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Trade-offs in community housing providers' procurement decision-making: The critical role of residents' perspectives

Affordable Housing for Generations: Component C

Working Paper

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Every effort has been made to ensure the soundness and accuracy of the opinions and information expressed in this report. While we consider statements in the report are correct, no liability is accepted for any incorrect statement or information.

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Executive Summary

This report presents a case study of the trade-offs that one community housing provider (CHP) made in procuring new-built stock, with a focus on how consideration of residents' needs and perspectives is factored into their decision-making.

The practices of consulting with, understanding, and reflecting residents' perspectives have become central to the management practices of many not-for-profit housing organisations in different jurisdictions. Resident perspectives increasingly inform design and procurement decisions about renovation, retrofit and new-builds.

At the same time, CHPs have to make those design and procurement decisions within a series of other constraints. CHPs have immediate and long-term interests in maintaining the use-value and functionality of their stock assets. Given limited funding opportunities for developing social and affordable housing, and constraints on the ability to sell stock to finance the next project or to invest revenue elsewhere (due to statutory and contractual requirements), CHPs have a strong procurement focus on value for money and reducing financial risk. They work within the imperatives of their values and objectives, quality drivers, obligations to residents and maintaining trust relationships with the range of actors necessary to achieve a build.

In short, CHPs make critical trade-offs in the procurement process that have long-term impacts on their ability to provide high-performing dwellings to meet residents' needs and preferences. Trade-offs are made throughout the whole procurement process, starting with site selection. A key priority is to select a site to maximise residents' access to services and to reduce their transport costs.

Trade-offs are also made around dwelling typology and design, including the number and size of dwellings that can be built on a site, external and internal materials, fixtures and fittings, and the provision of on-site amenities such as parking, play areas or communal gardens. It is important to choose a building design that is fit-for-purpose, provides features to improve the safety and quality of life for residents, and supports their long-term residence in the dwellings.

A critical trade-off is made between current expenditure on the build and future expenditure on repairs and maintenance. While there are drivers to minimise immediate build costs, it is also financially prudent to choose materials, systems and fittings to reduce on-going maintenance and repair costs to both the CHP and residents.

Trade-offs not only affect the current build, but also affect future builds. The CHP would like to adopt a wider range of dwelling designs and typologies, but considers it is constrained because of the narrow range of designs and building options offered by architects and builders. Trade-offs are therefore made in favour of known solutions, yet the 'business as usual' approach may meet neither the CHP's nor their residents' needs.

To better inform its procurement decisions for future housing developments, the CHP commissioned research about residents' experiences and views of living in the dwellings it

has built during the last decade. Overall, residents' satisfaction with their homes was high. The aspects that residents most liked were: their home's location, security of tenure, the generous amount of natural light in their homes, and having a warm home (although the latter was not experienced in all households). However, residents also identified a number of shortcomings. There were concerns about a lack of storage, the size and layout of the dwelling in relation to family needs, and the restrictions of living in multi-level housing. Residents would also like to see improvements in the robustness and functioning of fixtures, fittings and appliances in future builds.

This CHP is taking up the challenge of including residents' perspectives in procurement decisions, however this is not a simple process; it is an additional dimension affecting trade-offs. This case study shows the different priorities, expectations, interests and preferences of residents and the CHP. The potential divisions between residents' actual use of their homes and the CHP's expectations of how a home will be used are apparent.

Taking account of residents' perspectives in procurement decisions is a long-term endeavour that requires continued, open information sharing between the CHP and residents, and procuring design and construction services that match the CHP's vision for high performance homes, even when these are not easy to acquire in the marketplace at the price points needed to deliver affordable housing.

1 Introduction

In Aotearoa/New Zealand registered community housing providers (CHPs)¹ play a key role in the provision and management of housing for those in housing stress, particularly low-moderate income households, those with special housing needs and homeless people. The urgent need for more affordable, long-term housing for growing numbers in housing stress is clearly established (Johnson *et al.*, 2018).

In response, many CHPs commission the construction of new housing to increase the stock of affordable, secure housing. However, the process of procuring new-build affordable housing is complex and challenging, and characterised by competing priorities and imperatives (Davidson *et al.*, 2011; Saville-Smith *et al.*, 2016; Sharam *et al.*, 2021). Priorities include providing housing that is affordable, secure, and suitable for residents in ways that enhance their wellbeing and social participation, while also maintaining financial viability and sustainability.

This report presents a case study of how one CHP handles these competing priorities and the trade-offs made in procurement decisions in order to achieve a housing development. We also report on interviews with residents in housing provided by the CHP, showing the extent to which the CHP's procurement decisions and trade-offs align with residents' housing aspirations, expectations and needs.

It is useful to study trade-offs as part of examining what needs to happen to increase the supply of affordable housing, because making a choice of one of an array of possible options means forgoing a benefit or opportunity for another. Ultimately, having to make trade-offs influences affordable housing outcomes in critical ways. Trade-offs impact on the numbers of dwellings built, on housing quality, and on the immediate as well as the long-term affordability of a development over its life cycle. The aim of this case study is to deepen understanding of the range and complexity of trade-offs made by CHPs and their impacts on affordable housing development. We have focused on CHPs because they are increasingly expected by public agencies to play a key role in innovative solutions to grow affordable housing supply (Lawson *et al.*, 2022; van Zoest *et al.*, 2020; Wiesel *et al.*, 2012).

