BEFORE INDEPENDENT HEARING COMMISSIONERS IN CHRISTCHURCH

TE MAHERE Ā-ROHE I TŪTOHUA MŌ TE TĀONE O ŌTAUTAHI

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of the hearing of submissions on Plan Change 14 (Housing and Business Choice) to the Christchurch District Plan

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STATEMENT OF PRIMARY EVIDENCE OF RUTH ALLEN ON BEHALF OF CHRISTCHURCH CITY COUNCIL

COMMERCIAL FEASIBILITY – HIGH DENSITY RESIDENTIAL DEVELOPMENT

Dated: 11 August 2023

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EXECUTIVE SUMMARY

1. My full name is **Ruth Allen**. I am the Principal Advisor, Urban Regeneration, at The Property Group Limited.

2. I have prepared this statement of evidence on behalf of the Christchurch City Council (the **Council**) to assist in the understanding of the feasibility of high density development as enabled by the proposed development controls in Plan Change 14 to the Christchurch District Plan (the **District Plan**; **PC14**).

3. My evidence outlines the results of modelling that has been undertaken to assess the impact of different height controls on the feasibility of a high density residential development in current market conditions in the following locations:

   (a) a potential development site located in the High Density Residential Zone, close to the City Centre within the proposed 32m height limit area;

   (b) sites located in the High Density Residential Zone located within St Albans, Burwood, Riccarton, Hornby and Papanui.

4. My evidence statement also outlines the results of modelling that has been undertaken to assess the feasibility of a high density residential development and commercial development on a vacant site in the city centre, at varying heights.

5. The findings of the feasibility modelling demonstrate that, despite the increases in density enabled through PC14 provisions, under current market conditions – a key aspect of which relates to recent significant increases in construction costs – it remains challenging for development of buildings above three storeys and up to twelve storeys to be financially feasible in the range of suburban centre locations explored.

6. In and around the city centre, however, where development can reach heights of 12 storeys and above under the proposed controls, the feasibility of high density residential development improves.

7. The analysis demonstrates that the feasibility of high density residential development in a given location generally increases as heights are increased and greater yields are achievable. This is because, as the height

of a building increases above 3 storeys, so too do construction and design costs per square metre of floor area. Buildings above 3 storeys have increased development costs associated with providing lift access, greater foundation requirements (i.e. base isolation), and fire safety requirements. In addition, design and engineering costs increase for larger buildings. To cover the increasing costs, greater yields are required from the site to generate a feasible development opportunity.

8. The analysis also demonstrates that the feasibility of high density residential development is dependent on location. Different locations across the city generate different price points and have differing land values.

9. Whilst there is currently limited sales evidence for apartments in Christchurch outside of the city centre, based on a review of recent market data, and in particular the sales of smaller dwelling typologies across the suburbs assessed, I consider that currently higher prices for apartments would likely be achieved in locations closer to the city centre.

10. In locations close to the city centre, the development of high density residential development is thus more feasible based on achieving higher price points for apartments than in the areas further away from the city.

11. As other large centres grow and potentially have better access to employment, public transport and amenity, higher prices for apartments may become achievable and the feasibility of high density residential development would improve.

INTRODUCTION

12. My evidence outlines the results of feasibility modelling undertaken to assess the outcome of different height controls on sites located within the City Centre Zone and the High Density Residential Zone, in various locations as indicated above.

13. The purpose of the modelling is to assist in understanding the impact of different height controls on the feasibility of high density development under proposed PC14.

14. In preparing this statement of evidence I have read relevant materials relating to PC14, including relevant aspects of the section 32 analysis and section 42A reports, and reviewed relevant submissions received.

15. I have carried out the following tasks:

(a) Reviewed and updated modelling undertaken by my team at The Property Group in 2022 to reflect recent Christchurch market sales data, the 2022 update to Council's Rating Land Values, and up-to-date Christchurch construction costs;

(b) Reviewed recent sales evidence to determine revenue assumptions for the modelling;

(c) Engaged with local commercial and residential leasing agents, quantity surveyors and valuers to ground truth the model inputs; and

(d) Undertaken site visits across all locations tested.

QUALIFICATIONS AND EXPERIENCE

16. I have the following qualifications and experience relevant to my evidence:

(a) I hold the following academic qualifications:

(i) Postgraduate Certification in Social Impact Assessment, Griffith University, Queensland, 2007;

(ii) Masters of Regional Resource Planning, Town Planning, University of Otago, Dunedin, 2003; and

(iii) Bachelor of Arts (Geography), University of Otago, Dunedin, 2001.

(b) I have 20 years' experience in the fields of urban planning, housing, population growth, and development feasibility. I specialise in planning for housing and urban regeneration at a precinct scale and the preparation and co-ordination of major urban planning studies. I have worked on a wide range of feasibility studies in both Australia and New Zealand.

(c) I have a depth of experience and expertise in urban planning and development capacity assessment, including feasibility assessment. My past appointments in this regard include:

(i) (Former) Urban Planner – GHD Group;

(ii) (Former) Planner – Waverley Council (Australia);

(iii) (Former) Senior Planner – New South Wales Department of Planning and Infrastructure;

(iv) (Former) Team Leader – Urban Renewal – New South Wales Department of Planning, Industry and Environment; and

(v) (Former) Urban Planning Specialist – Allen Planning Solutions Ltd.

(d) I am currently undertaking a feasibility analysis of the medium density provisions of the proposed Aokautere Plan Change in Palmerston North and am assisting a number of councils interrogate and understand their plan-enabled capacity for growth and housing needs, including the Far North District Council, Gore District Council, and the Manawatū District Council.

(e) I have a long history of consultancy work for both New Zealand and Australia-based clients. This has variously covered the preparation and co-ordination of major urban planning studies, research into development feasibility with a particular focus on housing and planning for growth. Selected recent relevant assignments include:

(i) Feasibility assessment of residential medium to high density development in the Whāngarei Centre, Whāngarei District Council 2021;

(ii) Residential capacity analysis for the precincts along the proposed Wellington Mass Rapid Transit Route, Let's Get Wellington Moving, 2020; and

(iii) Feasibility Assessment of the Medium Density Residential Zone, Porirua City Council, 2020.

