

CHALLENGES IN POST-EARTHQUAKE RECOVERY OF DAMAGED AND NEGLECTED BUILDINGS IN CHRISTCHURCH CBD

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ABSTRACT

More than a decade since the 22 February 2011 earthquake devastated Christchurch CBD, partially demolished and neglected buildings remain present in the post-earthquake landscape. Christchurch City Council has made significant progress in recent years to reduce the level of neglected buildings across the central parts of the city. To encourage remediation of these buildings, the Council initiated the Barrier Sites programme to keep track of central city sites. This paper documents the current inventory of derelict properties and investigates issues that are delaying progress on these sites. We explore regulatory levers that can be used to influence action on these buildings (e.g. provisions in the Building Act and council bylaws). We also investigate how the local market drivers influence the speed of regeneration. Our review identifies gaps in the regulatory powers to act on barrier sites. Taking action involves meeting difficult definitions and tests under legislation and/or taking court proceedings. Specific legislative tools are needed to provide Councils with the powers they need to ensure action is taken on barrier sites to progress the regeneration of the city after a disaster. We also find that the delays in removing the cordon and uncertainties of the public sector anchor projects contained in the Blueprint have led to the loss of private investment and forced central city developments compete with more affordable commercial and residential offerings outside the CBD. With the passing of the 10-year anniversary of the earthquakes, this project offers a timely reminder of the mammoth struggles that the city has overcome evident in the numerous modern and resilient buildings, yet a few 'battle sites' slow the much-needed regeneration towards a resilient city centre.

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INTRODUCTION

The 2010-2011 Canterbury Earthquake Sequence caused widespread damage across Christchurch, in particular, the 22 February 2011 Earthquake caused heavy damage in the central city and eastern suburbs. In the aftermath of the disaster, the city was faced with a challenge of filling in empty sites that appeared in place of the approximately 70% of the central city buildings that came down in demolitions [1]. In the months following the February earthquake, the central city lost half of its workforce and two-thirds of inner-city residents were forced to move out [65]. The rebuild was focused on attracting people back into the city. The government set plans for major anchor projects as a catalyst to boost commercial and recreational activities in the Central Business District (CBD) [2], while private developers got on with the redevelopment of commercial buildings as insurance money began to flow and more land became available as edges of the cordon moved back [3].

Most recent economic and residential statistics show positive signs of recovery [4], yet after more than a decade since the February 2011 earthquake, the central city is still peppered with vacant sites and derelict buildings which are impacting re-investment in local infrastructure and are considered as barriers to successful regeneration [5]. Internationally, evidence exist that derelict, neglected properties pose significant public health hazard and can have a negative spillover effect onto neighbouring properties leading to loss of property values and slow development [6]. Therefore, to contain negative impacts of such sites in Christchurch CBD, it is important to understand factors contributing to slow post-earthquake recovery and revitalisation. In this paper, we review the Christchurch City

Council's programme targeted at progressing action on buildings neglected after the earthquakes, called the Barrier Sites Programme. The review analyses the range of approaches adopted by the Council, available enforcement tools and supplemented with the business and population data from Statistics NZ and commercial property market reports.

BARRIER SITES

Given the level of damage and destruction in the inner city, and prolonged access restrictions due to cordon, city centre revitalisation was among highest priorities for the Christchurch City Council (the Council) following the earthquakes. In 2016, the Council began focusing their attention on sites and buildings where owners have made no effort to remediate damage [7]. This initiative also coincided with the gradual return to local leadership and decision-making which were limited during the first five years of recovery by the Canterbury Earthquakes Recovery Act 2011. In the view of the Council, by then sufficient time (five years) had passed to resolve insurance disputes and/or to investigate and commence reconstruction/refurbishment. Some scholars refer to the 'window of opportunity' in post-disaster recovery being around 18-36 months following an event, however the timeframe varies with the political environment in a given country rather than the quality of disaster recovery efforts alone [8,9]. The Council identified properties considered a barrier to positive perceptions of the city for visitors and investors, this included 1) unoccupied buildings in a very poor state of repair, 2) damaged buildings that had containers or other propping to support them, 3) buildings or cordons that encroached onto public footpaths or roads affecting movement, and 4) other fenced sites. This is

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reflected in the term used to describe them - “barrier sites”. At a meeting in May 2017, the Council considered a report that outlined a framework and strategies for progressing action on problematic central city sites and was presented with an initial list of 30 derelict buildings and vacant sites [10]. The list was made publicly available [11] and quickly dubbed the ‘Dirty 30’, receiving wide coverage in the media. The combination of soft and hard measures developed by the Council were to be applied progressively/gradually on property owners to encourage repair, restoration, or redevelopment of their sites (Figure 1).

To encourage compliance, the Council adopted a VADE model – Voluntary, Assisted, Directed, Enforcement. The intention of the programme was to operate within the Voluntary and Assisted part of the VADE spectrum. For example, to assist owners of heritage buildings, several barrier sites buildings received council-funded heritage grants ranging \$170,000 to \$1.9 million. Once the soft options (voluntary and assisted) are exhausted, the Council would then resort to directing property

owners to act by issuing notices to fix (breach of the Building Act 2004) or abatement notices (breach of the Resource Management Act 1991), with the final step being enforcement action which would fall in the realm of council bylaws and various pieces of legislation such as the Building Act, Local Government Act, and Health Act. From the outset of the barrier sites programme, as evidenced in the council meeting minutes, the enforcement route was not prioritised within the Council as it was perceived to be costly, legalistic and would risk increase in tensions between property owners and the Council further delaying progress [7]. Instead, the Council adopted a case management approach to understand issues delaying redevelopment on each site (e.g. insurance disputes, availability of funds). It proved to be effective to seek negotiated outcomes through support and incentives (e.g. grants, technical advice, rates rebate) where since the launch of the barrier sites programme in 2017, the Council was able to achieve action on majority of the barrier sites operating within voluntary and assisted spectrum of VADE.

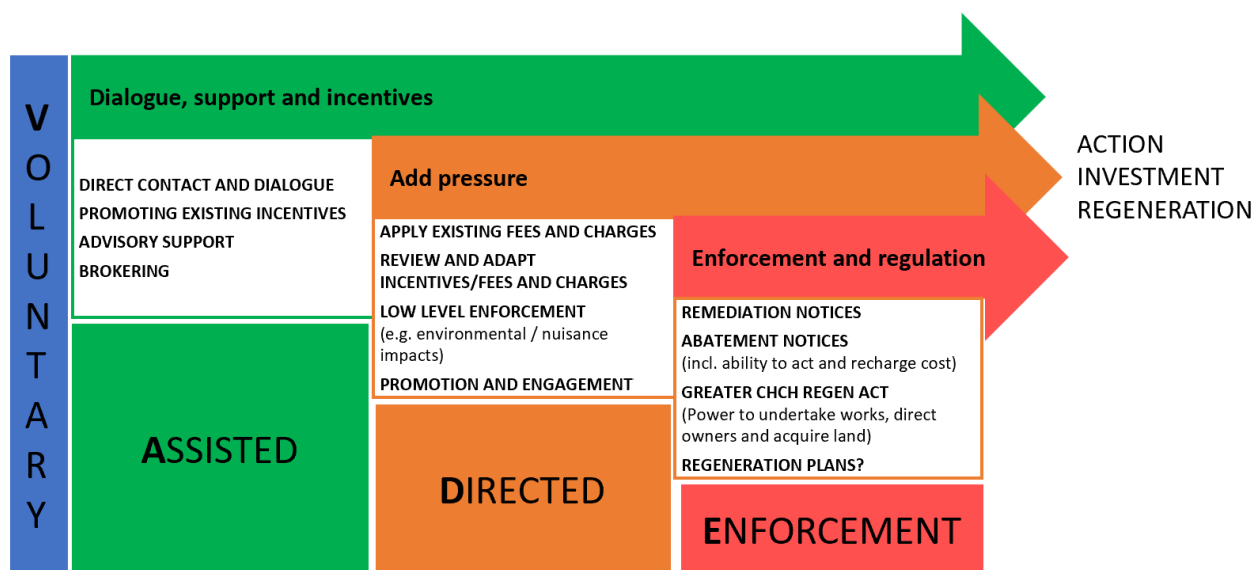


Figure 1: The Council's Barrier sites framework and VADE model (Source: Christchurch City Council, 2017).

Evolution of the “Dirty 30”

The publication of the original list of neglected properties was meant to be a living document, with sites removed from the list as plans for redevelopment were being finalised, while new ‘problem sites’ were added to the list. The original list featured 31 sites and by the end of 2018 a further 14 sites were added. As evident on the map below (Figure 2), the largest concentration of barrier sites is in the core of the city centre. Most of these buildings were inaccessible for longer due to the cordon being in place for up to two and half years in parts of the city centre. Pre-earthquakes the core of the CBD was the centre of commercial activity offering high-quality office accommodation options. The city's new high-end office accommodation is now located in the west end of the CBD along Cambridge Terrace, outside the edges of the primary extent of the cordon. As one local property developer explained, development along the edges of the cordon resulted in ‘unloved streets’ in the core of the city with rows of vacancies and abandoned buildings (personal communication, December 2019). Similar views about the impacts of the cordon on the supply of offices and retail spaces on the periphery of the CBD are echoed in [12-14].

Table 1 provides the full list of the central city barrier sites as of February 2021 (ten years after the earthquake). Twenty four

of the 45 sites have been permanently removed from the list with the owners either completing or being in the process of redevelopment, including three sites that have been cleared, tidied, and now held in vacant possession. Most of the buildings on these sites have been repaired or restored. A cluster of heritage buildings in High Street – also known as Duncan's building - had their facades retained and restored and new structures built behind. With the numerous heritage buildings destroyed in the earthquakes, preservation of these buildings is an important reminder of the city's rich history for future generations [15].

The Council is actively pursuing the owners of the remaining 21 sites. Thirteen owners indicated to the Council their plans for the buildings [10]. Some of the owners have applied or already received building consents and work on those sites is imminent. These plans include the development of a new Catholic precinct in Armagh Street on the sites of the former PWC building and the adjacent cleared site of the former Copthorne Hotel. The development will include a replacement for the damaged Cathedral of the Blessed Sacrament. While awaiting redevelopment, the PWC site famously became home to a colony of the endangered black-billed gulls – tarāpuka – for nearly three years (Figure 3(a)). Work to remove foundations of the former PWC building began in July 2021 as the birds

were relocated in time for their breeding season [16]. Restoration of the Old Municipal Chambers, another prominent historic building, commenced in April 2021 as the Council

entered into an agreement with a private developer Box 112 to restore, strengthen and lease the building (Figure 3(b)) [17, 18].