In this report we recount how one CHP makes trade-offs throughout the whole procurement process, starting with the initial location decision, and then addressing questions of dwelling size and typology, design and materials, the nature and extent of communal amenities, as well as consideration of trade-offs between upfront build expenditure and longer-term building operating and maintenance requirements. Of course, trade-offs are multi-dimensional, so the stratagem is to minimise the negative consequences of trade-offs – such as increased building costs, negative environmental impacts or reduced residents' quality of life – and maximise benefits for both residents and the housing provider (Karatas and El-Rayes, 2014; Erlwein and Pauleit, 2021).

¹ CHPs are not-for-profit housing providers registered with the Community Housing Regulatory Authority. They must meet certain performance standards and comply with legal requirements as a social landlord. See <https://chra.hud.govt.nz/about-chra/community-housing-legislation/>

For CHPs, the overriding factor in making trade-offs is their social mission and values, in which residents' wellbeing is predominant (Abowen-Dake *et al.*, 2020; Bryde and Meehan, 2015). Accordingly, consulting with, understanding, and reflecting residents' perspectives have become important in the management practices of many not-for-profit housing organisations in different jurisdictions (Davidson *et al.*, 2011; Bryde and Meehan, 2015; Mullins and Shanks, 2017; Wiesel *et al.*, 2012). Resident involvement in decision-making spans a broad range of activities including tenancy management, repairs and maintenance, design and management of communal facilities, as well as procurement decisions about renovation, retrofit and new-builds. This case study focuses on the consideration of residents' perspectives in a CHP's decision-making about new-builds.

Attending to residents' perspectives is embedded in the practice of sustainable procurement, which prioritises the triple bottom line of economic, environmental and social sustainability (Meehan and Bryde, 2014). Practices involving residents in procurement decision-making derive from an understanding that dwelling condition and affordability have profound impacts on residents' physical health and subjective wellbeing (Clapham *et al.*, 2018; Saville-Smith (ed), 2019), and for that reason, it is essential for a housing provider to understand how a dwelling functions to protect its residents and enhance their wellbeing. There is also evidence that resident involvement in procurement decision-making can result in significant savings to the housing provider through residents' identification of value-for-money improvements in dwelling performance that can lead to reductions in both repairs and maintenance call-outs and formal complaints (Manzi *et al.*, 2015). Moreover, some studies point to the social benefits of resident involvement in decision-making, including a decline in feeling socially isolated and lonely, and increased social connection, sense of belonging and pride in their home (Scanlon *et al.*, 2021; Wiesel *et al.*, 2012).

This case study is part of the Affordable Housing for Generations (AHFG) Research Programme, in the Building Better Homes, Towns and Cities (BBHTC) National Science Challenge. The objective of AHFG is to develop effective and practical approaches to alleviating the crisis of affordable housing through targeted research-based solutions. This case study contributes to three themes in the research programme: the impacts of trade-offs on the production of affordable housing; the meaning of home, affordability and place; and innovative practices for increasing the supply of affordable housing. With regard to the latter, we focus on how consideration of residents' perspectives in procurement decision-making can be seen as an innovative practice in the creation of affordable housing.

There is little New Zealand research on how not-for-profit housing providers make procurement decisions, and even less analysis of residents' involvement in procurement decision-making. This study builds on earlier research (Saville-Smith *et al.*, 2016) by documenting the procurement challenges one CHP, like other CHPs, routinely faces. The challenges are not only concerned with accessing land and finance and meeting legal and regulatory obligations, but also involve consideration of parameters of critical importance to the CHPs' values and operational practices, including meeting residents' needs and enhancing their wellbeing.

The case study

The case study explores the experience of one large urban-based CHP providing a range of public rental places,² affordable rental and shared ownership housing for low-income households. Residents in these dwellings range from young adults, to middle-aged and older single people and couples, to large families.

Information about the CHP's procurement processes, the range of trade-offs considered, and how they were made, was obtained through two detailed, in-depth interviews with the CHP's staff involved in procurement decisions. Their procurement experiences spanned between four and 20 years in the CHP. In addition, in-depth interviews were conducted with 19 adult residents living in 18 dwellings built by the CHP during the last decade. These interviews were conducted as part of the CHP's commissioned research about residents' experiences and views of living in those dwellings, which it undertook to better inform its procurement decisions for future housing developments. The research collected information about residents' perspectives on dwelling functionality, performance, design, amenity and satisfaction with their homes.

Report structure

This report is structured as follows. Section 2 considers the specific nature of building procurement practices as conducted by CHPs, and how such practices compare with the procurement practices of for-profit developers. Section 3 describes the procurement practices of the CHP in this case study. Section 4 discusses the priorities and trade-offs in the CHP's procurement decisions. Section 5 outlines the residents' views and experiences of their homes, while Section 6 explores how residents' preferences and expectations do not necessarily match up with the CHP's procurement imperatives and priorities. Sections 5 and 6 reveal the dynamics and tensions between the CHP's procurement decisions, and residents' lived experience of their homes. Finally, Section 7 concludes by summarising some challenges and opportunities facing CHPs when considering residents' perspectives in procurement decisions.

