabric stretched over a rectangular shaped frame.
Embroidered this time. Also with writing.

To solve these technical difficulties and to achieve the desired effect demanded we track-down industries that could assist with our cause. Twisting manufacturers arms, understanding mechanical processes, and testing the limitations of their craft + expertise.

In our eyes the finished and complete items were magnificent. Neatly made, with rigorous attention to the finishing of both the back and the underside of each piece.

Just like the lining of a good suit.
Giovanni loved to wear suits.

He pushed hard with life and his furore of the artworld. Everything fused and embodied into his art practice. There wasn't a distinction the two.

As the process gained momentum, endless discussions were exchanged. Battling together how to collect the embroidered cloth, how much money we had left, 'who was going out with who' and heated debates about Kathy Acker's latest book. We were all consumed by our purpose, by materiality, and the fabrication of his objects of desire.

Reciprocation was important. A transactional currency of sorts. Giovanni switched hats soon after to produce the supporting catalogue for my Teststrip exhibition, Pose, in Vulcan Lane. Pose, aptly titled was a memorial to the fantastical world of body building, glitz, steroids and glamour.

Our collaboration and friendship continued which initiated our unreserved crusade to establish the publishing house The Crushed Honey Press. Giovanni later moved to Los Angles where his machinations with the art world accelerated. I think the larger city of LA was a good fit.

NO.3 THE MERTON HALLWAY
Narrowneck. Tāmaki Makaurau. Auckland. 2010.

Advancing into the making of houses, the scale of the technical swelled.

I was becoming more confident with finding solutions to the complexities of built forms. More settled and accustomed to the intricacies of timber detailing and in-tune with the traditions and rationale of hardwood verses the soft-wooded cedar joinery techniques while rubbing up against the secret wins and delight of faultlessly matched wall sarking. Refining the transition of thick travertine blocks to the serrated in situ concrete foundations, then cycling back along the cast ledge on the eastern side corridor up towards the timber sills and frames. In my mind, these relationships of materiality and surface increasingly seemed to become more co-dependent and responsive as I invested and tested how to solve difficult connections, and how the composition of distinct parts could function, connect and perform. These relationships between exterior + interior became more subtle + balanced.

The initial hurdle I needed to resolve was: How does a long 15 metre zig-zag fashioned hallway become the more celebrated part of the house? The refined answer was embedded in the movement of walking along this main axis that connected the three ground floor bedrooms, the central staircase terminated by the open plan living spaces below. Experientially this path began from the roadside, stepping over the threshold through the large pivoting front door. Travelling down the extended passageway to the unbroken view of Rangitoto through the shifting levels of daylight that rippled over the finished surfaces was an unexpected reward that came from the 'actual' building of space. Attuned to the matching of timber sarking lines along the passageway, softened by the milky charcoal tinted stains and lacquers. Counterbalanced by the alternating sections of glazing balanced with grooved cedar panelling.

> **I think in the end some houses form you. To me house-making is a series of signatures.**

Impressions made by the skill of fine builders, draughtspersons, supportive clients, technicians and cabinet makers. Beginning with the concept

Fig. 1 *Interior shot of the Merton House hallway. Photograph: Simon Devitt, 2010.*

sketches and the trialling of shapes and spaces fashioned with cardboard, through to the site office being lowered onto the temporary piles. Admiring the marked up 'rod' used by skilled joiners; learning and witnessing the practice of 'setting out.' Celebrating the meticulous sequencing of concrete trucks arriving in the cooler morning temperatures, through to the planning and journaling with contractors across construction drawings + spare framing off-cuts. These too converted and followed up by more firm and direct site instructions and the eventual solemn meeting minutes.

After 5 years of constant attention, making houses propels you and your thinking. Your understanding of space, texture, constraints and resilience.

NO.4 THE MAKING OF 'DOUBLE PORTRAIT — SCREW THREAD'

A wall installation within the exhibition *Sapphic Fragments* by Imogen Taylor.
Hocken Collections.

The physical model of the Hocken Collections gallery space came first.

> **Drafted and scaled @1:20. Laser-cut from thin board. Taped and glued. Undercoated and walls painted with colours named Radiating Purple and Parsley green.**

Once assembled the model became a perfectly simulated exhibition space layered with a cork sheeted floor. A working apparatus for Imogen. An open topped version of the real thing. Like a playground.

Reduced photocopied prints of Imogen's work were cut out, meticulously positioned. Constantly circulating, switched over and replaced, correcting proportion and tweaking the sequence for a miniature show of sorts. How this device became critical to our collaborative endeavour is still deeply engrained in my experience of making this work.

***Double Portrait - Screw Thread* wall painting existed for three months as a flat two-dimensional helical painted pattern in the gallery room. 14.0m long x 3.0m high.**

> **Occupying and visually twisting the wall surface, turning the viewer in endless motion.**

Rendered in a combination of colours named Butterfly, Portage, Toffee and Chateau Green. Positioned, aligned + adjacent to Francis Hodgins oil painting Double Portrait (1922-23) selected by Imogen from the Hocken Collection.

There are specific rules demanded by the helix shape and function. The design process also seemed to match this repetitive rotation. Multiple iterations using CAD then translated into scaled 1:1 templates of each part of the whole. Careful tracing around template circumferences to establish the rhythm. Hand scribed and filled by retired signwriters. Their professional skill impeccable and a joy to witness. Like an over-scaled paint by numbers.

Writers and theorists talk about, and write about, the queering of space.

I first heard about this term as an architecture undergraduate.

I was enlightened that there was an official enquiry.

Well theoretically at least. To 'bend' space was a new idea.

Well to me anyway.

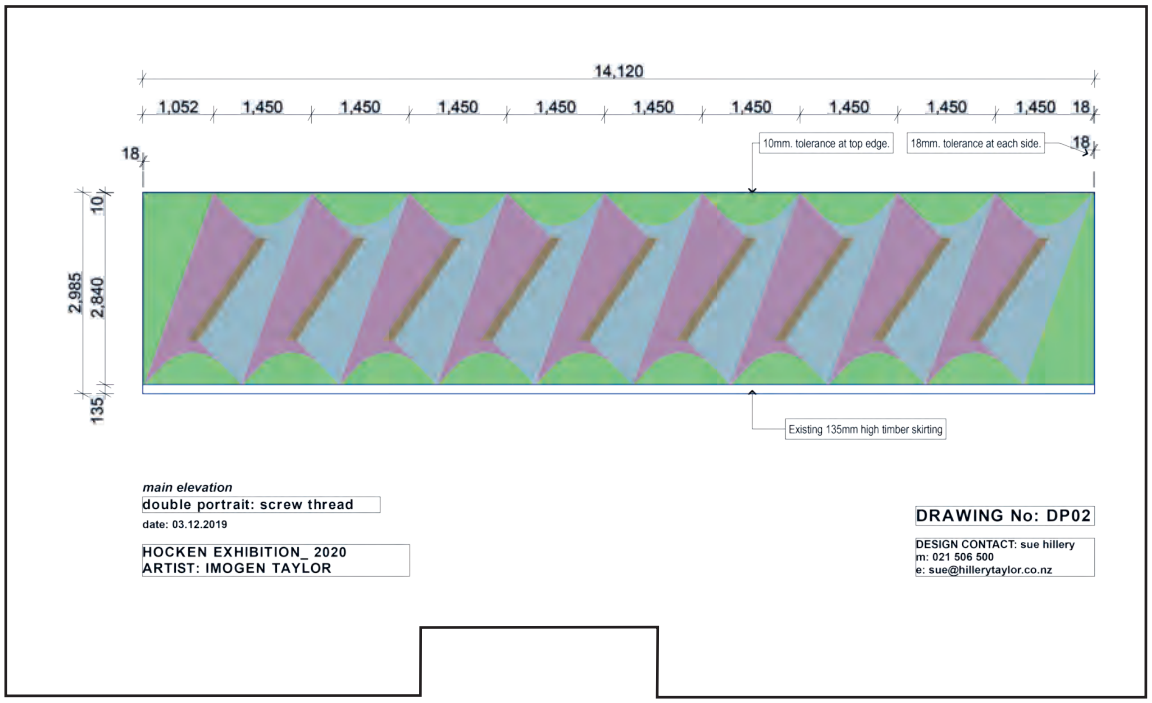


Fig. 2 *Graphic representation by Sue Hillery of the wall installation within the exhibition* Sapphic Fragments *by Imogen Taylor. Hocken Collections, Ōtepoti, Dunedin 2020.*

Back in 1997 I proudly thumped a newly bought copy of Queer Space on the library counter. Hauled back from a London bookshop, I was wilful that my donation would demand a new numbering sequence amongst the burgeoning hegemonic library collection. It's an unusual realisation that you live it and breath space like this. And now it has a term.

This is a reflective observation of my role as a technician turning into producer of things.

Rolling forward as an art maker, an architect, and then back again.

Four sequences of technical application.

Four samples of becoming a technician.

SUE HILLERY is a multi-disciplinary practitioner with an established career in architectural education, private architectural and art practices. Sue currently lectures at the School of Architecture, Otago Polytechnic with current interests in contaminated industrial ecologies and building taxonomy, while taste-wise, sifting between Rationalism and formal Regionalism.

DRAWING WITH LIGHT

LYNN TAYLOR

A blueprint of my father's boat, the *Kakawai*, is one of my prized possessions. Drawn in the 1950s, the blue has faded, the chemicals have begun to separate into stains and the paper is worn through the creased folds.[1] This process of creating blueprints to communicate technical plans by designers and architects is now obsolete, superseded by digital, computer-aided construction drawings. However, the medium remains in the art world, referred to as cyanotype, a form of alternative photography that produces Prussian blue.[2] I'm attracted to this light-sensitive printing, where art and science meet, because I have a foot, although not a foothold, in both. Through exploring and crossing over the similarities and differences of blueprints and cyanotypes, by shifting the boundaries of this photo-reactive medium, new expressions can be generated.

As a printmaker, I am curious to learn how becoming a technician within Architectural Studies will affect my art practice. I've long been inspired by the etchings of fantastical buildings produced by Soviet printmakers Alexander Brodsky and Ilya Utkin. Created as a revolt against communist architecture, Brodsky and Utkin's architectural plans were never intended to be built.[3] Fittingly, my attraction to blueprints is accompanied by a complete inability to translate them into the three-dimensional objects they are meant to be. Through this deficit, I have developed a fascination with interpreting plans in multiple ways. What could I make if I apply my skill set to a series of blueprints? Alternatively, if cyanotypes could be theorised as data, what might they build?

Cyanotype, for me, is a mapping process — not only a record and mnemonic device, but a method of drawing attention to the overlooked, the undervalued. Sensitised paper can be developed in

Fig. 1 *The washing-out process of cyanotype printing.*

 https://doi.org/10.34074/scop.1027007

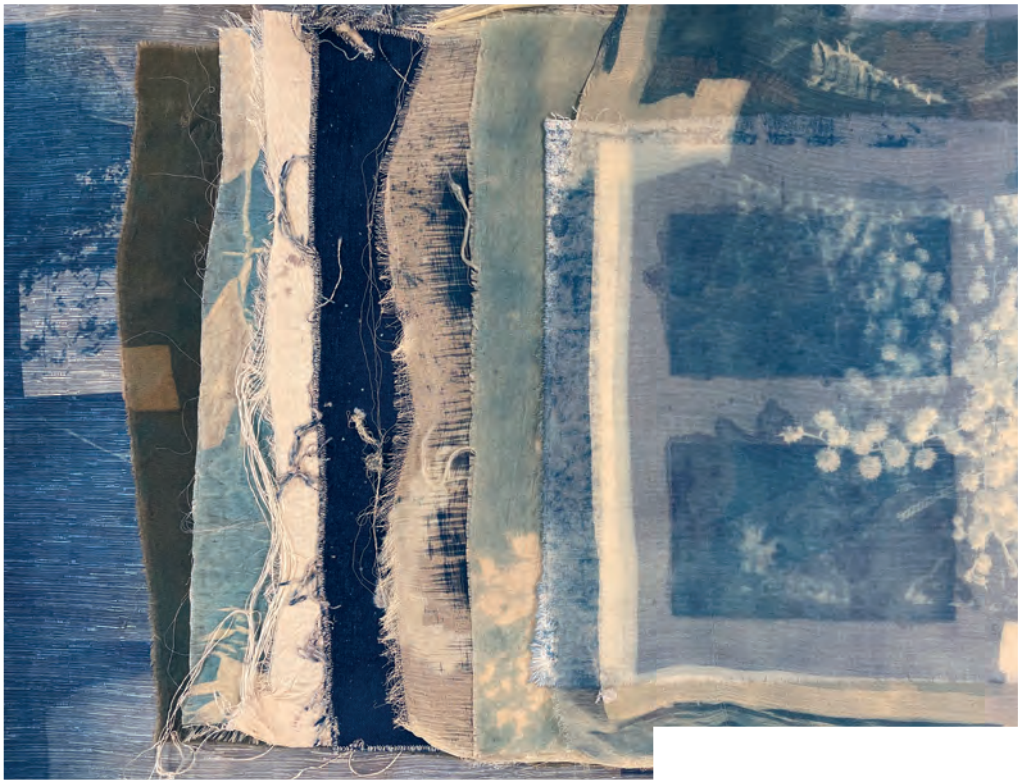


Fig. 2 *Cyanotype on fabrics, student work created with exposing plant materials*

sunlight and water (see Figure 1), creating nuances and subtle changes that allow the expression of the site to be captured. Cyanotypes invite curiosity, build awareness, memories, reactions, interpretations, and generate directions for subsequent artworks.

While the blueprint process was adopted for economic efficiency in reproducing technical drawings, current conceptual approaches in creating cyanotypes are generating new possibilities and understandings of print. I play with the materiality of cyanotype, an arena that embodies, reveals, becomes and conversationally produces knowledge and originality. Variables such as application methods, substrates, shadows, timing and toning disrupt the results and activate questions that lead to discoveries. For example, attempting to use a laser to develop cyanotype (as an alternative to natural sunlight) failed, but led to a new methodology of etching into paper, burning shallow valleys of map data which then became depositories for cyanotype solution to pool, creating a layer of deeper blue.

As skill-sharing is part of my process, I showed Bachelor of Architectural Studies students how blueprints and cyanotypes were traditionally made. Students today are predominantly using technology to design their plans. I wonder if high screen time, combined with industry demand for physical functionality, encourages certain sorts of thinking, as some find it challenging to generate more than one 'right' answer. In exploring aspects of their projects with cyanotype, I saw their experience as something that encouraged more flexible and lateral thinking.

Blueprinting and cyanotypes both require preproduction; with printmaking there is a separation and translation between matrix and substrate. With cyanotypes, the matrixes are commonly found materials or hand drawings, or digital information printed onto transparency film. This separation and translation opens up a space between stable and

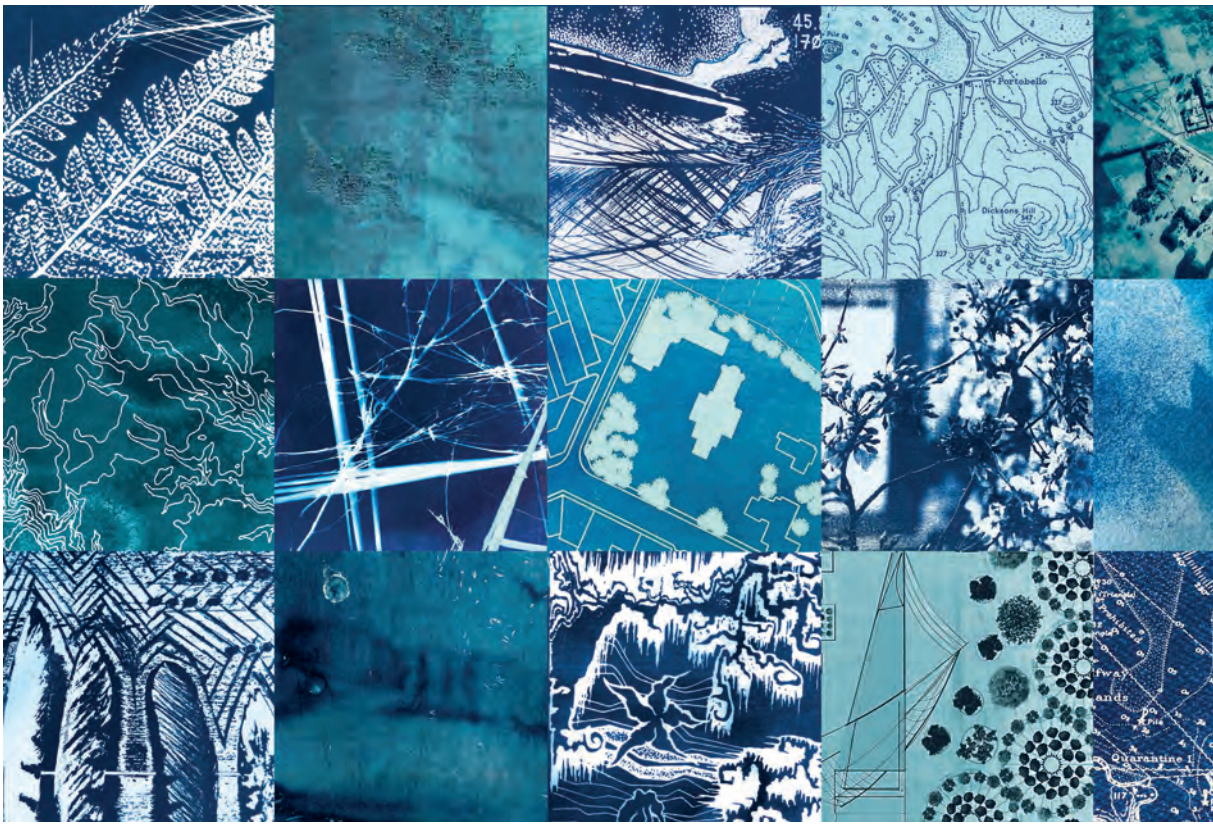


Fig. 3 *Selection of cyanotypes from workshops with architecture students compiled into a grid format*

unstable; a circulation space where rule-breaking can occur, and flaws can rupture the intended outcome.

Architecture students printed their photographs and site plans into interesting results when transparencies were overlaid. Sensitive work was produced by a particular student when adapted photographs were manipulated to high contrast and then scratched. The resulting marks echoed textures of place, a way to share her experience of Aotearoa New Zealand to family back home in South Africa.

Another participant played around with Photoshop filters over her site map of the Octagon, creating one that made her think of a flower. The 'flower' map was contact-printed onto fabric which, she realised, expressed the biophilic focus of her project. Fabric drapes, so hanging it up created an opportunity to look at the same thing in a different way, leading another participant to envisage potential clothing applications. This conversation referencing fabrics and the body is poignant for me, because the original technical drawings, the matrix for blueprints, were drafted on linen before being exposed onto the paper substrate. It was common practice by many, including my family, to re-use this fabric by washing away the sizing and information to release a fine white linen that was then used to create baby gowns.

Participants who made cyanotypes on their sites found themselves responding to place in a heightened sensory way. Edward Casey describes this experiential response: "The lived body is what affords a 'feel' for a given landscape. … Such a body is at once the organ and the vehicle of the painted or constructed map, the source of 'knowing one's way about,' thus knowing how we can be said to be acquainted with a certain landscape."[4]

One response articulates an experience akin to what the others described: "the process helped me feel more present, as you are ever mindful of the weather and your position on the land, and how much or how little light you have at any one moment. It has given me a new appreciation for how buildings here need to be very carefully crafted around the sun's unique pathway."[5]

An art student translated large-scale photographs of scenes into sections, produced negatives and laid them onto a piece of sensitised fabric. Working outside, the wind caught some of the negatives and by the time she retrieved and replaced them a colour change had begun; some information was lost. Some areas printed out of focus, but this whole process performed her perception of how we respond to the environment. Another project involved constructing architectural structures that were soft but dependable, structures that touched the earth lightly, like plants and trees do. In this process the participant made prints of plants from their site (see Figure 2) which they incorporated in the final design presentation, making parallels between plant and architectural structures obvious. The cyanotype process helped express how they felt, while bringing romance to the project.

When I'm fully immersed in the repetitious processes of printmaking, nothing else exists; I am unaware how much time I have moved through, I'm in a state most easily described as reverie.[6] One participant likened this experience as feeling very slow and meaningful with the added bonus of being part of the development stage of image reproduction which he considered to be more expedient than using a traditional film camera. He felt this alternative photographic medium reflected his way of thinking, towing the line between legibility and architectural expression.