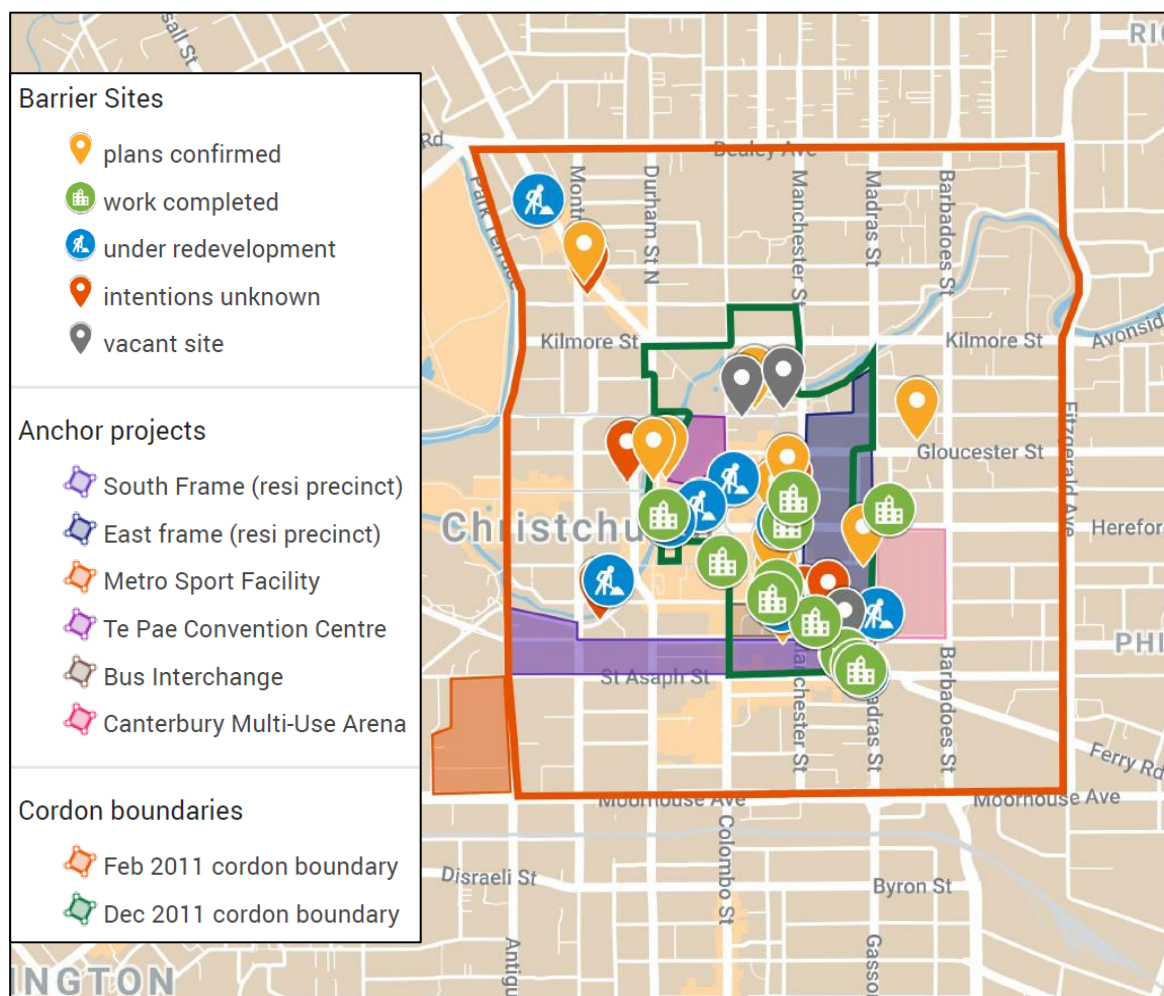


Figure 2: Map of the central city barrier sites as of April, 2021.

More recently, plans for redevelopment of two notorious buildings featured on the list have been signalled. The first is the Malvern House – arguably the poster child of the barrier sites programme – the most tagged building in the city and a magnet for squatters (Figure 4 (a)) [19, 20]. The physical condition of the building – with some labelling it an eyesore – has already delayed improvements on the neighbouring buildings and sites on the block. The other prominent building is the former IRD premisses – built in 2007, it sat damaged and vacant since the 2011 earthquakes (Figure 4 (b)). While redevelopment of barrier sites is a signal of recovery and confidence in the city, the Council understands a commitment to action does not always equate to completed projects. Several of the sites featured on the list have exchanged owners (some of them multiple times) since the earthquakes, with each new owner announcing plans for development, only to then abandon them.

FACTORS CONTRIBUTING TO THE DELAYS IN THE REGENERATION OF BARRIER SITES

The scale of destruction and loss experienced in the Canterbury earthquakes was unprecedented for New Zealand. Amidst fatalities and heavy damage in the CBD, emerged an opportunity to rebuild a city that is resilient. The city's Blueprint – a recovery plan for the central area - made the CBD

more compact through rezoning and strategic land acquisition [21]. The CBD got a head start with a handful of government-led anchor projects aimed at generating momentum in post-earthquake recovery. Several statistics which are discussed in detail in this section point to the strong recovery of the central city with workers and residents returning to the CBD. At the same time many indicators sit below their pre-earthquake levels requiring more government and private investment to fully regenerate.

While the decision to redevelop privately-owned barrier sites mostly rests on the individual property owners, the speed of progress on these sites is moderated by the specifics of the local environment including market conditions and degree of the Council's powers to enforce action. We have identified several factors that are contributing to the delays in the regeneration of barrier sites in the central city. Firstly, specific legislation that addresses the issue of barrier sites is absent and therefore the Council must look to a range of legislation for enforcement powers. Secondly, delays in the delivery of the anchor projects are often cited as impediment to private investment. In addition, weak local economy pre-earthquakes and post-earthquake competition from the suburbs offering affordable, modern residential and commercial buildings are also delaying recovery of the CBD.

Table 1: List of barrier sites and progress indicators (as of February 2021).

	Street address	AKA	Status	Scope of work/current state	Use
1	124 Worcester St	Former Trinity Church/Shands Bldg	work completed	repair	commercial
2	152 Oxford Ter	Public Trust Office	work completed	repair	commercial
3	81 Lichfield St	Lincoln House	work completed	repair	commercial
4	167-169 Hereford St	Hereford Chambers	work completed	repair	commercial
5	201-203 High St	Victoria Black	work completed	original build façade/new	commercial
6	231 High St	Former Work & Income	work completed	repair	commercial
7	12 Latimer Square	Park Tower	work completed	repair	residential
8	135 High St	High Street	work completed	new build	commercial
9	143-157 High St	High Street	work completed	original build façade/new	commercial
10	163 High St	High Street	work completed	original build façade/new	commercial
11	165 High St	High Street	work completed	original build façade/new	commercial
12	673 Colombo St	Pagoda Court	work completed	new build	commercial
13	143-145 Armagh St		removed from the list	cleared site	Catholic precinct
14	128 Armagh St	Former PSIS building	removed from the list	cleared site	tbd
15	167 High St	High Street	removed from the list	cleared site	tbd
16	79 Hereford St	Former Books Scorpio	under redevelopment	repair	hotel
17	31 Cathedral Square	Old Post Office	under redevelopment	repair	commercial
18	96 Lichfield St	Living Space	under redevelopment	repair	residential
19	216 Madras St		under redevelopment	cleared site	sport recreation and
20	155 Victoria St	Spagalimis / 28 Dorset	under redevelopment	new build	residential
21	100 Cathedral Square	Anglican Cathedral	under redevelopment	repair	religious
22	129-133 High St	High Street	under redevelopment	repair	commercial
23	165 Hereford St	Broadlands House	under redevelopment	repair	commercial
24	79 Cambridge Ter	Nuttal Building Bradley	under redevelopment	repair	hotel
25	235 - 237 High St	235 - Brick, 237 - vacant site	plans confirmed	repair	commercial
26	92 Lichfield St	Sol Square (part)	plans confirmed	repair	tbd
27	159 Oxford Ter	Our City	plans confirmed	repair	office
28	210-214 Tuam St	Old CCC Offices and Odeon Theatre	plans confirmed	repair	commercial
29	116 Worcester St	Kaplan/State Insurance	plans confirmed	repair	residential
30	119 Armagh St	Former Building PWC	plans confirmed	exposed foundations	Catholic precinct
31	249 Gloucester St	Stonehurst Hotel/Motel	plans confirmed	cleared site	residential
32	226-234 Cashel St	Former IRD Premises	plans confirmed	repair	medical
33	179 Tuam St	Sol Square (part)	plans confirmed	repair	tbd

Table 1: List of barrier sites and progress indicators (as of February 2021).

	Street address	AKA	Status	Scope of work/current state	Use
34	91 Victoria St	Victoria Mansions, 368 Montreal	plans confirmed	Repair	residential
35	141 High St	High Street	plans confirmed	repair	tbd
36	170 Oxford Ter	Old Rydges Hotel	plans confirmed	vacant building	hotel
37	159 Hereford St	Malvern House	plans confirmed	vacant building	tbd
38	158 High St	Cotters	intentions unknown	cleared site w/ original façade	tbd
39	25 Peterborough St	Peterborough Apts.	intentions unknown	repair	tbd
40	170 Cashel St	Former Holiday Inn	intentions unknown	exposed foundations	tbd
41	137 Cambridge Ter	Harley Building	intentions unknown	vacant building	tbd
42	112-114 Manchester St	2 Fat Indians	intentions unknown	vacant building	tbd
43	66 Oxford Ter		intentions unknown	vacant building	tbd
44	161 Hereford St	Hereford Suites	intentions unknown	vacant building	tbd
45	205 Manchester St	Blue Jean Cuisine	intentions unknown	vacant building	tbd



a) PWC site



b) Old Municipal Chambers

Figure 3: Examples of sites with confirmed plans for redevelopment.

a) Malvern House



b) Former IRD building

Figure 4: Sites sold to new owners with plans for redevelopment.

