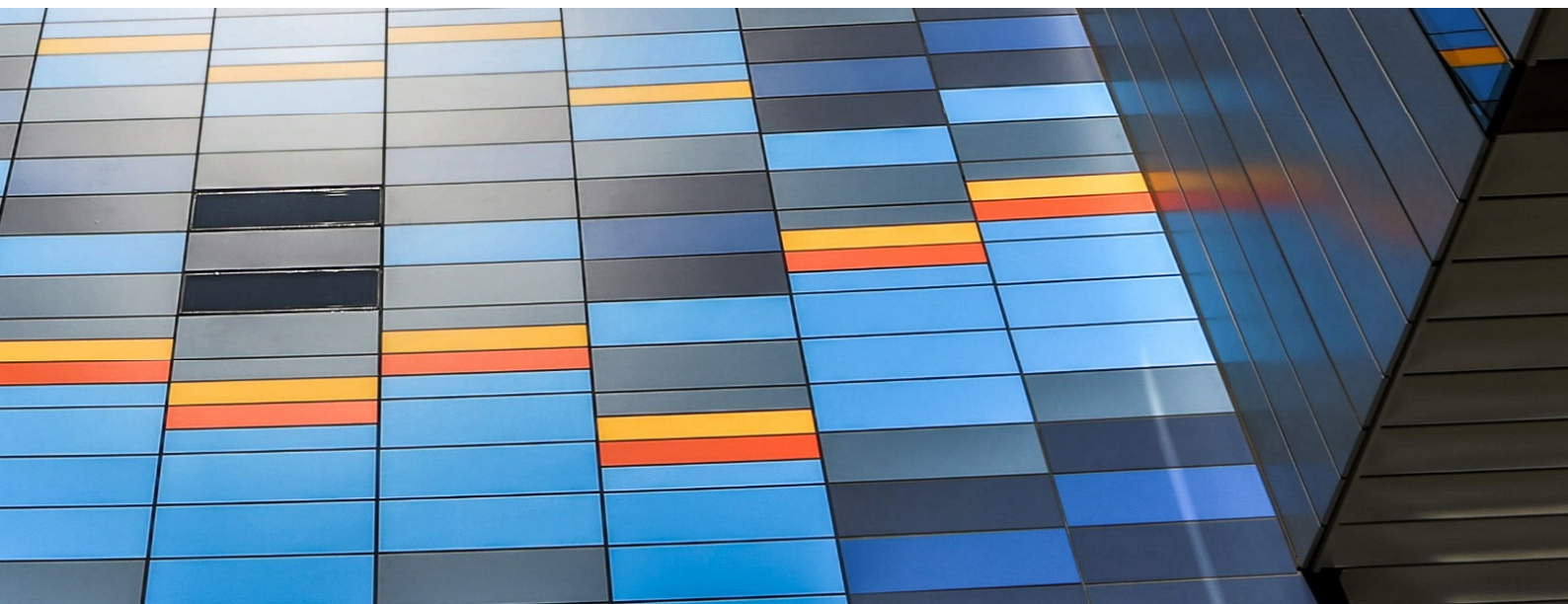




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CORKE**

**Accessible Housing:  
Estimated Cost Impact of Proposed  
Changes to NCC**

**The Centre for International Economics**  
Report Revision 5 – 22 June 2020



# Accessible Housing: Estimated Cost Impact of Proposed Changes to NCC

## The Centre for International Economics

Report Revision 5 – 22 June 2020

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# I. INTRODUCTION

## I.1. Purpose and Background of Report

This report presents an order of cost estimate for the proposed changes to the National Construction Code of Australia (NCC) to include mandatory minimum accessible housing provisions for new Class 1a (single residential) and Class 2 (apartments) dwellings.<sup>1</sup>

The Australian Building Codes Board (ABCB) is undertaking an assessment of a minimum accessibility standard for housing in the NCC.<sup>2</sup> In October 2019, they developed a formal proposal<sup>3</sup> to include minimum accessibility standards in the NCC that broadly correspond with the Livable Housing Design Guidelines (LHDG) produced by Livable Housing Australia (LHA), summarised as follows against individual design elements<sup>4</sup>:

**Overview Table**

ELEMENT	OPTION 1 (Based on LHDG Silver)	OPTION 2 (Based on LHDG Gold)	OPTION 3 (Based on LHDG Gold + part of Platinum)
At least one step-free entrance door	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>
Wider internal doors and corridors	✓	✓	✓
Toilet on ground level (or entry level)	✓	✓	✓
Bathroom and shower design for easy access	✓	✓	✓
Bathroom and toilet walls able to support grab rails	✓	✓	✓
Step-free path from street/garage to dwelling entry <sup>2</sup>	✓	✓	✓
Stairways designed to reduce likelihood of injury	✓ <sup>3</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>
Kitchen space to support ease of movement/adaptation		✓	✓
Laundry space to support ease of movement/adaptation		✓	✓
Space on ground/entry level suitable for a bedroom		✓	✓
Light switches at easy to reach heights		✓	✓
Door hardware at easy to reach heights		✓	✓
Minimum circulation spaces for kitchen, laundry, bathroom			✓
Maximum sill heights for windows			✓

The intent of these design elements is to provide ‘easier and safer ... use [of their homes for]... all occupants, including people with disability... [and]... the aged’<sup>5</sup>.

<sup>1</sup> This report specifically excludes any cost estimates for retrofitting existing dwellings to meet the proposed minimum accessible standards.

<sup>2</sup> Council of Australian governments (COAG), *Best Practice Regulation: A Guide for Ministerial Councils and National Standard Setting Bodies*, October 2007.

<sup>3</sup> Australian Building Codes Board, *Accessible Housing – Drafting of Proposed NCC Changes*, October 2019

<sup>4</sup> Ibid, p.13.

<sup>5</sup> Livable Housing Australia, *Livable Housing Design Guidelines*, 4<sup>th</sup> edition, 2017, p.2.

In order to cost engineer the effect which these proposed design elements will have on the construction cost for new Class 1a and Class 2 dwellings it is useful to establish their pattern of influence on those homes. Accordingly, the report identifies two patterns, namely:

1. Movement into and inside the dwelling, comprising:
  - a. A safe continuous path of travel from the street entrance and/or parking area to a dwelling entrance.
  - b. At least one step-free entrance door.
  - c. Wider internal doors and corridors.
  - d. Stairways designed to reduce likelihood of injury.
  - e. Space on ground/entry level suitable for a bedroom.
  - f. Toilet on entry or ground level.
2. Ease of use of amenities and services, comprising:
  - a. Bathroom and shower designed for easy access.
  - b. Bathroom and toilet walls to support grab rails.
  - c. Kitchen space to support ease of movement/adaptation.
  - d. Laundry space to support ease of movement/adaptation.
  - e. Light switches and power outlets at easy to reach heights.
  - f. Door hardware at easy to reach heights.
  - g. Maximum sill heights for windows.

If the patterns of influence are clear, what is left is to estimate the impact of these patterns on the construction cost for model homes that typically represent the Class 1a and Class 2 dwelling classes.

## **I.2. Costing Models**

In order to establish an order of cost for the proposed accessibility provisions in the NCC, a range of Class 1a and Class 2 dwelling models are put forward for discussion with stakeholders.

The choice of those representative model homes is the most critical factor in the financial modelling of this report. In any residential market, irrespective of the location within Australia, there is significant variation in dwellings across the spectrum of residential accommodation. This variance is driven by many factors, including demand and demographics, affordability, site topography and the environmental plans of individual states and territories.

Irrespective of the cause of the housing variance, it is possible to focus on a small number of typical dwellings that will demonstrate the construction costs of meeting the proposed minimum accessibility requirements.



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In our view, for Class 1a dwellings those typical homes are:

	<b>Volume or Production Home</b>	<b>Custom Home</b>	<b>Townhouse on Narrow Lot</b>
Storeys	Single	Single	Double
Garage	Single 3000x5500mm	Double 6000x5500mm	Single 3000x5500mm
Living area	120m <sup>2</sup>	200m <sup>2</sup>	105m <sup>2</sup>
Family/Kitchen combo	Yes	Yes	Yes on ground floor
Other Living areas	1	2	1 on ground floor
Ceiling heights	2.4m	2.4m	2.4m
Bathroom	1800x1800mm	1800x1800mm	1800x1800mm
En-suite	Not part of analysis		
Laundry	1500x1800mm	1500x1800mm	1500x1800mm
Kitchen arrangement	Galley kitchen, 3.6m long, benches 900mm apart		
Corridors	6m long 900mm wide	10m long 900mm wide	5m long 900mm wide
Siting arrangements	Setback 6m from front boundary and minimal side boundaries. Home fits on a 12.5m lot or wider	Setback 6m from front boundary and comfortable side boundaries. Home fits on 15m lot or wider	Setback 3m from front boundary and zero setback side boundaries. Home fits on 6.5m lot or wider

For Class 2 dwellings, significant floor plan variances exist. It is not necessary to highlight those variances individually, because the point to demonstrate the diversity of offerings has been made. For this class of dwellings the critical variable is the height of an apartment complex – those three storeys or below, and those taller than four storeys – because that is the point at which vertical transportation becomes normal practice, and which changes the proposed accessibility requirements in the NCC.