What of the state of blueprints and cyanotypes? Despite having an archival capacity, they are organic, in a state of constant flux. I am intrigued that they are created with light, yet that same light can erase a developed image, which incredulously can be rejuvenated in darkness. Likewise, I view buildings less as static artifacts and more as objects in a constant state of flux, with transformational capacities.

The capabilities of digital reproduction technologies contribute to printmaking's battle of copy versus original and perceived value in the marketplace, even though the contemporary field of printmaking has shifted from editioning to producing one-offs and variations. Integrating architecture and art lead me to disrupt my own rules as I scanned participants' cyanotypes and digitally reproduced them onto paper, then curated edited squares onto cubes of varying sizes.[7] Participant response was to immediately touch and pick up these cubes, play and build with them, delighted how their work read differently when edited onto a three-dimensional format. This cycles back to the early differences of intent concerning how the medium is applied, as fluidity and ambiguity continue to evolve. I believe interdisciplinary investigation that engages materiality, a hands-on process and sensory involvement helps in building something different and bridges the gap between real and imagined worlds.

LYNN TAYLOR focuses on nautical and historically themed artwork through mapping, memory, and the poetics of place. She approaches her practice with a 'printmaker's sensibility,' exploring links between ideas and materiality, and responding to the graphic surprise of integrating mediums. Teaching / facilitation forms a dual career path; with work in the Schools of Art and Architecture, as a Sci Art researcher and facilitating workshops in the community.

ENDNOTES

1 The terms 'blueprint' and 'cyanotype' are often used in an interchangeable, ambiguous manner. Sir John Herschel developed this printing process in 1842 and while the chemicals and fundamental procedures of sensitising a matrix, making a contact print, and washing out are aligned, the main points of difference are intent and purpose. While the term blueprint remains active today in general references to 'how to construct something,' in this paper blueprint refers to historical architectural plans where the technical drawing appears in white against a deep blue background. Herschel's friend Anna Atkins applied the process in a photographic way in her botanical publication, Photographs of British Algae: Cyanotype Impressions, 1843; hence cyanotype refers here to the artistic use of the medium. Put simply, unlike blueprints, cyanotypes are open to artistic interpretations.

2 When combined, ferric ammonium citrate and potassium ferricyanide oxidise to blue in sunlight. Anything that blocks the light will remain the colour of the substrate, traditionally creating negative image.

3 From 1978 to 1993 Alexander Brodsky and Ilya Utkin were members of the Paper Architects, a group of graduates from the Moscow Architectural Institute, who agitated against the near complete loss of Moscow's historical architectural heritage during the 1970s and 80s. Christopher Jobson, "Constrained by the Limitations of Soviet-Era Architecture, Brodsky & Utkin Imagined Fantastical Structures on Paper," Colossal, 7 February 2020, https://www.thisiscolossal.com/2015/09/paper-architecture-brodsky-utkin.

4 Edward S Casey, Earth-mapping: Artists Reshaping Landscape (Minneapolis, MN: University of Minnesota Press, 2005), 17.

5 Participant via Teams, 1 December 2023.

6 "Reverie is the state of giving ourselves up to the flow of associations. This state of letting something happen ... [is] a mode of introducing personal material into a picture or building ... [and] ... is essential to the creative process in which we come to make thoughts for ourselves." John Armstrong, Move Closer: An Intimate Philosophy of Art (New York: Farrar Straus & Giroux, 2000), 78.

7 Although I photographed the cubes outdoors — as I'm stimulated by the interactions and challenges that happen when out on site — for purposes of this publication some the cube surfaces have been formatted on a grid.

ESTABLISHING A SENSE OF PLACE-CONTINUUM

DEVON BELL

My inspiration as a researcher, designer and architectural technician stems from the imposing thought of what has been, what comes next, and how architecture can be constructed in a way that explores and respects this continuum. This is, in part, a reaction to my concern that the trajectory of 'our built environment' is fast becoming emblematic of 'our manufactured surrounding';

> *an action of occupancy,*
> *a scene for the contemporary.*

The problem with that scenographic approach has led to context-less environments propelling conditions of urbanisation like suburban sprawl and the removal of one's association with the natural world.

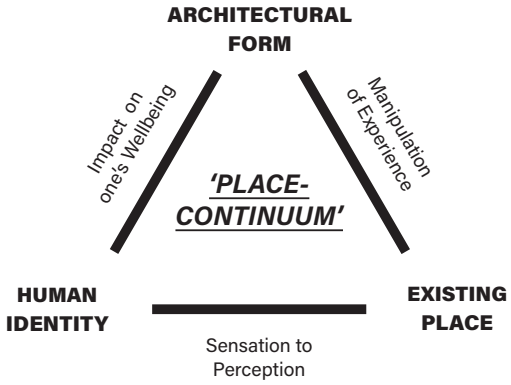
This brings me back to a framework for design that I developed in my final undergraduate year (Bachelor of Architectural Studies).

> *Place-continuum examines an exploration of cohesion between three concepts, Existing Place, Architectural Form, and Human Identity and discusses the ways they intersect.*

This ideology was devised as a response to my enquiry into how the understanding of Place as a conceptual belief informs architecture. My aim was to propose a method to instigate my design response that acknowledged history, associations that people had to existing places and how new architecture cannot erase but offer a continuation of that embodied experience. This was not an attempt to explore and manipulate experience of place into an architectural form (akin to 'Place-making'), but rather I looked to a concept of 'Place-continuing', in order to invite an expression of characteristics of the past while embracing the future.

Establishing this conceptual framework allowed me to consolidate my theoretical understanding of architecture as a student, but as I reflect on it now that I am in practice, I can't help but wonder — how do I preserve my connection with this concept of 'place-continuum'?

Fig. 1 Establishing Place-Continuum*, conceptual diagram.*



In my brief time working as an architectural technician, I've had the chance to work on a variety of projects, from small-scale commercial construction to planned residential additions and new homes. This has helped me advance my technical education and cultivate a more practical mindset that prioritises client goals and budget. However now that I'm practicing, I notice that I'm progressively drifting away from my philosophy; 'place-continuum' seems more like an idealistic, theoretical afterthought in the realities of architectural practice with all its complexities and constraints.

How has being in practice affected my creative agility? The first thing I learned as a student was to prioritise a critical engagement with a site (culturally, socially and historically) through a range of design processes (like site analysis diagramming and massing models.)

The efficiencies of digital resources have gone some way to disrupt this connection to land as an embodied experience. Instead, there is often little need to visit a site at all, as most work can be carried out in the office through various digital programming

https://doi.org/10.34074/scop.1027015

tools. Research that was so drummed into us as students has been reduced to identifying potential risk factors and policy-based parameters.

Or perhaps it is my lack of critical enquiry outside of my day job — lack of engagement in creating, questioning. The omission of both 2D and 3D exploration.

Instead, I intellectualise digital media, searching for evidence of 'place continuum' in architectural blogs, questioning if the projects on my screen have been instigated through connection to a physical experience. ***Or, am I viewing a constructed reality?***

WHAT HAS BEEN...

In 'The Aesthetic in Place,' Arnold Berleant establishes place as a structure of qualities for a person's engagement with the revolving world. These concrete characteristics are explored through physical identity, coherence, and meaning. Identity conveys a sense of place through one's ability to orientate themselves within topographical features or centres. Establishing a sense of place through physical coherence is explored through architectural similarity or being bounded by an interior space or urban square. Meaning distinguishes itself by existing as an interaction of human sensibility towards a place. Combinations of these elements contributes to a distinctive presence of place.[1]

Context is not implied to suggest a single landscape, but rather a formulation of surrounding community and locality. This is not to say design a building like the one adjacent to site, but to illustrate the importance of awareness towards local materiality and craftmanship.

> ***(a global know-how design that corresponds with local know-how construction?)***

...WHAT COMES NEXT?

As I navigate through the fast-paced world of construction, I am constantly reminded of the importance of efficiency and meeting deadlines. While I strive to uphold my philosophy of 'place-continuum,' I also understand the necessity of adapting to the demands of the industry. Finding a balance between the two will be a challenge, but I am committed to maintaining my client-centered approach while staying abreast of technological advancements in the field. Ultimately, it is about finding a way to merge the old with the new, in order to create successful and satisfying projects for my clients and myself.

If successful, I think the application and materialisation of 'place-continuum' holds the potential for designers to contribute to our built environment more authentically...

> ***...more conscious of the unity between a sustained scene and witness.***

Place-continuum illustrates that place is a multi-layered condition able to adapt and absorb past, present and future ideologies. This is not fixing time architecturally through pseudo representational techniques such as nostalgic or 'character styles' but rather presenting architecture that reflects this time, these people, this history and this land.

Architecture that responds, restores, and continues an aesthetic and experiential sense of place, creating re-engagement between form and nature, as well as human engagement, is essential. The advancement and application of both science and technology within construction should look to enhance the connection made to place and human identity.

Having graduated with a Bachelor of Architectural studies in 2021, **DEVON BELL** pursues an authentic exploration of architecture that respects connection with existing place and human iden[t]ity. Now, working in industry as an architectural technician, he hopes to maintain a respect towards this connection while also creating satisfactory architectural form for his clients.

ENDNOTES

1 Arnold Berleant, "The Aesthetic in Place," in *Constructing Place: Mind and Matter*, ed. Sarah Menin (London: Routledge, 2003), 43.

RESPONSIVE ARCHITECTURE: A REFLECTION OF PRACTICE

RATA SCOTT VON TIPPLESKIRCH

In a world that is rapidly changing, the need to adapt and respond to the environmental challenges of today is critical. As an emerging practitioner of architectural design and teaching, whose methodology is concerned with the issue of sustainability, my work reflects a site-specific approach with the aspiration to contribute positively towards climate and landscape, responsive to the conditions and the context.

Upon visiting the architecture of Richard Leplastrier in the Ku-ring-gai Chase National Park, I was struck by how sensible a dwelling could be. At a pivotal point in my own practice's development, Leplastrier taught me the importance of responding to one's environment by tailoring architectural space to deliver the experience of an unfolding relationship with nature.

We arrived during the greatest rain event in 30 years, registering the importance of creating a building that could be put to the test under such circumstances. Accessible only by boat, positioned tactfully in a natural clearing, and elevated above the river's flood-prone banks were a collection of elegantly poised timber buildings. Their eaves stretched gracefully beyond the building's boundaries as the rain poured down, allowing sufficient cover to the open-air structures, while also offering effective shade on a sunny day, given Australia's hot climate.

Round openings punctured the ply walls, chamfered to create focalised apertures, positioned in such ways that the air moved across the spaces in soft, cooling drifts. Constructed almost entirely from timber with patchworked profiled metal, the structures appeared as though they would melt into impermanence if engulfed by bushfires or left to decompose. Climatically tailored and perceivably perfect in its performance, this was a dwelling that served the occupants exceptionally, extending their relationship with the surrounding natural environment beyond the confines of built form. Leplastrier in plain architecture was responding to the integral conditions, through a sensibility to place so acute, it resonated in its simplicity.

Experiencing such a work, in such a way, I was affirmed in my aspiration to create site specific architecture that could conceptually blur the boundaries of nature and buildings, woven contextually into place.

As practitioners and teachers of the same school of thought, similar to Leplastrier, Glenn Murcutt speaks of architecture as a climatically responsive practice of reading the site through the process of immersion,

https://doi.org/10.34074/scop.1027012

Fig. 1 Contour Aerial, 2019. *Contextual aerial image of Banks Peninsula topography locating Little River.*

understanding the structure and order of the land. Murcutt teaches the importance of comprehending natural phenomena such as landscape and climate as these are factors that have significant consequences to architecture.[1]

As an approach to the process of architectural conception, beginning by perceptually locating oneself within the context of the environment, a methodical documentation and understanding of the site takes shape initially through the collecting of field recordings by way of mapping, photography, writing, and drawing.

This 'collecting' of place, becomes an assemblage of phenomenological connections between body, site and materiality, providing a position from which experimental play can ensue, transmuted as architectural imagination.

In order to give shape to haptic play, a greater contextual understanding is sought through critical investigation, reading and research translated through, sketches, models, and drawings.

Sculpting and drawing as tools for process, documentation, and as a means of communication play a critical role in the production of architectural design as evidenced by translating the methods of assembly into the reality of construction.

Architect and Lecturer Brit Andresen, also of the same school of thought speaks to the process of architectural design as bound to the interplay between factors of production, environment and culture, a synthesis of what appears to be opposing intentions of seeking design solutions that are poetic yet simultaneously pragmatic.[2]

As a young designer and an emerging teacher, I don't have the advantage of a ripened practice. However, I do have the blessing of learning about architecture from many angles. Currently practicing architecture, I have studied space from both an architectural and visual art perspective, taught multiple age groups in different settings, travelled to learn about architecture, and helped build projects, offering a skill set that spans in diverse directions.

Visiting the work of Leplastrier that critically

Fig. 2 Lightplay on Landscape, 2018. *Photograph of the view from a specific site.*

Fig. 3 Contour Model, 2018. *Photograph of a topographical scale model of a site.*

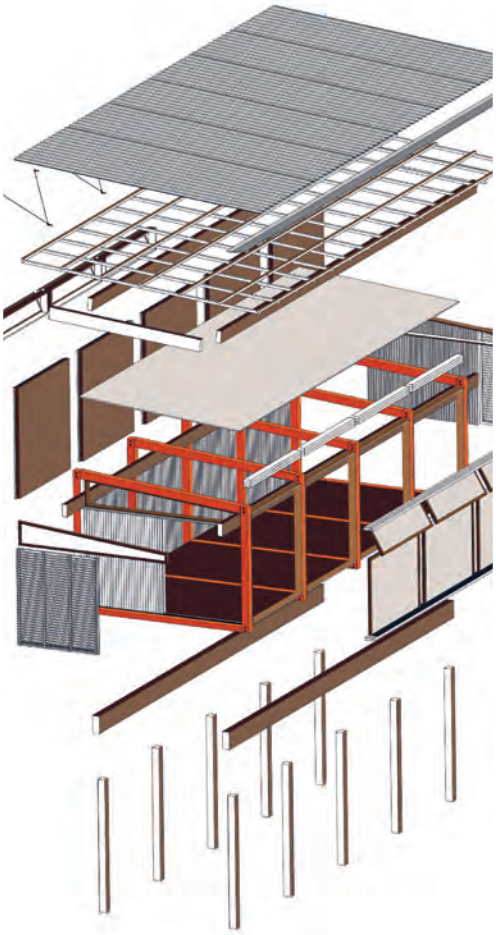


Fig. 4 Axonometric (Detail), 2019. *Exploded axonometric of a proposed project.*

engages with the natural world, understanding Murcutt's methodology of modifying the environment by way of creating layers of flexibility within the built form that respond to climate and landscape and recognising Andresen's contemplation of the practical art of the processes we undergo as designers, has encouraged adaptivity in my practice.

With the knowledge that the climate today won't be the same climate I am responding to tomorrow, and acknowledging the culture of change that will come with the challenges of the future, exposes the need for agility, required of skilled designers, teachers and thinkers who enrich the broader architectural discourse.

Understanding the importance of architecture's role in the conservation of our world contributes not only to a language of tectonics that can adapt and respond to climate (change) in a way that shelters life, but one that sustains and allows it to flourish.

Emerging designer **RATA SCOTT VON TIPPELSKIRCH** BVA (2016) BAS (2019), works in Ōhinehou as an Architectural Graduate for Bull O'Sullivan Architecture. Having previously lectured in Architectural History and Theory and held a position as a Research Assistant for the School of Architecture at Otago Polytechnic, Rata's work investigates themes of Art, Architecture and Ecology.

ENDNOTES

1 Maryam Gusheh et. al. *Glenn Murcutt - The Architecture of Glenn Murcutt*. (Toto, 2008), 14-25.
2 Andreson O'Gorman, "Architecture Interacting," UME, 2011, 12-27.

ARCHITECTURAL LAUNDRY

ANNABEL SMART

In any creative profession there is an obligation to be actively curious and empathetic. To be constantly learning and seeking out inspiration; adding to, and editing out, the mental filing cabinet of influences. Ultimately, for myself, the creative process begins by engaging in cross-disciplinary listening and honing my skills as an observer. It's about being receptive and intuitive to the current moment and acting as a conduit that transfers those findings into the creative thinking and making process.

I consider the act of seeking out inspiration as a duality between immersion and reflection. Immersion in the current culture is fundamental to any creative journey. It involves zooming into the local, the specific, delving into the micro vernacular. Being adept at listening to the popular commentary and being curious about what resonates with the people in the community and more specifically the client - what are they asking architecture to provide for them? I also like to personify the site of a project and to act as respectfully and inquisitively to the place as you would be to a paying client. Asking questions such as what was here before and how has this particular site come to be? This process of deep immersion provides a grasp on the site-specific response and ensures the design responds to the immediate physical and metaphysical context.

It is simultaneously important to zoom out and examine the broader context to inform design decisions. To understand the present we need to

Fig. 1 *Staff lunch table at Ārepa HQ. Photograph: James K. Lowe*

https://doi.org/10.34074/scop.1027014

Fig. 2 *Drinks fridge and timber plinth at Ārepa HQ. Photograph: James K. Lowe*

draw the road map of how we got here. Exploring the historical references that have shaped the overall conditions, the economic, political, and social climate helps to integrate a sense of continuity and relevance into designs. This process not only provides depth to the narrative of what we design but also ensures that every project is rooted in a broader cultural relevance and maintains an empathetic sentiment. Once we have the full picture, we can be more deliberate and considerate with decision making.

For instance, in recent years there has been a resounding call for a sense of solace, respite and retreat in our built environment, in everything from private homes to shared workspaces. Our design brief for the Ārepa (a brain food technology company) head office in Tāmaki Makaurau, was to create a space that would encourage staff to feel in a state of calm clarity and focused flow, in alignment with the brand's mission (see figure 1).

Our design response was to provide references back to nature and maximise the effect of natural light through use of light colours, transparency, textured surfaces, and shadow play. We researched sensory cues that evoke positive physiological responses in people, specifically to reduce stress levels and enhance mental performance. Importance was placed on creating spaciousness by reducing visual noise and creating a functional space that caters to their needs as a company, without clutter. Heavily textured walls, raw concrete and exposed timber ceilings create the bones of the space. Brushed aluminium joinery with refined detailing, machine precision edges and fine proportions sit comfortably next to solid rough sawn macrocarpa plinths in the entrance lobby, the contrast emphasising the soft grandeur of the natural timber (see figure 2).

Fig. 3 *Staff breakout area at Ārepa HQ. Photograph: James K. Lowe*

As part of our research we learnt why watching a curtain move at a slow and steady tempo is such a calming thing for the human brain. It represents a gentle breeze moving through the leaves of a tree, signalling agreeable weather patterns to our ancestral brain. A static curtain doesn't have the same effect and a rapidly flapping curtain can obviously be quite unnerving. So even if the source of that breeze is a ceiling mounted air conditioning unit, as in the Ārepa breakout area (see figure 3) the resulting effect of inducing a sense of calmness in the users of the space is still achieved. The overall design of Ārepa HQ achieves a sense of lightness and atmospheric charm that the clients have described as a serene environment to work in.

This collective yearning for respite is understandable given the high levels of daily stressors and constant stimuli we are faced with. The world is changing at exponential speed and leaving our animal brain struggling to catch up with it. The post-pandemic energy shift has significantly contributed to this trend, highlighting the importance of connection with nature in our buildings. This call for more calmness and 'naturalness' also seems to be in defiance of modern architecture and its disregard for human connection and experience. In his book Eyes of the Skin, architect and author Juhani Pallasmaa discusses the downfalls of modern architecture, claiming that "Modernist design at large has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories, imagination and dreams, homeless".[1] The reflective, flat surfaces and obvious impacts provided little regard for the human body and led to a 'depthlessness' in our buildings. It gives me comfort to know that people are now seeking out spaces that speak to our humanness, that allow us to decompress and give our nervous systems relief from stimulation. We

Fig. 4 *Image generated by AI software Imagine Art.*

can see a return to tactile materials, handmade craft over the machine, and an inclusion of the natural world in our built environments. Whether it's textured plaster walls that emphasise subtle shifts in light and shadow throughout the day, or high-tech circadian lighting systems that have a similar effect, we seem to be remembering that we thrive when at one with nature.

Across the board, the creative process is currently being revolutionised by the role of technology in our industry, specifically by the numerous AI programs. The entire way we funnel inspiration into our thinking, how we communicate to clients and how we document our projects is in flux. Embracing current technology is essential to enhancing the creative process. It opens up new possibilities by enabling innovative solutions and efficient processes but can serve as both a catalyst and a challenge. While it is useful for automating some of the more tedious and repetitive parts of the process it has the potential to hinder creativity if relied upon too much. Some programs like Imagine Art provide images from written prompts. The below image was generated in under 5 seconds with the text prompt "A Donald Judd style interior scene of a modernist chapel, moody lighting and textured materials" (see figure 4). It astounds me that what would have taken one individual countless hours to imagine, design, draft, model in 3D, render, not to mention all the pre-learned knowledge of religious building design and the nuances of Donald Judd's work - can now be generated in an instant.