² Public rental housing includes some rental housing operated by CHPs and state housing operated by Kāinga Ora. Public rental places attract income-related rent subsidies.

2 Procurement Practices and CHPs

In commissioning housing, CHPs deal with three broad and complex dimensions of procurement. According to Saville-Smith *et al.*, (2016), those are:

- i. The management of multiple procurement elements and activities. These include goods, such as land, designs/plans, products and materials; and services ranging from legal and financial services, surveying, design services, quantity surveying, trade services (building, electrical, plumbing), engineering, landscaping, and project management. In addition, there are many activities involved in gaining the required planning permissions to build.
- ii. The organisational and contractual arrangements within which procurement decisions are made. Procurement of goods and services can be bundled and contracted in various ways, including: different entities designing and building; design and build done by one entity; and public-private partnership contracts (Davidson *et al.*, 2011; Eriksson, 2017; van Zoest *et al.*, 2020).
- iii. The acquisition of information to inform decisions. There is informational asymmetry between CHPs and suppliers. This places CHPs at a disadvantage if they lack sufficient technical and market knowledge to make informed decisions. Informational asymmetry has been widely noted as a challenge and potential barrier for not-for-profit housing providers building the housing they deem to be most appropriate for their residents (e.g., Alencastro *et al.*, 2017; Davidson *et al.*, 2011; van Zoest *et al.*, 2020).

Housing procurement is “the act or process of bringing into being a building that was not there before and embraces all the activities that might be necessary to that objective” (Davidson *et al.*, 2011).

As not-for-profit housing developers, CHPs confront unique challenges which distinguish their procurement decisions and practices from those of for-profit housing developers. First, CHPs undertake procurement in a framework of their own social mission and values. Social values-driven procurement processes prioritise the worth of the dwelling as a long-term, secure home rather than as an investment or a profit-generating asset. The cornerstone is to generate positive social outcomes for residents through housing and the placement of the dwelling within its surroundings. The CHP’s role in the creation of a liveable neighbourhood is an important part of building homes. Achieving these aims requires the selection and maintenance of trust-based relationships with partners that share similar social values, and therefore consideration of partners can be a key driver of procurement decisions (Abowen-Dake *et al.*, 2020; Meehan and Bryde, 2014; Milligan *et al.*, 2015; Saville-Smith *et al.*, 2016; Sharam *et al.*, 2021).

Second, dwelling design and its on-going performance must respond to the specific housing needs of the populations that CHPs serve (Saville-Smith *et al.*, 2016; Wiesel *et al.*, 2012). Those are typically vulnerable and financially stressed households with multiple and complex social and housing needs. Many residents housed by CHPs, such as older people, disabled people, families with young children and beneficiaries, spend a considerable

amount of their daily lives in their homes and consequently need dwellings and immediate surroundings that always function well, whatever the time of day or season. Often the households served by CHPs are very low-income and eligible for income-related rents, and as a result are excluded from the market or cannot access the type of housing suited to their needs on the market. Another key group serviced by some CHPs are low-moderate income key worker families who are not eligible for social housing but cannot afford to rent or buy in the locations where they live and work.

Third, not-for-profit housing developers are constrained in accessing financing for both new-builds and asset upgrading (Milligan *et al.*, 2015; Sharam *et al.*, 2021; Wiesel *et al.*, 2012). Public policy settings and uncertain and limited funding streams restrict the range of location, housing typology and design options a CHP determines are viable, as well as increasing the trade-offs based on price the CHP must consider.

In addition, CHPs are subject to regulatory obligations relating to their legal and charitable status that for-profit housing developers are not. Those obligations influence the type of housing developed and operated by CHPs, and how they manage their stock. CHPs are registered to provide landlord services under regulatory and accountability requirements in addition to the residential tenancies legislation that covers all landlords. Regulatory obligations specific to CHPs that for-profit developers do not face include:

- providing and maintaining secure tenancies;
- assessing and responding to changing housing needs through stock configuration;
- undertaking cyclical and life-cycle maintenance;
- engaging with tenants and measuring tenant satisfaction; and
- providing for specific, identified housing needs.³

Finally, CHPs are frequently bound by government funding contracts which can be very detailed and inflexible about the supply of certain types of housing to defined groups in housing need over specified time periods. Those requirements mean that the housing cannot be easily re-purposed, sold or let to ineligible households.

The unique characteristics of CHPs lead to imperatives to build and retain secure and affordable dwellings for people on low incomes, many of whom are in severe housing need, have specific housing requirements, and may have been homeless. Typically, prospective residents have few or no choices on the housing market. For the CHP, those imperatives require a focus on value for money, reducing the probability of financial risk, ensuring stock durability and functionality, and meeting obligations to residents. Central to those imperatives is a concern to construct housing that is suitable and affordable to residents, not only in terms of housing costs, but also in terms of the day-to-day running costs of utilities, and the location of the dwelling to minimise transport costs.

³ See <https://chra.hud.govt.nz/assets/Uploads/performance-standards-guidelines.pdf>

3 The Procurement Process

What follows is a brief account of the case study CHP's recent history of procuring new-build social and affordable housing for people on low incomes in housing need, and particularly those with specialised housing needs that cannot be met on the market.

