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Residential Reconstruction of Christchurch City Centre: Is sustainability the key to promoting inner-city living?

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ABSTRACT

The aftermath of the 13 years following the earthquake has posed persistent challenges in achieving attracting permanent residents into the Christchurch City Centre. Despite City Council's initiatives like the Central City Housing Program Project 8011, aimed at reaching a population of 20,000 by 2028, population growth in the inner-city has not kept up with the growth of housing stock. This gap is filled by the growth of temporary residents in short-term rentals like Airbnb. The study argues that reaching sustainable levels of population growth requires more than just constructing extra houses. Discouraging speculative investment market, especially when property development companies with a 'build-to-sell' mindset offer products like typical townhouses, readily available in the suburbs at lower prices, and ensuring residential developments are innovative, sustainable, and resilient will help differentiate the inner-city living and promote growth.

Evidently, the development of sustainable residential properties, with features such as indoor air quality, energy and water conservation, health, and well-being (Oyewole et al., 2023), coupled with external factors such as environmental quality, spatial integration, connectivity, mixed land uses, and green spaces, contributes to the overall sustainability of the neighbourhood (Khatibi et al., 2023). This research explores the potential interaction between a sustainable built environment and the increased willingness to stay in the city centre. The study identifies characteristics of the residential built environment that are critical in post-disaster recovery.

1. Introduction

This study seeks to assess how the attributes of a sustainable built environment can serve as a viable solution for housing problems, particularly in relation to short-term rentals such as Airbnb, and their impact on permanent residency in the context of post-earthquake residential reconstruction in Christchurch City Centre. The research aims to review some characteristics of a sustainable built environment, including green space,

walkability and connectivity, mixed-use developments, and housing in the city centre. Through this examination, the study aims to determine the extent to which Christchurch City Centre is toward to the principles of a sustainable neighbourhood. Additionally, it aims to identify the necessary suggestion drawing insights from previous research, local and international example to enhance the attractiveness of city centre living.

The city of Christchurch, New Zealand, experienced a series of earthquakes in 2010 and 2011, leaving approximately 16,000 properties damaged, of which over 9,000 were rendered uninhabitable (Goodyear & Fabian, 2014). Approximately 70% of the Central City buildings was demolished and the city confronted an enormous task of rebuilding and regeneration challenge, yet it was perceived as a once-in-a-lifetime opportunity to construct a model sustainable city that aligns with the demands of the 21st century (Roberts, 2017). Despite the prevailing preference for suburban living in Christchurch City, often referred to as the Garden City, the city council has recognized the disadvantages of urban sprawl. As this pattern fosters a significant car culture, compelling people to commute to work and shops daily. From an environmental viewpoint, as indicated by the Christchurch Community Carbon Footprint Report (AECOM and Christchurch City Council, 2018), transportation emerges as the most substantial contributor to CO2 emissions in the city.

Increasing the number of people living in the city centre, to revitalise the inner city was the aim of Central Christchurch Recovery plan. The plan supported a diverse housing options for a diverse residential population as an essential factor to provide business growth and development, and create a high level of activity (Central City Recovery Plan, 2012). To follow the ongoing debate regarding the advantages of city centre living and compact city different initiatives, policies and rebates were developed to encourage people to live in the city centre. One of these initiatives was Christchurch Central Housing Program, Project 8011 (Christchurch City Council, 2018) with the aim of increasing the number of people to 20,000 individuals by 2028.

Despite all these efforts and the construction of a significant portion of new houses, the city continues to face persistent problems in housing development, including issues related to diversity, adequacy, design, and affordability (Christchurch City Council, 2023). Indeed, the current buyers of inner-city properties, who are financially positioned to do so, appear to be making these purchases for investment purposes rather than to become part of existing communities and promote homeownership. This dynamic creates complexities, raising concerns about sustainable residential development, housing availability, affordability, and social cohesion, especially given the growing influence of short-term rentals, notably Airbnb (Wachsmuth & Weisler, 2018; Grisdale, 2021; Smigiel, 2023). This concern is further substantiated by the substantial gap between the number of available dwellings and the number of households in the city centre, where newly built houses are being allocated to short-term rentals (Christchurch City Council, 2023)(See table 1 showing the aforementioned gap between the number of dwellings and number of households).