Other programs such as Maket use "advanced pattern recognition algorithms to generate thousands of design options in a matter of minutes".[2] We need to overcome our so-called 'FOBO' (fear of becoming obsolete) and use AI tools to let us prioritise conceptual development, critical research and empathetic design thinking.

AI is sometimes referred to as anti-humanity, but the value in leaning into this technology lies in the hope that our industry can produce a more human-centric result. By relieving us of the hours poured into testing plans, drafting and repetitive documenting we can spend more hours on growing our understanding of how architecture can trigger the senses and how significantly we are impacted by our built environment. For this to happen we need to steer AI in the right direction, nicely summarised by author Joanna Maciejewska when she states "I want AI to do my laundry and dishes so that I can do

art and writing, not for AI to do my art and writing so that I can do my laundry and dishes."[3]

As an architecture student I was taught that on any given project just 10 - 15% of the time and fees should be allocated to project establishment and concept design, as the later stages of a project are more labour intensive and time consuming. To me this has always felt unbalanced, the early stages of a project - information gathering, researching and being playful with concepts - offers so much depth to the end result. To state the obvious, AI saves us a lot of time. We could use it to tip the scale of the design process so that it is weighted more in favour of these initial stages of a project; the listening and observing part rather than the describing and informing part (the laundry and dishes). Working towards an approach where we stay curious, empathetic, and use the tools we have available to us, will expand our imaginative capacity as designers. My hope is that we can continue to move towards a more holistic and emotive architecture that does a better job of promoting our collective social, cognitive, and emotional development.

ANNABEL SMART is an architectural and interior designer and the Director of Studio 11:11 NZ. She approaches her projects with a thoughtful consideration of materials, aiming to create serene, warm, imaginative spaces for people to inhabit. Annabel has a reserved design sensibility, an appreciation for a natural palette and highly considered detailing, which is prevalent in all her work.

ENDNOTES

1 Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (Hoboken, NJ: John Wiley & Sons, 2012).

2 "Top 14 AI Tools for Architects and Designers," *CO-architecture*, 18 September 2023, https://site.co-architecture.com/artificial-intelligence-ai/top-14-ai-tools-for-architects-and-designers/#:~:text=Maket.ai%20is%20an%20AI,in%20a%20matter%20of%20minutes.

3 Joanna Maciejewska, ""You know what the biggest problem with pushing all-things-AI is? Wrong direction. I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes."," X, last modified March 30, 2024, https://x.com/AuthorJMac/status/1773679197631701238?lang=en.

https://doi.org/10.34074/scop.1027004

MĀTAHI O TE TAU MARAE: EXPECTATION VS REALITY

Karyn Paringatai and Heni Paringatai

Ko Maunga Kākā te maunga.
Ko Waipapa-iti te awa.
Ko Mātahi o te Tau te marae.
Ko Te Whānau-a-Hunaara te hapū.
Ko Ngāti Porou te iwi.

It is commonplace within te ao Māori to introduce oneself through the use of pepeha, identifying significant geographical landmarks and kinship groups that tells the reader which part of the country we tribally affiliate to and from whom we descend. Giving our names is the last part of this formulaic introduction and, to many, is a rather insignificant detail that they will quickly forget.

Ko Heni Walker Paringatai, ko Karyn Paringatai ō māua ingoa.

We are first cousins. We open this reflection in a way that positions us firmly within a body of knowledge that, from birth, was deprived to one of us (Karyn) and forms the heartbeat of the other (Heni). The public recitation of our pepeha indicates that despite the difference in our level of interaction with those things listed above, they are still of value to both of us.

In this reflection, we offer an insight in to our interactions with our marae. A place that provides comfort for one (Heni) and was (sometimes still is) a source of extreme discomfort for the other (Karyn). We are of the same generation but our expectations and our realities engaging with our marae could not be more different; as we are sure is the case for many other whānau around the country.

Karyn's Expectation

My father moved from Horoera to Invercargill in 1968 for employment at the freezing works. Dad took us back to Horoera twice before his parents both passed away in the early 1980s. Their deaths signalled an end to our return visits. I was 3 years old.

Throughout my childhood I was easily identifiable as Māori because of my name and my physical features – there was no escaping it. But I didn't 'feel' Māori. I wanted so badly to be Māori but I didn't know how. So I embarked on a journey of unravelling the mystery of being Māori. The one constant in all that I was reading, watching and hearing was the centrality of the 'marae' in one's identity as a person of Māori descent. Here is what I learnt:

- Marae are a collection of buildings centred around a carved wharenui adorned with whakairo, kōwhaiwhai and tukutuku panels, each carefully chosen to represent the whakapapa of the hapū and whānau who belong to that marae.
- The walls of the whare nui are lined with images of those who have passed, the activities held there pay continual homage to them, and we are reminded that the past most certainly has a continuing influence on the present and future.
- All important cultural ceremonies take place on the marae and the balance between tapu and noa is carefully maintained as people are spiritually guided from one state to another.
- Marae are spaces of intergenerational living and learning. Kaumātua are in abundance to help teach and guide the younger generations.
- Whānau gather there regularly to catch up and maintain their familial connections. The grounds are meticulously kept, the kitchen well stocked and the whare nui is always ready awaiting the next onslaught of marae users.
- The marae is the last bastion of te reo Māori.
- Every Māori person belongs to a marae. You may not know te reo, you may not know tikanga, but if you have whakapapa Māori, you have a marae.
- Everyone should go back to their marae. And they should go back often.

I learnt te reo all through high school. I completed my undergraduate and postgraduate degrees in Māori Studies. I embarked on a career as a Māori Studies academic, having never been to my own marae. But I was ready. I had stayed at other marae around the country. They fulfilled, in varying degrees, the attributes of a marae listed above and they taught me a lot. I was absolutely convinced that my marae would do the same. I was ready.

Heni's Reality

Matahi o te Tau Marae (Mātahi) is located 30 metres from my home. Mātahi plays a vital role for the identity of the Te Whānau-a-Hunaara people (or it used to). We are a small hapū, with only 10-15 whānau who openly claim Hunaara as their primary hapū, and regularly return back to Horoera. I haven't seen them all come through the gates of Mātahi though.

Only people from Horoera live in Horoera year-round. It's hard. Our rivers eat the land, bridges get damaged in heavy rain, and roads slip into the sea making access to Horoera impossible at different times of the year. Our community is resilient. We know how to stock up and prepare for natural disasters, and to keep ourselves safe. But we couldn't be protected from economic change. Something that caused my whānau to leave Horoera.

My mum has five older siblings. All of them left Horoera years before I was born. My mum, sister and I are the only ones from our Paringatai whānau still living in Horoera. We are ahi kā, a continuous burning flame occupying our whenua. We are the people behind the scenes keeping our taonga protected and kōrero alive.

I can't remember the first time I stepped foot on to Mātahi because I was fortunate to have been born and raised there. We were always at Mātahi. In fact, I was there so often people thought I actually lived there. We spent all our time there attending tangihanga, wānanga and hui, and the days in between these kaupapa cleaning for the next one. It was a never-ending cycle. I've swept the floors, dusted the cobwebs, cleaned the toilets (yuck), aired out the mattresses, painted the buildings, mowed the lawns, washed the windows, and cleaned up after the rats (even more yuck). We show up when no one else does.

I grew up with our pakeke at Mātahi. They indirectly taught me tikanga, kawa and the protocols of our people, just by me listening and being in the same room as them. This was a blessing that no one else in my wider whānau had the good fortune to experience. I've also mourned the deaths of many of them.

A lot of my time was spent walking back and forth between Mātahi and home (avoiding the cow shit) to get yeast, baking soda, gladwrap, rubbish bags – a never ending list of things people overlook when shopping for their wānanga. When we were little someone even mowed a track through the long grass for us from home to Mātahi. Our marae kitchen pantry is not stocked with anything. Mātahi isn't used that much anymore and food left in the pantry will expire before it can be used. Or be eaten by the rats.

Apparently, we are also electricians and plumbers. People using the marae always come to us for help with the water pumps, gas califonts for heating water, electrical wiring, and appliance breakdowns. We are neither of those things. Sometimes I think it's more trouble than it's worth.

Ironically, I've never actually slept at Mātahi.

Karyn's Reality

In 2003 my dad volunteered to drive a van from Christchurch to Te Araroa (the nearest township to Horoera) to deliver some carvings to the marae there. The carvings were of Hunaara, an ancestor of Horoera who was renowned for feeding manuhiri with an abundance of food, and were to be placed in the whare kai. Whilst I didn't fancy the long-distance drive in the middle of summer, I quickly offered to keep him company. This was my first chance to go to my marae. Hinerupe Marae.

Hinerupe fit all the criteria. I had already mentally created a relationship with her. I had made my connection to Hinerupe through piecing together whakapapa descent lines in books. I had learnt some of the stories of Hinerupe through online sources, the tipuna after whom the marae is named; her ancestral prowess and her exploits that enhanced her standing in the community. She embodied the concept of mana wahine and I was convinced that, as one of her mokopuna, I would also inherit those qualities.

Hinerupe Marae fulfilled all my expectations. And meeting her was magical. But it was a fleeting visit. Just long enough to deposit the carvings in their new home.

During this trip I met my dad's sister (Heni's mum) and her children for the first time. This was before Heni was born. We stayed at their house in Horoera. As we drove up to their driveway I looked to the right and across the paddock stood Mātahi o te Tau Marae. The revelation that Mātahi was actually the marae that instead filled the heart of my whānau came as a complete shock.

I stood aloof from Mātahi the entire visit. I knew nothing about this marae. I wasn't prepared for this thing to be on our doorstep. We left a few days later.

I didn't step foot on Mātahi for another four years. It lasted for all of 30 minutes as we took Heni's dad on during his tangihanga before his burial. I didn't make it past the veranda. I didn't make it inside the whare nui. I still didn't know how to deal with this stranger. In the years that had passed since I was last there, my knowledge of Mātahi had not increased.

Everyone says go home to your marae. Everything will make sense when you do. Nothing about going back to Mātahi made sense to me. But I had to figure out how to do that because my dad passed away two weeks after Heni's dad.

Death has always pulled me back to Horoera. Death has always pulled me back to Mātahi. Tangihanga. Kawe mate. Hura kōhatu. My connection has always been through activities of mourning.

I have to change that. My son's name is Mātahi.

Heni's Expectation

Mātahi should always be in use and it should never be empty: ā-tinana or ā-wairua. It should be a place to reset, where you see the people that matter the most to you. My whānau should always feel welcome and safe to come back to Mātahi. My whānau need to figure out how to be from there to go back there.

People preach about going back to your marae, back to your pakeke to learn your reo and your tikanga. Mātahi should be the best place for intergenerational learning in a safe environment. The reality is our pakeke aren't at Mātahi anymore. No one is. My whānau need to come home to be the pakeke.

Mātahi shouldn't be used as a museum to leave photos of tīpuna just sitting there not being seen or spoken to by their own whānau. The few photos that are there date back to the 1940s. I feel mamae looking after them. My dad and Karyn's dad should not be the responsibility of others to clean. My whānau need to come home and talk to our tīpuna.

Belonging to Mātahi is devoting yourself, your time and your energy to uphold the mana of our tīpuna and our hapū through the act of service to others. Whatever that looks like and wherever we are. It's a commitment to our Hunaaratanga.

My whānau have a lot to learn. [I'm trying].

Figure 1. First cousins at Mātahi o te Tau Marae, January 2024.
L-R: Manu Paringatai, Steven Anslow, Heni Paringatai, Karyn Paringatai, Maumahara Paringatai, Kandy-Lee Malcolm, Debbie Paringatai, Wiremu Paringatai-Walker.
Author: Paringatai, H & Paringatai, K.

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Heni Paringatai is a raukura of the kaupapa Māori schooling system and is an emerging scholar of Māori Studies. She has been raised within the knowledge systems of Te Whānau-a-Hunaara and is a member of the Ngā Tapuwae - Cultural Mapping Project, revitalising mātauranga Māori in ancestral landscapes.

Kuputaka / Glossary

te ao Māori	the Māori world
pepeha	formulaic expression of identity
whānau	extended family
te reo (Māori)	Māori language
tikanga	right way of doing things, customs, protocols, customary practices
whakapapa	genealogy; genealogically encoded knowledge, practice and belief
whakairo	carving that are placed on the walls of the whare nui
wharenui	large ceremonial house
kōwhaiwhai	painted scroll patterns commonly on the rafters of the whare nui
tukutuku	ornamental lattice work commonly placed on the walls of the whare nui
hapū	sub-tribal group
tapu	being sacred, holy and set apart from normal human interactions; spiritual beliefs pertaining to restriction or prohibition
noa	neutral state, that which is mundane, every day and has a lesser degree of restriction
Kaumātua	elders
ahi kā	burning the customary fires of occupation
taonga	precious items
kōrero	stories
wānanga	learning
tangihanga	funeral rites and rituals for the dead
hui	meeting
kaupapa	event
pakeke	adult
kawa	a system of appropriate rules, rituals, practices and behaviour that should ideally occur and apply on the marae
whare kai	dining hall
mana wahine	acknowledgment of the mana inherent in a woman
mokopuna	grandchild, descendant
kawe mate	mourning ceremony that carries the spirit of the deceased on to a marae that is different to where that person is buried
hura kōhatu	headstone unveiling
ā-tinana	in person
ā-wairua	in spirit
tīpuna	ancestors
mamae	pain
mana	spiritual authority, influence, prestige
Hunaaratanga	one's identity as a descendant of Hunaara, the ancestor after whom our hapū is named

https://doi.org/10.34074/scop.1027005

FROM RED CLAY TO FRAGRANT PINE: THE SEARCH FOR ROOTEDNESS THROUGH ARCHITECTURE

Leana Scheffer

Sitting with my two-year-old feet buried deep in the pale, soft mounds of the still-damp sandpit, I pause my dreams of building towers to look across the quiet garden. The deep roof overhang shelters my sandpit from the sweltering African sun and stretches the afternoon shade towards the boundary wall. I reach to my left to trace the rough edges and uneven bumps of the dark clinker brick wall – a formidable but reassuring companion to my first memory of home.

As a recent immigrant from Pretoria, South Africa, to Dunedin, Aotearoa New Zealand, feeling at home has become a pivotal theme in my adjustment to a foreign environment. I diligently prepared for the physical move and expected to bring 'home' with me as simply as bringing an extra sentimental suitcase. But living in a home of foreign materiality offered an unexpectedly unique body-centred experience and accompanying emotional and psychological responses[1] that sharply contrasted with my expectations of the qualities and values I have come to associate with home. As our body's sensory experience mediates our understanding of the world through an interpretative phenomenological lens,[2] I expected home to be what Pallasmaa defines as "the refuge of our body, memory and identity,"[3] and Bachelard's proposal that home is a place of "integration for the thoughts, memories and dreams of mankind."[4] To enrich my understanding of home through materiality, I examine my experience of a brick home in South Africa and the embedded meaning I associate with this materiality and compare it to my experience and the associated meaning of a New Zealand timber home.

BRICK DWELLING

Outside is bright and hot, where even the light breeze feels dry on your skin and the unrelenting high pitch of cicadas is all around – a typical 34-degree summer day in Pretoria, South Africa. You follow the patterned brick path to the front door as heat radiates from below your crunching footsteps. You step onto the brick tapestry of the covered porch, keys at the ready, breathing a sigh of relief for the shade. Quickly, you unlock the folding steel security gate securely bolted deep into the solid face-brick wall, and both door locks of the solid timber door. You step inside, turn to relock the gate and leave the door open to let the warm light breeze mix with the cool, still air inside. You turn back and it takes a moment for your eyes to adjust to the darkness inside. The soft hum of cicadas fades as you move into the foyer – safe inside.

The foyer is a rectangular volume, taller than it is wide but twice as deep. All the walls and the ceiling are painted white and a curved white cornice merges the two planes. The hard brick walls underneath the continuous plaster form a reassuring boundary, holding space, sound and temperature. The earthy ceramic tiles and dark timber skirtings create a soothing uninterrupted surface that allows your eyes to rest but announces your arrival as each step creates a distinct 'clack' that echoes down the corridor. Through its furnishings this foyer whispers that this home cherishes the support of extended family, admires quality handcrafting and historic narrative, appreciates beauty, values a variety of art forms, acknowledges the importance of place, respects nature and nurtures connections with others.

You lean through the living room door to greet the family. The large northern windows look across the garden, but the covered porch lets in no direct summer sun. An exposed face-brick fireplace forms one of two focal points of the living room, the other being the TV cabinet. The fireplace is empty, as it is only used for a few weeks during the deepest winter, but the furniture is arranged to acknowledge its importance. The basket-weave pattern of the mahogany parquet floor complements the running bond brick pattern of the fireplace surround. Visual repetition of both textures offers comfort through predictability. In contrast, each block of brick and timber is genuinely one-of-a-kind, a tapestry of different colours, patterns and textures. You turn back through the foyer.

The corridor is a windowless volume that extrudes from the end of the foyer at a right angle for almost the entire length of the home. Its width is about a third of its height. You reach out to touch both cool walls as you move towards your bedroom, the echo of your footsteps running ahead. The single overhead light exaggerates the texture of the white-painted plaster. Spaces alternate arrhythmically as you move through the long space; above each door, a brick ventilation block adds to the visual rhythm.

You hear a deep reverberating rumble. Delighted, you open the steel frame window to see the thunderclouds rolling in on the now brisk breeze, a sheet of angled rain slowly moving towards you. Occasional flashes of light pale the oversaturated garden colours as you sit by the window waiting for the first drops to fall. You smell the rusty dusty scent even before the large drops pat down on the hot brick paving and red clay soil. The first drops are always absorbed but quickly evaporate, turning the rust-heavy scent into a hot steamy vapour that lasts only a few minutes as it starts to cool. The sheet of rain has arrived, drenching the earth with water and darkening the brick pavers to a deep red ochre. The wind keeps moving the rain clouds and it only takes a few minutes for the outside air to cool, achieving equilibrium between inside and out. The thunder shower is over just in time to catch the sunset, leaving a feast of oranges above and below.

You recall that these bricks are made just outside of town, using the same iron-rich clay soil as in your garden. You have driven past the open mines with their terraced layers cutting deep into the orange-red hills, and seen the muddy water pools used to mix the clay. The pale stacks of bricks drying in the sun remind you of the texture and smell of making mud cakes as a child. The size of the pillar of smoke billowing from the warehouse leaves you wondering how much heat is needed to fire all those bricks that build your city, and those that have built your memories.

HOME AS A CAVE

Analysing the experience of inhabiting a brick home offers insights into the themes and embedded symbolism of brick materiality.

The similarity in colour, texture and porosity between the bricks and surrounding clay soil creates the impression of a hollow carved into an earth mound, like a cave.[5] The material continuity connects the home to place through a sense of groundedness and belonging to the natural 'place.' The prevalent use of brick in the surrounding built fabric also reinforces its belonging to the man-made 'place,' with both ideas supported by Zumthor's argument that architecture connects us to natural and man-made places while it also forms place character,[6] extending the connections to place.

The brick sensory landscape strongly emphasises the tactile and visual senses, amplified by contrasts in temperature and light between the outside and inside. Brick provides physical comfort through its ability to respond to and embody temperature changes.[7] The brick pattern's "visual repetition … offers comfort through predictability." The acoustic comfort of the brick interior creates a dampened perceptual soundscape[8] while offering the comfort of acoustic intimacy.[9] The concept of comfort is furthered by focal points like the brick fireplace as a central hearth, offering social comfort through family gatherings while also encouraging moments of quiet contemplation.

Brick forms an impenetrable physical barrier that manifests the line between unsafe and safe, as it offers protection from other people, dangerous animals and exposure to the elements – a refuge for the body and mind.[10] The

opposition between inside and outside holds a sense of "alienation and hostility between the two"[11] and suggests security through separation. The barrier quality facilitates access control between public and private and offers safety through increasing levels of privacy and intimacy. Interior rooms are separated by thinner, less formal barriers that provide additional levels of privacy, intimacy and optional access. Bachelard describes this as "protected intimacy,"[12] in that it provides a place to be unapologetically honest and safely vulnerable. As brick is made of the same clay that nurtures the local crops and native flora, you are aware of your dependency on this material, on this place, for your everyday survival and well-being. This nurturing quality expands how brick provides refuge.