CODE OF CONDUCT

17. While this is a Council hearing, I have read the Code of Conduct for Expert Witnesses (contained in the 2023 Practice Note) and agree to comply with it. Except where I state I rely on the evidence of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

SCOPE OF EVIDENCE

18. My statement of evidence addresses the following matters:

    (a) the feasibility of high density development in current market conditions, as modelled across specific sites within the City Centre Zone and High Density Residential Zone; and

    (b) the potential impact of increases in heights on feasibility.

19. I address each of these points in my evidence below.

20. My evidence does not address an analysis of feasible development capacity in Christchurch City or the impact of qualifying matters and varying ground conditions on feasible capacity. These issues are addressed in the evidence provided by John Scallan.

APPROACH TO ASSESSING FEASIBILITY

21. The feasibility modelling I refer to in this evidence is an update to the modelling undertaken by my team at the Property Group Limited in 2022 to support the preparation and drafting of PC14. The original report is titled "High Density Residential Feasibility Assessment" dated May 2022, and is Appendix 5 to Part 3 of the Section 32 report.

22. To support the preparation of this evidence, the modelling undertaken in 2022 has been updated to reflect:

    (a) a more comparative range of sites assessed across each area to allow comparisons to be drawn based on location;

    (b) up to date revenue assumptions based on a review of recent Christchurch market sales data;

    (c) the 2022 update to Council's Rating Land Values (including an analysis of recent sales to establish an average rate below rating land values the market is experiencing since the 2022 review was released);

    (d) up-to-date Christchurch construction costs (with up-to-date construction rates for high density residential development provided by Maltby's Limited quantity surveyors, attached to this evidence as **Appendix 1**).

23. In addition, further modelling has been undertaken to assess a site within the City Centre and to test a potential increase in height above ten storeys within the High Density Residential Zone around the city centre.

24. The methodology that has been used for the modelling is outlined below:

    (a) Selection of a comparable development site in each zone/area to be assessed to enable a comparison of the development outcome by location.

    (b) Preparation of a 'bulk and location plan' for each site selected to maximise the site's development potential under the proposed provisions at a range of height scenarios.

    (c) Review of relevant market data to inform revenue and cost assumptions to input into the model. I annex those a summary of those assumptions as **Appendix 2**. The following notes are made with respect to the assumptions:

        (i) Due to the relatively low volume of recent sales of high density sales of high density properties in Christchurch outside of the city centre, the price points used as assumptions in the analysis for residential apartments were drawn from an analysis of comparative market data for smaller typologies (residential units) across the suburbs assessed and the relativity of those same typologies in the city centre.

        (ii) The Maltby's construction costs (included at **Appendix 1**) have been used as assumptions in the modelling high rise residential apartments and have been drawn from Christchurch specific data. For the city centre site, where a podium and tower typology has been assessed with the inclusion of car parking in the podium, for which there is limited data to base the costs on, these rates have been adjusted based on engagement with the Christchurch construction sector and a review of rates for large scale development across other centres to reflect the complexity of this scale of development.

    (d) Creation of a feasibility model to assess the site's development potential, in simple terms, by comparing the likely costs of development with the potential resale value. From this, the potential developer's profit margin is derived to test feasibility.

25. The modelling is a high-level assessment, limited to the results of testing a range of concept scenarios on a limited number of sites which do not reflect the variance in available development opportunities, land values, or ground conditions across the different centres.

26. Despite this, the modelling provides a useful evidence base to assist in the understanding of what the impact of the height controls are on financial feasibility.

SUMMARY OF KEY FINDINGS

27. A summary of the results of the feasibility analysis are outlined in the tables attached in **Appendix 3**.

28. The results are shown as the percentage of revenue generated that can be considered developer's profit at a range of different price points for apartments. The industry rule of thumb is that 20% profitability is required for a development to be considered feasible.

29. The feasibility modelling undertaken illustrates that, despite the increases in density enabled through the proposed PC14 provisions, under current market conditions it remains challenging for development of buildings above three storeys and below 12 storeys to be feasible in the range of suburban centre locations explored.

30. Across the sites and scenarios tested, when the building already has high costs associated with construction above three storeys, an increase in building height enhances feasibility. This is because as the height of the building increases, whilst costs do increase, these are outweighed by the greater yields that are achieved from the site and increased revenue potential generate a feasible development opportunity.

31. In summary, the results of the modelling are as set out below.

32. The site tested in the **City Centre Zone** shows that, under current market conditions:

    (a) a profitable development (13.33% developer's margin) consisting primarily of residential apartments with retail on the ground floor and provision of parking was achievable at a height of 60m (19 storeys); and

(b) a commercial development at 30m (7 storeys) was more challenging in this location (showing a 4% developer's margin).

33. It is important to note that the site tested has one of the highest land values per square metre across the city centre. This is presumed to be due to its premium location and the amenity provided by views/access to the riverfront. Refer to map of land values included in **Appendix 4**.

34. Whilst the model uses the current rating land value as an assumption, and a more detailed assessment of the market value of this land has not been interrogated, when the land value is lowered to that of nearby sites a commercial development of between 4 and 7 storeys (with ground floor retail) shows a more profitable outcome (13%).

35. This is consistent with evidence demonstrated by a recent resource consent granted by the Council for a 4-storey commercial development on a nearby site (located at the corner of Worchester Boulevard and Cathedral Square), suggesting that, on less prominent sites within the city centre, lower scale commercial developments are feasible.

36. For the site tested in the **High Density Residential Zone, located close to the City Centre**, the updated modelling demonstrates:

(a) A high density residential apartment building with the inclusion of carparking achieves a profitable outcome at 12 storeys of 20.16% developer profit compared to 11.71% at 10 storeys; and

(b) Based on this assessment, I consider that allowing a height of up to 12 storeys is more likely to provide a feasible development outcome, in current market conditions, than provision for lower heights.

37. For the sites tested that are located **in the High Density Residential Zone within the walkable catchment of town centres**:

(a) Development up to ten, twelve and fourteen storeys did not achieve a feasible outcome based on current market conditions in these locations (negative developer profit of 33-18%) but demonstrate that increasing the height does reduce financial loss.

(b) The negative developer profit in these locations can be explained by the assumed lower price points achievable for apartments in these locations, compared to the city centre, despite the lower land values.

(c) As shown by the negative profit margin at 14 stories, significant increases in yield would be required to achieve a feasible development in current market conditions.

38. On this basis I consider unlikely that developments located outside of the city centre would achieve the same high price points for apartments required to make this a feasible development currently.