Regulatory Environment

A number of property owners remain disengaged despite the Council's efforts to establish a dialogue (Table 1, sites where owner intentions are unknown) and the Council is considering the use of enforcement tools. As mentioned earlier, this is not the favoured approach as the Council wants to maintain the role of a facilitator rather than enforcer of change. Legal action is likely to be strongly fought by owners, and would amount to a significant burden on the resources and finances of an already overstretched Council. This comes at a time when Council-Crown entity 'Regenerate Christchurch' was disestablished under the Greater Christchurch Regeneration Act 2016 transferring the responsibility for leading the city's regeneration solely to the Council [22]. Despite favouring softer approaches (voluntary and assisted methods of engagement), the Council has commissioned a review of enforcement tools which include a range of acts and council bylaws (Table 2). This review was presented to the Council at the commencement of the Barrier Sites Programme in May 2017. While local authorities have responsibilities to prosecute and can act as a regulator, other councils in the country also favour non-litigative approaches working alongside and supporting property owners instead of exercising legal powers. For example, Wellington City Council took a case management approach when implementing Hurunui/Kaikōura Earthquakes Recovery (Unreinforced Masonry Buildings) Order 2017 [23].

Moreover, it has emerged that there is no clear enforcement pathway in the absence of specific legislation that addresses the issue of barrier sites. Once all of the attempts to action progress on the sites are exhausted and with the lack of clear-cut powers, the Council must look to a range of legislation for powers to act. Unfortunately, there are a number of difficulties with this approach; first, the relevant legislation is not directly applicable to the problem at hand which means they are limited in their use; second, it can be difficult to locate property owners in order to serve them with notices; third, enforcement action often requires Court proceedings and is therefore expensive and resource intensive; and fourth, not all costs of enforcement action can be recovered from the property owner. This leaves the Council with limited options for enforcement action and explains why the Council has taken the facilitation approach it has to dealing with barrier sites.

The problem of abandoned buildings and barrier sites has arisen post-earthquakes. The governance of the recovery has contributed to the problem in that most of the issues that have arisen relate back to the early recovery policies and actions taken in the first five years. Legislation was enacted responsively and quickly. Within two weeks of the September 2010 earthquake the Canterbury Earthquake Response and Recovery Act 2010 (CERRA) was enacted and the Canterbury Earthquake Commission established to coordinate the recovery process with local and central government. However, this came to an end soon after the February 2011 earthquake caused significantly worse damage on a much larger scale giving rise to a more complex situation requiring an even greater response. The government argued the scale of the recovery was now beyond the capability of the existing institutions and therefore central governance was needed to allow for a high degree of ministerial control and the exercise of significant powers [24]. The Canterbury Earthquake Recovery Act 2011 (CER Act) was then enacted and the Canterbury Earthquake Recovery Authority (CERA) established with broad powers to actively progress the recovery. This Act put the powers for the recovery

squarely with the Minister responsible for earthquake recovery and CERA with a direct reporting line to central government. CERA was in charge of decision-making about land-use, building and planning that would ordinarily have been the domain of the Councils. The CER Act gave the Minister and CERA further extensive powers including the ability to amend or revoke Resource Management Act documents and city plans, demolish buildings to fulfil the blueprint plan, restrict access to roads and acquire land for anchor projects [25]. This was the governance structure for the first five years of the recovery until the expiry of the CER Act in April 2016 and the enactment of the Greater Christchurch Regeneration Act 2016 which saw authority over the recovery transition back to the Councils. This shift in responsibility from local government to central government and back again has had a huge impact on policymaking and governance in the eleven years since the earthquakes and no doubt has played a role in limiting the Council's role in being able to deal with abandoned buildings and barrier sites.

Another issue for Christchurch was the huge number of heritage buildings that were demolished after the earthquakes. The decisions to demolish caused tension between heritage advocates who claimed the buildings were brought down in haste and those in charge of the city's recovery who justified their decisions on the basis that safety was their priority [26]. It is clear CERA's extensive emergency powers to demolish buildings for the city's recovery were used on heritage buildings when owners could not get funding to save them [27]. A "section 38 notice" could be issued by CERA on any building it deemed dangerous and it could be demolished within 10 days [28, s.38]. Furthermore, emergency legislation gave CERA the power to overrule the legislation meant for safeguarding heritage buildings.¹ The main issues were the age of heritage buildings and how severely damaged they were in the earthquakes which rendered them unsafe; the cost to rebuild and make them safe was significant and many owners found their insurance was insufficient to cover this expense; and the purpose of the CER Act which was to ensure the city's recovery was "focused, timely and expedited" which meant CERA was not willing to wait for solutions to save the buildings. Furthermore, many owners chose demolition in order to obtain compensation from CERA for their buildings. Overall, it seemed that in the post-earthquake setting "heritage was regarded as an obstacle to the recovery of Christchurch to be demolished where necessary" [27]. This sentiment was cemented by the Minister for CER's public pronouncement of heritage buildings as "old dungas" diminishing their relevance in post-earthquake recovery and paving the way to systematic loss of heritage through demolition [2014].

Today, the following describes legislation which provides the Council or other parties with some enforcement powers for barrier sites; however, as indicated below, it is limited in its scope.

Building Act 2004

The Building Act 2004 confers powers on the Council to deal with dangerous or insanitary buildings, or those nearby, that may be affected by these buildings. The definition of a dangerous building is one that in the ordinary course of events (excluding an earthquake) is likely to cause injury or death to people in it or persons on another property, or damage to a neighbouring property [30, s.121].² If a building comes within

¹ The Resource Management Act 1991 and the Historic Places Act 1993.

² Note that after the earthquakes the definition of "dangerous building" was amended to include buildings that could collapse or otherwise cause death or injury in an earthquake. This amendment only applied to the districts of the Christchurch City Council,

this definition, the Council has the power to take action including putting up fences or barriers to prevent people approaching the building, issuing a notice requiring the building owner to carry out work to reduce the danger and demolishing the building (Building Act 2004, ss. 124, 127). Where a building poses an immediate danger, the Council can do what is necessary to remove the danger and recover the costs of the work from the building owner (Building Act 2004, ss.129, 130). If the action taken is disputed by the owner, the Council must apply to the Court for confirmation of the warrant under which the action was taken (Building Act 2004, s.130). If the building poses no immediate danger (Building Act 2004, s.127) but the work required by the notice is not completed by the building owner within the specified time, the Council may apply to the Court for an order authorising it to carry out the work (including demolition of the building) and recover the costs from the owner (Building Act 2004, ss. 126, 127). A disadvantage of this approach is that the Council will have to bear the initial upfront cost of taking action on the building.

While these provisions do give the Council powers to take action on abandoned buildings they are limited in that not all abandoned buildings will be “dangerous buildings” as defined by the Act³. Most abandoned buildings are uninhabited (except for squatters who are illegally in residence) and therefore do not come within the statutory definition of “dangerous”. It is more likely that abandoned buildings will pose a danger to a neighbouring property or people on that property and any in this category are likely to have been actioned. It is the balance of abandoned buildings that do not fall within the definition of a “dangerous building” that are the problem because the Council does not have the power under these provisions to require owners to take action or to take action itself.

An insanitary building is defined as one that is offensive or likely to be injurious to health because it is in a state of disrepair, is a damp building or does not have a supply of drinking water or sanitary facilities (Building Act 2004, s.123).⁴ All of these matters are likely to be injurious to the health of occupants. However, abandoned buildings are not occupied. The inquiry should be whether abandoned buildings could be deemed “offensive” owing to their state of disrepair. If they are determined to be an insanitary building on this basis the Council then has the power, as it would for a dangerous building, to require the owner to take action. Whether or not graffiti and being unsightly are sufficient grounds to meet the test for “offensive” under the Act is unclear as there is little case law on this section. However, it is open to the Council to test this provision but such a test comes at a cost.

Councils are required, under the Building Act 2004, to have a Dangerous and Insanitary Buildings policy to set out the Council’s approach to dealing and managing such buildings (Building Act 2004, s.131). The Christchurch City Council’s

“Dangerous and Insanitary Buildings Policy 2018” states that when the Council becomes aware⁵ of a dangerous, affected or insanitary building it will investigate and then work with the owner to ensure that action is taken to make the building, its occupants and the public safe. It also states it will use its powers to take action if required (although cost will again be a factor in determining what action to take)

The Building Act 2004 also governs buildings that may be earthquake-prone (Building Act 2004, subpart 6a).⁶ It tasks the Council with the job of identifying and managing buildings that come within the definition of an “earthquake-prone building” (EPB). An EPB has a specific legal definition being one that, owing to the condition of the building or the ground on which it is built, and its construction, will have its ultimate capacity exceeded in a moderate earthquake and if it were to collapse it would likely cause injury or death to persons or damage to other property (Building Act 2004, s.133AB).⁷ The Act requires the Council to apply an EPB methodology to identify these buildings which are those with unreinforced masonry, built before 1976 and three or more storeys or over 12 metres in height, and those built before 1935 of one or more storeys [31, ss.1.2.1, 1.2.3]. The Act also divides EPBs into two categories – priority buildings and others. Priority buildings include those that house emergency and response services, buildings that are regularly occupied by at least 20 people for education/training purposes, those with unreinforced masonry that could fall onto public thoroughfares, and buildings that might collapse in an earthquake and impede important transport routes needed in an emergency response (Building Act 2004, s.133AE). Where a building is identified as an EPB or a potential EPB the Council may take steps to ensure the safety of those around it by putting up fences to prevent people approaching while a plan is put in place to remediate or demolish the building (Building Act 2004, s.133AR).

If a building is identified as a potential EPB, the council can request the owner to provide an engineering assessment of the building or part of the building that may be earthquake-prone [32]. If the building owner fails to comply with the request, the council can treat the building as if it is an EPB and issue an EPB notice identifying the building or the part of it that could be earthquake-prone, specifying the earthquake rating and require the owner to carry out work on the building to comply with the Building Act 2004. For example, it could require the building owner to carry out remedial work within a specified deadline (Building Act 2004, s.133AL).⁸ If the owner fails to comply with the EPB notice, the Council can take the necessary action to make the building safe or demolish it, and can recover the costs from the building owner (Building Act 2004, s.133AS).

Finally, the Building Act 2004 also has provisions that govern the management of buildings located in an area affected by an

Waimakariri District Council and Selwyn District Council; Canterbury Earthquake (Building Act) Order 2010, cl 5. This Order was revoked in 2016 by the enactment of the Greater Christchurch Regeneration Act 2016.