Pallasmaa explains that architecture "enable(s) us to see and understand the passing of history, and to participate in time cycles that surpass individual life … to perceive and understand the dialectics of permanence and change."[13] Brick's ability to show weathering emphasises its connection to time by making visible how time passes. Simultaneously, brick's continuous presence and its natural resistance to wear evoke a sense of lasting strength, timelessness and endurance that can be trusted to exist for generations to come.[14] The idea of permanence and time is further supported by spaces like the foyer, dedicated to expressing and preserving a lineage of familial values.

The most prominent experiential feature of a brick home is the way in which its materiality lets us "become aware of being enclosed, of something enveloping us, keeping us together, holding us."[15] The experience of enclosure emphasises the distinct divide between the unsafe outside and the safe inside, where the thick brick protects the interior and its occupants, becoming a place of refuge. The notions of comfort, safety and permanence further reinforce this idea of refuge while also bringing our attention inward through a heightened awareness of enclosure. Bachelard proposes that a house's cellar provides a private refuge and intimate retreat for the unconscious.[16] Although a cellar provides an extreme form of enclosure, the experiential similarities of the brick interiority offer a similar respite, arguably for many forms of the self. Interior spaces edged by explicit physical boundaries add to the perceived importance of the interior in the spatial hierarchy, while the trust conveyed by the material's associations with permanence is transferred to the interior character. Brick's embedded associations with refuge and retreat combine with the physical experience of interiority to shape the idea of a home as a cave.

TIMBER DWELLING

Your exposed but sun-screened skin feels prickly in the warm and humid outdoors as you carry the clothing layers that kept you warm and dry in this morning's drizzly brisk wind – a typical four seasons in a day for Dunedin, New Zealand. Walking up the steep sidewalk, you are serenaded by birdsong from treetops above and greeted by friendly faces walking their dogs. Many of your neighbours are outside and wave as you walk by. You stop to exchange weather updates with your next-door neighbour pottering in the garden.

The moss-edged concrete footpath leads you home through garden shades of green, purple and blue. Damp, dark chocolate soil underneath it all. The low afternoon sun deepens the linear shadows of the white-painted horizontal weatherboard facade. The low rectangular mass is raised off the ground, held lightly between two red-brick cladding edges, only a single leaf wide.

You step onto the uncovered square concrete plinth and take out the keys, stopping to wave back to your elderly neighbour, waving from her kitchen window. The front door's large glass pane and white timber edges frame the view to the inside as you stop to unlock it. As you step inside, the timber step greets you with a distinct hollow 'thunk'. The carpeted timber floor creaks and thuds as you swap your outside shoes for indoor ones. You leave the door open to let the now soft breeze and garden birdsong move through the space, uninterrupted – you are home.

The foyer boundaries are subtle in the open-plan space and seem not to exist at all when the front door is closed, instead becoming the transition space between the open-plan kitchen and dining areas. The existence of the foyer is tied to the act of entering or leaving the home. The furnishings 'in' this foyer divulge that this home admires innovation, values beauty, respects quality handcrafting and nurtures connections with nature.

From the entrance, you can see the L-shaped volume of the open-plan living, dining and kitchen spaces wrap around the bathroom block from left to right, and two bedrooms to the left of the living and dining area. Interior walls are lined with identical smooth timber panels painted in a calm natural cotton colour, forming a continuous vertical plane winding through the home. Silk-textured white paint causes the flush-plastered ceilings to softly reflect light deep into the space, while seeming to be higher than they are. The honesty of the simple layout encourages your trust.

Large double-glazed, white-painted timber windows sit within the timber-framed walls and let in wide shafts of sunlight. You recall winter's blue-white midday sun glaring at an impossibly low angle, reaching deep into the house. Today, the morning summer sun only narrowly stepped through the large windows before being interrupted by the arm-length deep roof overhang. Window frames join seamlessly to windowsills and hand-width window trims, all in white timber. The continuous surface creates the illusion of the exterior cladding folding inward, framing the garden and mountain views. Interior doors have a similar wide white trim on both sides that subtly frames the views into adjacent rooms.

As you watch the sun set behind the treeline, you marvel at how much of this home is made of timber – beams, posts and sheets, all from the same living source. You remember seeing the locally grown pine logs transported on trucks along the highway through town, first to the docks, then on a train and then on cargo ships for export far and wide. It makes you wonder what stories they tell of the South Island sun, Otago rain and Dunedin loam and sand – of this place – in their new homes.

HOME AS A NEST

Analysing the themes arising from the experience of inhabiting a timber home provides insights into the materiality's embedded symbolism.

Timber's tendency to weather if left exposed to the elements gives the man-made material a distinct impermanent quality that contrasts with the longevity of the surrounding living trees. The raised structure emphasises its vulnerability to the elements and reminds us that regular maintenance is needed to keep the home habitable. The materiality's impermanence frames the activities housed within, a reminder that inhabiting and being are fleeting and tied to time. Bachelard argues that "mankind's nest, like his world, is never finished,"[17] highlighting a recurrent effort to rebuild, reinhabit and, perhaps, to reinvent home.

The daily climatic variability and dramatic annual changes in the natural light of this place make you profoundly aware of your body experience, increasing your awareness of being in place and in time. Timber speaks to place in its continuous presence in the surrounding landscape, the exterior skin and throughout the home interior, where it becomes progressively more covered and refined. Bachelard likens the interior–exterior relationship to the way that a tree extends the refuge qualities of the nest within, where "the entire tree, for the bird, is the vestibule of the nest." The timber's concealed interior presence allows for a connection directly with place – by experiencing the place through your body, instead of through the material as a symbolically mediated connection.

Timber's most striking theme explores different ways to connect with place, people and home. In contrast to Pallasmaa's proposal that "sight implies exteriority, but sound creates an experience of interiority,"[18] the permeable acoustic quality of the timber skin offers an immersive exterior connection to place and community, while also facilitating an immersive interior connection between the individuals that share the home. Pallasmaa argues that "sight is the sense of the solitary observer, whereas hearing creates a sense of connection and solidarity",[19] emphasising the influence of acoustics in feeling connected. In the timber home the visual experience focuses on observing and being observed, as seen in the framing and articulation of apertures that highlight exterior and interior views. Contrary to creating a "solitary observer," the reciprocal visual connection shares your inner space with others, as they share their inner space with you, creating a visual network of shared space.

In time, the connecting quality of timber matures and is transformed into multiple dynamic relationships between the self, the other and place, reminiscent of a dynamic ecosystem. The material's impermanence reminds us that relationships decay if not maintained, encouraging us to rebuild connections to people and place, like a bird returning to rebuild its nest each season.[20]

HOME AS ROOTEDNESS

Understanding what home means to me provides the foundations of how I could connect, integrate and belong in a foreign place. Bachelard explains that to grasp the meaning of home, we must understand "how we inhabit our vital space … how we take root, day after day, in our corner of the world."[21] My inhabitation process followed my physical in-body experience, emotional and mental response to that experience, and the meaning I attributed to both as part of my sense-making process.[22]

Materiality has an integral role in the experiential quality of architecture as we explore and know the world through our bodies.[23] The unique experience of a material becomes an associated characteristic of that material, just as material characteristics are projected onto experiential qualities. The materiality of a home therefore imbues the typology with subtle qualities specific to the material, which in turn become attributed to the essence of a home of that materiality.

My brick home was essentially comfortable, safe, permanent and grounded in place, its cave-like interior offering an experientially rich refuge and opportunity to look inward.[24] These qualities shaped my everyday experience and understanding of the world, while establishing the brick home as a place to build a deep relationship with the self and very close others.

My new timber home offers the opportunity to nurture connections, embrace impermanence and to experience and 'be' in place in a meaningful way. Pallasmaa elaborates on the experience of place as "a constant dialogue and interaction with the environment, to the degree that it is impossible to detach the image of the Self from its spatial and situational existence."[25] These surprising qualities have shown me a different way to inhabit, building dynamic relationships to social and physical place by sharing experiences and being with others inhabiting the same place.

Reflecting on this alternative way of inhabiting and my role in the dynamic place relationships has also allowed an extended understanding of myself and my being, in context. Inhabiting a timber home will take time to understand fully and will likely grow and develop in time. Experiencing inhabiting through new materiality has deepened my understanding of home as a place that reveals, shapes and connects us to ourselves and to others, as it roots us in place.

CONCLUSION

Exploring the meaning of home through materiality started with gaining a deeper understanding of my experience of inhabiting brick homes in South Africa and the embedded meaning associated with it. The same exploration of my experience of my new timber home yielded surprising insights into the materiality's embedded meaning, and how it differed from that of dwelling in brick. Ultimately, the process has consolidated and enriched the meaning of home, keeping the valuable and inviting the new, while allowing me to become rooted in place.

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https://doi.org/10.34074/scop.1027009

ON FIRES LIT AND WALLS CRUMBLED

Mark Baskett

Figure 1. The Neighbourhood (revisited) – Panel #3.
Mixed media digital print, 420 x 594mm.

1.

At home up on a hill, just the two of us together, before my days of packed lunches and the schoolyard—my mother dreamt up a jumble of activities to get us out into our local surrounds. Sometimes we´d simply set out into the streets, wandering in a random, zig-zagging fashion until we'd appear again at the pathway to our own front door. Or sometimes we'd stop at the corner of Kirriemuir Street, sit in the tall grass, and point out the sights from the district stretching out before us on the plain below. The shoebox-shaped houses, the green football field with its puddle that never disappeared, or the brick walls, the smokestacks, and the enormous gasholders of the city's old soot-covered gasworks. My mother told me stories about those gasholders—telling me how they moved up and down without end, moving like monstrous mechanical lungs, breathing fire into homes throughout the city.

Figure 2. The Neighbourhood (revisited) – Panel #4A.
Mixed media digital print, 420 x 297mm.

2.

But before the gasworks and the houses and the streets, the district down the hill that reached out to the sea had existed as a complex sub-aquatic environment, made up of wetland, tidal marsh, and lagoon. Its transformation began in the mid 1850´s, as the city´s new-founded colonial settlement began to rapidly expand. Plans were developed, a workforce was assembled, and in the following decades the entire flatland area was slowly-yet-decisively drained. Significant parts of this work was undertaken by the newly arrived Chinese market gardeners, who cultivated land leased from city council using techniques first learnt in Guangdong, China. Yet beyond more recent acknowledgements by the local historian, Barbara Newton, and the publication of Lily Lee and Ruth Lam's remarkable book that chronicles those Chinese migrants who took up market gardening, very little in the way of public reports shed light on this arduous labour.[1] In difference to this, historical accounts of individuals expressing prejudice against Chinese people are widely recorded and in plain view. It is a type of public outcry that by the time of my childhood seems to have morphed into a form of silent communication; into sidelong glances, short intakes of breath, a looking and not looking at those thought condemned to the murk of the city's long shadows.

Figure 3. The Neighbourhood (revisited) – Panel #5A.
Mixed media digital print, 420 x 297mm.

3.

Built on a mixture of re-used rock, blue puggish clay, and silica sand, the Dunedin Gasworks began operating in 1863, fed day and night on a smoke-producing brown coal mined and hauled from the island´s north-western coast. Soon other buildings and businesses appeared, bringing with them tight clusters of worker-housing. More industries developed, more dwellings were built; to the point that South Dunedin began being known as the country´s most densely populated area. But by the early 1980´s, with a decline in the use of coal-gas and with antiquated machinery in dire need of replacement or repair, the Dunedin Gasworks was closed and dismantled.[2] What's left can now be viewed at the Gasworks Museum; a small heritage site boxed in beside a supermarket, not far from a do-it-yourself megastore. Traces of the gasworks also still appear in articles from the city´s newspaper. Here business owners and councillors muse on the sulphates, the heavy metals, and the traces of cyanide that continue to seep from the site´s contaminated soils.[3]

Figure 4. The Neighbourhood (revisited) – Panel #6A.
Mixed media digital print, 420 x 297mm.

4.

In technical terms, ash can be described as the inchoate mixture of organic and other oxidizable residues: the end-product of an incomplete combustion.[4] I learnt this not long after hearing that my old neighbourhood—the entire area covering a hill—had once been cordoned off and duly set ablaze, burning bush and whatever else happened to be there. A few photos of this clearance practice can still be found filed away in museums and archives throughout the country. They offer glimpses into an activity that saw areas of forest and scrubland quickly transformed into landscapes of billowing smoke. For decades now scientists, academics, and graduate students have been trying to retrace this history of fire and destruction—searching through the country´s swamps, rivers, and lake sediments for evidence of once-living and now-petrified matter. Currently it is estimated that 6.7 million hectares of forest had been set alight by Māori, while a further 8 million hectares has been burnt away by participants in the country´s more recent colonial enterprise.[5] Numbers, diagrams, old images of charred trees—what can be done with these remains?

Figure 5. The Neighbourhood (revisited) – Panel #7A.
Mixed media digital print, 420 x 297mm.

AUTHOR'S NOTE

The images and texts above come from a large and long-term artwork. Titled The Neighbourhood, this artwork puts forward a wide variety of images related to Ōtepoti/Dunedin. Mixing personal accounts with more general public histories, the work maps out a somewhat idiosyncratic vision of a geographically and historically specific place and time. Themes and sub-themes developed within this work include art and memory, urbanism and dwelling, along with industrial development, family, territory, non-human co-inhabitants, and legacies of settler-colonial expansion.

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1 For further information, see Barbara A Newton, Our St Clair: A Resident's History (Dunedin: Kenmore Productions, 2003), 42-4; and Lily Lee and Ruth Lam, Sons of the Soil: Chinese Market Gardeners in New Zealand (Pukekohe: Dominion Federation of New Zealand Chinese Commercial Growers Inc, 2012).

2 For a more detailed historical account of the Dunedin Gasworks, see Karen Astwood, IPENZ Engineering Heritage Register Report, Engineering Heritage New Zealand, 2014, https://d2rjvl4n5h2b61.cloudfront.net/media/documents/dunedin_gasworks_register_report.pdf. For general information about the Dunedin City Gasworks, see https://www.gasworksmuseum.org.nz/ (accessed 2 March 2024).

3 Articles discussing the ongoing legacy of the Dunedin Gasworks continue to appear in Dunedin's daily newspaper, the Otago Daily Times. For an example that covers some of the issues pertinent to this site, see Bruce Munro, "What Lies Beneath," Otago Daily Times, 22 September 2014, https://www.odt.co.nz/lifestyle/magazine/what-lies-beneath (accessed 2 March 2024).

4 https://www.oed.com/dictionary/ash_n2?tl=true&tab=meaning_and_use (accessed 2 March 2024).

5 For a general summary of Aotearoa New Zealand's conifer–broadleaf forests, see https://teara.govt.nz/en/conifer-broadleaf-forests (accessed 2 March 2024). For more detailed information, see Robert B Allen et al., New Zealand's Indigenous Forests and Shrublands, Manaaki Whenua – Landcare Research, https://www.landcareresearch.co.nz/assets/Publications/Ecosystem-services-in-New-Zealand/1_2_Allen.pdf (accessed 2 March 2024).

https://doi.org/10.34074/scop.1027008

MORTAL FRAMES: EMBRACING ARCHITECTURAL TRANSIENCE AND THE LIVING BODY OF STRUCTURES

Georgia Pope

Since the publication of Vitruvius's *Ten Books on Architecture* (20-30 BCE), architects and theorists have shared a longstanding tradition of comparing buildings and the human body. This analogy between two seemingly disparate entities serves as a testament to the intrinsic connection between architecture and human experience, with architecture being representative of the humanistic tradition. Over time, architecture, akin to a living organism, undergoes a profound journey from inception to eventual dissolution. This inherent mortality shapes the way that buildings are conceived, constructed and perceived, influencing their sustainability and cultural significance.

Architecture, far from a static entity, emerges as a dynamic force that breathes life into the spaces we inhabit. Yet, woven into its creation is an inherent mortality – an acknowledgement that all architecture, regardless of its grandeur or endurance, is subject to the passage of time. Just as the human body evolves and eventually succumbs to time, architecture undergoes a similar journey. This realisation underscores the delicate balance between permanence and impermanence within the built environment, a theme analysed in this paper through the contexts of time and space, sustainability and cultural relevance. By examining sustainability through the lens of "cradle-to-cradle"[1] philosophy and exploring Māori architecture as an illustrative example, this paper reveals architecture's inherent adaptability and capacity for renewal. Additionally, an exploration into time and space through the weathering process deepens the understanding of architecture's relationship with mortality and the interconnectedness between human experience and the environment.

Time, often perceived as an ever-present force, serves as a poignant reminder of human mortality and the impermanence of all things. Our experiences, memories and surroundings, including the structures that envelop us, contribute to our comprehension of time and mortality. Just as time leaves its indelible mark on our lives, shaping our experiences and inevitably leading to our mortality, it also leaves its mark on the physical realm. This phenomenon becomes apparent through the gradual weathering of structures, where the relentless passage of time manifests in the erosion of stone, the fading of paint and the gradual decay of materials. Architecture, serving as both shelter and sanctuary, offers a semblance of stability and familiarity in an uncertain world; through the process of weathering, buildings also reflect the impermanence of human existence and the inevitability of decay.

In their seminal work, *On Weathering: The Life of Buildings in Time,* Mohsen Mostafavi and David Leatherbarrow delve into the intricate relationship between time, weathering and architecture. Their insights illuminate how our perception of time, shaped by materiality, informs our understanding of architecture and influences our interactions with the built environment. Despite the perceived solidity and permanence of Western architecture, Mostafavi and Leatherbarrow assert its inherent temporality, vulnerable to passing time and the transformative effects of weathering.[2] They eloquently capture this notion by stating that "finishing ends construction, weathering constructs finishes."[3] Through the gradual process of weathering, buildings acquire character, depth and a patina of age that enriches their beauty and resilience.

Challenging the conventional belief in architectural permanence, Mostafavi and Leatherbarrow advocate for a deeper appreciation of the beauty that emerges through natural processes and the passage of time. They align their understanding of time with a phenomenologist's perspective, emphasising "time as lived" rather than a mere representation. Rejecting the notion of time as a series of discrete moments, they propose that the time of weathering encompasses both spatial and experiential dimensions, transcending the strict measurements of clocks and calendars and unfolding as a narrative within the natural world.[4] This process liberates time from the constraints of linear progression, such as the cradle-to-grave model, allowing for a more fluid and renewable narrative. In embracing this dynamic understanding of time, Mostafavi and Leatherbarrow invite us to reconsider our relationship with the built environment, encouraging a deeper engagement with the ever-changing narrative within architectural spaces.