Table 1: Disparity in dwellings and household numbers (Christchurch City Council, 2023)

Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Number of Dwellings	2675	2814	2943	3217	3616	3894	4106	4336
Number of the Households	2595	2702	2808	2914	3003	3127	3230	3340
The Difference Between Number of Dwellings and Number of Households	80	112	135	303	613	767	876	996

Upon reviewing housing listings within the city centre, it becomes evident that development companies provide prospective buyers with documentation, including short-term rental appraisals and comparative analysis showing capital gains derived from short-term rentals versus the long-term rentals market (See Figure 1) (Williams Corporation, 2024)

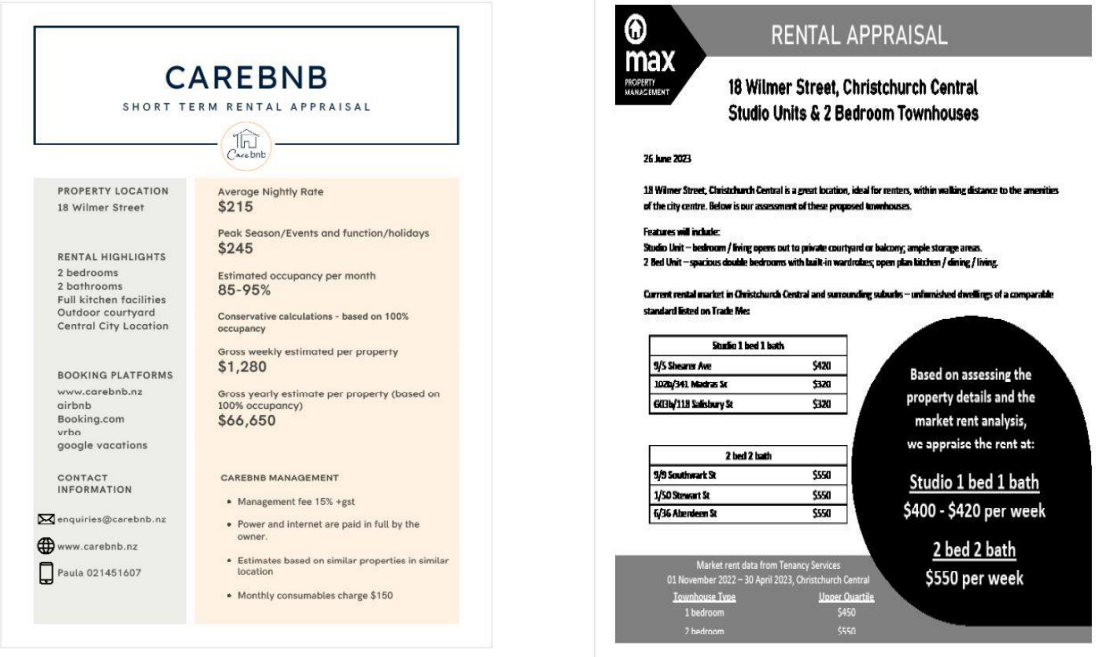

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Figure 1:Rental Appraisals for short-term rental and long-term rental (Williams Corporation, 2024)

In light of the foregoing discussion, this study emerges from the realization that achieving a sustainable and resilient residential development goes beyond mere construction. This form of construction, not only expands the global housing footprint but also leads to underutilization of built environments, impacting community cohesion (Perucca et al., 2023). In Christchurch City Centre, the City Council's strategy to incentivize housing supply, primarily benefiting major developers, has resulted in housing stock imbalances, unaffordability, and a surge in short-term rentals. Indeed, the city centre struggles with contentious historical issues, notably the absence of a predominant urban living culture and, a condition persisting even prior to earthquake events as well as socio-economic effects of the earthquake. While concerted efforts are being made to enhance the liveability of the city centre through strategies and incentives, key stakeholders, including development companies have capitalized on these incentives and rebates provided by the City Council. In this environment, they attempt to introduce products that contribute to housing speculation and the investment market. The inherent characteristics of short-term rentals position them as adaptable components within this construction model and housing market (Wachsmuth & Weisler, 2018).

This prompts a question into the potential of a sustainable built environment in the context of Christchurch City Centre to mitigate the adverse effects of housing speculation for short-term rental and promote the permanent residency. The built environment serves as a significant context for the comprehensive and integrated implementation of sustainable initiatives, as highlighted by Khatibi et al. (2023). Essentially, the methodologies aimed at promoting and evaluating sustainable development within the built environment operate at two primary scales: building and urban (Khatibi et al., 2023). Relying solely on housing and green building practices, without taking into account the surrounding neighbourhood, falls short in achieving a sustainable built environment. Such an approach overlooks opportunities for improvement in fostering more sustainable urban development, as noted by Anderson et al. (2015). Therefore, there is a need to emphasize the

study of both individual buildings and cities to consider their interconnectedness. This emphasis is crucial in the context of promoting city centre living in Christchurch City Centre (Soares et al., 2017).

The concept of sustainability, initially articulated by the United Nations in 1987, emphasizes meeting present needs without compromising the ability of future generations to fulfil their requirements. The urgency to address climate change is highlighted by the World Green Building Council's estimation that 39% of global carbon emissions originate from the real estate sector. Governments are compelled to halve greenhouse gas emissions within the built environment by 2030, with a net-zero emissions goal by 2050 (UN Environment Programme, 2022).

In the case of urban resilience and post disaster recovery, sustainable neighbourhoods by contributing to resilience, play a pivotal role in post-disaster scenarios, fostering community recovery and contributing to the overall restoration and revitalization efforts (Uda & Kennedy, 2018). For example, the amount of green space would significantly impact how a community is impacted by a heatwave (Hamin & Gurran, 2009).