39. It is important to note that these results are based on the estimated current market values and current high risks around the increasing construction costs and market instability. Into the future, as the Christchurch residential market changes and the construction sector stabilises, the viability of high density residential development may improve.

40. As the larger town centres grow and provide increased access to employment opportunities, and potentially better public transport and amenity, higher price points for apartments may be achievable and support improved development feasibility.

CONCLUSIONS – THE IMPACT OF INCREASING HEIGHTS ON FEASIBILITY

41. Several of the submissions request consideration of an increase in heights. In particular, consideration of an increase to 12 storeys in the High Density Residential Zone in the walking catchment of the city centre.

42. As noted in the above analysis, increasing heights can support a more financially feasible outcome and could be a way of enabling more feasible development capacity.

43. This is primarily because, once a development reaches 6 storeys in height, generally the cost of construction is already higher than for developments below 6 storeys (which do not require the same structural foundation work) and even lower for developments below 3 storeys (which do not require a lift). As such, increasing the heights within an already high density development effectively results in a better yield to cost ratio.

44. However, the feasibility is also reliant on the revenues that can be generated. The modelling demonstrates that, currently outside the city centre, the feasibility of high density development is challenging due to the lower price points anticipated for apartments in these locations.

45. As these larger town centres grow, and access to employment and amenity is enhanced, the feasibility of high density residential development is anticipated to improve. The increase in heights in these areas, as proposed, is supported as way to enhance development feasibility into the future as the market changes and the city grows.

11 August 2023

Ruth Allen

APPENDIX 1 - CHRISTCHURCH CITY COUNCIL M2 RATES

EST. 1929

MALTBYS

DEFINING COSTS · MANAGING RISK · DELIVERING RESULTS

Christchurch City Council m2 Rates

The Property Group

17 July 2023

DRAFT

DEFINING COSTS, MANAGING RISK AND DELIVERING RESULTS THAT ADD VALUE FOR OUR CLIENTS

AUCKLAND | HAMILTON | NAPIER | WELLINGTON | QUEENSTOWN

The Property Group

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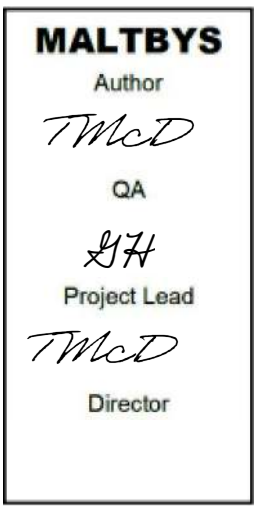
This report has been prepared for the sole use of the Client only for the purpose set out in our Letter of Appointment. We neither acknowledge nor accept any other duty of care in respect of the report or the contents thereof, and any person other than the Client who rely upon the report or any part thereof without direct reference to a written authorisation by a Director of Maltbys Ltd does so in all respects at that person's risk.



EO Estimate Overview

Estimate Overview

Maltbys have been commissioned by The Property Group to prepare this summary of high-level m2 build cost rates for Christchurch CIty Council for different building types and heights as outlined in the one page table provided by TPG.

We have not been provided Architectural, Structural, Civil or Services information or Drawings and allowances have been based on m2 of Gross Floor Area (GFA) of buildings only.

Maltbys have used data obtained from similar projects undertaken by our Company, sought feedback form local contractors and used rates and prices derived from projects currently being tendered in todays market as a basis for our m2 rates.

This is an estimate of construction cost ONLY. Maltbys estimate excludes ESCALATION for both pre-construction periods and during project which will be required - pricing is as at July 2023.

The below are m2 allowances only and do not reflect any specific design, or specifications which could have a significant impact on the rates.

The rates assume works would be tendered to a suitably capable contractor to carry out the works.

Any one of our rates will be influenced by a number of factors such as market conditions, locality, design, number of bedrooms and bathrooms and these factors could have an influence on the rates varying them by +/- 20%

Clarifications

Clarifications

This m2 rate document is based on the following documents;

- The outline of different building types and heights in the one page table provided by The Property Group
- Email correspondence from council relating to Building Consent Requirements forwarded by The Property Group to Maltbys

Specific Exclusions:

- Goods and Services Tax
- Ground improvement or piling
- Working outside normal working hours e.g. weekends and nights or hastened construction periods
- Works outside the building boundaries, services upgrades or transformers and the like
- Professional Fees
- Project Management Fees
- Council fees and internal costs
- Local Authority Building Consent and Processing Fees
- Loose Furniture, Fittings & Equipment
- All latent conditions noting in particular latent ground conditions, structural requirements over and above other similar projects in the region, asbestos and services and other contamination
- Services or road upgrades
- Transformers
- Demolition
- Legislation changes
- Public art or amenities
- Blinds and Curtains
- Lighting to outdoor unenclosed car parking
- Site works and landscaping have been excluded from each type of 'Building' cost and should be allowed for separately
- Financing Costs
- Resource Consent and Fees
- Legal Fees
- Project Contingency

Inclusions

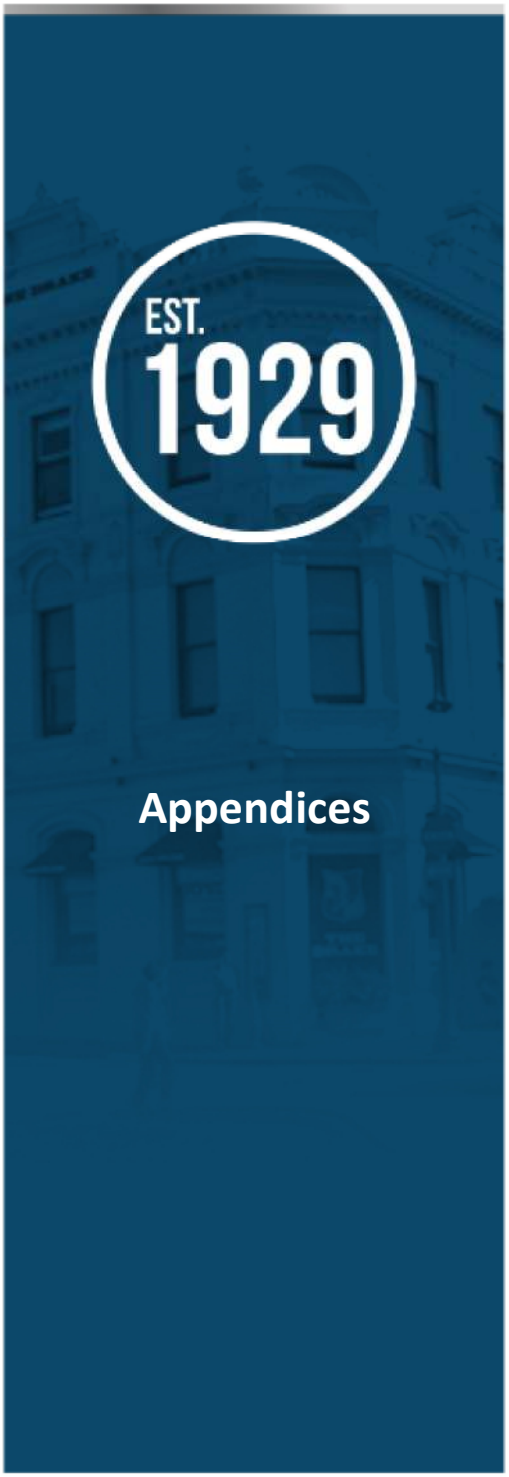
We have made provisional allowances for the following:

- a 20% uplift when compared to affordable quality, for fit out elements in Market Quality Finishes houses / apartments
- a 35% uplift when compared to affordable quality, for fit out elements in Premium Quality Finishes houses / apartments
- A premium level of finish has been assumed to a standard type build with higher internal finishes and excludes Architectural Homes or very high level of finish which is over and above our allowances
- Lifts to buildings 4 Storeys and above
- Fire Sprinklers to 6 Storeys and above
- Increasing structural requirements and complexity with each sub-category of building height

Escalation

Clarifications

Maltbys have included escalation for the pre-construction periods of the project (see summary). Maltbys suggest further discussion in regard to escalation once procurement time frames are confirmed.
Areas of concern are:
- Labour resources
- Subcontractor price certainty
- Security of long lead items
- Material Price Increases



Appendices

Christchurch City Council m2 Rates July 2023				
Building type	**Levels**	**Affordable**	**Market**	**Premium**
Residential				
Low density	Levels 1 – 3	$3,000	$3,400	$4,500
Medium density	Levels 4 – 6	$4,000	$4,500	$5,000
High density	Levels 6 – 10	$4,500	$5,000	$5,500
High density	Levels 10+	$5,000	$5,500	$6,000
Carparking (Central CBD only)				
Open area	$250.00			
Covered and multi-level	$1,200.00			
Seismic resilience	-			
Open Space				
Soft landscaping	$150.00			
Hard landscaping	$300.00			
Demolition costs				
Light duty	$150.00			
Heavy duty	$300.00			
Site establishment (civils and services)				
Further info required	-			
Contingency allowances				
See body of report	-			

RESIDENTIAL

	Qty	Unit	Rate	Cost
RESIDENTIAL				
General Note				
Any one of the below rates will be influenced by a number of factors such as market conditions, locality, design, number of bedrooms and bathrooms and these factors could have an influence of a variation of +/- 20% on the below m2 rates		Note		
The below rates include for circulation and communal spaces		Note		
Caparking and storage have been excluded		Note		
The below rates assume no basement car parking, lift or fire-sprinkler services		Note		
Low Density - 1 to 3 Storeys				
Affordable				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	3,000.00	3,000.00
Market				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	3,400.00	3,400.00
Premium				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	4,500.00	4,500.00
Medium Density - 4 and 5 Storeys				
The below rates include for small apartments and lift. They exclude for Fire Sprinklers which we have assumed will be necessary only in 6 Storey + apartments		Note		
Affordable				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	4,000.00	4,000.00
Market				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	4,500.00	4,500.00
Premium				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	5,000.00	5,000.00
Medium Density - 6 to 10 Storeys				
The below rates include for small apartments and lift. They include for Fire Sprinklers and additional structural requirements which we have assumed will be necessary for 6 Storey + apartments				
Affordable				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	4,500.00	4,500.00
Market				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	5,000.00	5,000.00
Premium				

RESIDENTIAL

	Qty	Unit	Rate	Cost
RESIDENTIAL				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	5,500.00	5,500.00
High Density - Levels 10+				
The below rates include for small apartments and lift. They include for Fire Sprinklers and additional structural requirements which we have assumed will be necessary for 10 Storey + apartments as well as increasing complexity in Electrical, Mechanical and Hydraulic Services.				
Affordable				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	5,000.00	5,000.00
Market				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	5,500.00	5,500.00
Premium				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	6,000.00	6,000.00
RESIDENTIAL				

CARPARKING (CENTRAL CBD ONLY)

	Qty	Unit	Rate	Cost
CARPARKING (CENTRAL CBD ONLY)				
Basements have been excluded		Note		
Open Area				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	250.00	250.00
Covered and multi-level car park building				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	1,200.00	1,200.00
Seismic Resilience				
Further information required to make commentary on this item		Note		
CARPARKING (CENTRAL CBD ONLY)				

OPEN SPACE

	Qty	Unit	Rate	Cost
OPEN SPACE				
Soft Landscaping				
This is assumed to be a combination of planting and grassed area		Note		
Changes of levels and retaining walls are excluded		Note		
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	150.00	150.00
Hard Landscaping				
The below assumes concrete paths and terraces if required and some seating, edging, basic drainage and the like		Note		
Changes of levels and retaining walls are excluded		Note		
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	300.00	300.00
OPEN SPACE				

DEMOLITION COSTS

	Qty	Unit	Rate	Cost
DEMOLITION COSTS				
Light Duty				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	150.00	150.00
Heavy Duty				
Construction costs per m2 of Gross Floor Area (GFA) measured as per the New Zealand Institute of Quantity Surveyors Standard Method of Measurement	1	m2	300.00	300.00
DEMOLITION COSTS				

SITE ESTABLISHMENT (CIVIL AND SERVICES)

	Qty	Unit	Rate	Cost
SITE ESTABLISHMENT (CIVIL AND SERVICES)				
Civil & Services				
Further information required to make commentary on this item		Note		
SITE ESTABLISHMENT (CIVIL AND SERVICES)				

CONTINGENCY ALLOWANCES

	Qty	Unit	Rate	Cost
CONTINGENCY ALLOWANCES				
Design Contingency				
Concept				
Allow for contingency at this stage	30.0	%		
Developed Design				
Allow for contingency at this stage	12.5	%		
Detailed Design				
Allow for contingency at this stage	2.5	%		
Additional Contingency for Construction				
Construction				
Allow for contingency in addition to the above	10.0	%		
CONTINGENCY ALLOWANCES				