CHP: We're here forever, we're not selling, we're long-term building

The CHP has a housing portfolio of over 100 properties, built up over several decades and now spanning a region. Historically most of that stock has been acquired through purchase or lease arrangements. While stock renovation and upgrading has been a long-standing practice, over the last 15 years the CHP has developed a greater focus on re-development and commissioning new-builds, which now make up a significant portion of the stock owned. Those new-builds are often medium-density developments consisting of apartments or townhouses and range from studio or one-bedroom to four-bedroom family homes.

Overall, the CHPs' values and objectives inform procurement decisions. Those values and objectives can be summed up as providing affordable, high-quality housing to people on low incomes and in housing need. Key elements are:

- Ensuring the building design is fit-for-purpose and maximises needed features for residents.
- Reducing on-going maintenance and repair costs to both the CHP and residents.
- Selecting locations to maximise residents' access to services and to reduce their transport costs.
- Installing energy efficient features to improve dwelling performance and comfort for residents, as well as to contribute to environmental sustainability.
- Incorporating features to improve the safety and quality of life for residents, and to support their long-term residence in the dwellings.

One of the CHP's main considerations in procurement has been to establish and maintain long-term, on-going relationships with suppliers that understand the vision, values and objectives of the CHP.

Over time the CHP has used a variety of commissioning models, including preferred suppliers, invited tenders and open tenders. The CHP has reviewed each approach, weighing up whether the 'best price' is obtained through open tender, and potential benefits from an on-going relationship with a preferred provider.

Despite generally good commissioning experiences over more than a decade, the CHP has found it hard to obtain trusted independent professional advice, as well as professionals that understand the nature and obligations of not-for-profit housing providers. Furthermore, an often complex consenting process, especially for medium density homes, has reduced the pool of consultants and builders that are prepared to take on such work, as

building single family stand-alone homes is easier, given typical design requirements, construction requirements and planning rules.

In the course of several build projects, the CHP has shifted from contracting external professionals to fully manage the build, to a greater reliance on generating and consolidating in-house knowledge and expertise. In early builds, the CHP used an architect to manage the development with a selected builder. Essentially, this was a turn-key solution, as CHP staff were not closely involved and key roles in the development process were taken on by those outside the CHP. Turn-key homes have the advantage of shifting risks to the builder/developer. But there is less control over decisions about the design and materials.

The CHP has moved from a turn-key approach to using a joint project management team comprising CHP staff and the builder/developer. This approach has enabled greater CHP input into the development at all stages. The CHP continues to review the advantages and disadvantages of different commissioning and project management approaches in terms of costs, risks and quality control.

While past procurement processes have not formally involved residents, the CHP has increasingly sought ways to gather and use information about residents' housing needs, how they use their homes and their views about their living environment (the dwelling, the development and neighbourhood in which the dwelling is placed) to inform procurement decisions.

4 Priorities and Trade-offs in Procurement

The CHP's overriding priorities are to provide affordable, secure housing that enhances residents' wellbeing, while also attending to the need to manage risk and ensure financial viability and sustainability. Procurement decisions foreground those priorities, however, trade-offs that balance and select between different priorities are inevitable. That reality is frequently very different to the abstract model of what is seen as successful procurement.

Successful procurement is typically defined in terms of four seemingly simple parameters – building completion on time, within budget, to quality standards and which fairly meets the client's aspirations (Alencastro *et al.*, 2017). However, those parameters hide many complex and competing factors that require trade-offs. For the CHP, those trade-offs concern site selection, dwelling size and typology, design, amenities and materials, as well as considerations of current build expenditure vs the need to minimise on-going maintenance expenditure risks through design and choice of materials.

Inevitably the CHP makes trade-offs throughout the whole procurement process. At the start, there is the question of where to build and whether suitable land is available and affordable in a preferred area. The location of a development has a significant influence on achieving desired social, environmental and financial outcomes (Wiesel *et al.*, 2012). One of the main constraints that the CHP faces, has been a continual struggle to fund land purchase

in a preferred location near public amenities to support residents' needs to minimise transport costs. Such sites are often keenly sought after and highly valued. This primary trade-off, of preferring a particular location over other factors, has affected the development budget. Due to keen demand for suitable locations near public amenities, the CHP has paid more for land, than if it were to develop in a cheaper, less-well serviced area.

CHP: Trade-offs come up through the whole build ...what goes on the site? How dense? ... the design and look of the building ... what suits people?

Once land is obtained, decisions must be made about the number and size of dwellings that can be built on the site. This brings into play many decisions and trade-offs that affect the build price. The CHP has a double imperative: to maximise the number of people assisted into housing, and to maximise income from the development so as to make the development financially viable. Due to the very high demand for affordable homes, the CHP aims to maximise the number of units it can build in each development. However, it must take into account not only available funding and the housing density permitted under planning rules, but also the rental income that can be achieved, which differs according to dwelling size.

A major constraint is the risks and requirements of planning rules. Sometimes the development has required a more rigorous and time-consuming resource consent process because it is outside of the permitted rules for the site. This has necessitated intense discussions with council officers resulting in re-design, increasing both time and expenditure, and thus uncertainty and risk. In the past the CHP has strongly advocated to the council for there to be a close working relationship with the CHP to lessen project complexity and speed up consenting processes, so that the CHP is treated in a similar way to the council's treatment of large for-profit developers.