This study aims to integrate and examine the concept of a sustainable built environment, focusing on their characteristics in the context of promoting permanent residency and liveability amidst the housing speculation for short-term rentals, particularly in the scenario of post-earthquake residential reconstruction for the Christchurch City Centre. The specific objectives involve defining the factors contributing to sustainability and resilience at the neighbourhood scale and analysing features of green and sustainable housing. The goal is to comprehend the interconnection between building and city environments, exploring how they can mutually enhance each other to establish a sustainable built environment. Finally, building on the findings, the research assesses the current state of Christchurch city centre, evaluating key aspects of sustainability such as green and open spaces, walkability, accessibility, sense of community, and housing. This evaluation aims to provide an overview to assess the extent to which Christchurch City Centre aligns with the principles of a sustainable built environment.

2.Sustainable Neighbourhood

There is an emphasis on evaluating the sustainability of urban areas, particularly through neighbourhood sustainability assessments.

In a notable empirical study examining 64 journal articles conducted by Khatibi et al. (2023), factors contributing to neighbourhood sustainability have been identified. Urban form and morphology emerged as the primary factor influencing neighbourhood sustainability, complemented by community dynamics and a sense of place. Together, these factors contribute to the realization of sustainability outcomes, including liveability, equity, and viability within a neighbourhood (See table 2).

Table 2: Factors of a sustainable neighbourhood (Khatibi et al., 2023)

Category	Factor	Frequency measured Criteria
Sustainable Neighbourhood Creation	Sustainable Form and Morphology	Environmental Quality, Density, Spatial Integration and Connectivity, Mixed Land Uses, Green Spaces, and Building Form and Typology
	Community	Community participation, Social interaction, and Social cohesion
	Sense of Place	Sense of attachment, Satisfaction, and Heritage preservation

Sustainability Outcome	Liveability	Walkability, Environmental quality (Air Quality, Thermal Comfort, Lighting and Visual Comfort, Acoustic Comfort, Psychological comfort), GHG emissions, Waste management, Water management, and Water pollution
	Equity	Accessibility, Affordability, Safety, Security, Diversity and choice, Income rate, House ownership and rent, Employment rate, and Education level.
	Viability	Renewable energy, Energy-conscious or responsible behaviour, and Economic performance (Creation of Agricultural green space, Installation of photovoltaic [PV] systems, and Installation of water harvesting systems)

Further to that Tapsuwan et al.(2018) looked at the criteria of sustainability in combination with liveability and resiliency of the nighbourhood and emphsized the importnace of accessibility and connectedness (well- lit cycle lane, presences of bus stop, plenty of street parking, a good balance of low, medium, high cost housing, choices of affordable housing, children playground, shaded footpath, places for people to socialize, homes within a short distance of public amenities, different block sizes for chousing diversity, local neighbourhood shops, social advocacy organization,..) to create a sustainble, liveable and resilient neighbourhood. Incorporation of factors contributing to the creation of sustainable neighbourhoods and outcomes of the sustainability more demonstartes that sustainability projects for both home and neighbourhood must work together to guarantee that when greening is negotiated into new developments, the sustainable affordable housing, community participation, mixed land used, and other measures are key part of the plan.

3. Sustainable Housing

Key indicators of sustainability prioritize the integration of houses with their surroundings, local acceptance, and resilience to future disasters. Designing for sustainability entails aligning with the natural environment, optimizing climatic conditions for energy efficiency, and incorporating features such as natural ventilation and daylight. Furthermore, emphasis is placed on the recyclability and reusability of building materials, along with providing flexibility for future expansion, ensuring the long-term sustainability of housing reconstruction (Ismail et al., 2017).

Oyewole et al.(2023) identified, eight major themes relevant to measuring sustainability in residential properties. These are Energy conservation, indoor air climate, water conservation, health and wellbeing, site and landscape sustainability, building operations and users' education, building ecology and waste management and materials use and conservation. Rating agencies like LEED, BREEAM, Green Star, and others have specific criteria that buildings must meet to achieve certification as sustainable or green. For example, in New Zealand Green Building Council has issued different categories and credit including efficient, healthy and comfortable, liveable, environmentally responsive, and innovative homes. By obtaining certain amounts of these credits, houses can qualify for a Homestar rating ranging from 6 to 10 (See table 3).