APPENDIX 2 - MODELLING ASSUMPTIONS

Appendix 2 Modelling Assumptions

Revenue Assumptions (price per sqm)				
Residential Apartments		**Affordable**	**Market**	**Premium**
City	1 bed 2 bed 3 bed	$8,300 $6,600 $5,700	10,000 11,500 8,000	13,000 12,500 11,500
St Albans	1 bed 2 bed 3 bed	$7,500 $6,000 $5,200	$8,500 $8,000 $7,500	10000 9700 9000
Riccarton	I bed 2 bed 3 bed	$8,100 $6,400 $5,600	$9,000 $8,000 $7,500	$9,900 $9,500 $8,800
Hornby	1 bed 2 bed 3 bed	$7,500 $6,000 $5,200	$7,600 $6,900 $6,000	$7,700 $7,400 $6,800
Papanui	1 bed 2 bed 3 bed	$7,700 $6,100 $5,300	$8,700 $7,800 $7,000	$9,700 $9,300 $8,600
Inner city commercial floor space		$2,300	$6,000	$9,000
Inner city ground floor retail		$2,100	$6,000	$8,700
Construction Costs (cost per sqm)		**Affordable**	**Market**	**Premium**
Residential Apartment Buildings				
Levels 4 -6		4,000	4,500	5,000
Levels 6-10		4.500	5,000	5,500
10+ storeys		5,000	5,500	6,000
Residential tower and podium		5,500	6,750	8,000
Commercial floor space		5,500	6,500	7,500
Ground floor retail (shell only no fit out)		5,000	6,500	7,500
Other cost assumptions				
Parking at grade		$250 psm		
Parking covered		$1,200 psm		
Parking internal (in building base)		$1,500 psm		
Contingency for Seismic Resilience/ Base Isolation works		5-15% dependant on risk evaluation of site conditions		

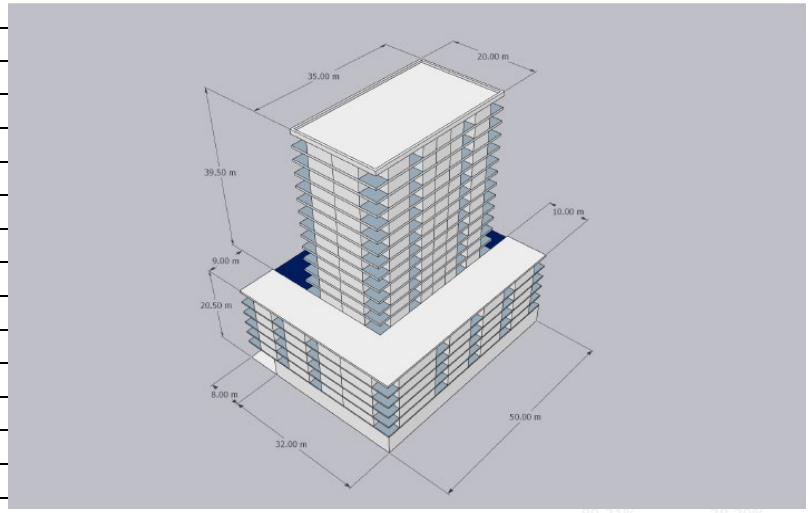
Landscaping hard	$300 psm
Landscaping soft	$150 psm
Demolition Costs - Light duty – heavy duty	$150 - $300 psm
Site Establishment	$420/sqm (civils and services)
Professional fees as % of construction costs	5-10% depending on scale
Development Contributions	As per Council DC Plan
Resource and building consenting fees, as % of construction costs	2%
Contingencies	10%
Finance	7.5%

APPENDIX 3 - MODELLING RESULTS

High Density Inner City Development Feasibility Analysis **Corner Oxford Terrace /Worcester Boulevard (CC Zone)**

Summary of residential building

Options	**Option 1 60m 19-levels (ground floor retail, residential above)**	**Option 1 60m 19 levels (ground floor retail, residential above)**	**Option 2 30m - 14 levels (ground floor retail, residential above)**	**Option 2 30m - 14 Levels (ground floor retail, Residential above)**
Price points	**Premium (green star)**	**Market**	**Premium (green star)**	**Market**
Project summary				
Residential GFA (m2)	11245	11245	8242	8242
Residential Dwellings	144	144	104	104
Commercial GFA (m2)	0	0	0	0
Retail GFA (m2)	698	698	698	698
Car parking GFA (m2)	7390	7390	7390	7390
Car parking spaces	200	200	200	200
Total GFA (m2) (ex access, circulation and car parking)	**11943**	**11943**	**8940**	**8940**
Financial analysis				
Gross realisation (Sales $m)	$168.82	$144.49	$122.20	$110.75
Net proceeds ($m)	$143.30	$122.62	$103.73	$94.00
Total construction costs ($m)	$104.28	$78.84	$80.00	$61.41
Estimated land value ($m)	$9.61	$9.61	$9.61	$9.61
Total development costs ($m)	$139.16	$108.21	$109.58	$86.91
Profit or (loss) $m	**$4.13**	**$14.42**	**-$5.86**	**$7.09**
Profit or (loss) as a % of total development costs	**2.97%**	**13.33%**	**-5.35%**	**8.16%**



Modelling prepared by Jazmax August 2023

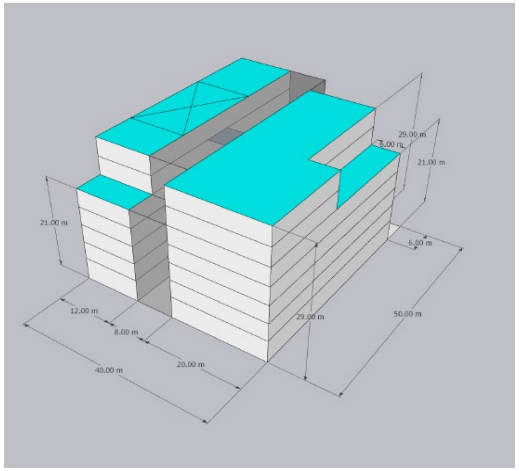
Christchurch City Council

High Density Inner City Development Feasibility Analysis

Corner Oxford Terrace /Worcester Boulevard (CC Zone)