In Māori culture, time and space are not perceived as linear or separate entities, but rather interconnected dimensions that shape the fabric of existence. The Māori conception of time embodies a holistic understanding of the universe as a dynamic and interdependent system. In contrast to the Western perspective of time as linear, in te ao Māori time is viewed as cyclical, with past, present and future existing simultaneously in a continuous sequence of renewal and regeneration. Similarly, birth, growth, death and rebirth are recognised as connected phases within an enduring cycle. This relationship between time, space and the natural environment is deeply intertwined with the concept of weathering and decay in Māori architecture. In Māori culture, weathering and decay are not regarded as signs of deterioration, but as natural processes that often contribute to the evolution and adaptation of architectural structures over time – a notion contrasting with the Western view of architecture where built structures are seen as isolated, static entities.[5]

In traditional Māori architecture, particularly in the wharenui or carved meeting house, the weathering of materials and the gradual decay of the structure are embraced as reflections of the passage of time and the interconnectedness of humans, nature and the spiritual realm. Rather than resisting the effects of weathering, Māori incorporate these processes into the design of the wharenui, allowing it to age gracefully and develop a patina of cultural significance.[6] This integration of weathering reinforces the notion of continuity and renewal, echoing the cycles of growth, decay and regeneration. Furthermore, the concept of whakapapa (genealogy) is reflected in the entropy of Māori buildings, as each layer of weathered materials bears witness to the history, lineage and cultural identity of the community. The carvings and adornments that embellish the wharenui serve as tangible expressions of whakapapa, connecting past, present and future generations in an unbroken chain of cultural continuity.[7]

Just as time and weathering are integral aspects of architecture's lifecycle, sustainability is deeply intertwined with the concept of renewal and regeneration. Understanding how architecture evolves and adapts over time offers insight into its inherent capacity for sustainability and its potential to positively impact the environment. This holistic perspective underscores the importance of considering architecture's lifecycle from conception to renewal, aligning temporal and sustainable dimensions. However, the pressing need to protect and restore natural ecosystems amid climate change, urbanisation and habitat destruction challenges traditional architectural methods.[8] Today, sustainability in architecture often falls short as a sufficient measure for current and future architectural design. Merely striving to make buildings 'less bad' is an inadequate objective; current construction standards place minimal emphasis on environmental considerations, with the bar for what qualifies as 'sustainable' set unreasonably low.[9]

When examining mortality in architecture within the context of sustainability, the cradle-to-cradle philosophy – a cyclical systematic approach to sustainable design – emerges as a pivotal departure from the traditional perception of buildings as static, finite structures. This paradigm, pioneered by architect William McDonough and engineer Michael Braungart in the 1990s, draws a direct connection between the broader concept of mortality and lifecycle processes. It challenges traditional construction practices through exploring a new and more dynamic, regenerative architecture lifecycle. The core of the cradle-to-cradle philosophy lies in its emphasis on transforming the perception of buildings as short-lived, disposable assets into enduring, dynamic components of a larger ecological system. McDonough and Braungart highlight the linear trajectory of traditional construction practices, where buildings

follow a path from creation – the cradle – to their end of life and demolition – the grave – contributing to significant building and construction waste. However, their philosophy re-imagines this cycle by promoting the idea that a building can in a sense be reincarnated, providing valuable materials for new structures and contributing to a sustainable, continuous lifecycle.[10]

The cradle-to-cradle philosophy represents a radical departure from conventional Western architectural approaches, which often perceive architecture as disposable. McDonough and Braungart's philosophy advocates for a fundamental rethinking of our relationship with the built environment and necessitates a shift from the traditional linear model of "take–make–waste," which perpetuates a cycle of resource depletion and environmental degradation.[11] Instead, cradle-to-cradle advocates for a cyclical and regenerative approach, where the concept of waste is fundamentally challenged. Central to this shift is the design of architecture that is inherently adaptable and sustainable. Rather than viewing buildings or materials as static entities with a finite lifespan, the cradle-to-cradle philosophy emphasises the creation of structures that can be easily dismantled, repurposed or biodegraded at the end of their lifecycles. This approach fosters a closed-loop system, where waste is minimised, and materials are continuously cycled back into the new production processes and therefore never actually 'die.' This shift towards adaptable and sustainable design acknowledges the finite nature of materials and resources, echoing the impermanence inherent in all living things.

To take a pertinent example, architect David Loughlin's Great Barrier House (on Great Barrier Island, New Zealand), although not officially certified with cradle-to-cradle status, embodies the essence of this philosophy by showcasing a low-impact and off-grid approach to sustainable architecture. By using reclaimed raw timbers selected for their rapid renewability and capacity to re-integrate into the forest ecosystem, the house generates no lasting waste. Its design enables effortless dismantling, relocation or repurposing in new projects, thereby minimising environmental impact. This structure serves as a vivid illustration of the cyclical nature of building materials – a poignant reflection of architectural mortality. It exemplifies the potential for sustainable design in permanent buildings, emphasising renewable resources, minimal carbon emissions and material recycling, while revealing an approach that echoes the lifecycle principles essential for enduring, environmentally conscious architecture.[12]

This concept of cyclical regeneration of materials echoes the sustainable principles that are deeply rooted in Māori culture. While cradle-to-cradle may appear novel in Western perspectives and practices, its principles of renewal and regeneration align closely with the enduring ethos of sustainability present in traditional Māori architecture, as discussed above. Just as the cradle-to-cradle philosophy promotes the continuous reuse and regeneration of materials, Māori architecture has long embraced a similar ethos, recognising the importance of preserving resources for future generations through mindful stewardship of the land and its materials.

In his examination of traditional Māori architectural practices, writer and theorist Bill McKay highlights the intrinsic sustainability found in Māori architecture, and particularly the wharenui. McKay delves into the parallels between the cyclical nature of life and architectural structures, echoing the core theme of the cradle-to-cradle philosophy. From a Māori perspective, buildings traverse cycles similar to those of human life, commencing with careful construction similar to a child's birth – marking the initial phase. Over time, these structures, like human life, bear the marks of aging and wear. This analogy between architectural structures and the human body, both subjected to the cycles of growth, aging and decay, encapsulates the essence of life's transience. It hints at the inevitable processes of birth, life's fleeting moments and eventual decay that reverberate through time-bound edifices, serving as a poignant reminder of our mortality.[13]

In contrast to the Western perspective where buildings are seen as static entities, wharenui are perceived as evolving, living entities intricately linked to a larger ecological system, returning cyclically to their origins. Metaphorically, the wharenui stands as an embodiment of a tribe's founding ancestor, a foundation of Māori tradition pivotal in comprehending architecture through a Māori lens. In many respects, the wharenui is a living entity, intricately woven with elements that reflect both the essence and the embodied form of the ancestor it represents, whereby each component serves as a manifestation of cultural heritage and spiritual significance.[14] During construction, each new

component's integration with existing parts is celebrated and blessed, illustrating the concept of interconnectedness as crucial to the wharenui's functionality, akin to the harmony within a living body. Should one component fail to fulfil its role, the structure's collapse becomes inevitable.

Embodying the Māori belief in embracing the natural world's forces rather than resisting them allows for indigenous architecture to evolve with time. This is exhibited in the transformation of wharenui throughout their lifecycle, whereby these buildings, as living entities, are subject to continual renewal and regeneration to ensure their ongoing spiritual and functional relevance. The choice of natural materials for construction – such as timber, flax and other locally sourced materials – necessitates ongoing reconstruction to stave off decay, providing an ongoing opportunity to practice and transmit construction skills to future generations.[15] Conceptually and pragmatically, death and degradation are regarded as a transition to the spiritual realm rather than as an endpoint. While this approach may be perceived as mere 'building maintenance' in Western culture, from a Māori perspective it reflects a deep understanding of architecture as a dynamic process of adaptation and sustainability. This ethos aligns closely with the cradle-to-cradle philosophy, which emphasises the cyclicality of resources and materials and promotes their continuous reuse and regeneration. We also see this concept embraced through the values aligned with Māori architecture – in particular, kaitiakitanga or mindful stewardship – which supports the preservation of materials for future generations through ongoing reconstruction and adaptation.

In the exploration of architectural mortality, a profound interweaving emerges, entangling the lifecycles of structures with the pivotal facets of sustainability and cultural values. This exploration of the transience of architecture reveals a fundamental truth: buildings, akin to living entities, navigate a trajectory from creation to eventual death. Yet, within this cyclical process there resides a treasury of wisdom that reshapes contemporary architectural paradigms. The comprehension of architectural mortality serves as a guiding principle for redefining our relationship with the built environment. It illuminates the path towards sustainable architectural practices, cultural reverence and respect for time and aging. Three pivotal perspectives converge to impart invaluable insights into the nature of architectural transience.

Sustainability, as epitomised by the cradle-to-cradle philosophy, beckons architects to reimagine buildings as dynamic components within a broader ecological framework. The pioneering approach of McDonough and Braungart reframes structures as perpetual contributors to a closed-loop system, echoing life's cyclical nature. Their philosophy champions regenerative cycles and minimal waste, catalysing a shift towards a responsible and enduring architectural landscape. Māori culture embodies profound cultural values intertwined with a cyclical philosophy of sustainability, fostering renewal and revitalisation. Embracing cyclical existence, it emphasises sustainability and cultural interconnectedness, providing profound lessons for architectural practice.

Within the rhythm of architectural mortality lies a testament to human resilience, ingenuity and the pursuit of spaces that not only provide shelter, but also inspire and provoke contemplation. This cyclical journey of creation, existence and dissolution is not merely a narrative of decay, but a testament to adaptability, regeneration and the intrinsic connection between humanity, the spaces we inhabit and our natural environment.

Ultimately, exploring architectural mortality unravels an enduring reality: architecture, transient by nature, should mirror life's cyclical essence. Embracing this impermanence encourages respect for ephemeral beauty, fosters sustainable practices honouring nature and imbues architecture with cultural significance.

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2 David Willis, "Review of: On Weathering: The Life of Buildings in Time," *Journal of Architectural Education,* 48:2 (1994), at 126, https://doi.org/10.2307/1425319.

3 Mohsen Mostafavi and David Leatherbarrow, *On Weathering: The Life of Buildings in Time* (Cambridge, MA: MIT Press, 1993), 5.

4 Willis, "Review."

5 Bill McKay and Antonia Walmsley, "Maori Time," *Idea Journal,* 4:1 (2003), at 95, doi:10.37113/ideaj.vi0.236.

6 Ibid.

7 Michael Linzey, "Speaking to and Talking about: Maori Architecture," *Interstices: Journal of Architecture and Related Arts,* 1:1 (1990), 50-61, at 59, doi:10.24135/ijara.v0i0.24.

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10 McDonough and Braungart, "Towards a Sustaining Architecture," 14.

11 The Beautiful Truth, *William McDonough: Cradle to Cradle,* 14 May 2021, YouTube video, https://www.youtube.com/watch?v=QIfFElvSaMo.

12 Andy Kenworthy, "Architecture and Design: From Cradle to Home," *The New Zealand Herald,* 5 March 2013, https://www.nzherald.co.nz/nz/architecture-and-design-from-cradle-to-home/ULFG2PRDAG754WO2YZPAWN2K6M/.

13 McKay and Walmsley, "Maori Time."

14 Linzey, "Speaking to," 51.

15 Bill McKay and Antonia Walmsley, "Pacific Space: The Pacific Conception of Building," *Idea Journal,* 6:1 (2005), 61-71, at 64, https://doi.org/10.37113/ideaj.vi0.196.

https://doi.org/10.34074/scop.1027010

CONSTRUCTING IDENTITY: DEFINING BI-CULTURAL ARCHITECTURE IN NEW ZEALAND'S POLITICAL LANDSCAPE

Meaghan Christensen

Biculturalism is a common term in discussions of identity in New Zealand and, in a country which defines itself as bicultural, it is important to question how this *bicultural* identity is explored through the nation's built environment. This discussion will interrogate the definitions and understanding of the terms 'bicultural' and 'biculturalism' through a legislative and architectural lens and, in response, propose an appropriate understanding of these terms in today's cultural context. Within this discussion, multiple case studies drawn from academic research are consulted in order to examine the history and evolution of the term and its application and thus better understand the evolving definition of biculturalism in New Zealand architecture.

The concept of *identity* has a long discursive history in New Zealand, where *biculturalism* is often a leading term in conversations navigating land, built form, education and related topics. In British English, the term *bicultural* is defined in the Harper Collins Dictionary as "having two cultures" and, subsequently, as "the characteristics, or policy, of a two-cultured society." According to these definitions, the presence of two cultures (Māori and Pakeha) and their involvement in signing the nation's founding document, Te Tiriti o Waitangi, implies that New Zealand is bicultural both by definition and legal obligation. In response to the transgressions suffered by Māori following the signing of the Treaty, multiple legal documents have been produced to move us toward a truly bicultural nation which upholds what was agreed in the Treaty of Waitangi and restore the identity and mana of Māori people. Driving documents include Te Tiriti o Waitangi, specifically the te reo translation of the text;[1] the Treaty of Waitangi Act 1975 and the Waitangi Tribunal;[2] and the Ngāi Tahu Claims Settlement Act 1998.[3]

Many of the issues around defining bicultural architecture are linked with the perspective that biculturalism as a concept and term has its origins in a Eurocentric agenda, evolving in New Zealand from assimilation and integration of Māori culture into Pakeha culture, progressing to biculturalism. Throughout the history and evolution of the concept, many bicultural policies remained restrictive for Māori, particularly regarding their expression of identity.[4] Architecturally, this aspect has been canvassed through criticisms of John Scott's Futuna Chapel, voiced by Julia Gatley and Bill McKay, questioning the validity of Scott as a bicultural architect – "an architect that was Māori, or a Māori architect?" – and analysing Futuna as a work that it is possible to view without recognition of any cultural elements.[5] Other work in this area has examined historical discourses about the defining of bicultural buildings, such as Āniwaniwa Visitor Centre and Te Kupenga o te Mātauranga. In the case of Te Kupenga o te Mātauranga, while consultation with the 'correct' parties was carried out according to legal obligation, those with genuine cultural interests were not consulted, resulting in the sale of the marae (according to official policy which required consultation with local iwi for whom the marae held no significance, despite the marae having been constructed by Māori students from Massey University, for Māori students).[6]

Āniwaniwa Visitor Centre, on the other hand, exemplifies the progress achieved by bicultural policies, which allowed a Māori voice in defining the original building, designed by John Scott, and its status and significance as a 'bicultural' work. While the planned restoration of Āniwaniwa Visitor Centre was the subject of debate due to its

historic significance as a bicultural building, Māori parties disagreed with this identity, as for them it was a symbol of oppression – a fake symbol of 'cultural unity,' built on land which had been stolen. Following protest, the building was knocked down (rather than repaired) in 2016.[7]

Despite the success at Āniwaniwa Visitor Centre, the policy failings evident in Te Kupenga o te Mātauranga marae and the criticisms of Scott's Futuna Chapel show that in New Zealand the concept of biculturalism (and the policies associated with it) is a 'work in progress' that is slowly moving away from its Eurocentric origins, but still has room for improvement. Politically, it is not enough to foster a nation or a built environment that is merely bicultural by definition, but rather one that is equally made up of both cultures or, better yet, incorporates bicultural equity. We need to question whether, in New Zealand, we collectively define biculturalism as an *equal* synthesis of the two cultures, or if our definition of biculturalism is defined by the minimum – the mere presence of elements of the two cultures, which could then be considered a failure to uphold the legal obligation to comply with Te Tiriti o Waitangi. Thus biculturalism, particularly in New Zealand architecture, could well be defined as "an equitable synthesis between Māori and Pakeha" – a concept which would uphold legal obligations to the treaty of Waitangi, but would also establish Māori identity in the built environment (something required by the Ngāi Tahu Claims Settlement Act).

In questioning *how* we define biculturalism in New Zealand, the fact that discussions of identity are often centred on "*becoming* a bicultural nation" or "*mastering* biculturalism" highlights the term as one which is loosely used and poorly defined and understood. By definition, New Zealand is *already* a bicultural nation, and yet much of the discussion is taken up with 'becoming.' In the realm of architecture, so long as a body of work incorporates an aspect of both cultures, it is by default bicultural. As currently used, the term 'bicultural' implies no essential balance between the two cultures, merely the *presence* of both. However, in the practice of architecture, it is unacceptable to merely 'slap' a Māori carving onto a building of otherwise European inspiration and call it bicultural. As the debates around Āniwaniwa Visitor Centre and John Scott's Futuna Chapel show, there is a good deal of controversy over defining bicultural buildings in New Zealand, and just as much confusion around what it means to create truly 'bicultural' architecture.

Christine McCarthy describes biculturalism as a term which arose in New Zealand during the 1950s, gaining momentum in the 1980s, and which has remained a subject whose contours shift when considered from the perspective of different disciplines, particularly when it comes to architecture. Despite its fluid usage, however, key similarities appear between academic interpretations of the term – especially the professional consensus that Scott's Futuna Chapel is a bicultural work (although even this is debated), and variations of the statement "biculturalism is a synthesis between Māori and Pakeha." However, this 'synthesis' is agreed to be difficult to achieve in practice and the methods by which this is done are subject to interpretation.[8] Taking these factors into account, it is evident that minimal criteria for defining bicultural architecture, and even the common term 'synthesis,' fail to include any further requirement for a 'balance' of cultures beyond the dictionary definitions of 'bicultural' and 'biculturalism.'

There is a need for the development of definitive criteria by which biculturalism is achieved, or at least for a stronger definition and understanding of the term, particularly with the intention of creating racial equality in New Zealand. Paul Jones discusses the sociological impacts of architecture, its ability to mediate between discoursing cultures and its ability to construct identity. For architects, particularly in relation to social architecture, there is an obligation to construct identity through the built environment as well as pressure to be cultural experts who walk a very fine political line.[9] As a result, biculturalism in New Zealand architecture should turn its attention to the built environment, rather than the individual building. If one building that strongly constructs Māori identity is produced in a sea of European representation, this is preferable to constructing a building that is 'half and half.' Perhaps it is in this way that *cultural* architecture should be produced to form a *bicultural* urban fabric that will in turn create bicultural equity within the built environment. In this regard, the goal should be the construction of Māori identity through built form, giving a distinctive voice to the minority culture.

How can this identity be constructed? For Māori, architecture is not merely made up of iconography and symbol through carving (visual form), but inheres in the relationship to landscape, spiritual journey, the life that the building itself has as an entity and, fundamentally, cultural storytelling as a key aspect of identity in Māori design.[10] The Museum of New Zealand Te Papa Tongarewa uses a series of metaphorical expressions to create a "mythical underworld" or a "third space" known as *chora*. The idea of the underworld is prevalent in Māori mythology – myths involving the underworld often "involve some measure of re-evaluation of self or identity construction."[11] Te Papa has been heavily criticised as a missed opportunity, or a building that has failed to be bicultural and does not embrace bicultural ideals.[12]

However, Michael Linzey argues that Te Papa's use of the "third space" is an effective means of constructing identity. One of the biggest criticisms the building receives, particularly from visitors, is the 'disorientation' that results from the presentation of the interior spaces. It is easy to get lost in Te Papa, to make for one place and arrive in another, and the lack of a clear path through the building can be an uncomfortable experience. However, Linzey argues that this sense of disorientation and the lack of a linear journey through a mix of cultural spaces creates the effect of walking through a mythical underworld, where

> '[u]nder the mountain' of Te Papa, Māori encounters Pakeha as such as a foreigner; biculturalism encounters the foreign-ness of its own culture … In this reversal and this keeping apart of opposites there also comes about the growing self-awareness, the growing together of awareness, which necessarily builds and contributes, to a deeper kind of construction of New Zealand identity as a nation.[13]

Despite Te Papa's incorporation of Māori metaphor in its design, and its ability to construct identity and ignite mediation between cultures, this attempt at biculturalism is also where it fails. According to Paul Jones, "architects' attempts to make their work resonate with publics outside of the architectural field go far beyond what is actually built, with the work of high-profile architects in part concerned with discursive strategies to make their architecture socially meaningful to non-experts."[14] It is not that Te Papa fails to be a work that mediates between cultures, as it does so through its programme, but it is open to criticism insofar as its methods of cultural mediation fail to be understood by the non-expert; thus it fails to be socially meaningful, merely reading as a building whose programme is confusing and disorienting to the everyday person. While Te Papa has the ability to construct identity for the individual, such construction is inaccessible because the programme cannot be readily understood. This failure exemplifies the reasoning behind the concept of *co-design* as a way of moving forward within bicultural architecture.

In response to a need for architecture which can be understood by the people it is targeting, and the lack of a strong collaborative process in the design of projects such as Te Papa, *co-design*, a form of participatory design, has emerged as a strategy to mitigate such failings and is proving to be a promising method for constructing cultural identity. Co-design involves a collaborative process with users and stakeholders, leaning on their knowledge and experience to inform and guide projects.[15] It is exemplified in the rebuild of Ōtautahi Christchurch. The Ngāi Tahu Claims Settlement Act requires the involvement of Ngāi Tahu in the design process as a part of the exercise of 'chieftainship' over their land. As parts of the Avon River and central Christchurch are important historical pa sites and kai-gathering grounds, large amounts of the central Christchurch rebuild, particularly in the public sector, legally require communication and involvement with Ngāi Tahu. In response, the Matapopore Charitable Trust has been mandated to be involved in the design process to ensure the integration of Ngāi Tahu values and identity in the redevelopment, in ways which are culturally relevant and appropriate, thus becoming one of the parties involved in the co-design process.[16]

Examples of recent buildings in the central city that have been designed through co-design are Tūranga Central Library and the Te Pae Christchurch Convention Centre. Both buildings successfully acknowledge and incorporate cultural values such as connection to landscape through their use of form, façade and physical connection. Storytelling is also prominent in the designs of both buildings and has been integrated into the built forms through art, sculpture,

carvings, façade design and spatial layouts.[17] Both buildings are successful in establishing identity – as they were designed to do – and have involved parties who understand the values and needs of the culture whose identity is being affirmed. In both instances, the building's cultural relevance goes beyond the visual – although visual elements provide enough on their own to make a construction of identity – and are supported by the values embodied within the remaining design features, making both buildings more successful examples of bicultural architecture than their predecessors.