³ For discussion on dangerous buildings under Building Act 2004 and treatment of buildings deemed earthquake-prone see [33]

⁴ The government has acknowledged it may be difficult to identify a building’s insanitary status; Department of Building and Housing “Dangerous and Insanitary Building Provisions of the Building Act 2004, Policy Guidance for Territorial Authorities (2005).

⁵ The policy states the Council will not actively inspect buildings to determine if they are dangerous or insanitary but will act on complaints provided to them.

⁶ This subpart was added by the Building (Earthquake-prone buildings) Act 2016 as a result of a recommendation by the Canterbury Earthquakes Royal Commission Report (Canterbury Earthquakes Royal Commission Te Komihana Rūwhenua o Waitaha Final Report – Part Two (Volume 4): Earthquake-prone buildings (10 October 2012) <https://canterbury.royalcommission.govt.nz/>)

⁷ The terms “ultimate capacity” and “moderate earthquake” are defined in the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 cl 7. Note that the definition of “dangerous building” excludes an earthquake; Building Act 2004, s121. Also see [33].

⁸ The EPB notice must be displayed in a prominent place on or near the building (Building Act 2004, s 133AP). A building owner commits an offence if it fails to do this and could be liable for a fine up to \$20,000 (Building Act 2004, s 133AU).

emergency (Building Act 2004, subpart 6b). The appointed responsible person⁹ has powers to put measures in place to stop people approaching a building or to protect the building from damage including by the erection of fences. These powers are used during an emergency response or transition period from an emergency and are therefore not powers for use by the Council to deal with a barrier or vacant site.

Greater Christchurch Regeneration Act 2016

This Act [34] was repealed on 30 June 2021.¹⁰ It was enacted to cover the transition of power from CERA under the CER Act after its expiration in April 2016 to local government over a period of five years. Its purpose was to support greater Christchurch by enabling a focused and expedited regeneration process after the earthquakes (Greater Christchurch Regeneration Act 2016, s.3). Regeneration was defined to mean rebuilding after the Canterbury earthquakes and improving communities through urban renewal, development, restoration and enhancement (s.3(2)). “Urban renewal” was defined as the revitalisation or improvement of an urban area (s.3(2)). These purposes were important when considering how the powers under the Act were to be used. If barrier sites were obstructing urban renewal, then arguably the powers under this Act could have been used to deal with them.

The Act gave the government’s chief executive broad powers to carry out or commission work in Christchurch. This work included the demolition, disposal or removal of a building or any part of it, on public or private land, with or without the consent of the owner (s.77). If the building was a “dangerous building” then the Crown was not liable to compensate the owner or occupier and it could recover the costs of demolition from the owner (s.83).

In relation to the problem of abandoned buildings there were other relevant powers under this Act. First, the chief executive had the power to direct an owner to act for the benefit of owners of adjoining or adjacent properties in relation to rebuilding if it would assist with the implementation of a Regeneration or Recovery Plan in the properties (s.89). The use of such powers was only limited by the fact that barrier sites must come within the relevant Plan but not all would have.

The Act also conferred powers on the chief executive to purchase or acquire land with the Minister’s approval, and on the Minister to compulsorily purchase or acquire land consistent with the Regeneration or Recovery Plan or if there was none, where the Council had agreed that the land be compulsorily acquired. These powers were only limited by the fact that the Minister had to acquire the land in accordance with the purposes set out in the Act which included the regeneration of greater Christchurch or where the Minister or chief executive considered it reasonably necessary.

Although these were extensive powers to require action be taken on buildings to facilitate the regeneration of Christchurch, there is no evidence they were used to target individual barrier sites.

Health Act 1956

Councils have powers and duties under the Health Act 1956 [35, Part 2] and in particular a duty to improve, promote and protect public health within their districts (s.23). To achieve this end, Councils must take all proper steps to abate any nuisances likely to be injurious to health or that are offensive (s.23(c)). A “nuisance” is defined as arising in a number of listed situations including premises that may harbour vermin or are in a state or so situated as likely to be offensive or injurious to health (s.29). The Council could use its powers under this Act to take action against the owner of a barrier or vacant site for causing or permitting a nuisance. However the barriers to the use of these powers is that the threshold to meet the test for the building to be a “nuisance” is high and barrier sites are unlikely to meet it, and the necessity to obtain an order of the court to require the owner to abate the nuisance and prohibit its recurrence (s.33).¹¹ Once a court order is obtained, if the owner fails to do the work required or the owner cannot be found, the Court may make an order that the Council attend to the work required and recover its expenses from the owner (s.33).¹²

Litter Act 1979

The Litter Act 1979 [36] gives the Council the power to issue notices requiring an occupier to clean up litter on their property. As the provisions of this Act relate to occupiers of private land (Litter Act 1979, s.10) these powers cannot be used for barrier sites or vacant sites given they are not occupied.

Resource Management Act 1991

The Resource Management Act 1991 [37] provides that Councils have a duty to avoid, remedy or mitigate adverse effects on the environment. There are limited provisions under this Act that could prove useful for a Council dealing with barrier or vacant sites.

The Council can serve an enforcement order or abatement notice asking a person to cease doing something that is likely to be noxious, dangerous, offensive or objectionable in that it has or is likely to have an adverse effect on the environment (Resource Management Act, s.17). It can also serve the same to require a person to do something to avoid, remedy or mitigate an adverse effect on the environment caused by that person. The question is whether a barrier site would meet this test? A state of disrepair, litter, dust, storm water run-off and vermin are problems that arise and could potentially have an adverse effect on the environment; however, the threshold to meet is high and may not be met by the mere existence of barrier sites. To obtain an enforcement order the Council will be required to apply to the court (s.314). If the effects are difficult to prove, the Council is unlikely to want to expend money and resources on action that may not be successful.

Public Works Act 1981 and Local Government Act 2002

The government and Councils have powers under these Acts [38, 39] to compulsorily acquire land but it must be for the purpose of, or in connection with, a public work. The issue for the Council is that barrier sites may not meet the requirements

⁹ A responsible person is someone who has the power to act under a state of emergency under the Civil Defence Emergency Management Act 2002 such as the Controller.

¹⁰ The Greater Christchurch Regeneration Amendment Act 2020 brought forward the disestablishment of the Crown-Council agency Regenerate to support and speed up the move to local leadership.

¹¹ The land or building owner could also be convicted of an offence under this Act; s30.

¹² If the Council incurs expense in abating the nuisance this becomes a debt due to the Council and until it is paid it is deemed to be a charge on the land; s33(8).

to enable them to be purchased, and the Council is unlikely to want to purchase them nor have the resources to do so.

Council Bylaws, Plans and Policies

The Council has limited powers under bylaws, plans and policies to take action in relation to barrier sites and vacant sections.

The Christchurch City Council Public Places Bylaw 2018 and the Christchurch City Council Traffic and Parking Bylaw 2017 allow the Council to take action should buildings or parts of them obstruct public places. There is also the Christchurch City Council Cleanfill and Waste Handling Operations Bylaw 2015 which prohibits land being used for waste operations unless the owner is licenced.

If the quality of air or water is being compromised by barrier sites through dust, storm water run-off, litter or other pollutant

the Environment Canterbury Regional Council's Air and Water Plans may apply. If a barrier site is creating high levels of pollution the Regional Council can impose penalties on the owner.

Council powers to take action on barrier or vacant sites are contained in a range of legislation, that is not fit for this purpose. Taking action involves meeting difficult definitions and tests under legislation and/or taking court proceedings. This leaves the Council exposed to high costs that may not be affordable or justifiable. The approach of the Council in trying to work with property owners to resolve this issue is therefore understandable. Specific legislative tools are needed to provide Councils with the powers they need to ensure action is taken on barrier sites to progress the regeneration of the city after a disaster.

Table 2: Statutory tools favoured by the Council.

Legislation/bylaw	Relevant section/clause	Form of nuisance/interference
Building Act 2004	s.123: Building can be insanitary if; hazard to health, in state of disrepair, lacks moisture penetration protection.	Derelict buildings; partial building/site clearance
Health Act 1956	s.29: Nuisance – accumulation or deposit which is offence or injurious to health, and/or harbours rats or other vermin, and premises which are offensive (health related) s.33: Council may issue proceedings in the District Court for nuisance to be abated. Court may allow Council to recover costs of doing work if owner/occupier fails to abate nuisance and Court orders Council to carry out work.	Derelict buildings; Temporary gravel carparks
Local Government Act 1974	s.459; Power to require work be done on private land for storm water drainage. Power to complete work, if not done, and costs recoverable.	Temporary gravel carparks
Christchurch City Council Public Places Bylaw 2008	- Clause 7: Requires permits for obstructions in public places - Allows for fees to be charged for permits - To be read in conjunction with Council 's Policy on Structures on Roads 2010	Public realm encroachment
Christchurch City Council Traffic and Parking Bylaw 2008	- Clause 20: Permits required for use of legal road - Enables charging for use of public roads and footpaths when containers/skips/fences and hoardings need to occupy public roads and footpaths - Requires TMP to be submitted with application for permit - s357 of LGA: Offence to put something on the road or allow it to remain without Council authorisation. Offence to allow water for mud to flow from land on to a road. In a successful prosecution, defendant may be ordered to pay Council's costs in removing materials. To be read in conjunction with Council's Policy on Structures on Roads 2010	Public realm encroachment
Christchurch City Council (Operative) District Plan	Transport - Rule: 7.4.2.3: RD6: (Restricted Discretionary): Temporary car parking activity – resource consent required, expires 30 April 2018. Transport - Rule: 7.4.2.3: RD8 (Restricted Discretionary): Commercial car parking lots. Transport - Rule: 7.4.2.5 (Non complying if activity doesn't comply with 7.4.3.1.d) Transport: Rule: 7.4.3.10 - High traffic generator Transport: Rule: 7.4.4.8 - Illumination of parking areas Transport: Rule: 7.4.4.9 - Surface of parking areas. 17: Duty to landowners to avoid, remedy or mitigate adverse effects arising from activity. <i>High threshold/test.</i>	Temporary gravel carparks

Table adapted from Attachment 2 in the 25 May 2017 Council Meeting agenda [40]

Cordon, Blueprint and Anchor Projects

The state of emergency declared on 22 February 2011, resulted in the cordoning of the CBD for the next 28 months (the boundaries were gradually moved, see Fig 2). Several authors have been critical of the prolonged cordon which is thought to have been detrimental to the recovery of the CBD [for example see 12, 13, 14]. While the cordon was appropriate in the immediate aftermath of the February earthquakes and until the peak of demolitions in the first 12 months, the risk could be managed effectively by restricting access to individual buildings (e.g. fencing) [14]. This lack of access and uncertainty around the cordon boundaries and its removal, encouraged investors and developers to accommodate replaced CBD businesses by building new spaces outside of the central city. Enticing tenants lost to the periphery back to the CBD is limited since lease terms often are in the range of 5-10 years and higher rentals and relocation costs means fewer tenants will be inclined to move back into the city [13].