Summary of lower scale commercial building

Options	**Option 1 7-levels (ground floor retail, commercail above)**	**Option 1 7-levels (ground floor retail, commercial above)**	**Option 2 4-levels (ground floor retail. Commercail above)**	**Option 2 4-levels (ground floor retail, Commercial above)**	**Option 1A 7-levels Premuim**	**Option 2A 4-levels Premuim**
Price points	**Premium (green star)**	**Market**	**Premuim (green star)**	**Market**	**reduced LV**	**reduced LV**
Project summary						
Residential GFA (m2)	0	0	0	0	0	0
Residential Dwellings	0	0	0	0	0	0
Commercial GFA (m2)	8868	8868	4428	4428	8868	4428
Retail GFA (m2)	1060	1060	1060	1060	1060	1060
Car parking GFA (m2)	0	0	0	0	0	0
Car parking spaces	0	0	0	0	0	0
Total GFA (m2) (ex access, circulation and car parking)	**9928**	**9928**	**5488**	**5488**	**9928**	**5488**
Financial analysis						
Gross realisation (Sales $m)	$90.05	$64.53	$49.69	$35.67	$90.05	$49.69
Net proceeds ($m)	$77.86	$55.79	$42.96	$30.84	$77.86	$42.96
Total construction costs ($m)	$55.13	$44.68	$27.61	$23.37	$55.13	$27.61
Estimated land value ($m)	$9.90	$9.90	$9.90	$9.90	$6.00	$6.00
Total development costs ($m)	$75.61	$60.96	$43.57	$37.31	$68.43	$37.98
Profit or (loss) $m	**$2.25**	**-$5.17**	**-$0.61**	**-$6.47**	**$9.43**	**$4.98**
Profit or (loss) as a % of total development costs	**2.98%**	**-8.48%**	**-1.41%**	**-17.34%**	**13.78%**	**13.12%**



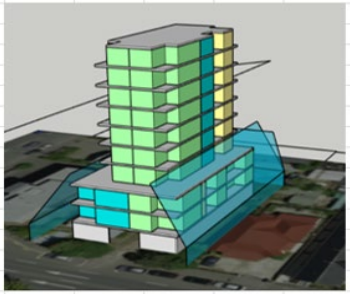
Christchurch City Council

High Density Housing Feasibility Analysis

Barbadoes Street, Central City (HRZ Zone)

Summary of 10,12,14 level apartment development options, shown at Premium, Market and Affordable Price Points

Options	**Option 1 10-levels**	**Option 1 10-levels**	**Option 1 10-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 3 14-levels**	**Option 3 14-levels**	**Option 3 14-levels**
Price points	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**
Project summary									
Residential GFA (m2)	2265	2265	2265	3115	3115	3115	3235	3235	3235
Residential Dwellings	42	42	42	50	50	50	60	60	60
Commercial GFA (m2)	0	0	0	0	0	0	0	0	0
Retail GFA (m2)	0	0	0	0	0	0	0	0	0
Car parking GFA (m2)	650	650	650	650	650	650	650	650	650
Car parking spaces	22	22	22	22	22	22	22	22	22
Total GFA (m2) (ex access, circulation and car parking)	**2265**	**2265**	**2265**	**3115**	**3115**	**3115**	**3235**	**3235**	**3235**
Financial analysis									
Gross realisation (Sales $m)	$29.74	$26.66	$18.57	$40.40	$36.33	$24.74	$42.02	$37.60	$26.10
Net proceeds ($m)	$25.19	$22.57	$15.70	$34.23	$30.77	$20.93	$35.59	$33.46	$22.06
Total construction costs ($m)	$15.70	$13.29	$11.02	$19.53	$17.97	$13.22	$20.26	$18.64	$13.72
Estimated land value ($m)	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68	$1.68
Total development costs ($m)	$23.49	$20.21	$18.64	$28.49	$26.85	$20.58	$29.47	$27.73	$21.23
Profit or (loss) $m	**$1.70**	**$2.37**	**-$2.94**	**$5.74**	**$3.93**	**$0.35**	**$6.12**	**$4.11**	**$0.84**
Profit or (loss) as a % of total development costs	**7.23%**	**11.71%**	**-15.77%**	**20.16%**	**14.62%**	**1.68%**	**20.76%**	**14.81%**	**3.94%**



Christchurch City Council

High Density Housing Feasibility Analysis

St Albans site

Summary of 10,12,14 level apartment development options, shown at Premium, Market and Affordable Price Points

Options	**Option 1 10-levels**	**Option 1 10-levels**	**Option 1 10-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 3 14-levels**	**Option 3 14-levels**	**Option 3 14-levels**
Price points	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**
Project summary									
Residential GFA (m2)	2265	2265	2265	3115	3115	3115	3235	3235	3235
Residential Dwellings	42	42	42	50	50	50	60	60	60
Commercial GFA (m2)	0	0	0	0	0	0	0	0	0
Retail GFA (m2)	0	0	0	0	0	0	0	0	0
Car parking GFA (m2)	650	650	650	650	650	650	650	650	650
Car parking spaces	22	22	22	22	22	22	22	22	22
Total GFA (m2) (ex access, circulation and car parking)	**2265**	**2265**	**2265**	**3115**	**3115**	**3115**	**3235**	**3235**	**3235**
Financial analysis									
Gross realisation (Sales $m)	$22.71	$19.20	$14.64	$30.88	$26.00	$19.73	$31.96	$26.96	$20.45
Net proceeds ($m)	$19.22	$16.24	$12.36	$26.14	$22.00	$16.68	$27.05	$23.99	$17.26
Total construction costs ($m)	$15.70	$13.29	$11.02	$19.53	$17.97	$13.22	$20.26	$18.64	$13.72
Estimated land value ($m)	$1.67	$1.67	$1.67	$1.67	$1.67	$1.67	$1.67	$1.67	$1.67
Total development costs ($m)	$23.48	$20.20	$18.63	$28.48	$26.84	$20.57	$29.46	$27.72	$21.22
Profit or (loss) $m	**-$4.26**	**-$3.96**	**-$6.26**	**-$2.34**	**-$4.84**	**-$3.90**	**-$2.41**	**-$4.92**	**-$3.95**
Profit or (loss) as a % of total development costs	**-18.15%**	**-19.59%**	**-33.63%**	**-8.22%**	**-18.02%**	**-18.94%**	**-8.19%**	**-17.75%**	**-18.63%**