Driven by policies including Te Tiriti o Waitangi, 1845, the Treaty of Waitangi Act 1975, the Waitangi Tribunal and the Ngāi Tahu Claims Settlement Act 1998, biculturalism in New Zealand architecture is an ever-evolving concept which is mandated to produce a construction of identity within the built environment. This discussion has explored the definitions and debates around bicultural architecture in New Zealand, and how these definitions have been formed through policy, to better understand the political obligations and drivers behind 'bicultural' architecture and how it navigates the political and sociological landscape of New Zealand. The definition of bicultural architecture in New Zealand is still a topic for debate, with no agreed definition of or collective understanding as to what is or is not bicultural architecture beyond a 'synthesis' of Māori and non-Māori architectures. Some commentators continue to uphold this view of biculturalism as a limiting term to form identity within New Zealand and the architectural landscape, where colonial views remain prevalent. However, methodologies such as *co-design* have begun to enter the 'bicultural' architecture scene as a means of promoting cultural equality in New Zealand architecture. Bicultural architecture is hard to put in a box, and almost impossible to define with any precision. Perhaps it is more useful to regard 'bicultural' in relation to architecture as a term whose definition is necessarily fluid and ever-changing according to social context. Given that architecture is a vessel for the construction of identities, and, as identity is constructed at ever more sophisticated levels, what was considered bicultural in the past may not be considered bicultural now. Looking forward, as the balance between cultural identities within an urban landscape, or the cultural values embodied in the 'average' building, continue to shift, so to must the architectural profession respond with an authentic commitment to instigate change.

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THE STORY OF A SIMPLE TOILET: WHAT A FORGOTTEN STRUCTURE CAN TELL US ABOUT THE ARCHITECTURAL, CULTURAL AND SOCIAL HISTORY OF NEW ZEALAND

Alison Breese

The time of the people climbing downstairs and disappearing into the earth should be over.

Iona Williams, Dunedin City Councillor, 1987

Along Princes Street, Dunedin, nestled by a public reserve, a small structure sits, surrounded by a small ornamental garden. Many passersby do not know what the structure is, or why it is there. Although small and seemingly unremarkable, it remains as the last Edwardian public toilet in New Zealand and has recently gained an entry on the Heritage New Zealand Pouhere Taonga Heritage List. It is a tangible link to the architectural and historical significance of public conveniences and remains as physical evidence of a once common facility. It is indicative of an early-twentieth-century response to sanitation and hygiene needs, as well as what was acceptable behaviour in the public sphere. Ignored for many years, the Manor Place Convenience is a piece of important built heritage.

Social perceptions of these public spaces changed drastically over the twentieth century, and their architectural design was heavily influenced by society's expectations. Considerations of hygiene and cleanliness, while being at the forefront of their design, saw public toilets (as we now know them) develop into 'architectural superstructures,' being moved underground and concealed in the early twentieth century. Within 50 years, these underground spaces fell out of favour as above-ground conveniences became the norm as societal and aesthetic attitudes towards the humble public convenience evolved. Through the lens of historical scholarship, this article outlines how sanitation and technology, as well as social expectations and safety factors, influenced and shaped the design of publicly provided facilities, with a particular focus on Dunedin as a case study.

Figure 1. Manor Place Conveniences
February 2023.
Photograph: by author for Heritage New Zealand Pouhere Taonga.

The first public toilet facilities were built by the Dunedin Town Board, the predecessor of the Dunedin City Council, in the 1860s. Public urination was illegal, and the town board sought to provide public urinals for residents and travellers. Only two were built, and those were for men.[1] Early designs were purely functional – they were plumbed with a simple iron screening for privacy.

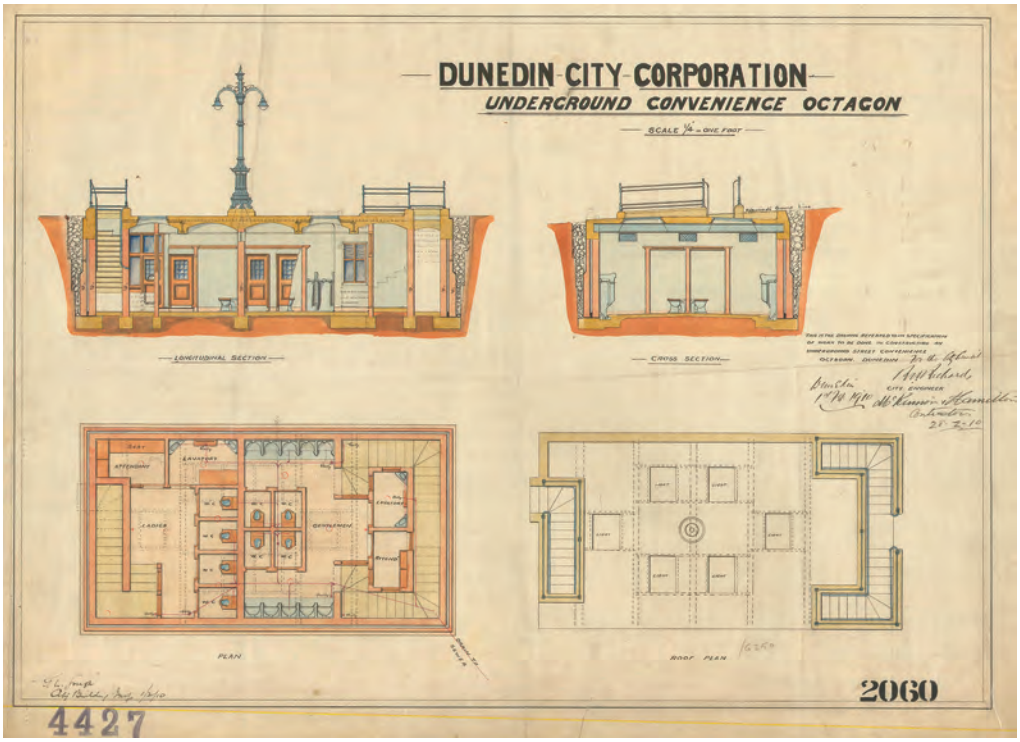

Figure 2. The Underground Conveniences, Octagon, 1910,
City Engineer's plan 14/2/2 (b), Dunedin City Council (DCC) Archives.

Urinals were built in European cities from the 1840s so that people could privately and hygienically relieve themselves during normal everyday travel in public spaces.[2] Removal of the sights, sounds and smells of common bodily functions was seen as all-important. Further removing natural functions from the bustle of crowds, subterranean facilities were becoming popular as they were completely out of sight. The first underground public conveniences in the world were built in 1855 and shown by George Jennings at the Great Exhibition, London.[3] These underground spaces, as well as the first flush toilet (which came into public use from the 1860s), were seen as symbols of the scientific and technological achievements of the nineteenth century.

In New Zealand by the early 1900s there were no 'modern' underground toilets until the first one was constructed in Christchurch in 1907.[4] Hampered by fiscal restraints, the Dunedin City Council built their first underground conveniences in 1909.

In a bid to convince the local authority to build underground conveniences, Richard Richards, the Dunedin City Council's town clerk and city engineer (a dual role), argued that underground structures had displaced the "unsightly arrangements" of above-ground facilities in Europe.[5] He argued that Dunedin had many open spaces that were well adapted for the construction of underground conveniences. Having such facilities would enable Dunedin to build a reputation as a well-kept, well-appointed modern city, qualities which the public and local authority alike deemed important.[6]

Dunedin's underground conveniences or comfort stations, as they were termed, were designed to be both aesthetically pleasing and state-of-the-art in design.[7] Urinals and closets were sourced from the Twyford company, England. Twyford's were among the first of the major sanitarians in England and their inventions were hailed as landmarks of domestic sanitary reform.[8]

Water closet and urinal styles changed from the fancy, decorative style of the Victorian age to reflect a more austere, functional approach in the early twentieth century. Interiors were plainer, with more rounded designs. Water closets were now clean and uncluttered, and lavatories were more discreet, raised on simple pedestals. There were practical reasons for this, including the reality that they were easier to clean. The urinals were made from porcelain-enameled fireclay with an automatic flush cistern, developed in 1889. These became extremely popular around the world, including in New Zealand.

A simple colour palette was also favoured, and the interiors of these underground facilities were fitted with wall-to-ceiling tiles, skirting and dados and enriched with cornice tiles. The Manor Place Convenience, built in 1912 above ground, also had a frieze with Art Nouveaux-style green tiles, which still exist in the structure today.

Other aesthetic elements included the woodwork. The cupboards and towel rollers were made from kauri and all the joinery work was completed in Tasmanian wood.[9] The seats in the attendants' spaces were also made from kauri and there were brass coat and hat hooks, as well as electric heaters and looking glasses installed.

While these spaces were designed with modernity and privacy in mind, the challenges of being underground meant they had to be constructed to withstand their subterranean environment. Roofs were designed to withstand the traffic load and the walls and floors needed to be watertight to hold back the water table and rainwater.[10] Despite this planning, Dunedin's underground facilities did suffer from leaks, with some causing issues as early as 1912.[11]

Ventilation and lighting were very important in these underground spaces. The toilets had uptake ventilation pipes up to the streets above. These were necessary fixtures but were also decorative features, with the cast-iron bases of the ventilation pillars displaying ornamental patterns. As well as the artificial light, these spaces all had skylights to let the natural light in and pavement lights with glass lens lights.[12] Outside, gas lamps and later electric lights were used to light the accessway and stairs, and were left burning all night.

MANOR PLACE CONVENIENCE – THE LAST ONE STANDING

A convenience was demanded by residents of the Manor Place area in 1912; they were concerned about the existing urinal's aesthetics within the cityscape and its offensiveness to members of the public. Residents called for an underground convenience for both sexes.[13] The DCC's Chief Building Surveyor, George W Gough (1863-1936), agreed with the petitioners that a modern structure should replace the old one, built in 1876. Using dedicated funds allocated in 1909 for building underground conveniences, the council agreed to a less popular option – an above-ground convenience for men only.[14]

Augustine Ferry (1850-1939) won the contract to build the Manor Place Convenience. He had already successfully undertaken the contracts for the two main underground conveniences at Custom House Square and London Street. All three structures were to make use of Twyford stoneware and designs.[15] The design of the Manor Place structure was drawn up by City Building Surveyor Gough.

The decorative tiles used in the Manor Place Convenience included a frieze of a distinctive acanthus leaf design in the British Art Nouveau style. A similar design was used in London Underground railway stations from 1906.[16] The steady rise of English tile manufacture began early in the Victorian era and reached its height between 1880 and 1900. The push for cleanliness and public health popularised tiles as a surface that could be easily cleaned and sanitised, and all Dunedin public conveniences built from 1910 utilised ceramic tiles. While not rare at the time, being used in numerous public buildings, the Manor Place cladding has become a rare survivor in New Zealand of Edwardian Art Nouveau tiles.

In 1919, the city engineer described the Manor Place structure as an "object of beauty, draped as it is in lovely native shrubs."[17] Commenting on the various urinals constructed in the 1870s, one councillor exclaimed how disgusted he

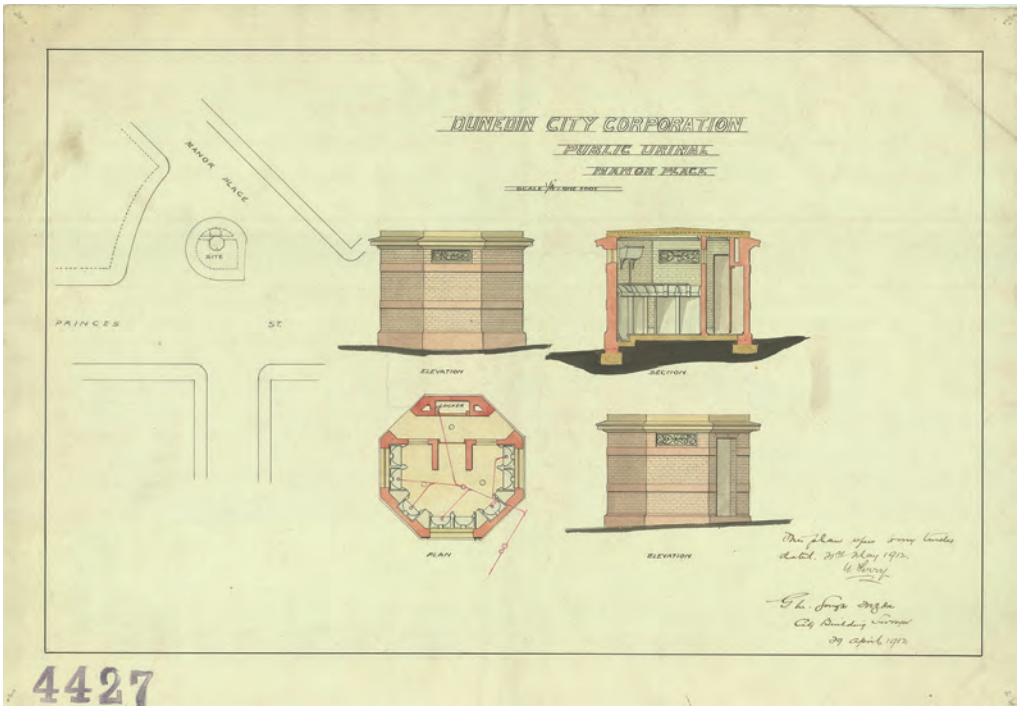

Figure 3. Manor Place Public Urinal plans, 1912, City Engineers Series, 12/2/2d, DCC Archives.

was, as they were too exposed to the street.[18] Shrubbery was used to cover and hide these structures from public view and provide concealment for self-conscious patrons; however, this move inadvertently increased opportunities for anti-social behaviour.

ANTI-SOCIAL BEHAVIOUR

Urinals could be dangerous places. In 1902, a urinal at the Dowling Street steps on Princes Street comprised a narrow passage with five chambers and a single entrance and exit; a writer to the local newspapers wrote that it could become a "garrotting chamber."[19] After damage to the Manor Place Convenience in 1913, "Open Door" wrote to the local paper saying that the inwards-swinging doors should be removed: "the very fact that there are such unscrupulous persons frequenting the place shows how necessary it is that the line of retreat should be kept open. Fancy a man bursting in on one or more of these gentry at nightfall and figure out his chances of escape if they set on him."[20] Being an enclosed space, the Manor Place Convenience was also reported to be littered with broken bottles – evidence of "the use to which such places are put."[21] These spaces could be dangerous for the public to use, with multiple cases of abuse and assaults.[22] Antisocial behaviour in the Manor Place environs was reported in the local court news. Dunedin's central city underground conveniences often provoked complaints of young men, under the influence of liquor, drinking in the toilet spaces and blocking the entrance and exits. Attendants were also assaulted.[23]

As a way of curbing this anti-social behaviour, in the mid-1950s the council planned to situate new conveniences in prominent places in the hope that the vandalism and mistreatment would stop.[24] By this time, most of its toilet buildings and conveniences were outdated and the council planned to gradually replace the older facilities, though it was "difficult to provide modern facilities in the face of continued mistreatment of these public utilities."[25]

Figure 4. Manor Place Convenience 1919,
City Engineers Correspondence, Vol 18, DCC Archives.

Public conveniences for men often served other functions. While I have found no documentary evidence indicating that the Manor Place Convenience was a place of encounter, or 'beat,' for homosexual men, there is evidence for other male public toilets in Dunedin. Public toilets have historically been a popular beat (a sex-on-site venue) for men interested in men and there are reports of other Dunedin public toilets being used in this way, such as the Rattray Street urinal or the facilities in Queens Gardens.[26] There is a strong likelihood that situated in a relatively isolated part of the city, surrounded by trees, the Manor Place Convenience would have been a place of sexual encounter.

GENDERED STRUCTURES

Although London built the first underground conveniences in the world in 1855, it was another 40 years before women got their first conveniences, in the form of a dual-sex facility.[27] Dunedin women had to wait until 1910.

Women's organisations around the world were lobbying for access to public spaces, recognising the connection between access to public facilities for women and their place in wider society.[28] According to historian Caroline Daley, the lack of public toilets for women reinforced the idea that they were unwanted, unassimilated to the urban environment.[29] In Dunedin, "Ratepayer," writing to the *Evening Star,* noted that "many other deficiencies mark Dunedin, and particularly so in regard to public conveniences for both sexes. This city is utterly lacking in even the most common conveniences in this respect."[30] Given prevailing social attitudes towards acceptance of women in the public sphere, a more pressing issue for local authorities was the cost needed to build women's facilities. Providing water closets for women was more expensive than men-only facilities, as more units were needed. In an analysis of the London dual facility in 1895, Sarah McCabe noted that it cost 175 percent more to build this type compared with men-only conveniences.[31]

While the Octagon underground convenience was a great step forward in providing spaces in public for women, it continued to be the only public convenience supplied by the council in the central city during the early twentieth century. The Manor Place Convenience is an example of this gendered divide; while the public had petitioned for a dual-sex facility, fiscal and social restraints meant that a men-only facility was built.[32]

Water closets for women were more expensive to build and use than men's facilities. Women's underground toilets cost more in general to construct, due to the space needed for water closets and lavatories. They also cost money to use, with penny-in-the-slot systems – men had access to free urinals, but women had to pay to use the water closets. Narrow, steep stairways also caused accessibility issues: "why should it be necessary to ascend steep stairs to them – which elderly women and mothers with babies and small children find difficulty in climbing?" argued one writer to the local newspaper in 1939.[33]

The mid-1920s saw many women's groups lobbying council for 'modern' restrooms for the city. There was a societal shift in attitude as women became more accepted in public life, with facilities being provided for mothers. Restrooms were larger and more elaborate facilities than standard toilets, offering a wide range of services. The idea of 'rest' was linked to ideals of maternity, providing spaces to change babies' nappies, heat feeding bottles and generally have a rest from the public space.[34] Modern restrooms were inclusive spaces – they were easily accessible, preferably situated on a ground floor and provided wider services than just a water closet accessed down steep, narrow stairs underground when a person was in need. Across New Zealand, new toilet buildings took on a homelier appearance, drawing from the Arts and Crafts and bungalow styles of architecture. This relaxed, comfortable style reflected the new practices and ideas around public toilets for women.[35]

The demand for more women's public conveniences was part of a worldwide trend as women's organisations demanded improved access to public spaces. While some overseas campaigns strove for years to get local authorities to build public facilities for women, in New Zealand, women's groups and associations ran the facilities themselves. They organised, fundraised and ran their own restrooms and creches for local people, with some council support.[36] With increased numbers using restrooms, in Dunedin, the Women's Rest Room Committee continued to improve these spaces by installing radio sets, electric water heaters and new furniture.

MODERN TOILETS

An investigation into replacing all Dunedin's underground conveniences with more modern structures at footpath level was initiated in 1957. "These have served the city for about 50 years and are subject to considerable vandalism."[37] The investigation showed it had become increasingly difficult to maintain the underground facilities to the required standard due largely to the difficulty in attracting suitable employees for the role of attendant. The council agreed with the chief city health inspector's report that every effort should be made to replace the underground conveniences with more modern structures situated at ground-floor level. This was a shift in thinking – no longer was the underground convenience favoured due to being 'hidden' away from the public's eyes. Indeed, it was the fact it was hidden away which created problems, with high rates of vandalism and abuse. This led to a dramatic change in architectural style for public facilities. The council agreed that "every effort should be made to replace these buildings with more modern structures at ground floor level." As a result, within 50 years the city's underground conveniences had become surplus and unwanted.[38]

Against a backdrop of architectural changes in 1960s Dunedin, existing public conveniences were slowly demolished. Victorian-style buildings were becoming undesirable and costly to upkeep. Many government and local government buildings in Dunedin were demolished during this decade and, in their place, new multi-storied buildings were erected. Along with this new building design trend, the design of public conveniences also evolved. Stainless steel became a prominent material, replacing porcelain. All piping and workings to the toilet were concealed to prevent damage and vandalism. Public toilets became free to use, further increasing accessibility, as the penny-in-the-slot system was retired during this decade. The last remaining underground site in the Octagon survived the 1960s, but it was a shadow of its former architectural glory.

Figure 5. Botanic Gardens Entrance with new Public Toilets 1968,
Architect Series, Album 'Parks and Rec 2, DCC Archives.

Across New Zealand, early underground conveniences have evolved into newer designs, with no originals remaining today, heightening the importance of the Manor Place Convenience. Unsurprisingly, no interior photos of Dunedin toilets are extant before the 1960s to allow us to see what these spaces were like. Looking at the original contract specifications and correspondence, and the remaining Manor Place urinal (built by the same contractor as the underground facilities, and with the same materials), we can construct a picture of the demolished toilets. Part of my Masters thesis involved creating a Virtual Reality space to enable the rich history of these seemingly simple spaces to be told.[39]

Dunedin's early public conveniences were subterranean spaces that protected Victorian modesty and yet were modern and state-of-the-art in their design and construction. Social perceptions of these spaces changed drastically over the twentieth century. Heavily influenced by current architectural trends, their design evolved as local authorities tried to curb the excessive costs resulting from damage and vandalism and the phasing out of attendants' positions – factors which led to the demise of these underground spaces. They survived for over 50 years in the city, before visible, above-ground conveniences became the norm as societal and aesthetic attitudes towards the public convenience evolved.