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The typical apartments the report proposes are:

	<b>Two Bedroom Apartment Three-Storey Walk-up</b>	<b>Three Bedroom Apartment Complex 4 Storeys and above</b>
Storeys	Single	Single
Parking Space	On grade Stair Circulation	In Basement Serviced by Lift
Living area	90m <sup>2</sup>	120m <sup>2</sup>
Balcony	Direct access off living area	
Family/Kitchen combo	Yes	Yes
Other Living areas	No	2
Ceiling heights	2.4m	2.4m
Bathroom	1800x1800mm	1800x1800mm
En-suite	Not part of analysis	
Laundry	1500x1800mm	1500x1800mm
Kitchen arrangement	Galley kitchen, 3.6m long, benches 900mm apart	
Corridors	6m long 900mm wide	6m long 900mm wide

These representative models were discussed at the workshop on 29 November 2019, where there was broad agreement that these models were an acceptable representation of residential dwellings in the market.

### **I.3. Weighted Average Construction Costs**

Within the archetypes defined, there will be variation between individual dwellings. For instance, Class 1a dwellings comprise both detached houses and attached dwellings (townhouses), and two, three or more bedrooms. The minimum proposed accessibility standards apply equally to all, with the exception of those dwellings that are on lots that will make it unfeasible to provide step-free entries due to site topography or design and siting rules.

As a result of such anticipated variations, the stakeholders have introduced weightings of the estimated costs in an attempt to represent the compliance cost across the widest possible base. The purpose of this weighted average approach is to reflect the diversity of design in the market and these weightings are based on extensive discussions amongst the stakeholders.

## **I.4. Clarifications**

The following clarifications are noted:

- The base date for these estimates is 31 January 2020 and utilises Canberra, ACT as the baseline location.
- We have assumed labour is readily available.
- We have based our assessment on the forecast long term sustained cost impact, following industry adaptation to the proposed standards. Thus the estimated costs include all labour and materials, builder's preliminaries, margins and overheads, design fees, a design and construction contingency and GST. The estimate therefore represents the total anticipated construction cost.
- Each of the Silver, Gold and Gold Plus options introduce additional space requirements to meet the minimum accessibility standards (which differ for each option). We have allowed for each of the Class 1a model homes to increase in size, and that additional construction cost is included in our estimates (unless specifically noted otherwise).

On the other hand we have assumed that in Class 2 homes the space will be absorbed within the current footprint of any apartments.

- For Class 2 buildings we note that not all apartments in any given development will be impacted by the requirements of Design Elements 1 and 2, as some Class 2 dwellings already have equivalent requirements per Table D3.1 'REQUIREMENTS FOR ACCESS FOR PEOPLE WITH A DISABILITY' under the NCC. The NCC therefore already stipulates equivalent access requirements for apartments on floors served by a lift or which are accessible via the ground floor.
- We have assumed that for detached homes (Class 1a) the split in the market is 57% volume construction and 43% custom construction.

## **I.5. Exclusions**

All estimates contained in this report exclude:

- Additional costs applicable to retro-fit existing dwellings.
- Authority fees and cost.
- Industry adaptation, mobilisation, re-tooling and the like.

## **I.6. Documentation**

The cost engineering has been undertaken with reference to the following documentation:

- Australian Building Codes Board, Accessible Housing – Drafting of Proposed NCC Changes, October 2019, and current revisions of that document dated February 2020.
- Livable Housing Design Guidelines, Fourth Edition, 2017 published by Livable Housing Australia, Forest Lodge, NSW.



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- NCC 2019 Volume 1 and Volume 2.
- ABCB, Accessible Housing Options Paper, September 2018.
- Workshops and comments from ABCB and The Centre for International Economics in relation to draft versions this report.

## 2. WEIGHTED ESTIMATED CONSTRUCTION COSTS

### 2.1. Summary of Estimate

We attach five cost matrixes that capture the design elements being proposed for inclusion in the NCC for each of the representative model homes. Those spreadsheets also capture the weightings as determined by the stakeholders to apply to this cost engineering exercise.

The estimated weighted costs are summarised as follows:

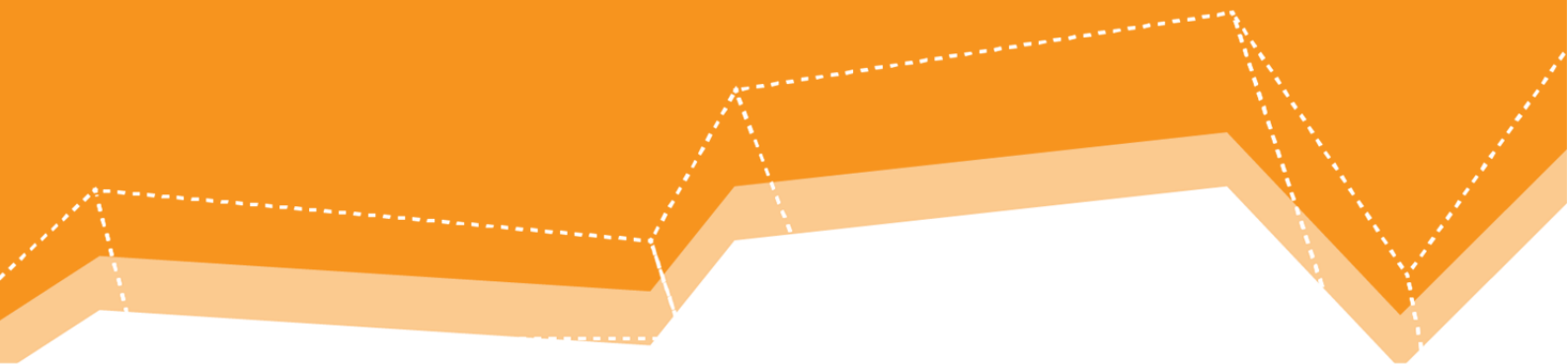
Weighted Construction Costs			
Cost Element Design Element 1B reflected in Table	Option 1 LHDG Silver \$	Option 2 LHDG Gold \$	Option 3 LHDG Gold Plus \$
Class 1a – Volume Product	1,032	7,736	10,432
Class 1a – Custom Home	732	6,206	8,411
Class 1a - Townhouse	1,839	12,398	14,976
Class 2 – Three-storey Walkups	1,322	9,368	12,210
Class 2 – Plus Four Storeys	1,637	8,526	10,678

### 2.2. Recommendation

This report is presented for further discussion as part of a Consultation Regulation Impact Statement in relation to the proposed inclusion of minimum accessibility standards for housing in the National Construction Code.

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## APPENDIX A COST MODEL OF VOLUME HOME



CLASS 1A - VOLUME OR PRODUCTION HOME											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
Design Element 1 - Dwelling Access Option B - BASELINE OPTION - A safe continuous and step free path of travel WITH ONLY ONE STEP											
The baseline option assumes that the dwelling has a 1m wide path from the boundary to the entrance door of the dwelling with only one step. It also assumes that any access to balconies or outdoor areas incorporate no more than one step (base assumption allows for accessible access to the home through the front door)											
There is no financial implication in meeting this proposed requirement											
Weighted Cost -				Weighted Cost -				Weighted Cost -			
Design Element 1 - Option A - Dwelling Access (Additional Requirements)											
There will be instances where access through the front door will not be feasible, and accessible access will be through the garage											
Carpark space increase to 3200x5400mm	1) Removing single step	425	85%	Carpark space increase to 3200x5400mm and to 2500mm vertical clearance	1) Removing single step and making path wider	620	85%	Carpark space increase to 3200x5400mm and to 2500mm vertical clearance	1) Removing single step and making path wider	620	85%
	2) Larger car space	931	15%		2) Larger car space	931	13%		2) Larger car space	931	13%
			0%		3) Larger space and height	1,571	2%		3) Larger space and height	1,571	2%
					4) Higher height only	640	0%		4) Higher height only	640	0%
Weighted Cost 501				Weighted Cost 681				Weighted Cost 681			
Design Element 2 - Dwelling Entrance											
800mm clear opening door with 5mm threshold and 1200x1200 arrival space	1) Negligible Impact	-	90%	850mm clear opening door with 5mm threshold and 1350x1350arrival space	1) Negligible Impact	-	20%	850mm clear opening door with 5mm threshold and 1350x1350arrival space	1) Negligible Impact	-	20%
	2) Low threshold door	-	0%		2) Low threshold larger door	100	60%		2) Low threshold larger door	100	60%
	3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	175	10%		3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	347	10%		3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	347	10%
					4) Low-step threshold, larger door and landing from 1.2x1.2m to 1.35x1.35m	172	10%		4) Low-step threshold, larger door and landing from 1.2x1.2m to 1.35x1.35m	172	10%
Weighted Cost 18				Weighted Cost 112				Weighted Cost 112			
Design Element 3 - Internal doors and corridors											
800mm clear opening doors and 1000mm wide internal corridors	1) Negligible Impact	-	40%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact	-	10%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact	-	10%
	2) Wider doors only	-	0%		2) Wider doors only	509	30%		2) Wider doors only	509	30%
	3) Wider corridor	942	60%		3) Wider doors and wider corridor 0.9 to 1.2m	3,335	60%		3) Wider doors and wider corridor 0.9 to 1.2m	3,335	60%
					4) Wider doors and wider corridor 1 to 1.2m	2,393	0%		4) Wider doors and wider corridor 1 to 1.2m	2,393	0%
Weighted Cost 565				Weighted Cost 2,154				Weighted Cost 2,154			

