

Design Library Project

Sprint 1 – August 2023

Urban Design and Maori Design Principles Diagrammatic Analysis

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Better Urban Design Outcomes

Focus on floor plan first...

Building form variety

Allows for the buildings to react to the site and requires floor plan options.

Window design flexibility

Allows for better CPTED outcomes and requires flexibility in the floor plans.

Articulating the front door and addressing the street

Is vital for creating a vibrant streetscape and requires flexibility in the floor plans.

...then look at the exterior envelope

Roof form

Can be adapted project by project to suit the site and create variety within a development.

Cladding and facade details

The architect can adapt this to suit the site and context and create variety across projects.

Addressing Maori Design Principles

Interrogate Tapu and Noa spatial relationships with input from Te Kurutau and other experts

What are the key interdependancies and spatial separations?

Are there some relationships that are more important than others?

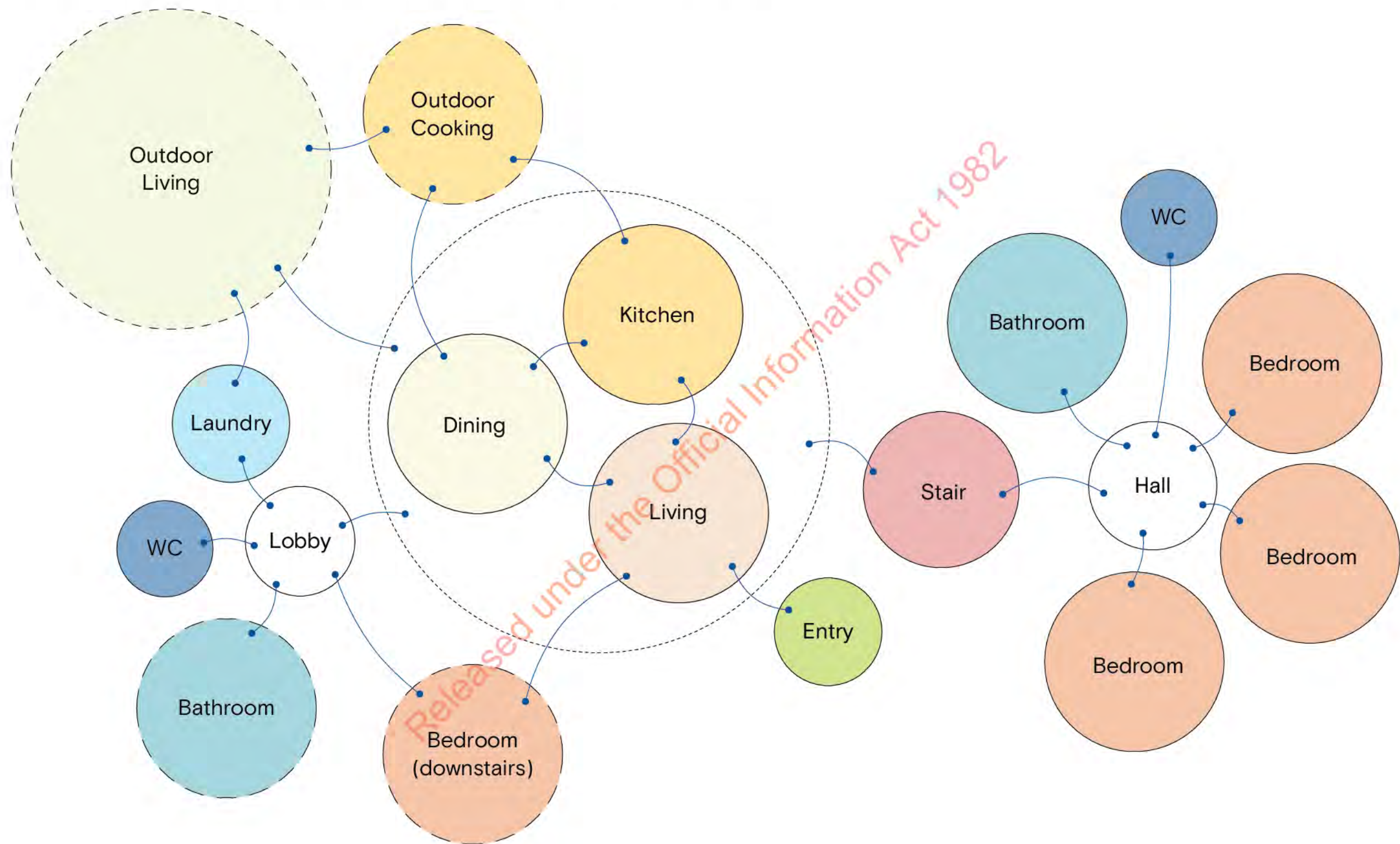
What are the cost and floor area implications of these spatial relationships?