The much anticipated rebuild blueprint for the quake-damaged Christchurch city centre was revealed to the public on 31 July 2012. The plan included 12 major anchor projects to be delivered by 2017. Over the years some projects have been scaled back (e.g. South Frame) while some have been considerably delayed (e.g. Canterbury multi-use arena). The intention of the anchors was to attract new residents, visitors, businesses, and private market-led redevelopment. However, protracted decision-making over financing of the anchor projects between the Council and the central government, lack of planning details and ambitious agglomeration of land in the CBD has taken ‘the steam’ out of the rebuild [41]. Concerns around prolonged delays in turn are putting breaks on the ability of the city centre to attract private investments in residential and commercial construction. Timely delivery of the anchor projects is crucial in the full regeneration of the CBD as this sends a signal of commitment of the local and central governments, providing much needed certainty and confidence to the public. Having a complete picture of the CBD post-rebuild, helps define plans for private developments to go around the anchor projects. Remaining barrier sites where no active work is currently being done (i.e. plans confirmed but no work started and intentions unknown) tend to be clustered around future anchor projects such as the East Frame, Canterbury Multi-Use Arena (CMUA) and South Frame (Figure 2).

Market Environment

Using Statistics NZ predefined geographic areas, we collected population and business statistics for analysis in this section. Statistical area 2 (SA2) geography in urbanised areas usually has a population of 2,000-4,000 residents and is typically used to show socio-economic profiles of the communities/neighbourhoods [42]. Christchurch’s central area is made up of five such statistical areas (SA2), namely Christchurch Central, Central-West, Central-East, Central-North and Central-South. Their boundaries are depicted in Figure 5.

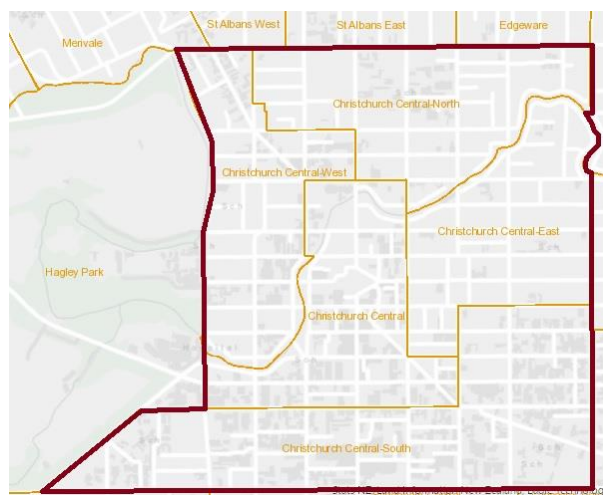


Figure 5: Boundaries of central city’s Statistical Areas 2 (SA2).

Inner-City Living

The council has an ambitious goal of increasing inner-city population from 8,000 (Census 2018) to 20,000 by 2028 [43]. Project 8011 is the Council’s initiative to create a CBD that is compelling to ‘live, work and play’ for thousands of people. The central city is on the back foot when it comes to competing against the attraction of the suburbs on the fringe of the CBD. The CBD is relatively small in comparison with other main urban areas, which means that within a short commute of the CBD, potential buyers are spoilt for choice with houses priced about 20% less, offering better parking and access to popular schools. According to a recent REINZ report [44], buyers attracted to inner-city living are making a lifestyle choice more than anything else and the location is more popular among singles and young couples with preferences for one- or two-bedroom units. In addition to higher land values in the CBD, developers are factoring in more strict building requirements pertaining to central city developments into the cost of construction¹³, making housing more expensive. In addition to the barrier sites, as of 2020 around 20% of the land (68.3 ha) within the four avenues remains vacant [45]. Much of that land (39 ha) is either unused or occupied by gravel car parks which are notoriously poorly maintained, source of dust and contaminated stormwater runoff, and are seen as an eyesore and a sign of a slow recovery. The combination of negative externalities created by the buildings on the barrier sites and empty land put off some of prospective homebuyers [5,46].

Unlike Auckland and Wellington where inner-city living has quadrupled and tripled respectively between 1991 and 2001, during the same period Christchurch’s apartment dwellers increased by only 23% [47]. During the 2006 Census, 12,960 people resided in the central city, representing about 3.7% of the total population (Figure 6). After the earthquakes and as the city began to rebuild, the size of the population fell below 6000 (2013). In the latest 2018 Census, this number sits at around 8000 which falls short of population size necessary to support residential developments planned for the city. The biggest loss of population was from Christchurch Central SA2, the area with the highest damage.

¹³ For example, Canterbury Earthquake Royal Commission made specific recommendations in respect to ground improvement and foundations design in the CBD (Royal Commission, 2012)

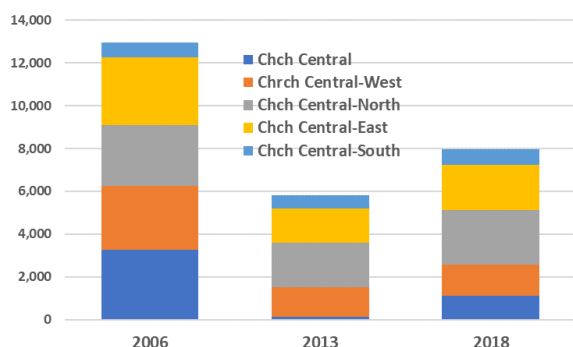


Figure 6: Inner-city population counts (Source: Stats NZ).

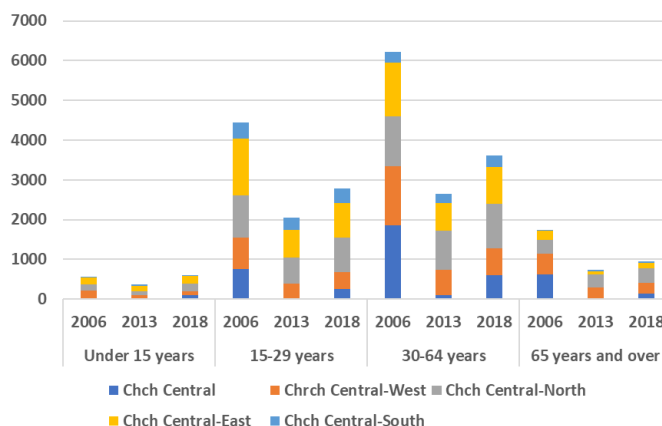


Figure 7: Inner-city population by age group.

Breaking down the population statistics into specific age groups (Figure 7), we can see that central city is popular among working age population. School-age children is the least represented group within the CBD, reflecting the lack of education and recreation facilities favoured by families. Across all age groups, there are signs that population is returning to the city centre but sitting below pre-earthquake levels.

Council commissioned research into the attraction of inner city living [48], identifies that the population targets set by the Council appear unrealistic. Developers operating in the market expressed concerns that the 2028 timeframe was too compressed for the current level of demand. Some suggestions included greater effort in the delivery of major economic initiatives aimed at attracting businesses and people; for example, delivery of the Multi-Use Arena and Metro Sports Facility, both would boost hospitality offerings and provide convenient recreation options for residents. In addition, the commissioned report suggests that the Council should consider placing restraints on the residential developments outside of the city centre and offering greater incentives for inner-city building. Nevertheless, since the start of the COVID-19 pandemic the central city has seen a renewed interest from investors and households relocating to Christchurch seeking more affordable housing options [49].

Working in the CBD

Auckland, Wellington, and Christchurch are New Zealand's major business and government hubs attracting large firms and public service departments to the CBD and as a result these cities contain significant amount of commercial building stock (office and retail). To add context to the analysis, we compared the size of the central areas of these cities (Table 3 and Figure 8). One of the obvious trends is the increased demand for office space in Auckland and, less so, Wellington, while in Christchurch available office stock is lagging behind the pre-earthquake levels.

Table 3: 2020 survey of commercial building stock.

CBD	Building stock (000's m2)
Auckland	1,200
Wellington	1,150
Christchurch	370

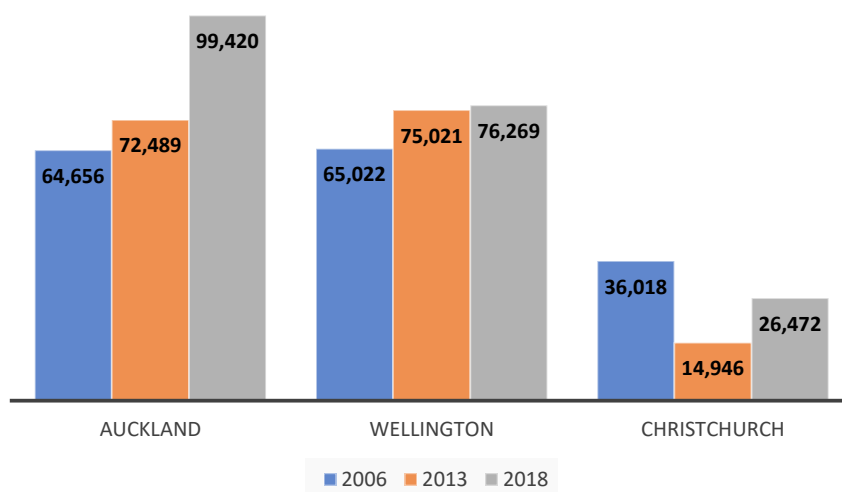


Figure 8: Number of people with a workplace address in Auckland, Wellington, and Christchurch CBDs, 2006, 2013, and 2018 Censuses.