Christchurch City Council

High Density Housing Feasibility Analysis

Riccarton site

Summary of 10,12,14 level apartment development options, shown at Premium, Market and Affordable Price Points

Options	**Option 1 10-levels**	**Option 1 10-levels**	**Option 1 10-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 3 14-levels**	**Option 3 14-levels**	**Option 3 14-levels**
Price points	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**
Project summary									
Residential GFA (m2)	2265	2265	2265	3115	3115	3115	3235	3235	3235
Residential Dwellings	42	42	42	50	50	50	60	60	60
Commercial GFA (m2)	0	0	0	0	0	0	0	0	0
Retail GFA (m2)	0	0	0	0	0	0	0	0	0
Car parking GFA (m2)	650	650	650	650	650	650	650	650	650
Car parking spaces	22	22	22	22	22	22	22	22	22
Total GFA (m2) (ex access, circulation and car parking)	**2265**	**2265**	**2265**	**3115**	**3115**	**3115**	**3235**	**3235**	**3235**
Financial analysis									
Gross realisation (Sales $m)	$22.29	$19.20	$15.61	$30.29	$26.00	$21.06	$31.36	$26.96	$21.83
Net proceeds ($m)	$18.86	$16.24	$13.19	$25.64	$22.00	$17.80	$26.54	$23.91	$18.44
Total construction costs ($m)	$15.70	$13.29	$11.02	$19.53	$17.97	$13.22	$20.26	$18.64	$13.72
Estimated land value ($m)	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40
Total development costs ($m)	$23.20	$19.91	$18.35	$28.20	$26.55	$20.29	$29.18	$27.44	$20.93
Profit or (loss) $m	**-$4.34**	**-$3.67**	**-$5.16**	**-$2.55**	**-$4.55**	**-$2.49**	**-$2.64**	**-$4.64**	**-$2.49**
Profit or (loss) as a % of total development costs	**-18.70%**	**-18.45%**	**-28.12%**	**-9.06%**	**-17.15%**	**-12.27%**	**-9.06%**	**-16.91%**	**-11.91%**

Christchurch City Council

High Density Housing Feasibility Analysis

Riccarton site

Summary of 10,12,14 level apartment development options, shown at Premium, Market and Affordable Price Points

Options	**Option 1 10-levels**	**Option 1 10-levels**	**Option 1 10-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 3 14-levels**	**Option 3 14-levels**	**Option 3 14-levels**
Price points	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**
Project summary									
Residential GFA (m2)	2265	2265	2265	3115	3115	3115	3235	3235	3235
Residential Dwellings	42	42	42	50	50	50	60	60	60
Commercial GFA (m2)	0	0	0	0	0	0	0	0	0
Retail GFA (m2)	0	0	0	0	0	0	0	0	0
Car parking GFA (m2)	650	650	650	650	650	650	650	650	650
Car parking spaces	22	22	22	22	22	22	22	22	22
Total GFA (m2) (ex access, circulation and car parking)	**2265**	**2265**	**2265**	**3115**	**3115**	**3115**	**3235**	**3235**	**3235**
Financial analysis									
Gross realisation (Sales $m)	$22.29	$19.20	$15.61	$30.29	$26.00	$21.06	$31.36	$26.96	$21.83
Net proceeds ($m)	$18.86	$16.24	$13.19	$25.64	$22.00	$17.80	$26.54	$23.91	$18.44
Total construction costs ($m)	$15.70	$13.29	$11.02	$19.53	$17.97	$13.22	$20.26	$18.64	$13.72
Estimated land value ($m)	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40
Total development costs ($m)	$23.20	$19.91	$18.35	$28.20	$26.55	$20.29	$29.18	$27.44	$20.93
Profit or (loss) $m	**-$4.34**	**-$3.67**	**-$5.16**	**-$2.55**	**-$4.55**	**-$2.49**	**-$2.64**	**-$4.64**	**-$2.49**
Profit or (loss) as a % of total development costs	**-18.70%**	**-18.45%**	**-28.12%**	**-9.06%**	**-17.15%**	**-12.27%**	**-9.06%**	**-16.91%**	**-11.91%**

Christchurch City Council

High Density Housing Feasibility Analysis

Hornby site

Summary of 10,12,14 level apartment development options, shown at Premium, Market and Affordable Price Points

Options	**Option 1 10-levels**	**Option 1 10-levels**	**Option 1 10-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 3 14-levels**	**Option 3 14-levels**	**Option 3 14-levels**
Price points	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**
Project summary									
Residential GFA (m2)	2265	2265	2265	3115	3115	3115	3235	3235	3235
Residential Dwellings	42	42	42	50	50	50	60	60	60
Commercial GFA (m2)	0	0	0	0	0	0	0	0	0
Retail GFA (m2)	0	0	0	0	0	0	0	0	0
Car parking GFA (m2)	650	650	650	650	650	650	650	650	650
Car parking spaces	22	22	22	22	22	22	22	22	22
Total GFA (m2) (ex access, circulation and car parking)	**2265**	**2265**	**2265**	**3115**	**3115**	**3115**	**3235**	**3235**	**3235**
Financial analysis									
Gross realisation (Sales $m)	$17.56	$16.37	$14.64	$23.79	$22.15	$19.73	$24.61	$22.90	$20.45
Net proceeds ($m)	$14.84	$13.83	$12.36	$20.12	$18.73	$16.68	$20.80	$20.24	$17.26
Total construction costs ($m)	$15.70	$13.29	$11.02	$19.53	$17.97	$13.22	$20.26	$18.64	$13.72
Estimated land value ($m)	$0.57	$0.57	$0.57	$0.57	$0.57	$0.57	$0.57	$0.57	$0.57
Total development costs ($m)	$22.33	$19.05	$17.48	$27.34	$25.69	$19.43	$28.32	$26.58	$20.07
Profit or (loss) $m	**-$7.49**	**-$5.22**	**-$5.12**	**-$7.22**	**-$6.96**	**-$2.75**	**-$7.51**	**-$7.23**	**-$2.81**
Profit or (loss) as a % of total development costs	**-33.54%**	**-27.42%**	**-29.28%**	**-26.40%**	**-27.10%**	**-14.17%**	**-26.54%**	**-27.19%**	**-13.99%**