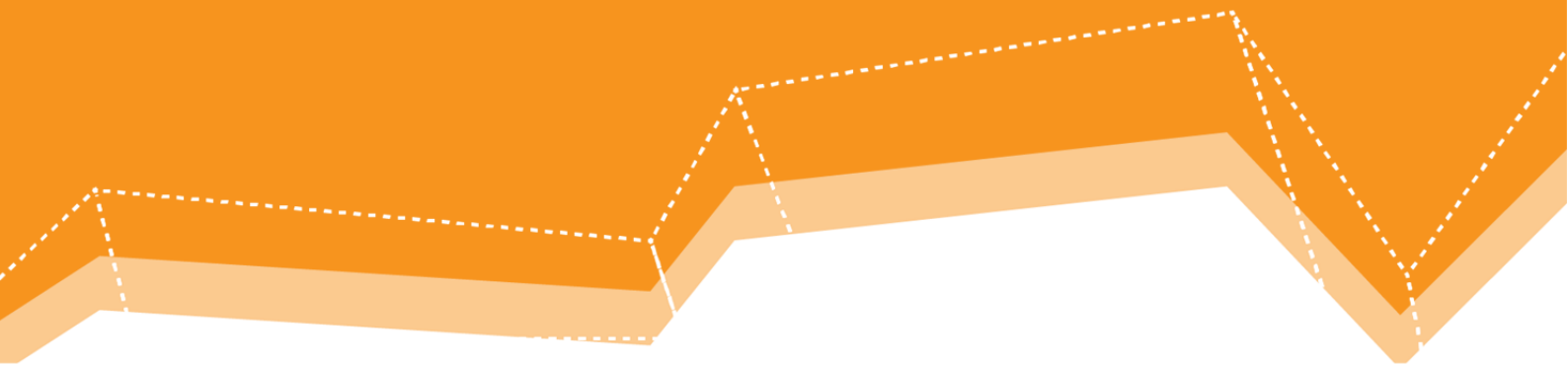
CLASS 1A - VOLUME OR PRODUCTION HOME														
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum						
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting			
Design Element 4 - Toilet														
Construct with sufficient circulation space	1) Negligible Impact	-	10%	Construct with sufficient circulation space	1) Negligible Impact	-	10%	Construct with sufficient circulation space	1) Negligible Impact	-	10%			
	2) Achieve clearance by replacing swing door with cavity slider door	80	80%		2) Achieve clearance by replacing swing door with cavity slider door, and additional width	1,097	80%		2) Achieve clearance by replacing swing door with cavity slider door, and additional width	1,097	80%			
	3) Retain swing door, and introduce additional width to bathroom	2,619	10%		3) Retain swing door, and introduce additional width and length	4,064	10%		3) Retain swing door, and introduce additional width and length	4,064	10%			
Weighted Cost				326	Weighted Cost				1,284	Weighted Cost				1,284
Design Element 5 - Shower														
Removable shower screen, no size requirement	1) Negligible Impact	-	100%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	15%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	15%			
	2) Change shower to compliant - step, circulation and additional waterproofing	-	0%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	2,888	76%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	2,888	76%			
					3) Change shower to compliant assuming swing door	3,750	9%		3) Change shower to compliant assuming swing door	3,750	9%			
Weighted Cost				-	Weighted Cost				2,536	Weighted Cost				2,536
Design Element 6 - Reinforcement of Bathroom and Toilet Walls														
Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%			
	2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%			
Weighted Cost				124	Weighted Cost				124	Weighted Cost				124
Design Element 7 - Internal Stairways														
No requirements			0%	No impact - single level home			0%	No impact - single level home			0%			
Weighted Cost				-	Weighted Cost				-	Weighted Cost				-
Design Element 8 - Kitchen Space														
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	40%	1500mm min clearance in front of benches and appliances	1) Negligible Impact	-	20%			
			0%		2) Increase circulation space	2,035	60%		2) Increase circulation space	4,069	60%			
									3) Increase space from Gold level	2,035	20%			
Weighted Cost				-	Weighted Cost				1,221	Weighted Cost				2,848

CLASS 1A - VOLUME OR PRODUCTION HOME											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
Design Element 9 - Laundry space											
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	70%	1550mm min clearance in front of benches and appliances	1) Negligible Impact	-	30%
			0%		2) increase circulation space	1,017	30%		2) increase circulation space	2,204	30%
									3) Increase space from Gold level	1,187	40%
Weighted Cost			-	Weighted Cost			305	Weighted Cost			1,136
Design Element 10 - Space on ground/entry level suitable for a bedroom											
No requirements				No impact - single level home			0%	No impact - single level home			0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 11 - Light switches and power outlets at easy to reach heights											
No requirements				Light switches to be 900mm to 1100mm above floor level			0%	Light switches to be 900mm to 1100mm above floor level			0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 12 - Door hardware at easy to reach heights											
No requirements				Door handles to be 900mm to 1100mm above floor level			0%	Door handles to be 900mm to 1100mm above floor level			0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 13 - Window Cills											
No requirements			0%	No requirements		-	0%	Cill height at 1m controls allow one handed operation	1) Negligible Impact		5%
									2)Upgrade window hardware to allow single handed operations	250	95%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			238
TOTALS - Design Element 1A			1,533	TOTALS - Design Element 1A			8,417	TOTALS - Design Element 1A			11,113
TOTALS - Design Element 1B			1,032	TOTALS - Design Element 1B			7,736	TOTALS - Design Element 1B			10,432



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## APPENDIX B COST MODEL OF CUSTOM HOME



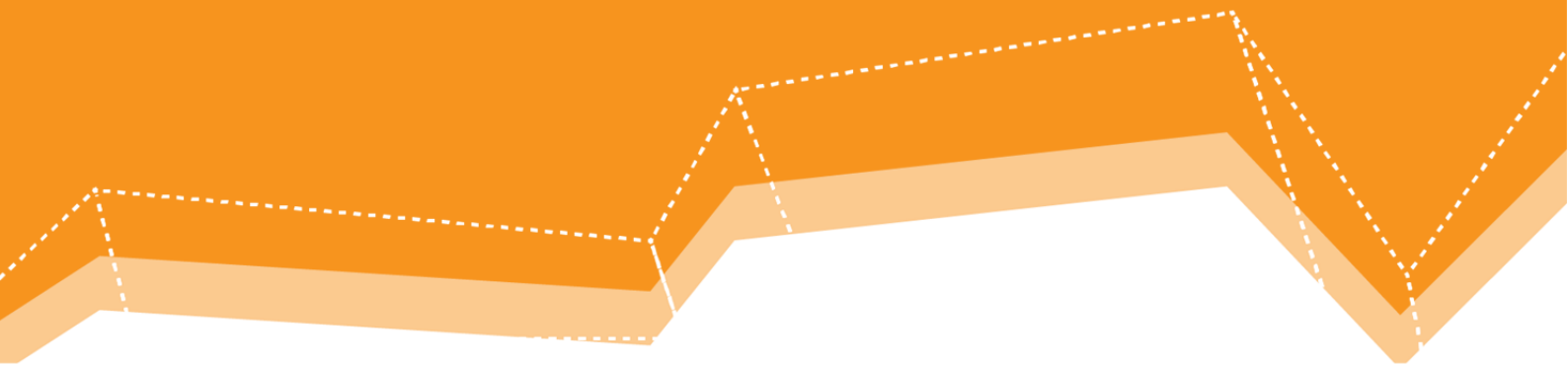
CLASS 1A - CUSTOM HOME											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
Design Element 1 - Dwelling Access Option B - BASELINE OPTION - A safe continuous and step free path of travel WITH ONLY ONE STEP											
The baseline option assumes that the dwelling has a 1m wide path from the boundary to the entrance door of the dwelling with only one step. It also assumes that any access to balconies or outdoor areas incorporate no more than one step (base assumption allows for accessible access to the home through the front door)											
There is no financial implication in meeting this proposed requirement											
Weighted Cost -				Weighted Cost -				Weighted Cost -			
Design Element 1 - Option A - Dwelling Access (Additional Requirements)											
There will be instances where access through the front door will not be feasible, and accessible access will be through the garage											
Carpark space increase to 3200x5400mm	1) Removing single step	425	75%	Carpark space increase to 3200x5400mm and to 2500mm vertical clearance	1) Removing single step and making path wider	620	75%	Carpark space increase to 3200x5400mm and to 2500mm vertical clearance	1) Removing single step and making path wider	620	75%
	2) Larger car space	931	25%		2) Larger car space	931	19%		2) Larger car space	931	19%
			0%		3) Larger space and height	1,571	6%		3) Larger space and height	1,571	6%
					4) Higher height only	640	0%		4) Higher height only	640	0%
Weighted Cost 551				Weighted Cost 738				Weighted Cost 738			
Design Element 2 - Dwelling Entrance											
800mm clear opening door with 5mm threshold and 1200x1200 arrival space	1) Negligible Impact	-	100%	850mm clear opening door with 5mm threshold and 1350x1350arrival space	1) Negligible Impact	-	20%	850mm clear opening door with 5mm threshold and 1350x1350arrival space	1) Negligible Impact	-	20%
	2) Low threshold door	-	0%		2) Low threshold larger door	100	80%		2) Low threshold larger door	100	80%
	3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	175	0%		3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	347	0%		3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	347	0%
					4) Low-step threshold, larger door and landing from 1.2x1.2m to 1.35x1.35m	172	0%		4) Low-step threshold, larger door and landing from 1.2x1.2m to 1.35x1.35m	172	0%
Weighted Cost -				Weighted Cost 80				Weighted Cost 80			
Design Element 3 - Internal doors and corridors											
800mm clear opening doors and 1000mm wide internal corridors	1) Negligible Impact	-	70%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact	-	20%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact	-	20%
	2) Wider doors only	-	0%		2) Wider doors only	509	50%		2) Wider doors only	509	50%
	3) Wider corridor	942	30%		3) Wider doors and wider corridor 0.9 to 1.2m	3,335	30%		3) Wider doors and wider corridor 0.9 to 1.2m	3,335	30%
					4) Wider doors and wider corridor 1 to 1.2m	2,393	0%		4) Wider doors and wider corridor 1 to 1.2m	2,393	0%
Weighted Cost 283				Weighted Cost 1,255				Weighted Cost 1,255			