Throughout the design process the CHP considers the living environment of the development in which several households will make their home. The style and appearance of both the dwellings, and the development as a whole, is a key priority for the CHP. Of particular concern is how the buildings, most of which are multi-level townhouses or multi-units, present to the street and fit in with the neighbourhood. Uppermost is the determination to prevent stigmatisation of the dwellings due to negative public perceptions of social housing, which include the impression that social housing has a particular 'look' that is inferior to surrounding private housing. The drive to reduce stigmatisation of social housing through use of superior design is common among not-for-profit housing providers (Wiesel *et al.*, 2012). To reduce negative perceptions, the CHP pays special attention to the building scale, form, height and materials, the number of dwellings on-site, access to natural light, and provision of on-site amenities. Often the CHP has elected to reduce the number of units it is permitted to build on a site (and thus forego rental income), because it has chosen to increase access to natural light for each dwelling, enhance the overall look of the development, or provide on-site amenities such as parking, play areas or communal gardens. Furthermore, a concern to avoid stigmatising features has resulted in the CHP not using what it considers are 'institutional' design elements inside as well as outside the dwellings.

One aspect that has heightened the need for trade-offs has been the use of multi-level designs. Multi-level dwellings have often been the only viable typology, due to site shape and topography, and the imperative to maximise the number of units per site to generate income. This typology can also be favoured by District Plans in certain areas. However, the CHP has received mixed feedback from residents about multi-level dwellings. It is also aware of the challenges for large families in medium density living where there is limited opportunity to incorporate access to private outdoor space such as a balcony.

The CHP works to select the appropriate mix of different sized dwellings to meet residents' needs and preferences. Current stock ranges from a few studios⁴ to larger family dwellings of up to four bedrooms. The CHP has found a diversity of views among residents about dwelling size. Some single people and couples want two-bedroom dwellings, even though it may be deemed that smaller households can be adequately accommodated in one-bedroom dwellings. The CHP has found that studio units are judged too small by some residents, although a few find a confined living environment more secure and suited to their needs. As an example of trade-offs around dwelling size, in one complex studios were included in order to free up space to meet district plan requirements for on-site car parking. Their inclusion also meant that two additional units were provided that otherwise would not have been possible due to parking requirements. Providing both studios and multi-level units has meant that the CHP must carefully match each household to a dwelling best suited to their needs and preferences.

The CHP must also make trade-offs about design features and materials, including consideration of environmental performance and materials or design elements that go beyond Building Code standards, which are based on minimum requirements (James *et al.*, 2018). Trade-offs between price and preferred solutions have resulted in the CHP foregoing certain materials due to expense, and this has had impacts on environmental performance, e.g., the CHP has struggled to find affordable shading solutions.

CHP: Environmental impacts and the durability of materials – external cladding that's low maintenance and not needing painting We were looking at a new product for external shading, it looked really smart but it was too expensive.

Another critical trade-off is made between current expenditure on the build, and future expenditure on repairs and maintenance.

The CHP's stock must be built to a budget but is desirably durable, resilient and affordable to maintain over time. This is the case for the dwelling, but also for appliances, fixtures and fittings.

However, durability and resilience can often be sacrificed to price. Other research on building procurement strategies has observed a tendency to prioritise immediate build costs rather than long-term costs and savings. For example, one study comments that "... potential positive effects as part of lifecycle costs are harder to defend than a financially attractive singular tender result" (van Zoest *et al.*, 2020, p.411). CHPs in New Zealand have

⁴ A studio apartment or dwelling consists of one large room containing kitchen, living and bedroom facilities, and a separate bathroom/toilet.

reported similar tendencies, with the result that trading off price at the expense of durability has created unforeseen later expenditure for building repair, maintenance and remediation as well as replacement of whiteware that failed to meet the needs or stresses associated with residents' constant use (Saville-Smith *et al.*, 2016).

The case study CHP has gradually changed its approach over a number of years. It has moved from an immediate pre-occupation with the price of materials, fixtures and fittings at the build point, to consider dwelling life-cycle costs and a preventative approach to repairs and maintenance. The CHP has reviewed decisions in earlier builds about certain fixtures, fittings and appliances, which have resulted in repairs and replacement costs. In response, the CHP has moved to a preference for installing more expensive, but more durable options, such as stainless-steel kitchen benches and robust bathroom and kitchen hardware. The CHP has also included carpet in some rooms instead of vinyl throughout, even though it has been more expensive, in order to reduce the 'institutional' feel of the dwellings. Moreover, the CHP is increasingly considering environmentally-friendly materials and has opted to increase insulation beyond the Building Code as well as install thermal curtains.

In addition to financial, design and planning imperatives that result in trade-offs, the CHP must also meet the specific build standards required of any funding received through a government contract. The latter standards have included minimum dwelling size requirements, which have implications for both design and costs. These matters have determined decisions made about stock typology, dwelling size and amenities.