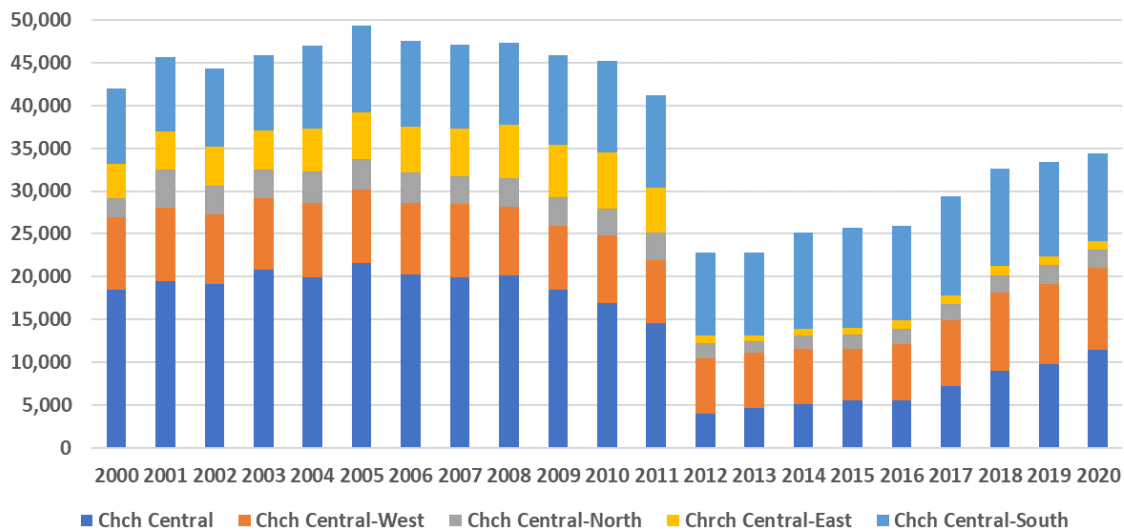


Figure 9: Central city workers by SA 2, 2000 – 2020. [54]

The impact of the 2008-09 global financial crisis, combined with the 2011 earthquake, significantly altered the business landscape of the central city's economy. Just after the earthquake, the CBD lost all of the additional workers it gained in the previous decade contracting to pre-2000 level (Figure 9). As the CBD began to re-open, the size of the labour market in the city centre was hovering around 22,000 in 2012, a decrease from the peak of 49,400 in 2005. With their premises inaccessible due to damage or cordon, central city businesses dispersed into the suburbs [50]. This pattern of dispersion is evident in the latest 2018 Census, that shows a new trend of falling proportion of employed people commuting into Christchurch CBD from outlying suburbs and districts. For example, nearly half of working population from the neighbouring districts of Selwyn and Waimakariri worked in the CBD in 2013, this proportion fell to 38% and 32% respectively [51]. In other words, like housing, commercial property market in the CBD is forced to compete with suburbs in a post-earthquake environment.

Table 4: CBD office construction.

Year	New stock added (m ²)
2014	106,901
2015	142,507
2016	94,485
2017	32,637
2018	9,542
2019	1,452
2020	0

Source: [55]

Early in the rebuild, property developers re-entered the CBD, helped by insurance settlements from damaged buildings, starting on the fringes of the centre as cordons progressively moved back. First developments went up along the riverfront and Victoria Street. Building in these areas are now experiencing the highest level of demand. Replacement of the commercial building stock seemed like an impossible task, with the city centre being a near blank canvas. The pace of reconstruction was unprecedented – with the damaged and

demolished stock accumulated over a century replaced in a span of a decade (Table 4). With developments completed over the last 10 years, the stock is now at 85% of the 2010 level (Figure 10), but now appears to have plateaued. One of the factors that contributed to the fast recovery of the building stock is the historical ownership of commercial property within the CBD being heavily skewed towards locally-based high net worth investors which collectively owned over 80% of buildings and two thirds of the total stock [52]. Earlier research suggests that these investors had strong place attachment to the city and that this emotional attachment played a significant role in deciding to rebuild as opposed to taking insurance payouts to other markets in the country or overseas [53].

It is important to keep in mind that any recovery in the commercial market is not going to be fast. To put the speed of current recovery in prospective, leading up to the earthquakes the local market experienced only moderate growth from the 1990's. At that time, vacancy rates reached 30% (Figure 11). Between 1990 and 2007 the amount of available office space remained relatively flat with the only significant new building added to the market was a building at 250 Oxford Terrace. By then vacancies had reduced but this was achieved by the removal of older office stock through conversions to hotels. Office rents achieved in 1989 for premium grade office spaces were at \$225 per sqm, by 2010 net rents only increased to \$270 per sqm, which equates to an annual growth rate of less than 1% [52]. With very few new offices added to the supply, the CBD office market was dominated by B and C grade buildings (65% of the total stock). Pre-earthquakes, rental rates ranged between 170-200 \$/m² and 220-240\$/m² in C and B grade buildings respectively [52]. New structural design requirements introduced after the earthquakes and the added risk margin of the uncertain outlook for the central city rebuild, meant that financial viability of new developments required rental income at \$460 per sqm, on par with premium rents achieved in Auckland at that time [52]. While businesses expressed their desire to return to the CBD, the pre- and post-earthquake rent gap was out of reach for the vast majority of tenants. The CBD, however, is beginning to look more attractive to tenants who relocated to the suburbs after the earthquakes. Since the post-earthquake high of \$450 per sqm, CBD rental rates have settled at \$320 per sqm (Figure 12). As post-earthquake leases approach expiry, tenants in suburban locations would possibly be considering a shift back into the CBD [13, 42]. Those tenants would have leased properties in the suburbs in 2012/13 at rent levels not too dissimilar to the rents charged in central office

precincts presently (Figure 12). Another driver stimulating additional demand for offices in the CBD is the expiring June 2021 deadline that allowed displaced businesses to take up temporary accommodation in the suburbs after the earthquake established by the Canterbury Earthquake Order. At the time the council issued around 1,000 permits for temporary accommodation that would otherwise not comply with the District Plan¹⁴. The council estimates that 148 permits are still in use and if businesses continue to operate past the deadline, the council can consider enforcement action. [56].

While the current available stock is absorbed, abundant suburban office space will continue to keep CBD rent at moderate levels, meaning that rents are unlikely to increase significantly. Since development projects are assessed on their

ability to generate favourable financial returns, as discussed earlier, high construction costs coupled with high land values demand rents higher than what is currently achieved in the market. In addition, the Reserve Bank's quantitative easing aimed at stimulating the economy during COVID-19, including the lowering and commitment to keep for at least 12 months the Official Cash Rate at 0.25% and implementation of other monetary policies aimed at bringing down long-term interest rates[57], resulted in low property holding costs for owners (i.e. low/affordable lending interest rates) removing pressure to redevelop barrier sites. Therefore, the underlying focus on population and economic growth that in turn increases demand for retail, offices and people will be instrumental in creating conditions for property owners to contribute to the regeneration of the CBD.

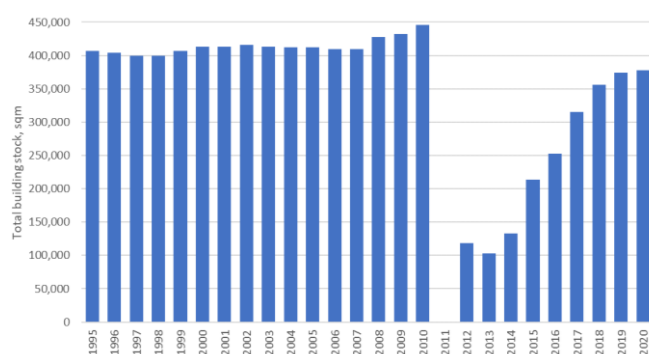


Figure 10: Inventory of Christchurch CBD office stock. (No data available for 2011) [55]

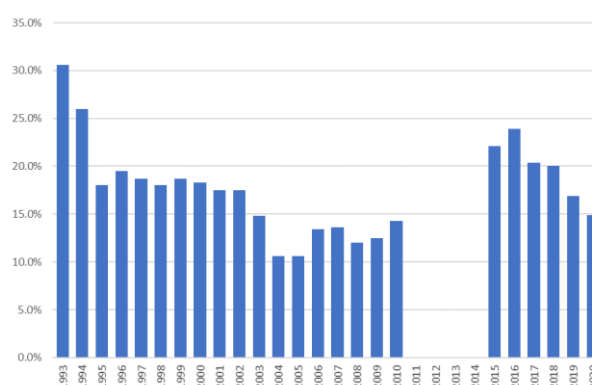


Figure 11: Survey of office vacancies in Christchurch CBD [55].

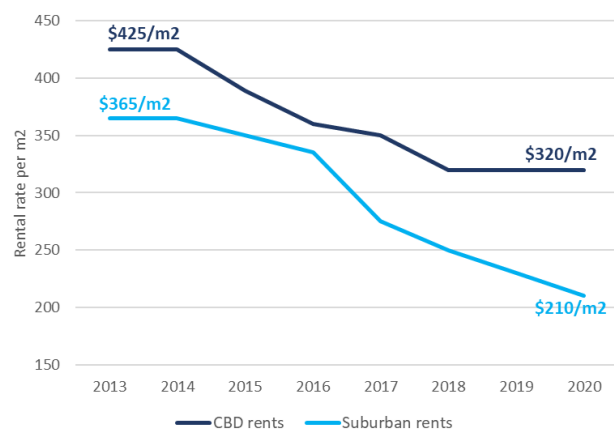


Figure 12: Comparison of suburban and CBD office rents for A-grade buildings [55].

Resilient CBD

It has been acknowledged before, that unlike other developed markets, New Zealand has a wide insurance penetration which enabled much of the reconstruction [59]. This is in contrast to a similarly damaging 1994 Northridge earthquake where the bulk of building repair was financed through the city-administered

housing and commercial loan programmes which eventually had to be repaid by the owners [60]. The scale of the Canterbury pay-out and reassessment of risks have seen new insurance policy premiums post-earthquakes increase up to 300% [61]. Changes in the affordability of insurance coupled with the societal expectations of re-occupiable buildings (i.e. avoiding long-term cordons and minimising large scale property damage) are driving the demand for resilient buildings. Bruneau & MacRae [61] show that the Christchurch experience is making tenants rethink business continuity and the advantages that certain structural systems offer in terms of limiting disturbance to their operations. This has led to a significant uptake of low-damage seismic design in the central city rebuild. Similarly, in the US, there are initiatives to improve the performance of buildings in terms of re-occupancy and functional recovery [62]. Central city rebuild forced modernisation on the majority of commercial buildings in Christchurch CBD. The CBD now outperforms Auckland and Wellington in the ratio of high-quality accommodation having over 60% of A-grade office space vs 47% for Auckland and 29% for Wellington [63]. The CBD provides a natural laboratory to test the benefits of low-damage solutions in an event of another major earthquake (as some experts say it is a matter of when, not if). Ability to return to the CBD and repair damaged buildings minimises economic and social disruptions, retains character of the area and sense of place, and reduces the recovery time and cost of demolition and reconstruction (in other words, limiting the scale of any future barrier sites).