CLASS 1A - CUSTOM HOME														
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum						
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting			
Design Element 4 - Toilet														
Construct with sufficient circulation space	1) Negligible Impact	-	10%	Construct with sufficient circulation space	1) Negligible Impact	-	0%	Construct with sufficient circulation space	1) Negligible Impact	-	0%			
	2) Achieve clearance by replacing swing door with cavity slider door	80	80%		2) Achieve clearance by replacing swing door with cavity slider door, and additional width	1,097	80%		2) Achieve clearance by replacing swing door with cavity slider door, and additional width	1,097	80%			
	3) Retain swing door, and introduce additional width to bathroom	2,619	10%		3) Retain swing door, and introduce additional width and length	4,064	10%		3) Retain swing door, and introduce additional width and length	4,064	10%			
					4) Silver compliant toilet to Gold/Gold+ compliant with cavity slider door design	1,017	9%		4) Silver compliant toilet to Gold/Gold+ compliant with cavity slider door design	1,017	9%			
					5) Silver compliant toilet to Gold/Gold+ compliant with swing door design	1,445	1%		5) Silver compliant toilet to Gold/Gold+ compliant with swing door design	1,445	1%			
Weighted Cost				326	Weighted Cost				1,390	Weighted Cost				1,390
Design Element 5 - Shower														
Removable shower screen, no size requirement	1) Negligible Impact	-	100%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	25%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	25%			
	2) Change shower to compliant - step, circulation and additional waterproofing	-	0%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	2,888	67%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	2,888	67%			
					3) Change shower to compliant assuming swing door	3,750	8%		3) Change shower to compliant assuming swing door	3,750	8%			
Weighted Cost				-	Weighted Cost				2,238	Weighted Cost				2,238
Design Element 6 - Reinforcement of Bathroom and Toilet Walls														
Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%			
	2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%			
Weighted Cost				124	Weighted Cost				124	Weighted Cost				124
Design Element 7 - Internal Stairways														
No requirements			0%	No impact - single level home			0%	No impact - single level home			0%			
Weighted Cost				-	Weighted Cost				-	Weighted Cost				-

CLASS 1A - CUSTOM HOME											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
Design Element 8 - Kitchen Space											
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	60%	1500mm min clearance in front of benches and appliances	1) Negligible Impact	-	50%
			0%		2) Increase circulation space	2,035	40%		2) Increase circulation space	4,069	40%
									3) Increase space from Gold level	2,035	10%
Weighted Cost			-	Weighted Cost			814	Weighted Cost			1,831
Design Element 9 - Laundry space											
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	70%	1550mm min clearance in front of benches and appliances	1) Negligible Impact	-	30%
			0%		2) increase circulation space	1,017	30%		2) increase circulation space	2,204	30%
									3) Increase space from Gold level	1,187	40%
Weighted Cost			-	Weighted Cost			305	Weighted Cost			1,136
Design Element 10 - Space on ground/entry level suitable for a bedroom											
No requirements			0%	No impact - single level home			0%	No impact - single level home			0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 11 - Light switches and power outlets at easy to reach heights											
No requirements			0%	Light switches to be 900mm to 1100mm above floor level			0%	Light switches to be 900mm to 1100mm above floor level			0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 12 - Door hardware at easy to reach heights											
No requirements			0%	Door handles to be 900mm to 1100mm above floor level			0%	Door handles to be 900mm to 1100mm above floor level			0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 13 - Window Cills											
No requirements			0%	No requirements			0%	Cill height at 1m controls allow one handed operation	1) Negligible Impact		5%
			0%				0%		2)Upgrade window hardware to allow single handed operations	375	95%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			356
TOTALS - Design Element 1A			1,283	TOTALS - Design Element 1A			6,944	TOTALS - Design Element 1A			9,148
TOTALS - Design Element 1B			732	TOTALS - Design Element 1B			6,206	TOTALS - Design Element 1B			8,411

# DONALD CANT WATTS CORKE

## APPENDIX C COST MODEL OF TOWNHOUSE



CLASS 1A - TOWNHOUSE ON NARROW LOT											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
Design Element 1 - Dwelling Access Option B - BASELINE OPTION - A safe continuous and step free path of travel WITH ONLY ONE STEP											
The baseline option assumes that the dwelling has a 1m wide path from the boundary to the entrance door of the dwelling with only one step. It also assumes that any access to balconies or outdoor areas incorporate no more than one step (base assumption allows for accessible access to the home through the front door)											
There is no financial implication in meeting this proposed requirement											
Weighted Cost		-	Weighted Cost		-	Weighted Cost		-			
Design Element 1 - Option A - Dwelling Access (Additional Requirements)											
There will be instances where access through the front door will not be feasible, and accessible access will be through the garage											
Carpark space increase to 3200x5400mm	1) Removing single step	425	85%	Carpark space increase to 3200x5400mm and to 2500mm vertical clearance	1) Removing single step and making path wider	620	85%	Carpark space increase to 3200x5400mm and to 2500mm vertical clearance	1) Removing single step and making path wider	620	85%
	2) Larger car space	931	15%		2) Larger car space	931	13%		2) Larger car space	931	13%
			0%		3) Larger space and height	1,571	2%		3) Larger space and height	1,571	2%
					4) Higher height only	640	0%		4) Higher height only	640	0%
Weighted Cost		501	Weighted Cost		681	Weighted Cost		681			
Design Element 2 - Dwelling Entrance											
800mm clear opening door with 5mm threshold and 1200x1200 arrival space	1) Negligible Impact	-	40%	850mm clear opening door with 5mm threshold and 1350x1350arrival space	1) Negligible Impact	-	10%	850mm clear opening door with 5mm threshold and 1350x1350arrival space	1) Negligible Impact	-	10%
	2) Low threshold door	-	0%		2) Low threshold larger door	100	10%		2) Low threshold larger door	100	10%
	3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	175	60%		3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	347	60%		3) Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)	347	60%
					4) Low-step threshold, larger door and landing from 1.2x1.2m to 1.35x1.35m	172	20%		4) Low-step threshold, larger door and landing from 1.2x1.2m to 1.35x1.35m	172	20%
Weighted Cost		105	Weighted Cost		253	Weighted Cost		253			
Design Element 3 - Internal doors and corridors											
800mm clear opening doors and 1000mm wide internal corridors	1) Negligible Impact	-	30%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact	-	0%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact	-	0%
	2) Wider doors only	-			2) Wider doors only	509	20%		2) Wider doors only	509	20%
	3) Wider corridor	942	70%		3) Wider doors and wider corridor 0.9 to 1.2m	3,335	70%		3) Wider doors and wider corridor 0.9 to 1.2m	3,335	70%
					4) Wider doors and wider corridor 1 to 1.2m	2,393	10%		4) Wider doors and wider corridor 1 to 1.2m	2,393	10%
Weighted Cost		659	Weighted Cost		2,676	Weighted Cost		2,676			



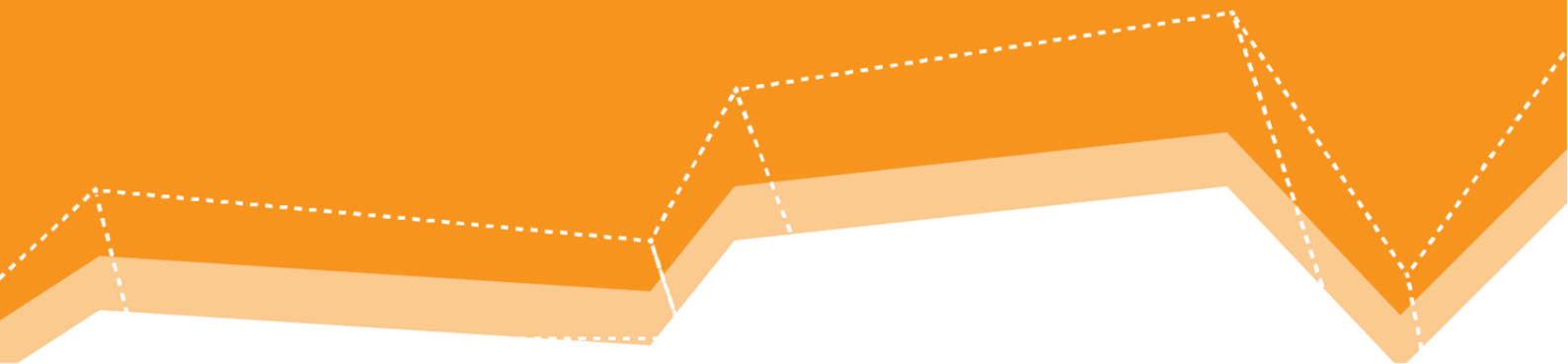
CLASS 1A - TOWNHOUSE ON NARROW LOT											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
Design Element 4 - Toilet											
Construct with sufficient circulation space	1) Negligible Impact	-	0%	Construct with sufficient circulation space	1) Negligible Impact	-	0%	Construct with sufficient circulation space	1) Negligible Impact	-	0%
	2) Achieve clearance by replacing swing door with cavity slider door	80	70%		2) Achieve clearance by replacing swing door with cavity slider door, and additional width	1,097	70%		2) Achieve clearance by replacing swing door with cavity slider door, and additional width	1,097	70%
	3) Retain swing door, and introduce additional width to bathroom	2,619	20%		3) Retain swing door, and introduce additional width and length	4,064	20%		3) Retain swing door, and introduce additional width and length	4,064	20%
Provide WC at Ground level	4) Additional WC where not currently provided at entry level (with slider door design)	3,537	8%	Provide WC at Ground level	4) Additional WC where not currently provided at entry level	4,689	8%	Provide WC at Ground level	4) Additional WC where not currently provided at entry level	4,689	8%
	5) Additional WC where not currently provided at entry level (with swing door design)	4,409	2%		5) Additional WC where not currently provided at entry level (with swing door design)	6,848	2%		5) Additional WC where not currently provided at entry level (with swing door design)	6,848	2%
Weighted Cost			951	Weighted Cost			2,093	Weighted Cost			2,093
Design Element 5 - Shower											
Removable shower screen, no size requirement	1) Negligible Impact		100%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	15%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	15%
	2) Change shower to compliant - step, circulation and additional waterproofing		0%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	2,888	58.3%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	2,888	58.3%
					3) Change shower to compliant assuming swing door	3,750	16.7%		3) Change shower to compliant assuming swing door	3,750	16.7%
				Provide Shower at Ground Level	4) Additional shower in bathroom with cavity door design	6,920	8.0%	Provide Shower at Ground Level	4) Additional shower in bathroom with cavity door design	6,920	8.0%
					5) Additional shower in bathroom with swing door design	9,367	2.0%		5) Additional shower in bathroom with swing door design	9,367	2.0%
Weighted Cost			-	Weighted Cost			3,051	Weighted Cost			3,051
Design Element 6 - Reinforcement of Bathroom and Toilet Walls											
Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%
	2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%
Weighted Cost			124	Weighted Cost			124	Weighted Cost			124