Finally, trade-offs not only affect the current build, but also affect future builds because some options that the CHP would like to implement seem unobtainable. The CHP considers that it is constrained in exploring a wider range of dwelling designs and typologies, because of the limited designs and building options offered by architects and builders. The CHP has found the preferred solutions of professionals somewhat conservative and not always meeting its aspirations or needs. The CHP therefore trades off a desirable or ideal option for a more easily available option. Additional procurement challenges have arisen during the Covid-19 pandemic, where supply chains have been disrupted, affecting both price and supply of building materials, fixtures, fittings and appliances, as well as availability of labour. Shortages of materials and products are fuelling the need for substitution and further trade-offs, resulting in foregoing of preferred options.

In summary, this case study has identified the many trade-offs made at all stages of procurement. Those trade-offs span decisions about land and location; the initial budget and dwelling running and life-cycle costs; maximising income from the development while enhancing liveability; maximising social goals, like the social integration of residents into the neighbourhood and the prevention of stigma; and maximising environmental performance while controlling build costs. In the next section, we link examination of these trade-offs between social, environmental and financial objectives with residents' views and experiences.

5 Residents' Views and Experiences of their Homes

Residents' perspectives offer insights into the features residents most value about their homes, how they use their homes, and whether the home is compatible with their characteristics and needs. These insights help CHPs to ensure they match both individual dwellings and the residential development to residents. Those residents can be diverse, as in this case study, where they range from children to seniors, singles to large families, and include people from a variety of cultural backgrounds, as well as people with physical impairments and mental health service users. In-depth interviews were conducted with 19 residents. Overall, residents' satisfaction was high. The aspects that residents most liked were: their home's location, security of tenure, the generous amount of natural light in their homes, and having a warm home (although the latter was not experienced in all households).

Residents expressed the highest satisfaction with their home's location. Being close to shops and public transport was particularly appreciated. Residents liked walking to facilities and services, as well as living near recreational amenities and green spaces. Many residents felt very much a part of their community, both within the housing complex in which they lived, and in their neighbourhood. Most did not want to move anywhere else. A few households wanted to move, and their main reason was to obtain more living space for their family.

Easy access to doctors, beaches, sport, supermarket. It's walkable (Parent with two children).

Local pool, I use it every day. Even when I'm not very mobile it's been manageable (Parent with one child).

Been able to get involved with the community from an early stage ... Really sink our roots in (Two-parent family with two children).

Lack of storage in the bathroom and more generally mean that the bathroom is packed with brooms, buckets, cleaning products etc (Flatmate).

[Our] biggest concerns are around the areas we most use - kitchen and bathroom ... [they] really don't meet our needs (Parent with seven children).

We move furniture around trying to get it to fit and so we can move around. The table is in front of the heater and has to be moved in winter. The table used to be in another part of the room and stopped the flow (Parent with two children).

Despite the strongly positive views about their housing, residents also identified problems and improvements they would like to see in future builds.

Comments about space dominated. Inadequate storage was the most mentioned issue. In addition, residents frequently commented that their kitchens, living areas, bathrooms, laundries and bedrooms are too small to accommodate their (growing) family's daily activities. Some residents pointed out that the dwelling's layout resulted in awkward alcoves or spaces in their home that they cannot easily use. Those awkward areas are usually the result of trade-offs having been made in terms of dwelling size, and number and configuration of units within a building.

Residents said there were persistent problems with the robustness and functioning of fixtures, fittings and appliances, such as door handles and locks, tap hardware, ovens, range hoods, extractor fans and heating appliances. Some items posed on-going difficulties, despite the CHP's attempts to repair or replace. Faulty range hoods and extractor fans resulted in additional cleaning, while faulty locks were a security concern. Poor performing ovens limited residents' use of those appliances. Some residents were concerned about the energy consumed by their oven, while others were not sure how the oven functioned, which resulted in them under-using the appliance.

Problems with door handles. Kitchen flooring is too soft for this space. Bubbling and lifting (Two-parent family with two children).

Taps drip. Hard to turn the taps on and off ... [kitchen] extractor fan is not working. Steam and oil build up and drip down the walls. Takes a lot of cleaning (Parent with seven children).

I use the cooktop, not sure how to use the oven. I thought maybe the light is fused. Bottom oven not working, not heating up at all (Single person).

A pain ... Induction cooktop, difficult to clean. It doesn't have fanbake or anything - one mode of cooking. Pretty average. I feel the oven is not very economical. The seal lets heat out ... I can't move the oven out so can't clean under or behind the oven (Parent with one child).

Heating and cooling were also an issue. Some residents find it hard to maintain warm room temperatures in winter, due to inadequately sized and sited heating appliances. Residents also noted it is hard to keep cool in summer, citing limited ventilation and little shading. Residents in multi-level homes commonly remarked on both heating and cooling problems, particularly affecting the upper level.

Residents do not like living in multi-level housing, which is the main typology used in the CHP's housing developments to maximise the number of homes that can be provided. Residents identified issues not only with heating and cooling on different levels, but also with managing family needs, especially where the parents' bedroom is situated on a different level to children's bedrooms, and the lack of a toilet on each level. This configuration presents parenting challenges in terms of safety, surveillance, and care.

Very hot [upstairs] ... No awnings outside the house - sun comes streaming in ... Can get a cross breeze, but we had to get safety stays for the windows when our son was a toddler as he was a climber so we don't get a lot of ventilation (Two-parent family with two children).