Table 3: Homestar Tool Summary (NZGBC, 2023)

Category	Efficient	Healthy comfortable	Liveable	Environmentally Responsive	Innovation
Credit	Resource Efficiency Urban density Water Use Energy Use	Winter comfort Summer comfort Ventilation Moisture Control Natural Light Acoustic Performance Healthy Materials	Inclusive Design Occupant Amenities Eco-friendly Living Sustainable Transport	Renewable Energy Embodied Carbon Sustainable Materials Construction Waste Minimisation Water Sensitive Design Ecology Responsible Contracting	Innovation

The evidence supporting the benefits of incorporating green and sustainable features in building design is growing. In Korea, Jang et al. (2018) suggested that at a lower certification level, a green building certification is associated with potential tenants' willingness to rent. The study also suggests that potential tenants who prioritize eco-friendliness show a greater willingness to rent green buildings (Jang et al., 2018). In addition to the energy efficiency resulting from direct energy savings, green buildings can have a positive impact on occupiers' health and productivity, potentially leading to increased productivity gains (Robinson, 2005). Socio-demographic factors such as age, gender, income, and education play a significant role in determining willingness to pay for green products. (Diamantopoulos et al., 2003).

It is evident that sustainable products and services tend to carry higher costs for consumers (Deloitte, 2022). For example, concerning the housing prices for Homestar buildings in New Zealand, the research by Ade (2018) found that a 6-Homestar dwelling costs approximately 3% more to construct than a typical Building Code-compliant dwelling, and a 7-Homestar dwelling an extra 4%. These additional costs can be reduced when there are a number of similar homes in development. In return for this increased capital cost, the advantages include reduced operational expenses within the house, enhanced market value, and improved health and comfort for the occupants (Ade, 2018).

While construction of sustainable houses is acknowledged to come with higher costs for consumers, using new technology within the construction industry presents a potential solution for achieving affordable sustainable housing. For instance, in the realm of asset management, the integration of sustainability parameters, as highlighted by Islam et al. (2019) can lead to a reduction in maintenance costs. The authors have identified cost-effectiveness, asset value, environmental considerations, cultural practices, and design adaptability as key sustainable parameters in the context of people, processes, economy, and social aspects in asset management practices.

4.Christchurch City Centre

The policy review of the Sustainability demonstrates that a support from various planning documents at the national and local levels in New Zealand. The Resource Management Act (RMA) of 1991 serves as foundational environmental legislation, promoting sustainable resource management by balancing social, economic, and cultural well-being with environmental protection. The National policy statement on Urban Development Capacity emphasizes sustainability in creating high-quality urban spaces. At the local level, after earthquake the Christchurch Central Recovery Plan (CCRP) (Blueprint) articulated a sustainable vision for the city's reconstruction, encompassing green technologies, eco-streets, green buildings, and transportation (Central City Recovery Plan, 2012). For example, based on the plan, the Council should have encouraged the

uptake of certified green buildings through leadership, incentives, best practice demonstrations and building assessment tools.

Moreover, the Blueprint appeared to present larger expanses of green space and a more condensed Central City. It suggested the preservation and redesign of the Avon River corridor, the establishment of eastern and southern green frames that, together with Avon River Precinct, define the boundaries of the new Central City. The plan proposed a new north–south boulevard, along with expansive green streets, squares, lanes, and courtyards (See Figure 2)(Central City Recovery Plan, 2012; Tavares & Swaffield, 2017). It is noteworthy that, with the adoption of the precinct model, which organizes new developments into large blocks with single ownership and a limited range of functions, the new open spaces seem to be less aligned with established planning theories. In these theories, the mobility of residents across diverse areas, the connection between mass and open spaces, short block, and density are considered important factors (Jacobs, 1992; Tavares & Swaffield, 2017).

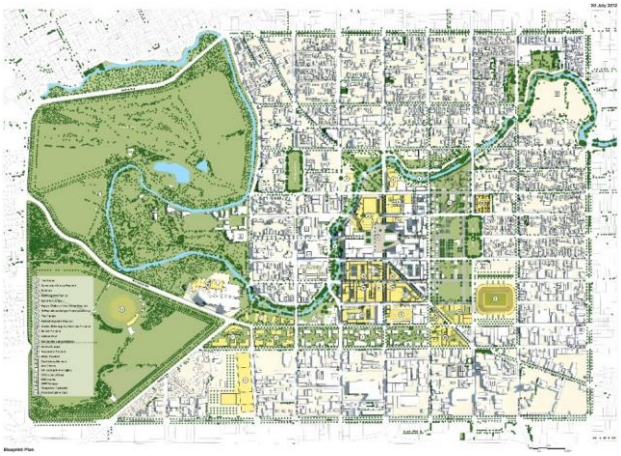

Figure 2: Christchurch Central Recovery (Central City Recovery Plan, 2012)

In the subsequent section, the research examines specific sustainability criteria within Christchurch City Centre, aiming to evaluate the city centre's alignment with a sustainable built environment and propose recommendations for furthering sustainable development.