CLASS 1A - TOWNHOUSE ON NARROW LOT													
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum					
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting		
Design Element 7 - Internal Stairways													
No requirements			0%	Stair to have no winders and landings introduced and adjoining a wall to support a handrail	1) Negligible Impact (existing practice meets standard)		10%	Stair to have no winders and landings introduced and adjoining a wall to support a handrail	1) Negligible Impact (existing practice meets standard)		10%		
			0		3) Stair results in less efficient layout requiring additional internal area	2,974	90%		3) Stair results in less efficient layout requiring additional internal area	2,974	90%		
Weighted Cost			-	Weighted Cost			2,677	Weighted Cost			2,677		
Design Element 8 - Kitchen Space													
No requirements			0	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	40%	1500mm min clearance in front of benches and appliances	1) Negligible Impact	-	20%		
			0		2) Increase circulation space	2,035	60%		2) Increase circulation space	4,069	60%		
									3) Increase space from Gold level	2,035	20%		
Weighted Cost			-	Weighted Cost			1,221	Weighted Cost			2,848		
Design Element 9 - Laundry space													
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	70%	1550mm min clearance in front of benches and appliances	1) Negligible Impact	-	30%		
			0%		2) increase circulation space	1,017	30%		2) increase circulation space	2,204	30%		
									3) Increase space from Gold level	1,187	40%		
Weighted Cost			-	Weighted Cost			305	Weighted Cost			1,136		
Design Element 10 - Space on ground/entry level suitable for a bedroom													
No requirements		-	0%	Negligible Impact - existing living spaces can be converted			-	0%	Negligible Impact - existing living spaces can be converted			-	0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-		
Design Element 11 - Light switches and power outlets at easy to reach heights													
No requirements			0%	Light switches to be 900mm to 1100mm above floor level			0%	Light switches to be 900mm to 1100mm above floor level			0%		
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-		
Design Element 12 - Door hardware at easy to reach heights													
No requirements			0%	Door handles to be 900mm to 1100mm above floor level			0%	Door handles to be 900mm to 1100mm above floor level			0%		
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-		

CLASS 1A - TOWNHOUSE ON NARROW LOT											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
<b>Design Element 13 - Window Cills</b>											
No requirements			0%	No requirements			0%	Cill height at 1m controls allow one handed operation	1) Negligible Impact		5%
			0%				0%		2) Upgrade window hardware to allow single handed operations	125	95%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			119
TOTALS - Design Element 1A			2,340	TOTALS - Design Element 1A			13,079	TOTALS - Design Element 1A			15,656
TOTALS - Design Element 1B			1,839	TOTALS - Design Element 1B			12,398	TOTALS - Design Element 1B			14,975

# DONALD CANT WATTS CORKE

## APPENDIX D COST MODEL OF CLASS 2 THREE-STOREY WALKUP APARTMENT



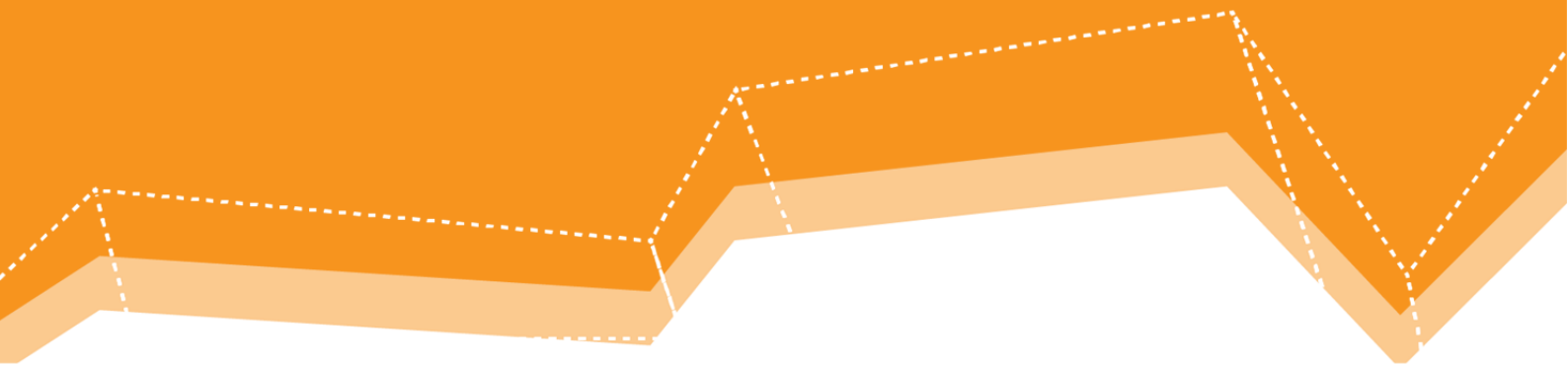
CLASS 2 - WALKUPS											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
<b>Design Element 1 - Dwelling Access</b>											
Exclude - already part of NCC requirements for GF units to have accessible path				Exclude - already part of NCC requirements for GF units to have accessible path				Exclude - already part of NCC requirements for GF units to have accessible path			
Weighted Cost -				Weighted Cost -				Weighted Cost -			
<b>Design Element 2 - Dwelling Entrance</b>											
800mm clear opening door with 5mm threshold and 1200x1200mm arrival space	1) Negligible Impact		100%	850mm clear opening door with 5mm threshold and 1350x1350mm arrival space	1) Negligible Impact	-	20%	850mm clear opening door with 5mm threshold and 1350x1350arrival space	1) Negligible Impact	-	20%
	2) Low-step threshold and larger door		0%		2) Low-step threshold and larger door	100	80%		2) Low-step threshold and larger door	100	80%
Weighted Cost -				Weighted Cost 80				Weighted Cost 80			
<b>Design Element 3 - Internal doors and corridors</b>											
800mm clear opening doors and 1000mm wide internal corridors	1) Negligible Impact		40%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact		0%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact		0%
	2) Wider doors only	-	0%		2) Wider doors only	509	40%		2) Wider doors only	509	40%
	3) Wider corridor	1,365	60%		3) Wider doors and wider corridor 0.9 to 1.2m	4,604	60%		3) Wider doors and wider corridor 0.9 to 1.2m	4,604	60%
					4) Wider doors and wider corridor 1 to 1.2m	3,239	0%		4) Wider doors and wider corridor 1 to 1.2m	3,239	0%
Weighted Cost 819				Weighted Cost 2,966				Weighted Cost 2,966			
<b>Design Element 4 - Toilet</b>											
Construct with sufficient circulation space	1) Negligible Impact	-	10%	Construct with sufficient circulation space	1) Negligible Impact	-	10%	Construct with sufficient circulation space	1) Negligible Impact	-	10%
	2) Achieve clearance by replacing swing door with cavity slider door	80	80%		2) Achieve clearance by replacing swing door with cavity slider door, and additional width	1,309	80%		2) Achieve clearance by replacing swing door with cavity slider door, and additional width	1,309	80%
	3) Retain swing door, and introduce additional width to bathroom	3,153	10%		3) Retain swing door, and introduce additional width and length	4,914	10%		3) Retain swing door, and introduce additional width and length	4,914	10%
Weighted Cost 379				Weighted Cost 1,539				Weighted Cost 1,539			
<b>Design Element 5 - Shower</b>											
Removable shower screen, no size requirement	1) Negligible Impact		100%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	15%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	15%
	2) Change shower to compliant - step, circulation and additional waterproofing		0%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	3,488	75.6%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	3,488	75.6%
					3) Change shower to compliant assuming swing door	4,529	9.4%		3) Change shower to compliant assuming swing door	4,529	9.4%
Weighted Cost -				Weighted Cost 3,063				Weighted Cost 3,063			
<b>Design Element 6 - Reinforcement of Bathroom and Toilet Walls</b>											
Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%
	2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%
Weighted Cost 124				Weighted Cost 124				Weighted Cost 124			
<b>Design Element 7 - Internal Stairways</b>											