Some residents with impaired mobility or health conditions find it hard to move around their dwelling, primarily due to internal stairs. Furthermore, while others are able to manage stairs at present, it will become harder as they age and their mobility deteriorates. Residents also pointed out inaccessible cupboards, narrow garages and car pads that impede movement, poorly designed stairs and ramps, and inappropriately positioned grab rails and handrails. Some residents with health conditions and impaired mobility were living in a dwelling with only one entry and felt that this compromised their safety.

Of note is that residents' views about living very close to others, in multi-unit dwellings or townhouses, in this case study resonate with the findings of other studies. For instance, Allen and O'Donnell's (2020) research, which included both tenants and owner-occupiers, found dwelling location and neighbourhood to be as important as dwelling liveability. Key dwelling features that residents in that research liked were similar to resident's views in this case study and included: access to natural light, thermal comfort and affordability. Residents in both Allen and O'Donnell's (2020) research and this case study identified several issues with medium-density living including proximity to neighbours, lack of privacy, noise and dwelling size including dissatisfaction with storage and room size.

6 Competing Expectations

The CHP and residents share many priorities, such as the need for homes to be affordable, comfortable and safe, and tenure security. Both the CHP and residents are concerned to reduce the need for maintenance and repairs because this increases residents' comfort and safety. However, the CHP's need to make trade-offs to manage the complexities involved in completing a development reveal tensions and competing expectations between the CHP and residents.

The CHP's constraints of budget, site size, topography and shape, and the need to optimise site yield to ensure financial viability, have resulted in particular dwelling types – town house and multi-units – and determined dwelling size, layout and the extent of communal amenities provided on-site such as parking. The pervasive preoccupations of residents highlighted the expectations they have about dwellings and sites, and the limitations they see. Residents particularly highlighted a lack of storage, limitations in the size and layout of the dwelling in relation to family needs, and the constraints of living in multi-level housing. However, both the CHP and residents concurred on the primary importance of location, which has generated strong satisfaction among residents.

The tensions between the CHP's decisions, and residents' expectations, preferences and behaviour are seen in detailed examples of trade-offs the CHP has made about building and site amenities, materials, fixtures and fittings. On the one hand, the CHP has based its trade-offs on its understandings of use, liveability, safety and performance rather than solely price. On the other hand, residents' views about those elements are informed by their direct experiences, which have revealed operational and functional problems in the dwellings. The following examples show how trade-offs, which were made by the CHP on the basis of their objectives and priorities, affect the everyday lives of residents:

- The CHP has preferred 3-point door locking systems for reasons of security, while residents have complained about the systems being confusing, inconvenient and hard to use.
- The installation of safety catches on windows has been done to keep residents safe, although these fixtures are often at odds with the amount of ventilation that some residents desire.

- The installation of cooker restraints has been done to stop the appliance tipping and improve safety, in contrast residents want to move their cooker easily for regular cleaning.
- The CHP's provision of window coverings has been done to maximise thermal performance, contribute to shading and ensure privacy, but this has come up against diverse resident preferences for either no coverings or certain types of coverings.
- Communal amenities (e.g., play areas, clotheslines, benches, vehicle and bike parks) are selected to enhance the liveability of the development, but they also have the potential to create conflict among residents using the amenity. If such amenities are under-used or not used at all, then a further tension is created due to the loss of opportunity to benefit from an alternative use of the space.

These examples show the dynamics and potential divisions around residents' use of their homes and the CHP's expectations. The CHP senses a tension between their expectations that residents will change their behaviour and practices to align with the CHP's design intentions in its developments, and how their residents actually live in their homes. The CHP perceived a conundrum between "deciding a balance between working with tenants to change their behaviour to live more successfully in their home, or making changes to the home to match the tenant's actual behaviours and desires."

Other studies have noted that residents' experiences of dwelling design and amenities can contrast with the assumptions of social housing providers, and have questioned how realistic it is for providers to expect residents' behaviour to change to accommodate the dwelling's environment. Diverse residents' attitudes towards providers' efforts to encourage them to adopt new behaviours range from satisfaction and acceptance to low engagement, or scepticism, resistance and distrust (Bryde and Meehan, 2015; Brown *et al.*, 2014; Palm *et al.*, 2020). Simply providing information on the benefits of new products, systems or technologies within the home does not necessarily lead to the adoption of desired practices. However, some studies show that residents are more likely to change their behaviour if they perceive there will be increased comfort or financial benefit (Ossokina *et al.*, 2021). Lack of accurate and reliable information that speaks to residents' actual lived experience is a significant barrier to effecting change in how residents use their homes. One study concluded that "... rumours, myths and misinformation transmitted by unknown and non-specific sources can have serious impacts" on housing providers' efforts to educate residents about how their home functions (Brown *et al.*, 2014, p.650). Added to that, easy to understand information about how a product or system works and the actions residents can take to maintain its functioning is critical to supporting new practices (Brown *et al.*, 2014; Bunker *et al.*, 2021; Liu *et al.*, 2019).