4.1. Green Spaces

The study by Tavares and Swaffield (2017) examines how post the 2010–2011 earthquakes rebuild of Christchurch Central addresses compact and green goals, utilizing urban comfort as an analytical lens. The authors define the urban comfort as a mix of human thermal comfort, urban life, and place-related meanings. The investigation evaluates emerging urban spaces in Christchurch Central, focusing on microclimate quality, greenery, social activity, and accessibility. Findings revealed an increase in courtyard spaces, but most are not public, and outer precincts don't enhance public street comfort. Indeed, the Blueprint has reduced public accessibility to green microclimates, concentrating on private courtyards. Green efforts are concentrated along the Avon corridor, with limited greenery in publicly funded street projects. New buildings lack significant green strategies, and the precinct model limits functional diversity, making frontages mono-functional and privately owned. In terms of the green amenities, according to the Christchurch Open Space Strategy (2010) for every 1000 residents 1.1ha of neighbourhood parks is required. Currently there is 40 ha of open space in the central city so there is more than enough for the current residents and even future potential population. While recognizing the presence of sufficient green space, the distribution of these areas in the city centre remains areas of concern (See figure 3). Concerns were also raised regarding the inadequate support for indigenous biodiversity, where native plants are predominantly utilized for urban design proposes rather than actively fostering habitats for native species (Stirling, 2020).

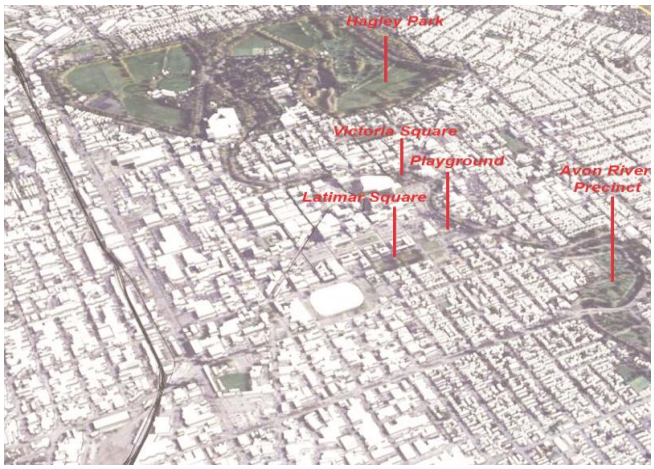

Figure 3: Green and public spaces in the city centre (Author's construct)

4.2. Mixed Use

Increasing the integration of mixed-use spaces would enhance the vibrancy of street environments and promote urban diversity, as suggested by Jacobs (1992). However, the current precinct model implemented in Christchurch reflects a functional differentiation seen in planning during the 1960s and 1970s. This model, resembling a corporate quasi-mall, is criticized for fostering the growth of placelessness (McDonagh, 2017; Tavares & Swaffield, 2017). The Retail Precinct, as it is evolving, is tending towards a more limited set of functions, primarily encompassing branded retail, restaurants, bars, and professional offices. Notably, the dominance of offices and retail spaces along the street frontages, which do not engage with the street space shows that the streets are used for movement rather than contributing to social activities. This focus on the retail precinct during the reconstruction phase overlooked the potential to establish a vibrant, 24/7 city with economic revitalization opportunities throughout the day and night, as noted by Stirling (2020). In total, Mixed-use development faces obstacles due to developers perceiving it as less profitable, technical challenges, difficulties in managing commercial leases, and conflicts between mixed uses.

4.3. Housing

Currently, terraced housing is the most prevalent housing typology within the Central City. There are very few high-density, high-rise developments across the Central City, with just 93 units (Christchurch City Council, 2021)(See Figure 4). In terms of housing size, one-bedroom, and 2-bedroom houses are the most favourable for the prevalent population of professionals and managers in the city centre.

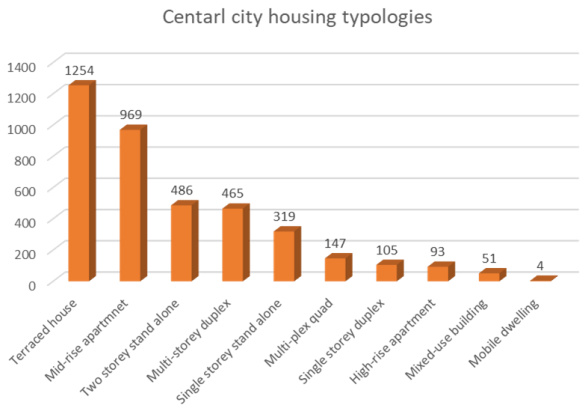

Figure 4: Housing Typology in Christchurch Central- (Christchurch City Council 2021)

While the majority of these houses share simple plans, there are notable exceptions such as Riverbank (243 Cambridge Terrace) and The Rakaia Apartments, which have received acclaim, securing the prestigious New Zealand Architecture Local Award in the Multi Unit category.
In terms of fostering community cohesion and attachment, the Peterborough Housing Cooperative serves as a notable example. This cooperative feature 14 townhouses arranged around a sizable central courtyard, with common facilities including two shared laundries, a common house with a dining room, kitchen, lounge, bike shed, kids, living, and guest room, collectively creating a cohesive community environment. The model provides an economically sustainable housing model as an alternative to profiteering from private ownership. The renters pay a 'living rent' to Ōtākaro Land Trust. This is 35% of the weekly living wage for the smallest unit, then increasing by unit size.
The city centre has a total of 250 Homestar-rated buildings. This figure reflects a commendable advancement for the urban landscape, constituting 26.17% of the city's overall 950 Homestar-rated houses. Notably, a substantial portion of the ratings, specifically 27.6%, was presented in 2023 by Fletcher Living and is currently under construction. The distribution of Homestar ratings for other years is as follows: 4.4% in 2022, 32.4% in 2020, and 35.6% in 2019. It is noteworthy that all Homestar-rated houses in the city centre attain a 6-star rating, comprising 105 apartments and 155 terrace houses.