How can we provide adaptabilty in the floor plan for better Urban Design outcomes, while maintaining Maori Design Principles?

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Tapu and Noa Spatial Relationships

Interpretation of Nga Paerewa Hoahoa Planning Matrix



B2.1 PRIVATE SPACE: PROVISION AND CONFIGURATION CONTINUED

PERFORMANCE REQUIREMENT

ACCEPTABLE SOLUTION

B2.1.2

Privacy and Māori cultural practices are facilitated and maintained through the organisation of internal spaces.

A. Physical and visual separation is provided between:

- bathroom, toilet and laundry facilities and living, dining, kitchen and bedrooms
- bedrooms and kitchen.

Guidance

Certain household functions are kept separate from others in order to preserve their tapu (sacred/prohibited) or noa (common/profane) nature. For example, all food-related facilities must be separate from bathrooms, toilets and laundries. For further guidance, see Table B2.1-2 and refer to [Kite Hau Kāinga: New Perspectives on Māori Housing Solutions](#).

TABLE B2.1-2: TAPU AND NOA PLANNING MATRIX

	Main entry	Laundry	Toilet	Bathroom	Living	Dining	Kitchen
Bedroom	✗	~	~	~	~	✗	✗
Kitchen	~	✗	✗	✗	✓	✓	
Dining	~	✗	✗	✗	✓		
Living	✓	✗	✗	✗			
Bathroom	✗	~	✗				
Toilet	✗	✗					
Laundry	✗						