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HOW, AS ARCHITECTS AND DESIGNERS, DO WE BECOME STEWARDS FOR PUBLIC SPACE THAT SUPPORTS THE SAFETY OF WOMEN, GIRLS AND GENDER-DIVERSE PEOPLE?

Lisa Pike

This paper is a high-level summary of a working document that Lisa Pike has developed in her role as associate architect at Allford Hall Monaghan Morris. The document is designed to support the design teams in the early site analysis and concept design stages to ensure that a well-rounded approach is being taken to better support the safety of women, girls and gender-diverse people in the built environment. Recognising that, as designers, we cannot fix this issue in its entirety, this paper draws out some of the key principles and design prompts to encourage other designers to take women's safety into consideration whilst at the drawing board.

CONTEXT

> *Designing cities that work for women will make cities safer, healthier, more vibrant and more pleasant to live in for everyone.*[1]

In a world where evidence is mounting that the safety of women, girls and gender-diverse people is not a primary consideration in urban contexts, it makes a great deal of sense that we, as architects and urban designers, should leap at the opportunity to rewrite this script, insofar as it is possible through design.

As our understanding of gender has broadened, so have the discussions central to it. This paper takes account of cis-women and girls (both adults and younger persons presumed female at birth), those who identify as women (including transgender and non-binary people) and others who are not represented by or are marginalised by the prevalence of male, able-bodied bias in the urban realm – explaining why the term *womxn* has been adopted, in its capacity to reflect a broader definition of 'woman.'

The limitations of the data we have to work with should, however, be recognised. Where available, it is often disaggregated for cis-gendered discussion or, at times, inconsistent or unclear as to its inclusion or exclusion of non-binary or transgender people. What is clear, however, are the potential benefits available through designing for diversity and safer spaces for all – male, female or gender non-conforming. The built environment contributes to failing half (51 percent in the UK 2021 census[2]) of our population – arguably in part, an outcome of ill-considered urban planning, community engagement and architectural specification, the effects of which are retrospectively managed through cumbersome and often ineffective means, such as CCTV or security lighting. Identifying these urban failings as an architectural opportunity is valuable for a number of reasons.

Firstly, when our womxn are dying or being abused because an urban environment has contributed to social harm,[3] we should care. Given that gender-related violence is preventable, not inevitable, it should be seriously considered that architecture has a role in the reduction of such violence through innovative responses to areas such as policy revision and the elimination of structural gender inequality.

Secondly, space that is designed through an intersectional lens for a diversity of users brings mutual benefits for all. Additionally, it provides an avenue for impact through stakeholder and community engagement. Through early and meaningful engagement with community groups, our design development is furnished with lived experience and expertise. This, in turn enables community buy-in. The best we can hope for as architects and designers is that our communities want to own the spaces we design – so it is only right that there are appropriate levels of input and co-design at the heart of the process.

This paper is positioned from a lived, professional and urban planning perspective within the UK. Prefaced by a literature review, it proposes a toolbox of principles that could be considered within the briefing and early design development stages of a project. This toolbox is not exhaustive, but rather puts forwards a series of starting points – or prompts – for design, elements that the design team, client team and local planning authorities might consider during the collaborative design development process. It sets out why community engagement during this process is fundamental and can be leveraged to bring forward proposals that discourage antisocial behaviour through community ownership and understanding of people's lived experiences.

AVENUES FOR APPRAISAL AND DESIGN

The proposals put forward in this paper are underpinned by two salient publications – *Safety in Public Space: Women, Girls and Gender Diverse People*[4] and *Cities Alive: Designing Cities that Work for Women*.[5] Arup's wider Cities Alive series and a number of publicly available strategic documents produced by the Greater London Authority (GLA) provide wider context and relevant strategies for consideration here – such as the Transport for London Night-time Charter.

Safety in Public Space proposes three avenues for designed outcomes that result in a safer public realm for women – understanding, making and using. It proposes a cross-industry level of responsibility in making our public spaces safe, ranging from the way we *listen* to multiple and diverse voices; the way we *make* through co-design with diverse collaborators; and the way we *use* policy and community strategies to support women's safety in the long term. *Cities Alive* offers four key themes that constitute a positive and safe public environment for women, girls and gender-diverse people: safety and security, justice and equity, health and wellbeing, and enrichment and fulfilment. These themes help to shape a framework for the understanding and making processes set out below and provide a themed lens through which analysis and design can be undertaken.

Understanding

As this paper is geared to tackling the issue of women's safety in the built environment as architects, it suggests that the avenue of understanding is two-fold in nature. Firstly, it is fundamental to understand the site itself in detail via thorough site analysis undertaken through the lens of safety. What are the existing physical barriers to safety – lighting, blind corners, visually obstructive landscapes? What social behaviour does the site currently encourage, and how? Are there certain user groups that are prioritised by the urban environment, such as vehicles or the able-bodied?

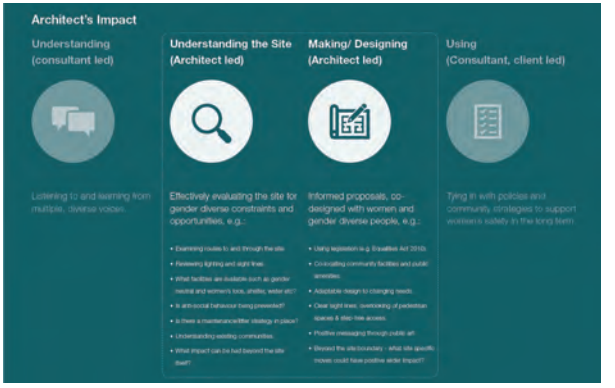

Figure 1. Scope potential for the architect's influence during the design and briefing stages.

Does the site allow for people to comfortably dwell there? Is it welcoming to carers with children? Is the shortest route to and across the site also the safest? Does the site have a starkly different character after dark? It is important that such questioning is supported by the collection of gender-disaggregated data so that a clear and factual picture can be developed to support site appraisal.

Secondly, we need to listen to and understand the existing intersectional communities relevant to the site. Their lived experiences, tacit knowledge of the area and personal investment in their shared spaces is all crucial information for shaping an outcome that is representative and facilitates community ownership. How we undertake the process of understanding is set out in the toolbox section below, where key principles are linked as both analysis themes and design prompts.

Key considerations for effectively evaluating a site for gender-diverse constraints and opportunities might include:

- Understanding the existing demographic and identifying invested local communities.
- Do existing public amenities include such facilities as gender-neutral and women's toilets, shelter and water?
- Is anti-social behaviour being prevented where possible, or is it being encouraged by the environment or lack of maintenance?
- Is there a maintenance/litter strategy in place?
- What positive impact can be made beyond the site itself?
- Examining routes to and through the site.
- Reviewing lighting and sight lines.
- Appraising the landscape for visual obstruction or the capacity to conceal weapons.
- Do pedestrians have priority?

Making

Design principles that facilitate equitable public space are best embedded in the early design phases, so that they are integral elements. In the UK, we would place this work under RIBA Stage 0-2 feasibility and concept design stages. At this point in the programme, key principles that are relevant to the brief and site should be identified and explored through design, just as one might prioritise sustainability or accessibility principles. As architects are often the lead consultant at this stage, we are afforded a great deal of influence over the drawing board. This is also the point at which co-design processes should be implemented, if they are to constitute a meaningful form of engagement.

Informed proposals that are co-designed might include:

- Identifying and tying into existing legislation.[6]
- Co-locating community-led brief elements with existing public amenities.
- Adaptable design principles to support changing needs.
- Defining a landscape and public realm strategy that establishes clear sight lines, the overlooking of pedestrian spaces and step-free access.
- Working with clients, management and end users to produce proposals that emphasise ease of maintenance so that the design has an afterlife that is easy to maintain and is well cared for, and clear management strategies are in place prior to handover.
- Positive messaging through public art and installations associated with 'meanwhile' use (see below).
- Beyond the site boundary – what site-specific developments could have positive wider impacts?

Using

This avenue becomes most relevant once the site is occupied and in use. It draws on existing legislation, policy and management strategies to ensure that the principles embedded in the design are being successfully carried out once the site is handed over. Whilst it is important that the design team is cognisant of existing policies and local strategies that support safety design principles, this paper focuses on the processes of understanding and making.

A TOOLBOX FOR DESIGN

This section proposes a toolbox of principles for design. These principles have been identified for their ability to augment womxn's safety in the built environment in relation to safety and security, health and wellbeing and enrichment and fulfilment. While the following list is not exhaustive, it aims to provide prompts for thought and asks the overarching question: What are the small moves that can have a big impact?

Figure 2. Proposed toolbox of designer's prompts.

Adaptable use

The notion of adaptable use not only supports the sustainable principle of "long-life, loose-fit," but also enables a space to accommodate a community's evolving needs and adapt throughout its life. Where are our proposals readily adaptable? Buildings that are of continual service to their occupants are less likely to fall into disrepair, encouraging anti-social behaviour, and are more likely to become cornerstones of a place's identity, promoting positive connection. Adaptability can be supported through an ordered hierarchy of spaces and considered structural solutions that allow for flexibility of layout, an adaptable servicing strategy and evolving brief requirements over time. This in turn speaks to the urban design principle established by Jane Jacobs, who signalled that the complexity of a city is too intricate for one person to resolve, but rather allows for evolution by the people who constitute it.[7] If our proposals have a guiding framework with the right amount of flexibility, this enables cohesive evolution over time by the site's current and future occupants.

Creative response to the brief

Approaching the brief creatively allows space for intensive co-production with local community groups and stakeholders to identify how the brief can be made flexible or best tailored to its user groups and suited for innovative responses. Brief-making should be considered a cyclical process that is first founded on and then refined by the existing diverse neighbourhoods and communities in a given area.

We should ask: Are the architectural responses creative and employ out-of-the box thinking – for example, embodying a reconsideration of what play, and work might look like for different people, aiming to enrich the spatial experience and enable fulfilment in innovative and diverse ways?

Clarity of entrances and wayfinding

Routes to and through the site should be clear and accessible. They should be able to be navigated with confidence and with minimal reliance on signage so that occupants' decisions can be made instantaneously, particularly in high-risk scenarios. When womxn find themselves in an unsafe situation or feel uncomfortable, there need to be multiple and clear exit routes from A to B, C and D. Where multiple routes cannot be provided, such as pedestrian bridge links, it is important that the route offered is as direct, clear, well-lit and overlooked as possible. Material selection should consider robustness, transparency and a level of maintenance required to promote the chosen route as a well-maintained and safe option for all users.

Ground floor and active edges

An active frontage should be promoted as much as possible to establish a lively, overlooked and welcoming environment, avoiding excessive blank façades such as plant screens along main routes.

Are the ground-floor uses well considered and co-located appropriately? Do they tie into existing community amenities or provide accommodation that would benefit diversity? Are the entrance points to buildings well considered and located along main routes, and are they secure and discouraging of tailgating?

Undertaking a mapping exercise of existing ground-floor uses on the site enhances our understanding of the existing commercial and community environment and allows us to tie our work into these elements in a meaningful way, whilst introducing new and complementary uses. A rich public realm typically involves a good mix of uses, avoiding homogeneity of use and therefore, potentially, of user group.

Twenty-four-hour building

The after-dark environment includes not only nighttime, but that period during the winter months where collection of children from nurseries or schools and commuting home from workplaces and co-curricular activities may pose additional threats. We can expect people such as shift workers – of whom 3.9 million or 44 percent are female in the UK[8] – and young women to be making their way to and from their places of work or residences, entertainment venues or after-dark sport and recreation.

How can our proposals contribute to the after-dark environment and encourage positive, round-the-clock use of these spaces? Also, do lighting arrangements illuminate at human scale, without glare?

A good mix of round-the-clock uses at ground-floor level and an approach to façade design that creates opportunities to look across public spaces help to establish passive surveillance and offer mutual protection.

Pedestrian priority

Clear delineation of pedestrian, cycle and vehicular routes promotes a hierarchy of users within the space. Where safety is compromised, this is often because vehicles take priority over a route or there is insufficient separation between cyclists and pedestrians. Do our proposals prioritise pedestrian movement and safe cycling routes for a range of abilities? Can all users exercise independent movement safely?

Opportunities should be found to make space for rest, play and gentle exercise in a way that is safe and enjoyable. With consideration for the human scale, proposals should also look to provide public shelter zones in a visible and climate-specific manner, so that the invitation to safely and enjoyably occupy the public realm is available year-round.

Recognising that womxn often have a distinctive approach to active travel and often use trip-chaining[9] – the connecting of tasks such as running errands and collecting children – any urban strategy should seek to enable meaningful and plentiful connections through active travel and public transport.

Landscape and play

Biodiversity and planting is vital to a proposal's sustainability strategy and should be considered in a way that reinforces wayfinding and access. Has the maintenance and location of dense planting that could, for example, hide a stowed weapon or obstruct visibility, been planned for so as to minimise such risks? Is there an allowance for places to rest, relax and safely congregate? Is play space planned that facilitates a range of play activity beyond the traditional hard-surfaced multi-use games area (MUGA)?

Figure 3. Queen's Quarter is a high-density residential scheme of three towers nested within an intensively landscaped ground play, incorporating an array of play spaces for all ages.

Tidy and well cared for

Public spaces that are ill-maintained or where litter is prevalent create an unwelcoming environment that invites antisocial behaviour and a lack of community ownership. Improving how a space is overlooked and perceived impacts positively on the occupancy and dwell times of those spaces.

Does the design support an easy-to-maintain waste and maintenance strategy so as not to encourage antisocial behaviour and the illegal or inconsiderate dumping of waste?

Because user-centric design helps to bestow a sense of ownership, access to and legibility of the maintenance and upkeep strategy should be clear to all.

Plugging in

Augmenting or tying into existing public amenities and venues can enhance the vibrancy of a place and produce mutual benefits, such as increased visibility of local businesses and footfall to them. These places might be womxn-owned or provide spaces beyond the site boundary for safe gathering. By enhancing the site's connections to these spaces, womxn's fulfilment and wellbeing might be addressed or new, safe routes to these locations introduced.

What existing opportunities within the site or wider context are our proposals plugging into and amplifying in ways that offer the potential for community enrichment and fulfilment, as well as safe passage?

All-age and family-friendly

Womxn of all ages should be able to connect with the public realm in a safe and fulfilling manner. Do our proposals provide quiet, secure and accessible spaces for all? Can children access play spaces and exercise independent movement without crossing vehicular paths? Has consideration been given to gender-diverse families and what amenity space they might need, or how public spaces can represent this diversity? Can older generations easily navigate and engage with the site in a safe and joyful way?

Celebrating diversity through art

Public art has a wonderful ability to educate and celebrate a place's identity and the people who constitute it. By introducing public art, womxn artists can be supported and their history celebrated, raising the profile of both site and artists in the process.

Can the history and achievements of women and gender-diverse people, especially those relevant to the site or wider community, be visualised and celebrated through public art?

Well-considered 'meanwhile' uses

Temporary works or unoccupied spaces between decant (temporary rehousing) and site mobilisation can create vacant and sometimes perceived unsafe spaces. There is an opportunity here to develop a clear 'meanwhile' use strategy that is locally led, providing temporary space for community groups to come together in an innovative way.

Has a clear plan been set out for temporary works and development sites? How could 'meanwhile' use support wider public safety and wellbeing and provide opportunities for young girls, gender-diverse people and women?

Figure 4. Brentford Masterplan had a clear and locally driven programme of meanwhile use within the existing buildings prior to mainworks commencing.

SUMMARY

This paper has proposed that the built environment has a role in supporting the safety of womxn and gender-diverse people that goes well beyond the obvious and unimaginative security interventions that do little to foster a hospitable sense of place.

A holistic approach, stemming from thorough site analysis of existing constraints and opportunities, can produce enriched and coordinated proposals that support not just the physical security of womxn, but also their wellbeing and fulfilment in their local communities. In interpreting the brief creatively, an innovative response can provide an environment for thriving and truly representative public spaces that will benefit the wider user group and stand the test of time, as adaptability is embedded at the concept stages of design. By linking the early appraisal and concept design stages to a brief that emphasises innovation and adaptability, a given space is much more likely to experience enhanced longevity, as well as the ability to adapt to the evolving needs (including safety and security) of all gender-diverse peoples.

Designing for a ground floor that is actively occupied and overlooking, and connected sensibly to the wider site, promotes the creation of a public realm that is inviting and encourages positive social engagement as well as longer dwell times.

A design brief and proposal that identifies a thoughtful programming of the relevant spaces for 24-hour presence can mitigate the hostility of spaces that otherwise become dominated by vehicles or human presence at night.

An all-ages landscape and public realm strategy that pulls this approach together through opportunities to interact safely and with clarity and is easily maintained promotes a healthy space that a broader population can call 'ours.'

Whilst as architects we may not be able to directly prevent the trauma and crime that is perpetrated against womxn of all ages, we can begin to challenge the narrative that public space is a space for marginalisation. The scene can very intentionally be set for a public realm that is co-produced by its stakeholders and end-users – a better representative of half of its population.

Contributions

With thanks to my colleagues at Allford Hall Monaghan Morris (AHMM) for their project and research-based discussions in this area, especially Kay Razak.

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VISIONS OF THE FUTURE: REPORT FROM THE UPTOWN FUTURES FESTIVAL

Devon Sanson and Natalie Allen

Uptown – comprising the urban fringe Auckland suburbs of Eden Terrace, Newton and Grafton – has a rich history, which has been shaped and reshaped by movement. Lava flows and magma created the steep gullies and ridgelines which were used by Tāmaki Makaurau's earliest inhabitants to move between pā and mahinga kai; the ridgelines were later developed into tramways and roads that spurred industrialisation and suburbanisation of Auckland; and the motorways and flyovers that destroyed communities of so-called slums appeared in the mid-twentiethth century. In many ways, this part of the city has always been seen as somewhere to move through – with the people who live here given only passing consideration.

Uptown became a place to pass through and bypass. However, over time, a strong arts culture flourished in the relatively affordable city-fringe rental market. Today, Uptown is an eclectic mix of professionals, students, artists and manufacturers, home to some of the city's best eateries and most innovative businesses and NGOs. But at first glance, the area's undeveloped lots and dearth of public space conceals this vibrancy – the built environment is a poor reflection of the life in this precinct.

Now, Uptown is entering an era of resurgence, unifying the suburbs of Eden Terrace, Newton and Grafton in a shared identity. Thanks to the Maungawhau City Rail Link development, Auckland Light Rail and proximity to the city, Uptown will be Auckland's 'most connected place.' As more people and businesses arrive, the challenge will be: how does Uptown preserve and enhance its identity as a vibrant, innovative and attractive urban place?

Meeting this challenge is the mission of the Uptown Business Association. Established through Auckland Council's Business Improvement District (BID) programme, the business association has taken an active role in advocating for Uptown's interests to local bodies, and strengthening the links between business and resident communities in the precinct.

During 2020, The Urban Advisory, the Uptown Business Association and the communities of Uptown came together to develop a community vision and devise six "place pillars" for the precinct. This process involved community workshops and a survey to determine what the future of the precinct should be. The survey process and questions evolved through workshops with BID members, and the survey was completed by 300 current and future local residents, business owners, workers and potential developers. Questions covered if, and how, a sense of belonging to the community was defined, as well as what kinds of amenities people used, when and why, and how needs might change in the area over time. Respondents' sentiments about the future rail station development were also explored.

In addition, both, at in-person workshops and online, participants told us what they loved about living in Uptown, what they didn't love, and what they hoped the future would look like. Participants included residents, business owners and workers, as well as people who simply enjoyed spending time in Uptown or hoped to live there someday.

Figure 1. The Uptown Place Pillars, developed through the Community Vision process undertaken in 2020. The Pillars represent what development in the precinct should facilitate. Illustration credit: Nathalie Drujon, courtesy of the Uptown Business Association.

At the conclusion of the community visioning project, the following vision was arrived at: *"A thriving, accessible, neighbourhood that embraces its heritage and diverse creative solutions for its community."*[1]

Thriving
The people and businesses of Uptown can flourish through social, cultural, environmental and economic connection and activity.

Accessible
Different demographics, incomes and mobility options are all found in Uptown.

Creative Solutions
A range of ideas is developed in a collaborative way to achieve a broad range of housing options, business and recreational opportunities, and create a sense of discovery and a strong vibe in Uptown.

Neighbourhood
All the people and places that make Uptown what it is.