¹⁴ Following the 2011 earthquakes, the Council granted 950 businesses temporary accommodation permits to carry out activities in areas they would not normally be allowed to operate under the district plan. For example, a business relocating to a residential

dwelling may find that their premises were not appropriately zoned for their activity [58].

CONCLUSIONS

The Canterbury earthquakes caused tremendous disruption to the region causing human suffering and bringing widespread physical damage. The fabric of the central city changed following the loss of nearly 70% of the buildings that were damaged or destroyed in the earthquakes. Although we cannot diminish the tragedy of the 185 lives lost in the February 2011 event, most of the building occupants were able to evacuate safely, thus meeting the overarching life-safety performance objective of the current building code. Although the buildings served their purpose of protecting lives, many were deemed unsafe to re-occupy. A significant number of heritage buildings were also lost which has dramatically changed the city's heritage landscape. Buildings left unrepaired and abandoned are a blemish on the urban landscape leading to longer term social-economic issues and slow regeneration.

From the analysis of the delays in the regeneration of Christchurch's central area, it is apparent that much of the private-led rebuild of the Barrier sites has been in response to increased demand in the market and financial feasibility as opposed to being the result of the Council's enforcement actions. Property owners who are waiting for the right market conditions to remediate their sites require certainty in the greater rebuild programme defined in the blueprint and depend on the timely delivery of the public sector anchor projects. While the Council has a cost-sharing agreement with the Crown on the delivery of the anchor projects, the Council's leadership and clearly defined timeframes are important signals to investors and the public in ensuring the key assets for the city are on track. The completion of these projects will determine the speed at which the city is fully regenerated [5, 64]. The distraction of the barrier sites, undoubtedly, takes away council's focus and resources from the anchor projects. The majority of barrier site owners have completed or are progressing action on the rebuild; however, a minority of owners continue to delay progress on their sites. As the city moves towards full recovery, abandoned buildings stick out as a sign of reversing fortunes. Therefore, the Council should prioritise resources to ensure that the negative impacts of the neglected buildings are contained. In addition, while the pandemic is driving a renewed interest among investors and homebuyers, the long-term trends in the residential and commercial markets show slower speed of recovery due to competition from the more affordable suburbs and rapidly increasing construction costs.

Despite the need to continue with progress towards regeneration of the city, this research has demonstrated that the Council is limited in its legal powers to deal with barrier sites. Although the Building Act should govern this problem it does not do so adequately. The definition of "dangerous building" presumes it is occupied. If unoccupied, then it must pose a danger to neighbouring properties. It is only if there is the threat of immediate danger that the Council can take action itself to demolish the building or make it safe. If there is no immediate danger, the Council is left to work with the owner and an uncooperative owner means the only way a Council can take action on the building is to apply for a court order. Furthermore, not all abandoned buildings meet the definition of "dangerous" which means the Council cannot act. The other option is for the Council to examine whether the building is insanitary under the Act. If it is offensive because it is in a state of disrepair, this may mean the Council can take action as it would for a dangerous building. However, whether the abandoned buildings meet the test of being "offensive" is unclear and any testing of this provision is likely to be expensive. If the building comes within the definition of an "earthquake-prone building" then the Council can work with the owner to remediate or demolish the building. The Building Act provides the Council

with some powers to act on barrier sites, but they are limited in that they apply to buildings that have the potential to cause harm to people or neighbouring property and therefore do not cover all abandoned buildings post-earthquake.

The other various pieces of legislation that could potentially assist the Council to deal with abandoned buildings and barrier sites either do not apply or have tests with high thresholds that are difficult to meet or require court proceedings which limits their use. Any enforcement action is likely to require Court proceedings which are expensive and resource intensive. Moreover, not all costs of enforcement action can be recovered from the property owner. These are clear reasons why the Council has taken the approach of working with the owners of barrier sites to achieve its desired outcomes. The extensive powers in emergency legislation seem to provide the solution for dealing with barrier sites. It is clear that if these powers are not used for this purpose during the emergency and transition period, the opportunity is lost because the problem does not fit squarely within the parameters of the ordinary legislation. While emergency legislation, such as the Canterbury Earthquakes Recovery Act 2011 and Greater Christchurch Regeneration Act 2016 (now repealed), can help address short- and mid-term recovery, it is clear that specific long-term legislative tools combined with a comprehensive survey of the local governments' recovery management capabilities [66] are needed to support the local councils and give them the necessary power needed to take action against owners of barrier sites who refuse to cooperate, as they works to regenerate the city.

The review also demonstrated that institutional powers alone do not force action of barrier sites. Development projects require the right set of market conditions to test their feasibility. Unfortunately, valuable rebuild opportunities were missed early on while the cordon was in place. In hindsight, the Crown should have exercised its CER Act powers to freeze or limit construction activity in the commercial sector outside of the CBD. Unconstrained by the blueprint, developers on the periphery of the CBD and nearby suburbs met the newly created demand from the displaced central city's prime tenants (financial services, law firms etc). This has set back demand for the CBD premisses by at least 5-10 years, i.e., a full lease cycle. Implementation of the blueprint was criticised for uncertainties it created due to lack of details and progress on the public sector anchor projects which resulted in developers delaying their rebuild or taking their investments elsewhere. Therefore, private sector-led regeneration of the CBD can happen "naturally", if the government (central and local) can identify factors that may hinder the recovery at the time when plans are put in place.

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REFERENCES

- 1 Kim JJ, Elwood KJ, Marquis F and Chang SE (2017). "Factors influencing post-earthquake decisions on buildings in Christchurch". *Earthquake Spectra*, 33(2): 623-640. <https://doi.org/10.1193/072516EQS120M>
- 2 Office of the Prime Minister (2012). *Christchurch CBD Rebuild Blueprint Unveiled*. Press Release, 31 July 2012. <https://www.beehive.govt.nz/release/christchurch-cbd-rebuild-blueprint-unveiled>

- 3 Chang SE, Taylor JE, Elwood KJ, Seville E, Brunsdon D and Gartner M (2014). "Urban disaster recovery in Christchurch: The Central Business District cordon and other critical decisions". *Earthquake Spectra*, **30**(1): 513-532. <https://doi.org/10.1193/022413EQS050M>
- 4 Radio New Zealand (2021). *Christchurch businesses returning to city centre, Real Estate Company says*. 2 February 2021. <https://www.rnz.co.nz/news/business/435626/christchurch-businesses-returning-to-city-centre-real-estate-company-says>
- 5 Walton S (2021). *Council proposes targeted rate for owners of vacant land in central Christchurch*. The Press, 3 March 2021. <https://www.stuff.co.nz/the-press/business/124372755/council-proposes-targeted-rate-for-owners-of-vacant-land-in-central-christchurch>
- 6 Gu D, Newman G, Kim JH, Park Y and Lee J (2019). "Neighborhood decline and mixed land uses: Mitigating housing abandonment in shrinking cities". *Land Use Policy*, **83**: 505-511. <https://doi.org/10.1016/j.landusepol.2019.02.033>
- 7 Christchurch City Council (2017). *Christchurch City Council Meeting Agenda Item 16- Central City Regeneration: Tackling Barrier Sites*. 27 May 2017. https://christchurch.infocouncil.biz/Open/2017/05/CNCL_20170525_AGN_1288_AT_WEB.htm
- 8 Platt S and So E (2017). "Speed or deliberation: A comparison of post-disaster recovery in Japan, Turkey, and Chile". *Disasters*, **41**(4): 696-727. <https://doi.org/10.1111/disa.12219>
- 9 Olson RS, Olson RA and Gawronski VT (1998). "Night and day: Mitigation policymaking in Oakland, California, before and after the Loma Prieta earthquake". *International Journal of Mass Emergencies and Disasters*, **16**(2): 145-179.
- 10 Christchurch City Council. *Barrier Sites*. Available at: <https://ccc.govt.nz/the-council/future-projects/barrier-sites>.
- 11 Christchurch City Council Newline (2017). *Council releases list of central city barrier sites*. 27 May 2017. <https://newline.ccc.govt.nz/news/story/council-releases-list-of-central-city-barrier-sites>
- 12 Amore A and Hall M (2016). "Regeneration is the focus now: Anchor projects and delivering of a new CBD for Christchurch". (pp. 181-199) in M Hall, S Malinen, R Vosslander and R Wordsworth (Eds), *Business and post-disaster management: Business, organisational and consumer resilience and the Christchurch earthquakes*. Routledge.
- 13 Sheppard D (2014). "To plan or not to plan". (pp. 60-66) in B Bennett, J Dann, E Johnson and R Reynolds (Eds.), *Once in a lifetime: City-building after disaster in Christchurch*. Freerange Press.
- 14 Smith J (2014). "Christchurch – A state of emergency". (pp. 145-149) in B Bennett, J Dann, E Johnson and R Reynolds (Eds.), *Once in a lifetime: City-building after disaster in Christchurch*. Freerange Press.
- 15 Moon L, Dizhur D, Senaldi I, Derakhshan H, Griffith M, Magenes G and Ingham J (2014). "The demise of the URM building stock in Christchurch during the 2010–2011 Canterbury Earthquake Sequence". *Earthquake Spectra*, **30**(1): 253–276. <https://doi.org/10.1193/022113EQS044M>
- 16 Gates C (2021). *Breeding colony of rare gulls in central Christchurch ruins is being demolished*. <https://www.stuff.co.nz/the-press/news/125738537/breeding-colony-for-rare-gulls-in-central-christchurch-ruins-is-being-demolished>
- 17 Christchurch City Council (2020). *Christchurch City Council Meeting Agenda Item 27- Old Municipal Chambers: Final approval to proceed and lease*. 10 December 2020. https://christchurch.infocouncil.biz/Open/2020/12/CNCL_20201210_AGN_4052_AT_WEB.htm
- 18 Christchurch City Council Newline (2021). *Restoration work starting on Old Municipal Chambers*. 29 April 2021. <https://www.newline.ccc.govt.nz/news/story/restoration-work-starting-on-old-municipal-chambers>
- 19 Steeman M (2020). *City's most-tagged building for sale*. The Press, July 22.
- 20 McDonald L (2021). *Fed-up neighbour buys central Christchurch 'eyesore' bringing down the block*. The Press, 2 February 2021. <https://www.stuff.co.nz/business/property/124082015/fed-up-neighbour-buys-central-christchurch-eyesore-bringing-down-the-block>
- 21 Christchurch Earthquake Recovery Authority (2012). *Central City Recovery Plan*. Canterbury Earthquake Recovery Authority (CERA). <https://ceraarchive.dpmc.govt.nz/sites/default/files/Documents/christchurch-central-recovery-plan-march-2014.pdf>
- 22 Christchurch City Council Newline (2020). *Regenerate Christchurch winding down*. 19 June 2020. <https://newline.ccc.govt.nz/news/story/regenerate-christchurch-winding-down>
- 23 Smith MC (2019). "Towards a resilient city: Wellington City Council pioneers a new approach to URM buildings to promote public safety". *Pacific Conference on Earthquake Engineering and Annual NZSEE Conference*, 4-6 April, Auckland. <http://db.nzsee.org.nz/2019/Oral/12C.03%20Smith.pdf>
- 24 Office of the Minister for Canterbury Earthquake Recovery (2011). *Cabinet Paper 1: Canterbury Earthquake Recovery: Proposed Governance Arrangements*. Memorandum to Cabinet. <https://www.treasury.govt.nz/sites/default/files/2017-11/b11-2081711.pdf>
- 25 Office of Auditor General (2017). *Canterbury Earthquake Recovery Authority: Assessing its effectiveness and efficiency*. Wellington Office of the Auditor General. <https://oag.parliament.nz/2017/cera/docs/cera.pdf>
- 26 Walton S (2021). *Why hundreds of heritage buildings were demolished in Christchurch post-quake?* The Press, 22 February 2021. <https://www.stuff.co.nz/the-press/business/the-rebuild/124157655/why-hundreds-of-heritage-buildings-were-demolished-in-christchurch-postquake>
- 27 Amore A (2016). "The governance of built heritage in the post-earthquake Christchurch CBD". in *Business and Post Disaster Management: Business, Organisational and Consumer Resilience and the Christchurch Earthquakes*. Routledge.
- 28 Canterbury Earthquake Recovery Act (2011). <https://www.legislation.govt.nz/act/public/2011/0012/lates/v/DLM3653522.html>
- 29 Halliday J (2014). "Losing our collective memory: The importance of preserving heritage architecture". (pp. 210-216) in B Bennett, J Dann, E Johnson and R Reynolds (Eds.), *Once in a lifetime: City-building after disaster in Christchurch*. Freerange Press.
- 30 Building Act 2004. <https://legislation.govt.nz/act/public/2004/0072/latest/DLM306036.html>