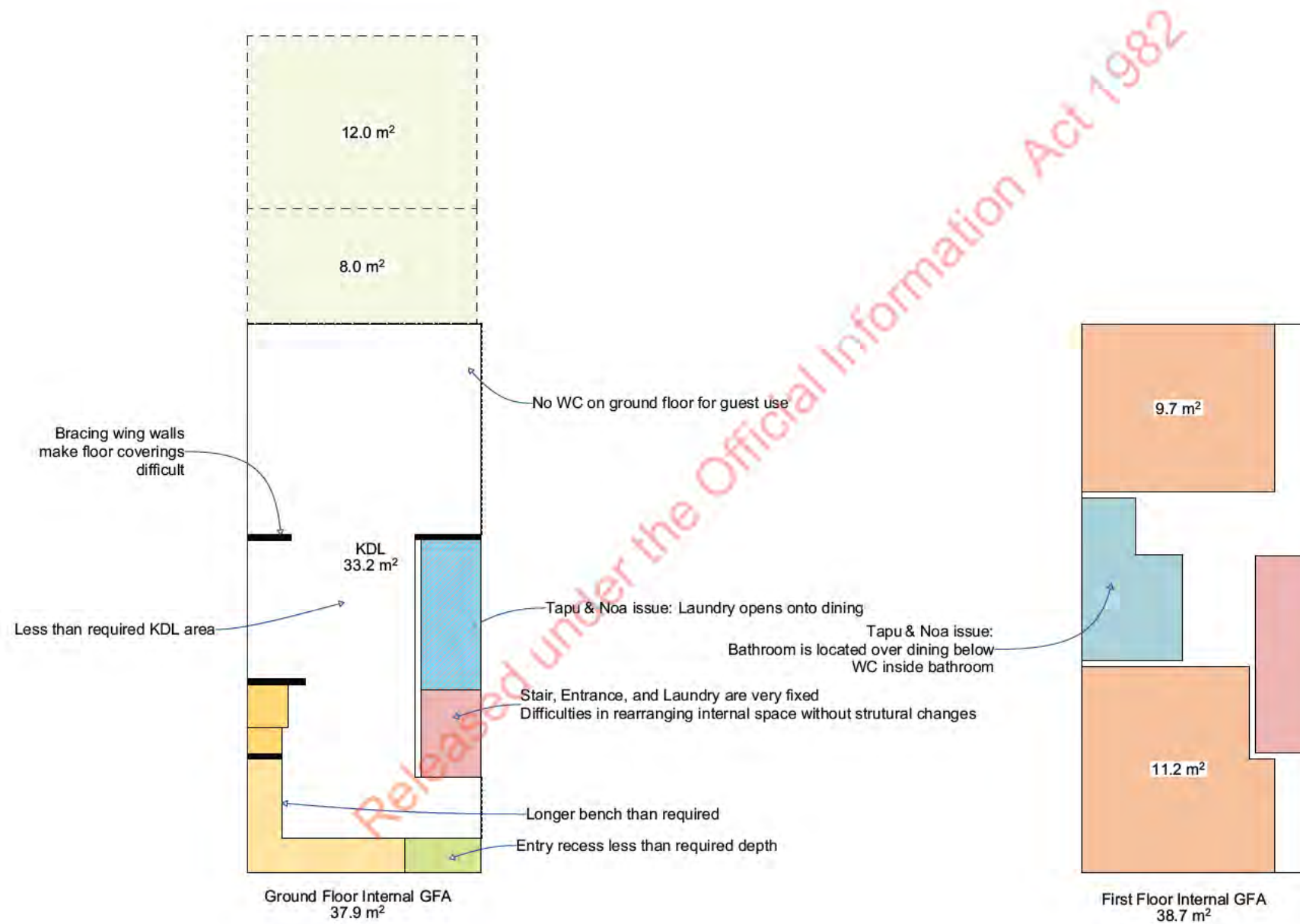
~ Neutral

✗ Conflict

✓ Desirable

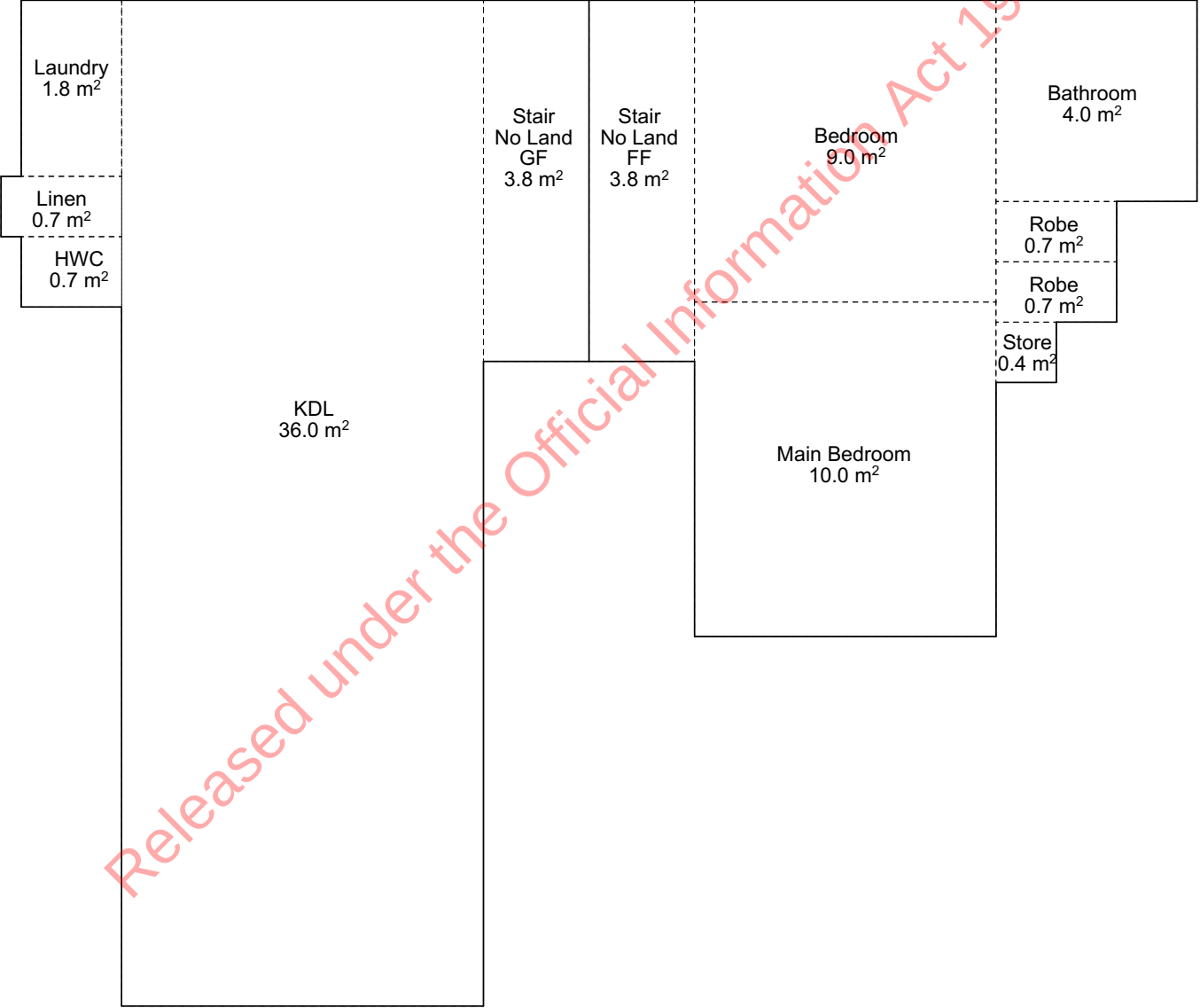
Diagrammatic Analysis of Current Floor Plans