CLASS 2 - WALKUPS											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
No requirements			0%	No impact - single level home			0%	No impact - single level home			0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 8 - Kitchen Space											
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	50%	1500mm min clearance in front of benches and appliances	1) Negligible Impact	-	30%
			0%		2) Increase circulation space	2,457	50%		2) Increase circulation space	4,914	50%
									3) Increase space from Gold level	2,457	20%
Weighted Cost			-	Weighted Cost			1,229	Weighted Cost			2,948
Design Element 9 - Laundry space											
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	70%	1550mm min clearance in front of benches and appliances	1) Negligible Impact	-	30%
			0%		2) increase circulation space	1,229	30%		2) increase circulation space	2,662	30%
									3) Increase space from Gold level	1,433	40%
Weighted Cost			-	Weighted Cost			369	Weighted Cost			1,372
Design Element 10 - Space on ground/entry level suitable for a bedroom											
No requirements			0%	No impact - single level home			0%	No impact - single level home			0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 11 - Light switches and power outlets at easy to reach heights											
No requirements			0%	Light switches to be 900mm to 1100mm above floor level	Standard practice - no financial impact		0%	Light switches to be 900mm to 1100mm above floor level	Standard practice - no financial impact		0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 12 - Door hardware at easy to reach heights											
No requirements			0%	Door handles to be 900mm to 1100mm above floor level	Standard practice - no financial impact		0%	Door handles to be 900mm to 1100mm above floor level	Standard practice - no financial impact		0%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			-
Design Element 13 - Window Cills											
No requirements			0%	No requirements			0%	Cill height at 1m controls allow one handed operation	1) Negligible Impact		5%
			0%				0%		2) Upgrade window hardware to allow single handed operations	125	95%
Weighted Cost			-	Weighted Cost			-	Weighted Cost			119
TOTALS - Design Element 1A			1,322	TOTALS - Design Element 1A			9,368	TOTALS - Design Element 1A			12,210
TOTALS - Design Element 1B			1,322	TOTALS - Design Element 1B			9,368	TOTALS - Design Element 1B			12,210



# DONALD CANT WATTS CORKE

## APPENDIX E COST MODEL OF CLASS 2 FOUR STOREYS PLUS APARTMENT



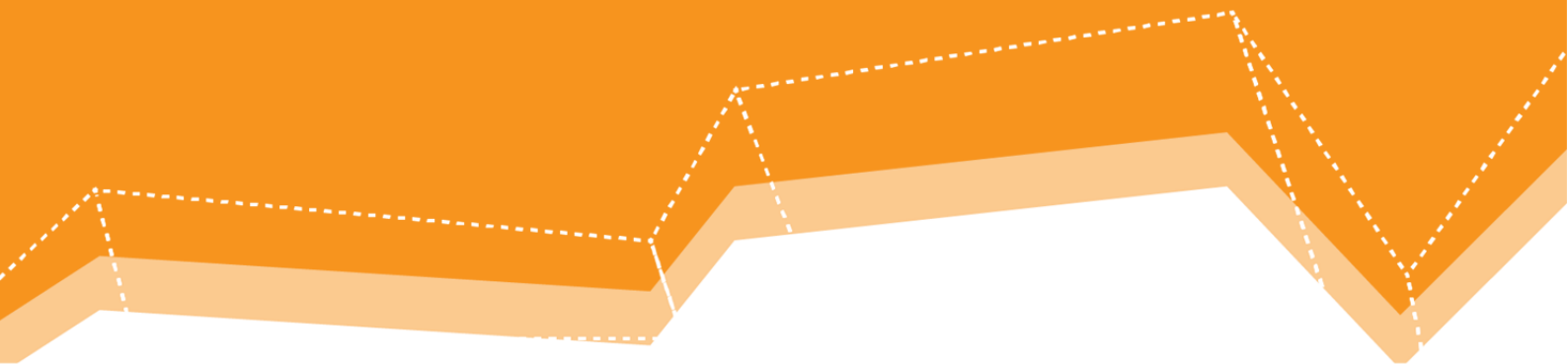
CLASS 2 - FOUR STOREYS PLUS											
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum			
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting
Design Element 1 - Dwelling Access Option B - BASELINE OPTION											
The baseline option assumes that the apartment is serviced by a lift, therefore no further access provisions have to be made. In addition, it assumes that any access to balconies or outdoor areas incorporate no more than one step, rendering these apartments compliant with the proposed NCC changes.				The baseline option assumes that the apartment is serviced by a lift, therefore no further access provisions have to be made. In addition, it assumes that any access to balconies or outdoor areas incorporate no more than one step, rendering these apartments compliant with the proposed NCC changes.				The baseline option assumes that the apartment is serviced by a lift, therefore no further access provisions have to be made. In addition, it assumes that any access to balconies or outdoor areas incorporate no more than one step, rendering these apartments compliant with the proposed NCC changes.			
There is no financial implication in meeting this proposed requirement				There is no financial implication in meeting this proposed requirement				There is no financial implication in meeting this proposed requirement			
Weighted Cost -				Weighted Cost -				Weighted Cost -			
Design Element 1 - Option A - Dwelling Access (Additional Requirements)											
Carparking provision is driven by market forces and state planning regulations, this allowance is based the marginal cost to adjust a single associated car space											
Dedicated carpark space increases to 3.2x5.4m from 2.5x5.4m, including proportional allowance for impact on the aisle	1) Negligible Impact	-	25%	As for Silver but height increases from 2.2m to 2.5m	1) Negligible Impact	-	0%	As for Silver but height increases from 2.2m to 2.5m	1) Negligible Impact	-	0%
	2) Larger car space	5,831	75%		2) Larger car space	5,831	26%		2) Larger car space	5,831	26%
	3) Larger space and height		0%		3) Larger space and height	10,360	49%		3) Larger space and height	10,360	49%
					4) Higher height only	4,529	25%		4) Higher height only	4,529	25%
Weighted Cost 4,373				Weighted Cost 7,713				Weighted Cost 7,713			
Design Element 2 - Dwelling Entrance											
800mm clear opening door with 5mm threshold and 1200x1200mm arrival space	1) Negligible Impact		100%	850mm clear opening door with 5mm threshold and 1350x1350mm arrival space. Apartment assumed compliant with arrival side space requirements	1) Negligible Impact	-	60%	850mm clear opening door with 5mm threshold and 1350x1350mm arrival space. Apartment assumed compliant with arrival side space requirements	1) Negligible Impact	-	60%
	2) Low-step threshold and larger door		0%		2) Low-step threshold and larger door	100	40%		2) Low-step threshold and larger door	100	40%
Weighted Cost -				Weighted Cost 40				Weighted Cost 40			
Design Element 3 - Internal doors and corridors											
800mm clear opening doors and 1000mm wide internal corridors	1) Negligible Impact		40%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact		0%	850mm clear opening doors and 1200mm wide internal corridors	1) Negligible Impact		0%
	2) Wider doors only	-	0%		2) Wider doors only	509	40%		2) Wider doors only	509	40%
	3) Wider corridor	1,365	60%		3) Wider doors and wider corridor 0.9 to 1.2m	4,604	60%		3) Wider doors and wider corridor 0.9 to 1.2m	4,604	60%
					4) Wider doors and wider corridor 1 to 1.2m	3,239	0%		4) Wider doors and wider corridor 1 to 1.2m	3,239	0%
Weighted Cost 819				Weighted Cost 2,966				Weighted Cost 2,966			

CLASS 2 - FOUR STOREYS PLUS														
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum						
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting			
Design Element 4 - Toilet														
Construct with sufficient circulation space	1) Negligible Impact	-	0%	Construct with sufficient circulation space	1) Negligible Impact	-	0%	Construct with sufficient circulation space	1) Negligible Impact	-	0%			
	2) Achieve clearance by replacing swing door with cavity slider door	80	80%		2) Achieve clearance by replacing swing door with cavity slider door, and provide additional width	1,309	70%		2) Achieve clearance by replacing swing door with cavity slider door, and provide additional width	1,309	70%			
	3) Retain swing door, and introduce additional width to bathroom	3,153	20%		3) Retain swing door, and introduce additional width and length	4,914	30%		3) Retain swing door, and introduce additional width and length	4,914	30%			
Weighted Cost				695	Weighted Cost				2,391	Weighted Cost				2,391
Design Element 5 - Shower														
Removable shower screen, no size requirement	1) Negligible Impact		100%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	50%	As for Silver, but with 900x900 shower and 1200x1200 space at entry	1) Negligible Impact	-	50%			
	2) Change shower to compliant - step, circulation and additional waterproofing		0%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	3,488	35%		2) Change shower to compliant - step, circulation and additional waterproofing (with slider door)	3,488	35%			
					3) Change shower to compliant assuming swing door	4,529	15%		3) Change shower to compliant assuming swing door	4,529	15%			
Weighted Cost				-	Weighted Cost				1,900	Weighted Cost				1,900
Design Element 6 - Reinforcement of Bathroom and Toilet Walls														
Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%	Reinforce walls for future adaptation	1) Negligible Impact	-	5%			
	2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%		2) Addition of compliant noggings	130	95%			
Weighted Cost				124	Weighted Cost				124	Weighted Cost				124
Design Element 7 - Internal Stairways														
No requirements			0%	No impact - single level home			0%	No impact - single level home			0%			
Weighted Cost				-	Weighted Cost				-	Weighted Cost				-
Design Element 8 - Kitchen Space														
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	70%	1500mm min clearance in front of benches and appliances	1) Negligible Impact	-	60%			
			0%		2) Increase circulation space	2,457	30%		2) Increase circulation space	4,914	30%			
									3) Increase space from Gold level	2,457	10%			
Weighted Cost				-	Weighted Cost				737	Weighted Cost				1,720