- 31 MBIE (2017). “EPB methodology: The methodology to identify earthquake-prone buildings”. Ministry of Business, Innovation and Employment, Wellington.
- 32 MBIE (2018). “Managing earthquake-prone buildings: How the system for managing earthquake-prone buildings works”. <https://www.building.govt.nz/managing-buildings/managing-earthquake-prone-buildings/how-the-system-works/>
- 33 Nuth M, Brown C, Brunsdon D, Hopkins J, Hudson-Doyle E and Ball R (2021). “Managing earthquake-prone council buildings: Balancing life safety risks and community costs”. BRANZ Study Report SR463. BRANZ Ltd, Judgeford, New Zealand.
- 34 Greater Christchurch Regeneration Act 2016. <https://www.legislation.govt.nz/act/public/2016/0014/lates/DLM6579202.html>
- 35 Health Act 1956. <https://www.legislation.govt.nz/act/public/1956/0065/lates/DLM305840.html>
- 36 Litter Act 1979. <https://www.legislation.govt.nz/act/public/1979/0041/lates/DLM33082.html>
- 37 Resource Management Act 1991. <https://www.legislation.govt.nz/act/public/1991/0069/lates/DLM234810.html>
- 38 Public Works Act 1981. <https://www.legislation.govt.nz/act/public/1981/0035/lates/DLM45427.html>
- 39 Local Government Act 2002. <https://www.legislation.govt.nz/act/public/2002/0084/lates/DLM170873.html>
- 40 Christchurch City Council (2017). *Meeting of the Christchurch City Council: Agenda*. 25 May 2017. https://christchurch.infocouncil.biz/Open/2017/05/CNCL_20170525_AGN_1288_AT_WEB.htm
- 41 McCrone J (2014). “Great plan but where are the investors?”. (pp. 101-108) in B Bennett, J Dann, E Johnson and R Reynolds (Eds.), *Once in a lifetime: City-building after disaster in Christchurch*. Freerange Press.
- 42 Stats NZ (2017). *Statistical standard for geographic areas 2018*. www.stats.govt.nz
- 43 Christchurch City Council. *Project 8011*. <https://ccc.govt.nz/culture-and-community/central-city-christchurch/live-here/residential-programme-8011>
- 44 Real Estate Institute of New Zealand (2019). “Christchurch City Council Research Report”. <https://ccc.govt.nz/assets/Documents/Culture-Community/Central-City/REINZ-Real-estate-market-Christchurch-Central-City.-December-2019.pdf>
- 45 Christchurch City Council. *Vacant Sites*. <https://ccc.govt.nz/culture-and-community/central-city-christchurch/develop-here/vacant-sites/>
- 46 McDonald L (2021). *Crackdown on shabby Christchurch car parks spurs operators into action*. The Press, 4 August 2021. <https://www.stuff.co.nz/the-press/news/125919490/crackdown-on-shabby-christchurch-car-parks-spurs-operators-into-action>
- 47 Stats NZ (2005). *Downtown Dwellers 2005: New Zealand’s CBD Residents*. <https://statsnz.contentdm.oclc.org/digital/collection/p20045coll1/id/1547>
- 48 Research First (2020). “Central City Report”. <https://ccc.govt.nz/assets/Documents/The-Council/Plans-Strategies-Policies-Bylaws/Plans/central-city/Research-First.-Central-City-dnd-research.-June-2020-report.PDF>
- 49 McDonald L (2021). *High demand sees Crown offer land in Christchurch’s east frame to more developers*. The Press, 6 October 2021. <https://www.stuff.co.nz/the-press/news/126597780/high-demand-sees-crown-offer-land-in-christchurchs-east-frame-to-more-developers>
- 50 Bond S, Moricz Z and Wong C (2012). “The impacts of the Canterbury earthquakes on the commercial office market in Christchurch, New Zealand”. *Pacific Rim Property Research Journal*, 18(4): 389-405.
- 51 Stats NZ (2020). *Newly released census data shows Christchurch CBD bouncing back*. 25 June 2020. <https://www.stats.govt.nz/news/newly-released-census-data-shows-christchurch-cbd-bouncing-back>
- 52 Ernest & Young Transaction Advisory Services [EYTAS]. (2012). “CERA Christchurch central city commercial property market study – Part 2”. <https://ceraarchive.dpmc.govt.nz/documents/cera-christchurch-central-city-commercial-property-market-study>
- 53 Chukwudumogu IC, Levy D and Perkins H (2019). “The influence of sentiments on property owners in post-disaster rebuild: A case study of Christchurch, New Zealand”. *Property Management*, 37(2): 243-261. <https://doi.org/10.1108/PM-04-2018-0031>
- 54 Statistics NZ. *NZ.Stat Table viewer: Business demography tables - Geographic units by industry and statistical area*. <https://nzdotstat.stats.govt.nz/wbos/index.aspx>
- 55 Colliers NZ (2020). “Property Council NZ Christchurch Market Summit Presentation 2020”. <https://www.colliers.co.nz/en-nz/research/colliers-pcnz-christchurch-market-summit-presentation-2020>
- 56 Star News (2021). *Deadline looming for some Christchurch businesses to shift out of suburbs*. 24 March 2020. <https://www.odt.co.nz/star-news/star-christchurch/deadline-looming-some-christchurch-businesses-shift-out-suburbs>
- 57 Kengmana B (2021). “RAMPed up: RBNZ’s additional monetary policy toolkit”. *Reserve Bank of New Zealand Bulletin*, 84(1).
- 58 McCallum H (2021). *Popular cafe turned ‘community hub’ faces closure due to post-quake red tape*. The Press, 17 July 2021. <https://www.stuff.co.nz/the-press/business/125769741/popular-cafe-turned-community-hub-faces-closure-due-to-postquake-red-tape>
- 59 Marquis F, Kim JJ, Elwood KJ and Chang SE (2015). “Understanding post-earthquake decisions on multi-storey concrete buildings in Christchurch, New Zealand”. *Bulletin of Earthquake Engineering*, 15(2). <https://doi.org/10.1007/s10518-015-9772-8>
- 60 Olshansky RB, Johnson LA and Topping KC (2006). “Rebuilding communities following disaster: Lessons from Kobe and Los Angeles”. *Built Environment*, 32(4): 354-374.
- 61 Bruneau M and MacRae G (2017). “Reconstructing Christchurch: A Seismic Shift in Building Structural Systems”. The Quake Centre, University of Canterbury.
- 62 FEMA (2021). “Recommended options for improving the built environment for post-earthquake reoccupancy and functional recovery time. Special publication”. Federal Emergency Management Authority Report FEMA P-2090, National Institute of Science and Technology Report NIST SP-1254. <https://doi.org/10.6028/NIST.SP.1254>
- 63 Winstanley P (2019). “Christchurch office: An ‘A’ grade market revival”. <https://research.jllapsites.com/christchurch-office-grade-market-revival/>

- 64 Zaki A (2021). *Ten years after Christchurch's devastating quake 'anchor projects' yet to be completed*. Radio New Zealand, 21 February 2021.
<https://www.rnz.co.nz/news/national/436883/ten-years-after-christchurch-s-devastating-quake-anchor-projects-yet-to-be-completed>
- 65 Stevenson J, Vargo J, Seville E, Kachali H, McNaughton A and Powell F (2012). *"The recovery of Canterbury's organization: A comparative analysis of the 4 September 2010, 22 February and 13 June 2011 earthquakes"*. Resilient Organisations Research Report 2011/04.
https://ir.canterbury.ac.nz/bitstream/handle/10092/9819/12651099_ResOrgs%20Comparative%20Organisational%20Impact%20Report%20-V14.pdf?sequence=1&isAllowed=y
- 66 Johnson L (2014). "Developing a local recovery management framework: Report on the post-disaster strategies and approaches taken by three local governments in the US following major disasters". *International Journal of Mass Emergencies and Disasters*, 32(2): 242-274.