2 Bed Type

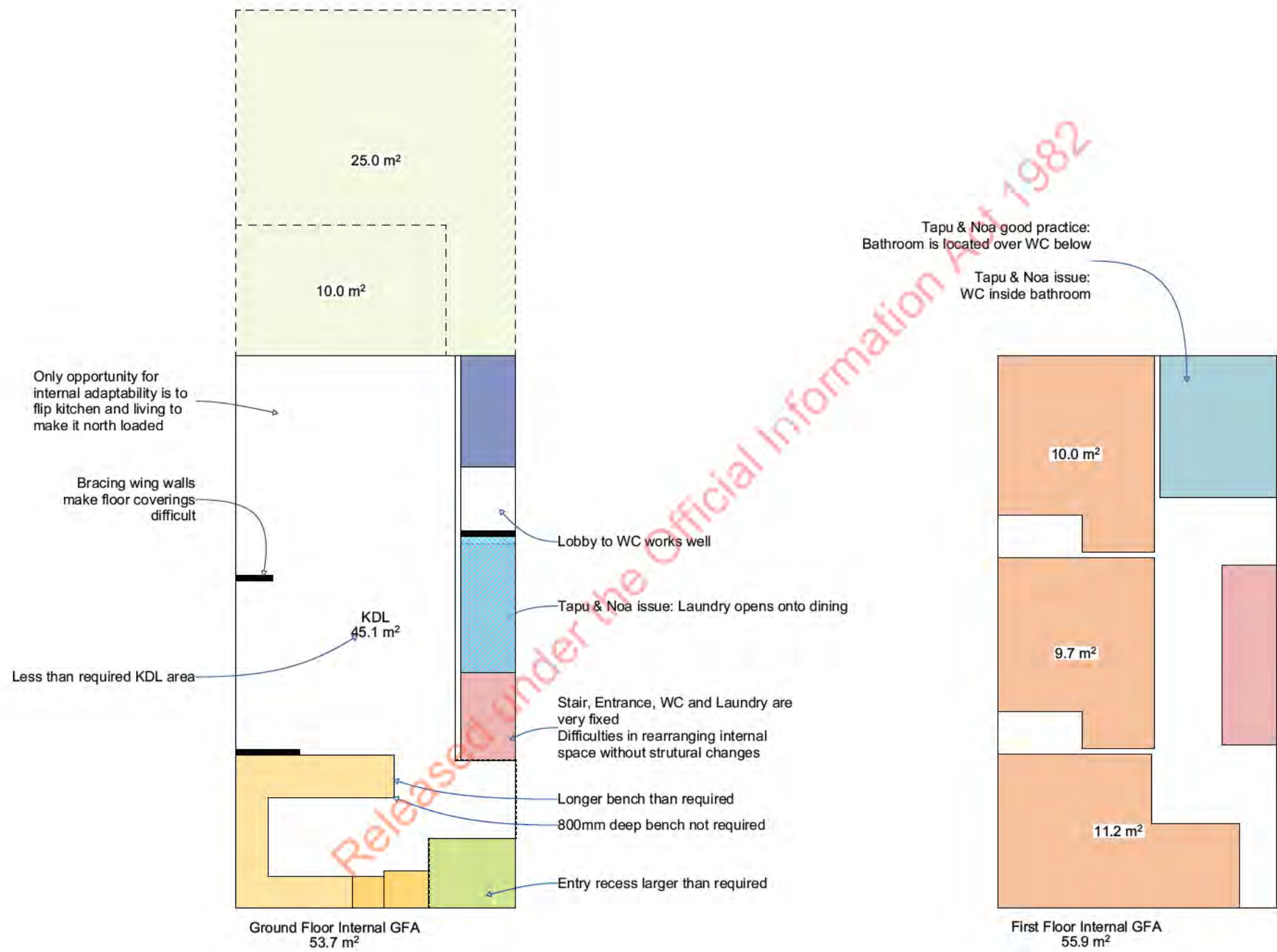


Nga Paerewa Hoahoa Spatial Area Requirements
2 Bed
excluding Internal and External Walls, Lobbies and Halls
Minimum GFA 82m2