Certainly, a comprehensive assessment of the impact of these new Homestar houses on home ownership dynamics in Christchurch central requires further investigation. However, the construction approach, characterized by the development of typical terrace housing or apartments, even when rated as Homestar 6, appears inefficient in addressing the housing speculation market for short-term rentals in Christchurch city centre, as evidenced by Airbnb listings showing the dedication of some of these houses to short-term rentals.

4.4. Walkability and Connectivity

The Central City is making progress in sustainable transport, with walking being the most popular mode, though driving still dominates. Efforts to prioritize pedestrians and discourage car use on certain roads are in place. However, it notes that in the case of Christchurch, car travel has not significantly decreased, leading to congestion and parking issues (Schmidt, 2022). Noteworthy successes include the development of a comprehensive cycle network, a well-designed bus terminal for future transportation trends, the implementation of a 30km/h speed limit to enhance pedestrian safety, and positive changes in local policy, particularly in the Christchurch District Plan, which includes rules promoting sustainable practices such as encouraging cycling to work and minimizing car park requirements (Christchurch City Council, 2017, 2024; Stirling, 2020; Waka Kotahi NZ Transport Agency, 2024)(See Figure 5 and 6).

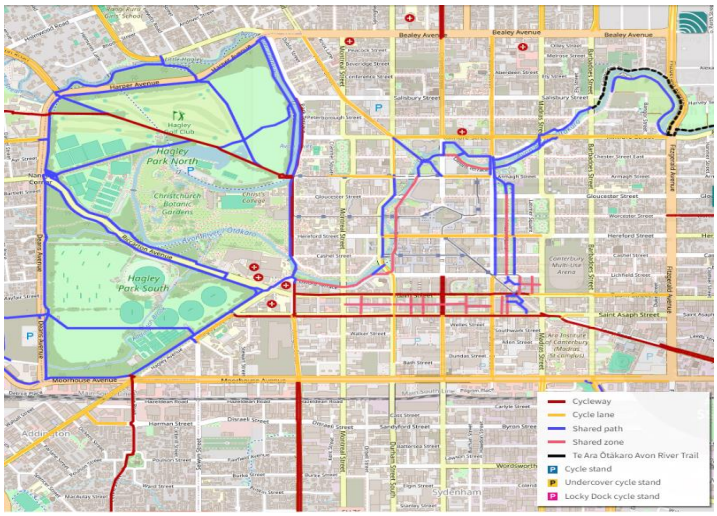

Figure 5: Christchurch Central bike map (Christchurch City Council, 2024)

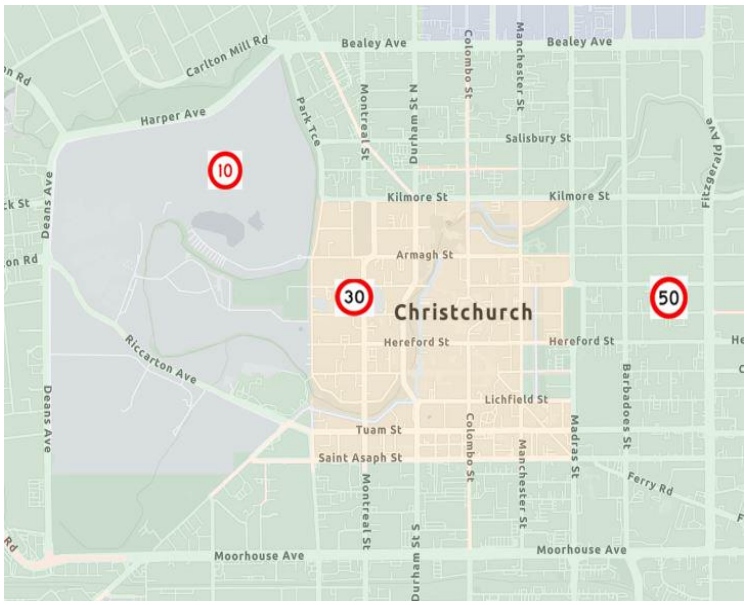

Figure 6: Christchurch Central speed limit map (Waka Kotahi NZ Transport Agency, 2024)

City Centre has the potential to align partially with the 15-minute neighbourhood concept, wherein essential daily amenities such as shops, schools, parks, leisure options, and healthcare facilities are within a 15-minute walking distance from residences. However, a notable challenge arises due to the lack of supermarkets near residential zone and absence of schools in the city centre, as illustrated in Figure 7.