A key factor influencing the way that tenants in particular use their homes is that they have no control over the energy costs generated by their appliances, since they do not own the major appliances installed in their homes, such as the oven, rangehood, extractor fans and heating appliances. As information from the residents in this study shows, they were worried about the energy costs of the ovens and heating appliances. In responding to those

financial impacts, they used ‘work-arounds’ to reduce energy consumption or in some cases, did not use the appliance at all.

7 Concluding Comments

While this is a case study of one CHP’s experiences of the trade-offs involved in procurement and its growing awareness of the need to incorporate residents’ perspectives into that process, it has revealed themes and issues in common with the findings of other studies. Common findings are: not-for-profit housing providers work within policy, planning and funding frameworks that are not well aligned with the requirements of producing affordable housing; they face major financial, design and environmental trade-offs when they commission new-builds; and their aspirations to create innovation in design and housing typology are largely unfulfilled (Erlwein and Pauleit, 2021; Karatas and El-Rayes, 2014; Saville-Smith, *et al.*, 2016; Wiesel *et al.*, 2012). Furthermore, the inclusion of residents’ perspectives in procurement decision-making presents both challenges and opportunities, raising issues concerning residents’ interests, priorities and expectations, their everyday experience of using their home, and their access to information about their home’s amenities (Brown *et al.*, 2014; Milligan *et al.*, 2015; Mullins and Shanks, 2017).

CHPs have immediate and long-term interests in maintaining the use-value and functionality of their stock assets. Given limited and often uncertain funding opportunities for developing social and affordable housing, and constraints on CHPs’ ability to sell stock to finance the next project or to invest revenue elsewhere (due to statutory and contractual requirements), CHPs have a strong procurement focus on value for money and reducing financial risk. They work within the imperatives of their values and objectives, quality drivers, obligations to residents and maintaining trust relationships with the range of actors necessary to achieve a build.

CHPs make critical trade-offs in the procurement process that have long-term impacts on their ability to provide high-performing and affordable dwellings that both meet residents’ needs and preferences, and increasingly, must address environmental imperatives. This case study shows that taking into account residents’ needs and preferences adds further layers of complexity to procurement and trade-off decisions, over and above financial, design, consenting and other complexities. Furthermore, the residents’ and the CHP’s priorities, expectations and interests often differ. These differences were apparent in residents’ and the CHP’s perceptions about dwelling typology, size and layout, although a strong point of agreement was about the choice of build locations that maximise residents’ access to services and public transport. Indeed, the location of residents’ homes, along with their tenure security, were the most valued aspects of their housing.

This case study has indicated the tensions inherent in current public policy, planning and funding settings that require trade-offs in the development of affordable housing. There has been significant decline in public financing of social housing over the last three decades and increasing reliance on the market and private sector finance to create social and affordable housing (Saville-Smith, 2018). These trends require CHPs to make trade-offs

around potential funding options, which in turn affect the nature of housing able to be developed and the targeting and selection of households. Planning regulations also affect the trade-offs that CHPs make. The CHP in this case study, and not-for-profits in other research, comment that land use planning rules, intensification policies and consenting processes can either constrain or enable the housing typologies, designs and locations preferred by CHPs (Wiesel *et al.*, 2012). Yet, at the same time as not-for-profit housing providers are encountering those policy, planning and funding settings that require trade-offs, public agencies expect them to take a greater role in increasing affordable housing supply.

Looking at the complex terrain of affordable housing development has highlighted a growing need for capacity, skills and knowledge development in the not-for-profit housing sector, a challenge that the CHP in this case study has responded to by on-going review and adaptation of procurement and commissioning processes, as well as reviewing building design. The CHP personnel involved in procurement decisions particularly highlighted their efforts to access information and expertise to support innovation in building affordable housing, for example, with regard to environmental performance and sustainability, and in design that is responsive to residents' use of their homes. Adopting a process of explorative learning, where new knowledge and technologies are investigated to "innovate and adapt for future demands" (Eriksson, 2017, p.212) is challenging. Explorative learning is necessary for both the short-term effectiveness of procurement and long-term organisational sustainability. Yet there is evidence from other studies that explorative learning and innovation, although of potential benefit to future builds, are often traded-off in current builds against time, budget and usual practice. Inevitably, builders and developers promote known solutions and existing knowledge, often resulting in a 'business as usual' approach that meets neither the not-for-profit housing provider's nor their residents' needs (Davidson *et al.*, 2011; Eriksson, 2017). This is apparent in New Zealand where housing innovation is largely unsupported by policy and planning frameworks. As a consequence, there is a history of patchy adoption of thermal performance and universal design solutions and unmet consumer demand (James *et al.*, 2018).

Alongside these challenges, which require trade-offs and compromises, e.g., in dwelling and development design, number of units provided and often environmental performance innovations, there are opportunities to involve residents. Taking account of residents' perspectives may not resolve inherent tensions in trade-offs, but it opens up a different way of seeing that can lead to improved stock performance and suitability, more responsive services to residents and increase residents' sense of home, pride and belonging. Involving residents can potentially provide a competitive edge in seeking finance for future developments. This CHP is taking up the challenge of including resident perspectives in procurement decisions, however it is not a simple process. It is a long-term endeavour that requires continued, open information sharing between the CHP and residents, and procuring design and construction services that match the CHP's vision for high performance homes, even when these are not easy to acquire in the marketplace at the price points needed to deliver affordable housing.

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