Christchurch City Council

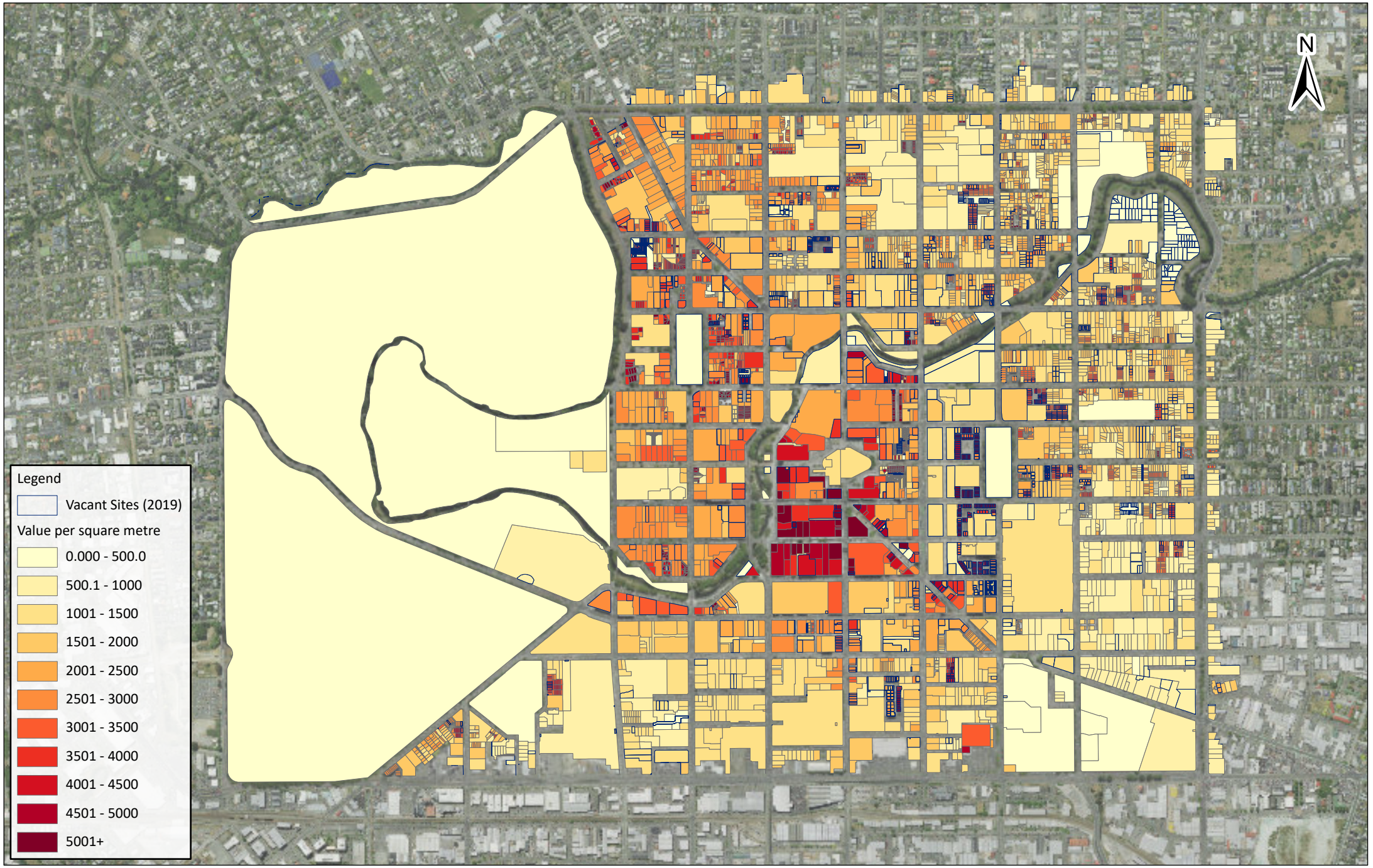
High Density Housing Feasibility Analysis

Papanui site

Summary of 10,12,14 level apartment development options, shown at Premium, Market and Affordable Price Points

Options	**Option 1 10-levels**	**Option 1 10-levels**	**Option 1 10-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 2 12-levels**	**Option 3 14-levels**	**Option 3 14-levels**	**Option 3 14-levels**
Price points	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**	**Premium**	**Market**	**Affordable**
Project summary									
Residential GFA (m2)	2265	2265	2265	3115	3115	3115	3235	3235	3235
Residential Dwellings	42	42	42	50	50	50	60	60	60
Commercial GFA (m2)	0	0	0	0	0	0	0	0	0
Retail GFA (m2)	0	0	0	0	0	0	0	0	0
Car parking GFA (m2)	650	650	650	650	650	650	650	650	650
Car parking spaces	22	22	22	22	22	22	22	22	22
Total GFA (m2) (ex access, circulation and car parking)	**2265**	**2265**	**2265**	**3115**	**3115**	**3115**	**3235**	**3235**	**3235**
Financial analysis									
Gross realisation (Sales $m)	$21.83	$18.53	$14.90	$29.67	$25.11	$20.08	$30.71	$26.00	$20.82
Net proceeds ($m)	$18.47	$15.67	$12.58	$25.11	$21.24	$16.97	$25.99	$23.02	$17.58
Total construction costs ($m)	$15.70	$13.29	$11.02	$19.53	$17.97	$13.22	$20.26	$18.64	$13.72
Estimated land value ($m)	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94
Total development costs ($m)	$22.72	$19.44	$17.87	$27.73	$26.08	$19.82	$28.70	$26.96	$20.46
Profit or (loss) $m	**-$4.25**	**-$3.77**	**-$5.29**	**-$2.61**	**-$4.84**	**-$2.84**	**-$2.72**	**-$4.99**	**-$2.88**
Profit or (loss) as a % of total development costs	**-18.70%**	**-19.41%**	**-29.59%**	**-9.42%**	**-18.55%**	**-14.35%**	**-9.47%**	**-18.49%**	**-14.10%**

APPENDIX 4 - CHRISTCHURCH CITY CENTRE LAND VALUES



the propertygroup

Property boundaries accuracy: +/-1m in urban areas, +/-30m in rural areas.
Datum: NZGD 2000
Coordinate System: NZGD 2000 New Zealand Transverse Mercator
This map was produced with ArcGIS Pro (Esri).

Christchurch City Centre Land Values

PREPARED BY	Louis Worthington
DATE	2/08/2023
TPG REF.	719079
SHEET	1 OF 1
	A4 Scale 1:15,000

0 400 Metres