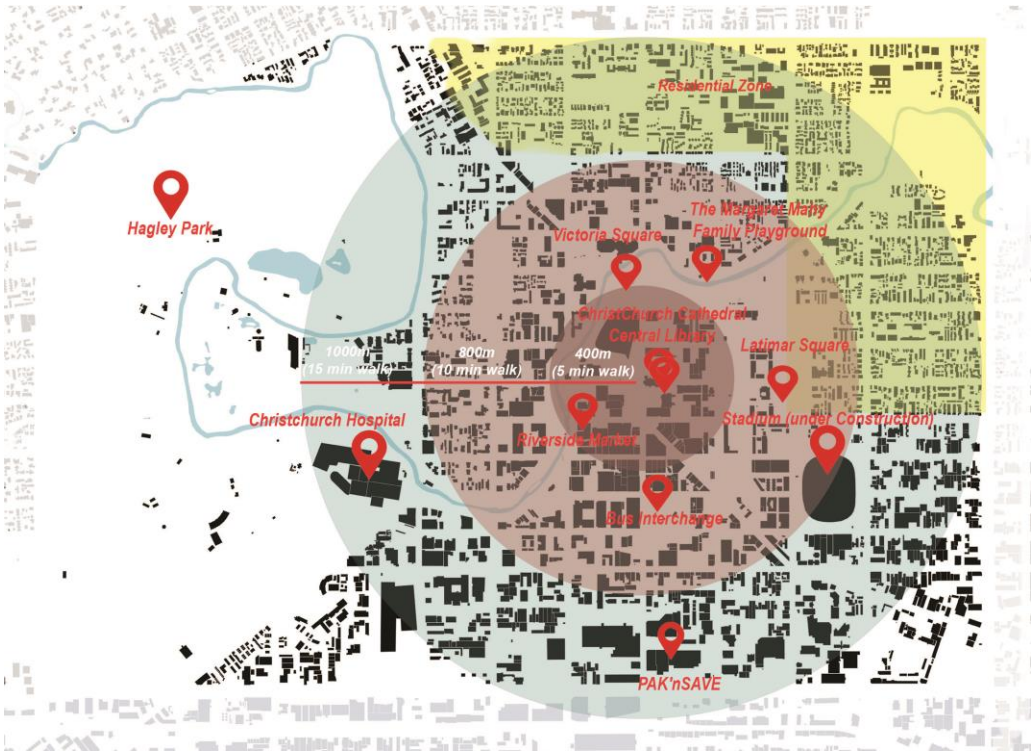

Figure 7: Walking distances and times to the amenities within the Central City (Author's construct)

4.5. Sense of community

Insights from the Life in Christchurch survey revealed that many individuals aged 18 to 64 residing in the City Centre expressed a lack of sense of community within the area (Life in Christchurch, 2022)(See Figure

8).These results have been supported in Wong's (2020) research, which reveals that only 10.53 percent of participants perceive a sense of community in the city centre (See Figure 9). However, it is worth noting that the people living in the city centre chose the city centre because of the proximity to the cafes, restaurants, good entertainment options, work, and city centre vibes, indicating its potential to enhance a sense of community (Life in Christchurch, 2022).

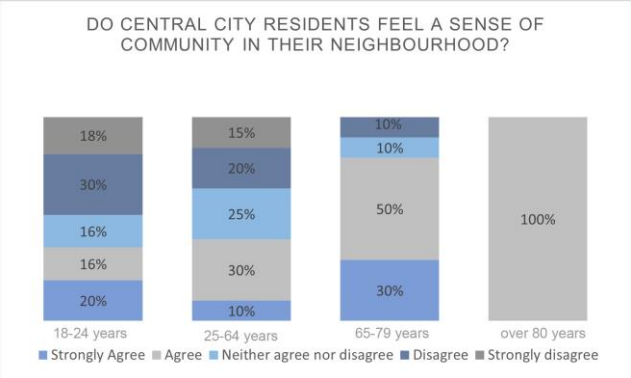

Figure 8: Sense of Community Disparity (Life in Christchurch, 2022)

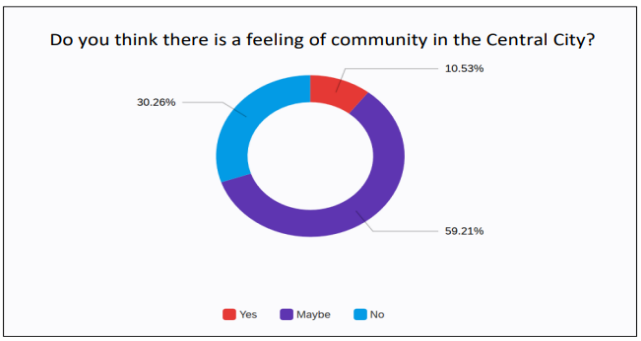

Figure 9: Feelings of community in the City Centre (Wong, 2020)