The six "place pillars" corresponding to these points to guide future development thinking are shown in Figure 1:

But how do we test these ideas and design principles? Do these pillars encourage architects and urban designers to think differently, in a way that responds to place?

To answer these questions, we worked with the respective architecture schools of Auckland University of Technology, Unitec and the University of Auckland. Over 550 students, from first years to those in Masters programmes, were asked to respond to a variety of lifestyle elements and challenges in Uptown.

Students walked the streets to discover the hidden places of this precinct and where planning decisions made in years gone by had severed community connections. This was a reminder that it is on foot that we really begin to *understand* our neighbourhoods and cities – the sounds, smells and sights that define a place. This is important in a precinct that has in the past been defined by how people move *through* it, rather than *within* it. Students rediscovered heritage buildings, learned about the birdlife that makes its home in Uptown and learned about Te Uru Karaka and Ipu Pakore, two important pre-European mahinga kai (traditional food-gathering sites) which are no longer visible in the built environment. It was these discoveries of the place that led many to focus on temporal elements within their designs, as well as future-positive schemes that were strongly tied to stories and memories from the past. The BID saw this exploration as an opportunity to build on their own knowledge of the history of the neighbourhood and weave their findings into their communications about the development with stakeholders.

Throughout their courses, students became embedded in the businesses and institutions that define Uptown. Over a period of 12 weeks, dozens of architecture, urban design and urban strategy concepts and interventions were delivered by students. These included innovative adaptive reuse projects, spaces for artists and creatives, dense cohousing projects, recreation spaces and artefacts that represented or supported elements of Uptown's environment.

This process culminated in the week-long Uptown Futures Festival. Three dedicated pop-up spaces were open to the public to visit and learn about the future or Uptown, and see the work of students. Visitors were encouraged to provide feedback about what they saw, or what they hoped for the future of Uptown. There was also a large panel discussion, where local and political leaders discussed visioning work of this kind, and a 'leaders' night' which included senior officials and project leads being guided through the pop-ups.

The futures festival showed that a strong, place-based design strategy can produce unique and creative additions to our built environment. A significant concern in urban regeneration projects is that the new architecture and urban design will alter the character of an area, and that, as a result, it would be unrecognisable to local communities. Tāmaki's emerging practitioners were encouraged to spend time in the area and understand the types of communities that are and could be in Uptown. The BID showcased designs that were place-specific, rather than generic architectural responses. It intends to continue its conversations with the wider design community so that as projects continue to come online, the place pillars – and especially the pillar titled "keep the character and stay edgy" – can be embodied in the design responses. Beyond architecture, the BID also wants to see creative governance and finance models explored to facilitate key local groups, such as the not-for-profit sector, staying in Uptown.

Figure 2. Kāinga Whakahounga, designed by AUT student Tina Le Phan.
This project incorporates affordable community-focused housing and urban farms.
Illustration credit: Tina Le Phan.

CONCLUSION

This brings us to the question, what are the impacts of a festival (or a placemaking process) like the Uptown Futures Festival?

Fundamentally, the festival was an example of 'future-positive' messaging from the BID which engaged a broad variety of stakeholders in the process. This included people passing by on the street going into a pop-up event, local residents engaging in the community visioning events, the students dreaming up ideas for the area, the senior officials and project leads. Reframing change – getting people excited about its potential, rather than focusing on disruption – positioned Uptown as a thought leader in the community, as well as serving as an exemplar project for other BIDs.

From Uptown's perspective, a further key impact lies in activating 550 creative minds and future designers who have the vision of Uptown in mind as they move forward in their careers and shape Tāmaki Makaurau, Auckland. This initiative has snowballed into an increasing awareness about Uptown, as media coverage also helped to promote the area and the opportunities that change would bring it.

What does this mean for the role of BIDs more generally in Aotearoa? It showcases a different way to operate by creating a central place to connect and by developing a shared vision for an area or precinct using a citizen-centric lens. In essence, the focus is on using placemaking as a tool to communicate the simple idea that businesses are people. Uptown is a business association, yes – but what businesses need to thrive is people and engagement, and the way that happens is by creating a neighbourhood that people want to come to and spend their time (and money) in.

Figure 3. | Mt Eden Road was transformed into a pop-up gallery for the Uptown Futures Festival, drawing people into the future from the busy thoroughfares.
Image credit: Blink Ltd, courtesy of the Uptown Business Association.

The festival has spurred on a series of 'next steps' for Uptown. Primarily, the BID is planning a series of activations for 2024 which build on the conversations from the festival and focus on different place pillars. A key focus of 2024 will be the pillar "Grow up in Uptown" and will include events such as street festivals and physical and digital content including guides to intergenerational opportunities and opportunities for families in Uptown. An additional survey round will also add to the evidence base about the community vision for the area. While, in these ways, the Uptown Futures Festival formed one approach for supporting the Uptown community vision, the BID will continue to explore a variety of ways to advocate for the precinct and create the thriving place Uptown can continue to be.

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https://doi.org/10.34074/scop.1027019

COMMUNITY RESILIENCE AND GRASSROOTS ACTION FOR LONG-TERM URBAN REGENERATION IN POST-QUAKE ŌTAUTAHI CHRISTCHURCH

Irene Boles

INTRODUCTION

The 22nd of February 2024 marked the 13th anniversary of the devastating earthquake that hit the city of Christchurch in 2011. This tragic seismic event took 185 lives, caused permanent damage to 100,000 buildings and resulted in the demolition of 80 percent of the buildings in the Central Business District.[1] Such sudden and significant disruption of society and the subsequent loss of the urban environment at the heart of the city led to the rise of a prolific grassroots, community-led, city-making movement, which has been working successfully alongside local and governmental institutions to support the recovery of the city and its communities.[2]

Using the framework of urban commoning, this paper looks at several examples of how community resilience and grassroots action are shaping the recovery and rebuild of Ōtautahi Christchurch in order to discuss and assess their impact, evolution and their possible positive long-term effects in a quest for spatial justice.

COMMONING AND URBANISATION AS A COLLECTIVE EXERCISE

The term *commons* describes a community of people sharing and governing resources, and their relations, production and reproduction processes through horizontal 'doing' in common: commoning.[3] Historically, the term commoning has been associated with the management of natural resources. In the last 25 years, scholars have shifted the conversation on commons from the natural to the urban context, looking at the relationship between "justice and geography, or social justice and the city."[4] *Urban commoning,* which originated in Europe during the late 1960s, describes the sustainable dynamics of social regeneration in urban contexts, where groups of citizens mobilise to reclaim decision-making power over urban matters. Similarly to the term commoning, urban commoning explains the collective production and governance of shared resources within cities, by communities.[5]

In Harvey's 2014 essay "The Crisis of Planetary Urbanization," the author describes the profound and increasing alienation that characterises modern urban living. This includes the destruction of meaningful social structures, the rise of social inequalities, unaffordability, violence and lack of democratic governance; a transformation of cities' "places of celebration"[6] into "engines for economic production, capital accumulation and speculation."[7] As most of the world's population now resides in cities, the impact of urbanisation has reached crisis level. Cities have become objects of intensive commodification and privatisation of housing, land and public space for the economic gain of powerful corporations,[8] a situation which has led to housing unaffordability, gentrification, displacement and criminality. The negative impacts on citizens has led to explorations of more equitable ways of urban living in order to overcome social and governance issues and, in turn, to the rise of revolutionary social movements aiming at reclaiming control and access over urban resources as commons.

PRINCIPLES OF URBAN COMMONING

The four key principles of urban commoning as outlined below (and represented in Figure 1) describe the collaborative socio-spatial practices and strong social relationships at the base of political action, and highlight how the quest for spatial justice can be further enabled through the practice of the urban commons.[9]

1st - People	2nd - Places	3rd - Politics	4th - Participation
As urban population increases, tensions and injustice do too. Hence more need and opportunities for commoning in cities.	Cities seen as shared resources: the space of the commons.	The production and management of the commons help imagine new scenarios of governance "it opens up new spaces for politics" (Chatterton, 2010)	Commoning communities need to work with urban professionals and institutions to realize their common projects.

Figure 1. Summary of principles for how urban commoning can support spatial justice.

The first principle outlined is an approach best understood through the term *tactical urbanism* and refers to a practice of commoning that de-commodifies urban spaces.[10] Mike Lydon describes this approach as temporary measures aimed to improve the liveability of small-to-medium scale neighbourhoods.[11] They allow locals to experience short-term, alternative ways of interacting with their urban environment while building new and deeper social connections. Many significant exemplars exist globally, such as the Open Streets initiative in the United States; ReNew Newcastle, a grassroots example from Australia; and "Estonoesunsolar" ("this is not an empty site") in Zaragoza, Spain. These initiatives show how community formation happens simultaneously as urban commons are created, as people come together and find purpose around issues in a communal way.[12]

The second principle identifies urban commons as a socio-spatial manifestation. Felstead et al. use the term "territory"[13] to describe the relationship between the spatial and social components of urban contexts. The territory has a spatial as well as a political connotation, being defined as a geographical space that needs political intervention to be subdivided, organised, managed and accessed by multiple users[14] or, in other words, to be shared. Moreover, urban design theories suggest that communities tend to form around three key dimensions that define their relationship with their physical space: social, democratic, and friendly and safe.[15] The social dimension in particular can be further explained through the concepts of opportunities for interaction, the formation of a healthy social network, conviviality, fun and the development of a sense of belonging for people to feel connected to their neighbours and their living environment.[16]

The third principle aligns to ideas of urban commoning that lead to imagining governance in new ways, both within the long-term, as processes to maintain shared resources, but also as short-term actions to reclaim areas of the city.[17] However, within this context, it is also important to address the limits of short-term urban commoning practices to promote further reflection, experimentation and, most importantly, implementation. Brenner argues that short-term interventions will fail to challenge neoliberal urban practices despite their participatory nature, democratic approach and the enhancement of social connections unless the actors involved (architects, planners and designers) adopt a more systematic approach to collectively understanding and addressing the "rules that govern the production, use, occupation and appropriation of space."[18]

A possible way of overcoming the limits of short-term urban commoning and promoting long-term, systematic change within governing institutions and policies is articulated by Cruz, who argues that the design process can be a powerful tool to re-imagine urban environments, if considered as a collective exercise and cultivated as a shared discipline. This approach can offer teams the power to find new ways to "coproduce the city as well as new models of cohabitation and coexistence to advance agendas of socioeconomic inclusion."[19] This is identified in the fourth principle of urban commoning, reflecting the reality that in recent times more and more professional bodies have shifted their focus in working with community projects from 'problem-solving' to 'sense-making,' supporting and facilitating community groups as they navigate legal frameworks, design work and relationships with stakeholders.

URBAN COMMONING IN POST-QUAKE ŌTAUTAHI CHRISTCHURCH

Ōtautahi Christchurch has been a laboratory for experimentation and implementation of community engagement within the urban environment since the first of the Canterbury Earthquakes Sequence (CES), which occurred in September 2010. Practices of urban commoning have been at the forefront of the grassroots-led, urban regeneration of the city, with several organisations enabling the collective reimagining of urban governance and co-design practices through transitional projects and bottom-up initiatives.

Tactical urbanism and collaborative engagement practices: The Transitional City-Making Movement

More than 13 years after the first of the CES that brought devastation and loss to the city of Christchurch between September 2010 and June 2012, the city is still entertaining its residents and visitors with pop-up, transitional installations that activate and beautify some of its most prominent corners in the Central Business District.

Gap Filler was the first grassroots organisation to grasp and act upon the importance of bringing temporary, engaging and community-focused activities to the sites left vacant by the many demolitions that followed the earthquakes, ushering what then evolved into a collaborative, prolific, grassroots city-making movement.[20] Over the years, Gap Filler evolved into an "award-winning place-making and urban regeneration social enterprise,"[21] delivering hundreds of public installations around Ōtautahi Christchurch and New Zealand in collaboration with local organisations, as well as local and central government.

In 2012, the Life in Vacant Spaces Charitable Trust (LiVS) was created following a report highlighting the barriers to property owners' participation and the need for a dedicated organisation to support the urban and social recovery of Ōtautahi Christchurch.[22] To date, LiVS has contributed to the realisation of over 700 projects and has collaborated with Crown-owned organisations such as Ōtākaro Limited, Regenerate Christchurch and council development company Development Christchurch (DCL).[23]

The Dahlias project (see Figure 2), a six-meter-long installation on privately owned land waiting for development, is one of the latest among hundreds of transitional projects that have been funded by Christchurch City Council (CCC) through the Enliven Places Programme Budget.[24] It illustrates the results of the fruitful collaboration between grassroots organisations and local councils, populating, enriching and activating vacant sites in Ōtautahi Christchurch.

The Festival of Transitional Architecture: urban experimentation and re-claiming the central city

The first significant outcome generated by the collaboration between grassroots organisations, Christchurch City Council, construction companies, community groups and architecture and design schools from across New Zealand was the October 2012 Festival of Transitional Architecture (FESTA). The festival was conceived of, and directed by, architectural historian Dr Jessica Halliday – who then founded Te Pūtahi, The Christchurch Centre for Architecture and City-Making, a post-quake charity dedicated to promoting a better, fairer urban environment through engagement and collaboration.[25] The eight-day festival consisted of free lectures, architecture tours, open-air concerts, family activities and conversations focused on raising awareness of civic engagement, whereby everyone can contribute to the discourse about rebuilding the city and what the city could become.[26] Professor Uwe Rieger, the curator of FESTA's main event, Luxcity – which involved over 350 architecture and design students in creating 16 large-scale luminous installations supported by cranes and intended to host pop-up activities – described it in this way:

FESTA is right in the global trend which is doing investigation around adaptive urbanism and user generator planning. I believe Architecture education has to change towards a much more collaborative model and this is what we can practice here in Christchurch, but this is also where we can learn from the different community groups and activities which are currently going on in Christchurch.[27]

Figure 2. Dahlias project in Christchurch CBD.

Figure 3. LUXCITY - Festival of Transitional Architecture 2012.

FESTA was a celebration of the re-appropriation and reconnection of the people of Ōtautahi Christchurch with their severely damaged public realm; it magnified the ways in which collaborative engagement can lead to positive and meaningful interactions between the public and their urban environment.

Indigenous knowledge and cultural narratives: identity and inclusion in the CBD

The rebuild in Ōtautahi Christchurch provided a unique opportunity for the city to be the first, globally, to embed indigenous knowledge into the regeneration of its urban environment at such a large scale. Matapopore Charitable Trust was established in 2014 by Ngāi Tūāhuriri – the local hapu of Ngāi Tahu, the main rūnanga (tribal authority) of the South Island of New Zealand – and aimed to promote and nurture the inclusion of mātauranga Māori (Māori knowledge), indigenous values and narratives in the Ōtautahi Christchurch post-quake rebuild:

> Ngāi Tahu made history after the earthquakes, finding themselves in the globally unique position of being the first Indigenous group to be an official partner in recovery following a major disaster. And you can see their presence all around the city now in the form of public art, signage, landmarks and even its Māori name, Ōtautahi, which is quite remarkable when you think Christchurch has always been regarded as the 'most colonially English' of our cities. [28]

Through collaboration with architects and with a focus on landscape design, the Trust worked to embed cultural stories, values and identity into the rebuilt city, creating a more inclusive and culturally vibrant urban landscape, enriched with the stories of mana whenua woven into the new fabric of the city. This was expressed in the landscape through patterns, sculptures and symbols,[29] as well as through the anchor projects that were being planned for the CBD.

An example of indigenous knowledge embedded within architectural language is Te Pae Convention Centre, which is designed around five key Māori kaupapa (principles), expressed in its spaces, materials and artworks:[30]

1. **Whakapapa** – identity and connection to place.
2. **Manaakitanga** – hospitality, respect and care for others.
3. **Mahinga kai** – knowledge and values associated with customary food-gathering places and practices.
4. **Mana motuhake** –- being able to act with independence and autonomy, being ourselves in our places.
5. **Ture wairua** – being able to exercise spirituality and faith.[31]

Matapopore Charitable Trust successfully led the integration of Māori narratives into the new fabric of the Christchurch CBD, transforming the urban environment into a canvas for indigenous inclusion and cultural expression.[32]

Figure 4. Māori patterns embedded into the landscape in Christchurch CBD.

Figure 5. Te Pae Convention Centre.

COMMUNITY-LED URBAN REGENERATION IN SUBURBAN AREAS

The Sumner Community-Led Masterplan emerged very early in the aftermath of the February 2011 earthquake as a bottom-up response to the significant loss of built environment and services that the Sumner community suffered.[33] The Sumner Urban Design Group (SUDG), formed by Irene Boles, Eugenio Boidi, Max Capocaccia and Stephen Fitzgerald, produced two draft masterplan proposals between March and August 2011. These were informed by community feedback, as well as knowledge that was kindly and voluntarily shared by landscape architects, structural engineers, traffic engineers, geotechnical engineers, planners and historians.[34]

Community engagement played a crucial role in shaping the Sumner Masterplan. Public meetings, interactive feedback sessions and surveys were conducted to gather input from residents, business owners and other stakeholders. This inclusive approach was successful in capturing the diverse perspectives and needs of the community, ensuring that the masterplan reflected the collective vision for the future of Sumner.[35] Two significant long-term built outcomes emerged from the masterplan: Matuku Takotako Sumner Centre and Te Ara Ihutai Christchurch Coastal Pathway. Matuku Takotako Sumner Centre, designed by Athfield Architects following significant consultation with the Sumner community, replaced three separate pre-earthquake venues: the Sumner library, community facility and museum. The co-design process started in 2012, when a group of Sumner community members and volunteers formed a Joint Advisory Group (JAG) to coordinate with CCC over the design of the new building, which was inaugurated on 19 August 2017.[36]

The Christchurch Coastal Pathway Group (CCPG) was formed during the Sumner Community-Led Masterplan days and became an incorporated society and registered charity in 2012. The group guided the fundraising and design process leading to the finalisation, in late 2023, of a 6.5km, shared-use accessible path. Connecting the suburbs of Ferrymead and Sumner, the pathway provided a safe pedestrian and cycling route to enhance sustainable transport for residents and tourists.[37]

Another community-led project that culminated in the creation of Albion Square in Lyttelton, started as a local initiative, facilitated by Gap Filler, to create a temporary public space.[38] Seating areas, a sand pit, pétanque pitch and community garden were created on the site of the former Albion Hotel. The project quickly became a focal point for community gatherings, events and activities. In 2012, CCC purchased the land from its private owners, following a public consultation process to inform the suburb's masterplan, which highlighted the need for a permanent, public space for the community. In November 2014, Albion Square was finally inaugurated as a permanent public, community space.[39]

EVALUATION OF CASE STUDIES AGAINST URBAN COMMONING PRINCIPLES

The projects described in this paper encompass the four principles of urban commoning (see Figure 1), demonstrating their relevance and validity in the quest to achieve a positive, inclusive, long-term regeneration of the urban realm of Ōtautahi Christchurch. The activities of Gap Filler, LiVS and FESTA in particular, through their grassroots approach, have enabled communities to reclaim participation in the future of the urban environment after a major natural disaster through inclusion and experimentation with short-term, tactical urbanism activities. This is demonstrated through projects like Albion Square, which evolved into a permanent public space created by the community, for the community.

The work of the Matapopore Charitable Trust in the central city and the SUDG in Sumner have shown how governance can be re-imagined to be more inclusive and democratic through co-design processes, and how social connections and a collective, collaborative approach among urban realm specialists can lead to meaningful, long-lasting, successful outcomes. Furthermore, the importance of local governance as a tool for the inclusion of a diversity of socio-economic groups in the decision-making processes about urban matters is stressed by Polese and Stren:

> Urban policies conducive to social sustainability must, among other things, seek to bring people together, to weave the various parts of the city into a cohesive whole, and to increase accessibility (spatial and otherwise) to public services and employment, within the framework, ideally, of a local governance structure which is democratic, efficient, and equitable.[40]

CONCLUSION

This paper highlights the positive impact of urban commoning practices in building community resilience and promoting grassroots action in the urban context of post-earthquake Ōtautahi Christchurch. The case studies demonstrate how communities can come together to challenge the status quo and create alternative governance models that prioritise the needs of citizens over profit-driven interests. By applying principles of urban commoning, including self-organisation, participatory decision-making and equitable distribution of resources, communities can create more a sustainable, inclusive urban environment.

The approaches implemented in the case studies discussed in this paper could be applied to other urban contexts facing similar challenges. Likewise, the urban commoning framework provides theoretical validity in the quest to promote spatial justice in the urban environment. The right to the city is fundamental for all citizens and, by working together, communities can create positive change and promote a more sustainable and just urban future for all.

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