CLASS 2 - FOUR STOREYS PLUS														
Option 1 - Based on LHDG Silver				Option 2 - Based on LHDG Gold				Option 3 - Based on LHDG Gold + part of Platinum						
NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting	NCC Element and Requirements	Scenario of Possible Impact on Dwelling (Low/Medium/High)	Straight Cost	Scenario Weighting			
Design Element 9 - Laundry space														
No requirements			0%	1200mm min clearance in front of benches and appliances	1) Negligible Impact	-	70%	1550mm min clearance in front of benches and appliances	1) Negligible Impact	-	30%			
			0%		2) increase circulation space	1,229	30%		2) increase circulation space	2,662	30%			
									3) Increase space from Gold level	1,433	40%			
Weighted Cost				-	Weighted Cost				369	Weighted Cost			1,372	
Design Element 10 - Space on ground/entry level suitable for a bedroom														
No requirements			0%	No impact - single level home			0%	No impact - single level home			0%			
Weighted Cost				-	Weighted Cost				-	Weighted Cost			-	
Design Element 11 - Light switches and power outlets at easy to reach heights														
No requirements			0%	Light switches to be 900mm to 1100mm above floor level	Standard practice - no financial impact		0%	Light switches to be 900mm to 1100mm above floor level	Standard practice - no financial impact		0%			
Weighted Cost				-	Weighted Cost				-	Weighted Cost			-	
Design Element 12 - Door hardware at easy to reach heights														
No requirements			0%	Door handles to be 900mm to 1100mm above floor level	Standard practice - no financial impact		0%	Door handles to be 900mm to 1100mm above floor level	Standard practice - no financial impact		0%			
Weighted Cost				-	Weighted Cost				-	Weighted Cost			-	
Design Element 13 - Window Cills														
No requirements			0%	No requirements			0%	Cill height at 1m controls allow one handed operation	1) Negligible Impact		5%			
			0%				0%		2)Upgrade window hardware to allow single handed operations	175	95%			
Weighted Cost				-	Weighted Cost				-	Weighted Cost			166	
TOTALS - Design Element 1A				6,011	TOTALS - Design Element 1A				16,239	TOTALS - Design Element 1A				18,391
TOTALS - Design Element 1B				1,637	TOTALS - Design Element 1B				8,526	TOTALS - Design Element 1B				10,678

# DONALD CANT WATTS CORKE

## APPENDIX F DETAILED COST ESTIMATE



		Silver			Gold			Gold+		
		Qty	Rate	\$	Qty	Rate	\$	Qty	Rate	\$
Design Element 1 - Dwelling Access										
Front entrance		425			620			620		
Removing single step (1m)	item	1.00	425.00	425						
Removing single step (1m) and making path wider (1.1m)	item				1.00	620.00	620	1.00	620.00	620
Larger car space, no extra height		931			931			931		
ADD: 3200 x 5400mm Garage including slab on ground, some walls, metal roof on purlins with timber truss roof, gutters and downpipe, and allowance for electrical lighting	m2	17.28	1,193.20	20,618	17.28	1,193.20	20,618	17.28	1,193.20	20,618
LESS: standard single garage	m2	(16.50)	1,193.20	(19,688)	(16.50)	1,193.20	(19,688)	(16.50)	1,193.20	(19,688)
Larger car space, plus height from 2.4 to 2.5m high		-			1,571			1,571		
ADD: 3200 x 5400mm Garage including slab on ground, some walls, metal roof on purlins with timber truss roof, gutters and downpipe, and allowance for electrical lighting	m2				17.28	1,230.26	21,259	17.28	1,230.26	21,259
LESS: standard single garage	m2				(16.50)	1,193.20	(19,688)	(16.50)	1,193.20	(19,688)
No need for larger car space, increase height from 2.4 to 2.5m high only		-			640			640		
ADD: 3200 x 5400mm Garage including slab on ground, some walls, metal roof on purlins with timber truss roof, gutters and downpipe, and allowance for electrical lighting	m2				17.28	1,230.26	21,259	17.28	1,230.26	21,259
LESS: the garage provided for Silver	m2				(17.28)	1,193.20	(20,618)	(17.28)	1,193.20	(20,618)
Design Element 2 - Dwelling Entrance										
Low-step threshold and larger door		-			100			100		
ADD: Min 850mm clear opening door including frame and solid core door with max 5mm threshold step	no				1.00	590.32	590	1.00	590.32	590
LESS: 820mm solid core door including with frame and door with 25mm threshold	no				(1.00)	489.84	(490)	(1.00)	489.84	(490)



		Silver			Gold			Gold+		
		Qty	Rate	\$	Qty	Rate	\$	Qty	Rate	\$
<b>Low-step threshold, larger door if required and larger landing from 0.9x0.9m to 1.2x1.2m (Silver) or 1.35x1.35m (Gold, Gold+)</b>		<b>175</b>			<b>347</b>			<b>347</b>		
ADD: Landing slab minimum 1200 x 1200mm integral with house raft slab including concrete, mesh reinforcement, subgrade preparation, formwork and labour, and broom finish to concrete	m2	1.44	188.40	271						
LESS: 1000 x 900mm paved landing including mesh reinforcement, subgrade preparation, formwork and labour, and broom finish to concrete	m2	(0.90)	106.76	(96)						
Doors from above	item						100			100
ADD: Landing slab minimum 1350 x 1350mm integral with house raft slab including concrete, mesh reinforcement, subgrade preparation, formwork and labour, and broom finish to concrete	m2				1.82	188.40	343	1.82	188.40	343
LESS: 1000 x 900mm paved landing including mesh reinforcement, subgrade preparation, formwork and labour, and broom finish to concrete	m2				(0.90)	106.76	(96)	(0.90)	106.76	(96)
<b>Low-step threshold, larger door and landing from 1.2x1.2m to 1.35x1.35m</b>		<b>172</b>			<b>172</b>			<b>172</b>		
Doors from above	item						100			100
ADD: Landing slab minimum 1350 x 1350mm integral with house raft slab including concrete, mesh reinforcement, subgrade preparation, formwork and labour, and broom finish to concrete	m2				1.82	188.40	343	1.82	188.40	343
LESS: Landing slab minimum 1200 x 1200mm integral with house raft slab including concrete, mesh reinforcement, subgrade preparation, formwork and labour, and broom finish to concrete	m2				(1.44)	188.40	(271)	(1.44)	188.40	(271)
<b>Design Element 3 - Wider internal doors and corridors</b>										
<b>Wider doors to three bedrooms, one bathroom, one laundry</b>		<b>-</b>			<b>509</b>			<b>509</b>		
ADD: Min 850mm clear opening width internal door including timber frame and hollow core door	no				5.00	546.36	2,732	5.00	546.36	2,732
LESS: 820mm wide internal door including timber frame and hollow core door (bedrooms)	no				(3.00)	452.16	(1,356)	(3.00)	452.16	(1,356)
LESS: 720mm wide internal door including timber frame and hollow core door (bathroom)	no				(2.00)	433.32	(867)	(2.00)	433.32	(867)
<b>Wider corridor from 0.9 to 1m</b>		<b>942</b>								
Additional corridor width comprising slabs with steel float finish, wall framing and linings, ceiling linings, finishes on walls, floors and ceilings, proportional adjustments to services. (5m corridor, 100mm wider)	m2	0.50	1,884.00	942						

		Silver			Gold			Gold+		
		Qty	Rate	\$	Qty	Rate	\$	Qty	Rate	\$
<b>Wider doors and corridor from 0.9 to 1.2m wide</b>		<b>3,335</b>			<b>3,335</b>			<b>3,335</b>		
Doors from above	item						509			509
Additional corridor width comprising slabs with steel float finish, wall framing and linings, ceiling linings, finishes on walls, floors and ceilings, proportional adjustments to services. (5m corridor, 300mm wider)	m2	1.50	1,884.00	2,826	1.50	1,884.00	2,826	1.50	1,884.00	2,826
<b>Wider doors and corridor from 1m to 1.2m wide</b>		<b>2,393</b>			<b>2,393</b>			<b>2,393</b>		
Doors from above	item						509			509
Additional corridor width comprising slabs with steel float finish, wall framing and linings, ceiling linings, finishes on walls, floors and ceilings, proportional adjustments to services. (5m corridor, 200mm wider) from the silver compliant corridor	m2	1.00	1,884.00	1,884	1.00	1,884.00	1,884	1.00	1,884.00	1,884
<b>Design Element 4 - Toilet (Assumed to be located in a bathroom)</b>										
<b>Using an existing toilet in a bathroom</b>										
Required space between door arc and WC can be achieved by replacing a swing door with a cavity slider door	item	1.00	80.00	80						
A cavity slider door cannot be used, therefore additional width needs to be added to the bathroom	m2	1.39	1,884.00	2,619						
Additional side space only required due to cavity slider door being introduced (rate includes the cost of the cavity slider)	m2	0.54	2,031.48	1,097	0.54	2,031.48	1,097	0.54	2,031.48	1,097
Using swing door	m2	2.16	1,884.00	4,064	2.16	1,884.00	4,064	2.16	1,884.00	4,064
Silver compliant toilet to Gold/Gold+ compliant with cavity slider door design	m2	0.54	1,884.00	1,017	0.54	1,884.00	1,017	0.54	1,884.00	1,017
Silver compliant toilet to Gold/Gold+ compliant with swing door design	m2	0.77	1,884.00	1,445	0.77	1,884.00	1,445	0.77	1,884.00	1,445
<b>New toilet</b>										
A cavity slider door can be used	m2	1.58	2,194.86	3,537	2.10	2,194.86	4,689	2.10	2,194.86	4,689
A cavity slider door cannot be used, therefore additional width is needed in each direction of the bathroom	m2	2.34	1,884.00	4,409						
Ground floor toilet including additional bathroom area comprising slabs with steel float finish, wall framing and linings, ceiling linings, finishes on walls, floors and ceilings, proportional adjustments to services and allowance for WC fixtures and associated plumbing. 2600x1200mm footprint assumed	m2	3.12	2,194.86	6,848	3.12	2,194.86	6,848	3.12	2,194.86	6,848