5. Conclusion: Towards a Sustainable Approach

The emergence of short-term accommodation in the Central Christchurch raises concerns about neglecting the potential for long-term residence. This research examines the concept of the sustainable built environment in the context of Christchurch City Centre. In terms of the sustainability criteria for the neighbourhood, the city centre has made progress in enhancing opportunities for walking, cycling, green spaces, and communal activities, such as community gardens. The inclusion of health care facilities, cafes, and restaurants has further contributed to the overall urban experience. However, there remains a pressing need to advance towards a sustainable neighbourhood. This necessitates a more comprehensive consideration of potential benefits, including the exploration of inclusionary zoning, the importance of maintaining green and open spaces, supporting a sense of community, facilitating sustainable transport through improved infrastructure and reduced car use, mixed-use development, emphasizing the importance of creating environments for social interaction such as enhancing the social potentials of public streets through approaches like greenery, walkability, density, preserving accessibility to green space by maintaining a balance in distribution of green spaces, and more importantly the need to treat the Central City residential area as a suburb and implementation of in demand services like schools, amenities or facilities that serves daily needs (e.g. a supermarket)(Schmidt, 2022; Stirling, 2020; Wong, 2020).

While acknowledging the city centre's sustainability challenges, it is crucial to recognize that not all challenges related to permanent residency, can be attributed solely to the city centre environment. The concept of a

sustainable built environment encompasses both building and urban area. The current housing development model, characterized by developers offering products such as terrace housing or medium-density apartments in both the city centre and suburbs, poses a significant challenge. This model puts the city centre in direct competition with suburbs, where same options with cheaper prices and more amenities in the neighbourhood are often available. Even the pursuit of Homestar ratings for these conventional housing models may not effectively address housing issues in the city centre, especially in related to long-term residency. This approach may render city centre housing more unaffordable for first-time homebuyers and contribute to increased building footprints and greater reliance on cars, exacerbating short-term rental issues without adequately addressing social sustainability. It is crucial to note, however, that sustainable houses bring about several advantages, including reduced operational expenses within the house, enhanced market value, and improved health and comfort for occupants. These benefits not only encourage a willingness to pay more for and reside in these houses but also contribute positively to the overall sustainability goals of the city centre. To achieve a truly sustainable neighbourhood, the focus should be on emphasizing the need for diverse type and affordable housing options, mix of housing ownership and rentals, and increased involvement of the public and non-profit sectors to promote balanced and affordable housing (Schmidt, 2022; Stirling, 2020; Wong, 2020). To achieve these objectives, one could explore the adoption of a proven models such as Peterborough Housing Cooperative in Christchurch City Centre and the Nightingale Model in Melbourne (Nightingale Housing Ltd, 2023). The Nightingale model, guided by principles such as holistic sustainability, simple living, energy efficiency, affordability, community building, reduced reliance on cars, promotion of healthy homes, community engagement, housing security, resales, exit from the rental market, community contribution, and reconciliation, stands as a potential solution to draw individuals back to the city centre. This successful community development cohousing concept involves selling inner-city apartments at a price 20% below market rates, employing intentional design processes that prioritize buyer preferences and foster personalized and economical living spaces. The Model integrates environmentally sustainable practices, financial affordability, and social inclusivity. Its core features include transparent decision-making, construction of fossil fuel-free buildings, high thermal ratings, water harvesting, and sustainable architectural design (Perucca et al., 2023; Stirling, 2020)(See Figure 10). Drawing inspiration from this international model, renowned for its commitment to environmental sustainability and community, and its measures addressing housing speculation through resale and investment protections (Perucca et al., 2023), this paper advocates for a similar approach in Christchurch City Centre.

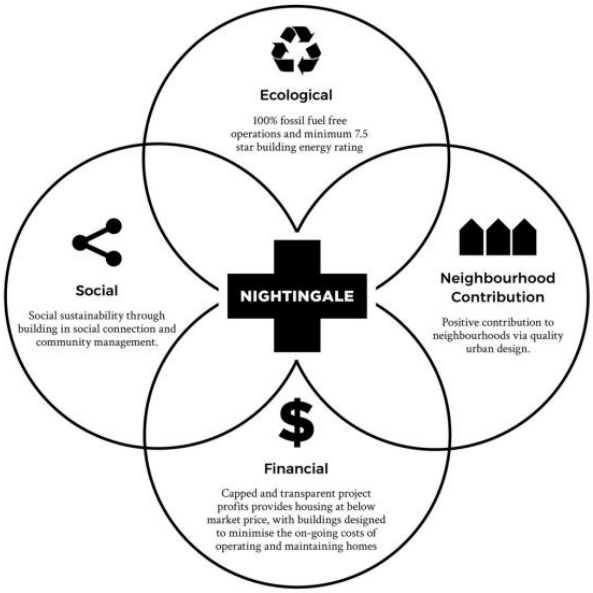

Figure 10: Nightingale Model (Nightingale Housing Ltd, 2023)

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