Silver			Gold			Gold+		
Qty	Rate	\$	Qty	Rate	\$	Qty	Rate	\$
<b>Design Element 5 - Shower (shower assumed 900x900mm)</b>								
<b>Provide 1200 square circulation space for shower (Assuming in the existing bathroom with toilet)</b>								
A sliding door can be used for the combined bathroom design	m2		1.53	1,884.00	2,888	1.53	1,884.00	2,888
A swing door is used for the combined bathroom design	m2		1.99	1,884.00	3,750	1.99	1,884.00	3,750
<b>Shower on entry or ground level (Assuming new)</b>			-			-		
A sliding door can be used for the combined bathroom design	m2		3.15	2,194.86	6,920	3.15	2,194.86	6,920
A swing door is used for the combined bathroom design	m2		4.27	2,194.86	9,367	4.27	2,194.86	9,367
<b>Design Element 6 - Reinforcement of bathroom and toilet walls</b>								
<b>Addition of noggings</b>			130			130		
Allow 2 hours of carpentry time for nogging installation irrespective of the wet area layout of any of the homes. This includes \$20 of materials.	no	1.00	130.00	130	1.00	130.00	130	130
<b>Design Element 7 - Internal Stairways</b>								
<b>Stair flights to be straight (no winders), and adjoining a wall to support a handrail</b>			-			2,974		
ADD: Stair with continuous compliant handrail to one side comprising straight flights and landings	m/rise		2.70	2,580.00	6,966	2.70	2,580.00	6,966
LESS: Ditto, but with winders, not landings	m/rise		(2.70)	2,420.42	(6,535)	(2.70)	2,420.42	(6,535)
Additional circulation space to accommodate landings in lieu of winders	m2		1.35	1,884.00	2,543	1.35	1,884.00	2,543
<b>Design Element 8 - Kitchen Space</b>								
Additional circulation space in kitchen to provide 1200mm clearance in front of fixed benches and appliances	m2		1.08	1,884.00	2,035			
Additional circulation space in kitchen to provide 1500mm clearance in front of fixed benches and appliances	m2					2.16	1,884.00	4,069
Additional circulation space in kitchen to provide 1500mm clearance in front of fixed benches and appliances from the Gold compliant case	m2					1.08	1,884.00	2,035

		Silver			Gold			Gold+		
		Qty	Rate	\$	Qty	Rate	\$	Qty	Rate	\$
<b>Design Element 9 - Laundry Space</b>										
Additional circulation space to provide 1200mm clearance in front of fixed benches and appliances	m2				0.54	1,884.00	1,017			
Additional circulation space to provide 1550mm clearance in front of fixed benches and appliances	m2							1.17	1,884.00	2,204
Additional circulation space to provide 1550mm clearance in front of fixed benches and appliances from Gold compliant case	m2							0.63	1,884.00	1,187
<b>Design Element 13 - Maximum sill heights for windows</b>										
<b>Window specific design, with bulk of windows probably requiring upgrading of hardware to allow single handed operations</b>										
Winders - Townhouse	no							5.00	25.00	125
Winders - Volume house	no							10.00	25.00	250
Winders - Custom House	no							15.00	25.00	375
no cost involved to manipulate height of window cill	note									

				Silver			Gold			Gold+		
				Qty	Rate	\$	Qty	Rate	\$	Qty	Rate	\$
Design Element 1 - Larger Basement Car spaces												
Larger car space, no extra height				5,831			5,831			5,831		
Carpark space increases to 3.2x5.4m from 2.5x5.4m, net extra space including ground slab, suspended transfer slab, drainage under slabs, retaining walls and drainage, and proportional adjustment to services and finishes, and proportional adjustment to aisle width	m2	5.92	985.00	5,831	5.92	985.00	5,831	5.92	985.00	5,831	5.92	985.00
Larger car space, plus height from 2.2 to 2.5m high				-			10,360			10,360		
Carpark space increases to 3.2x5.4m from 2.5x5.4m net extra space including ground slab, suspended transfer slab, columns, drainage under slabs, retaining walls and drainage, and adjustment to services and finishes, including proportional adjustment to aisle width, and additional height	m2				5.92	1,750.00	10,360	5.92	1,750.00	10,360		
Increase height from 2.2 to 2.5m high only				-			4,529			4,529		
no need for extra space, only raising the height to meet Gold/Gold+ standard	m2				5.92	765.00	4,529	5.92	765.00	4,529		
Design Element 2 - Dwelling Entrance												
Low-step threshold and larger door. Apartments assumed compliant with arrival side space requirements				-			100			100		
ADD: Min 850mm clear opening door including frame and solid core door with max 5mm threshold step	no				1.00	590.32	590	1.00	590.32	590		
LESS: 820mm solid core door including with frame and door with 25mm threshold	no				(1.00)	489.84	(490)	(1.00)	489.84	(490)		
Design Element 3 - Wider internal doors and corridors												
Wider doors to three bedrooms and one bathroom, one laundry				-			509			509		
ADD: Min 850mm clear opening width internal door including timber frame and hollow core door	no				5.00	546.36	2,732	5.00	546.36	2,732		
LESS: 820mm wide internal door including timber frame and hollow core door (bedrooms)	no				(3.00)	452.16	(1,356)	(3.00)	452.16	(1,356)		
LESS: 720mm wide internal door including timber frame and hollow core door (bathroom)	no				(2.00)	433.32	(867)	(2.00)	433.32	(867)		

		Silver			Gold			Gold+		
		Qty	Rate	\$	Qty	Rate	\$	Qty	Rate	\$
<b>Wider corridor from 0.9 to 1m</b>				<b>1,365</b>			<b>-</b>			<b>-</b>
Additional corridor width comprising slabs with steel float finish, wall framing and linings, ceiling linings, finishes on walls, floors and ceilings, proportional adjustments to services.	m2	0.60	2,275.00	1,365						
<b>Wider doors and corridor from 0.9 to 1.2m wide</b>				<b>-</b>			<b>4,604</b>			<b>4,604</b>
Doors from above							509			509
Additional corridor width comprising slabs with steel float finish, wall framing and linings, ceiling linings, finishes on walls, floors and ceilings, proportional adjustments to services. Assumed multiple corridors/spaces totalling 6m long	m2				1.80	2,275.00	4,095	1.80	2,275.00	4,095
<b>Wider doors and corridor from 1m to 1.2m wide</b>				<b>-</b>			<b>3,239</b>			<b>3,239</b>
Doors from above							509			509
6 metre long corridor, 200mm wider than the Silver compliant corridor (1000mm)	m2				1.20	2,275.00	2,730	1.20	2,275.00	2,730
<b>Design Element 4 - Toilet (Assumed to be located in a bathroom)</b>										
Required space between door arc and WC can be achieved by replacing a swing door with a cavity slider door	no	1.00	80.00	80						
A cavity slider door cannot be used, therefore additional width needs to be added to the bathroom	m2	1.39	2,275.00	3,153						
Additional side space only required due to cavity slider door being introduced (rate includes cost of cavity slider)	m2				0.54	2,424.07	1,309	0.54	2,424.07	1,309
A cavity slider door cannot be used, therefore additional width is needed in each direction of the bathroom	m2				2.16	2,275.00	4,914	2.16	2,275.00	4,914
<b>Design Element 5 - Shower (shower assumed 900x900mm)</b>										
<b>Provide 1200 square circulation space for shower</b>				<b>-</b>						
A sliding door can be used for the combined bathroom design	m2				1.53	2,275.00	3,488	1.53	2,275.00	3,488
A swing door is used for the combined bathroom design	m2				1.99	2,275.00	4,529	1.99	2,275.00	4,529
<b>Design Element 6 - Reinforcement of bathroom and toilet walls</b>										
<b>Addition of noggings</b>				<b>130</b>			<b>130</b>			<b>130</b>
Allow 2 hours of carpentry time for nogging installation irrespective of the wet area layout of any of the homes. This includes \$20 of materials.	no	1.00	130.00	130	1.00	130.00	130	1.00	130.00	130

					Silver			Gold			Gold+		
					Qty	Rate	\$	Qty	Rate	\$	Qty	Rate	\$
Design Element 8 - Kitchen Space													
Increase circulation space													
-													
Additional circulation space in kitchen to provide 1200mm clearance in front of fixed benches and appliances	m2				1.08	2,275.00	2,457						
Additional circulation space in kitchen to provide 1500mm clearance in front of fixed benches and appliances	m2							2.16	2,275.00	4,914			
Additional circulation space in kitchen to provide 1500mm clearance in front of fixed benches and appliances from the Gold compliant case	m2							1.08	2,275.00	2,457			
Design Element 9 - Laundry Space													
Increase circulation space													
-													
Additional circulation space to provide 1200mm clearance in front of fixed benches and appliances	m2				0.54	2,275.00	1,229						
Additional circulation space to provide 1550mm clearance in front of fixed benches and appliances	m2							1.17	2,275.00	2,662			
Additional circulation space to provide 1550mm clearance in front of fixed benches and appliances from Gold compliant level	m2							0.63	2,275.00	1,433			
Design Element 13 - Maximum sill heights for windows													
Window specific design, with bulk of windows probably requiring upgrading of hardware to allow single handed operations													
Winders for four plus apartments	no							7.00	25.00	175			
Winders for walk-up apartments	no							5.00	25.00	125			



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