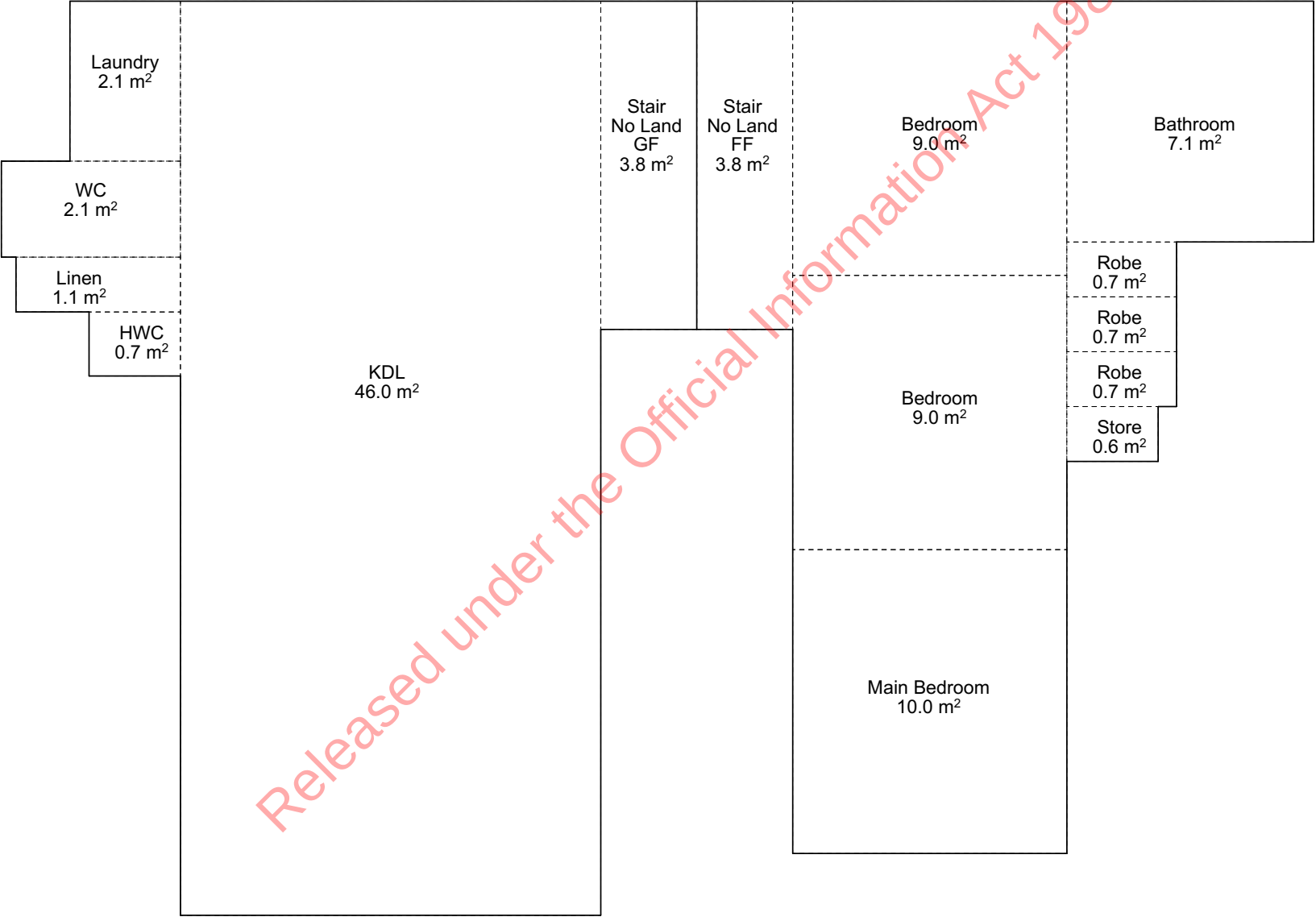
Total 71.5 m²
Ground Floor 42.9 m²
First Floor 28.5 m²



3 Bed Type

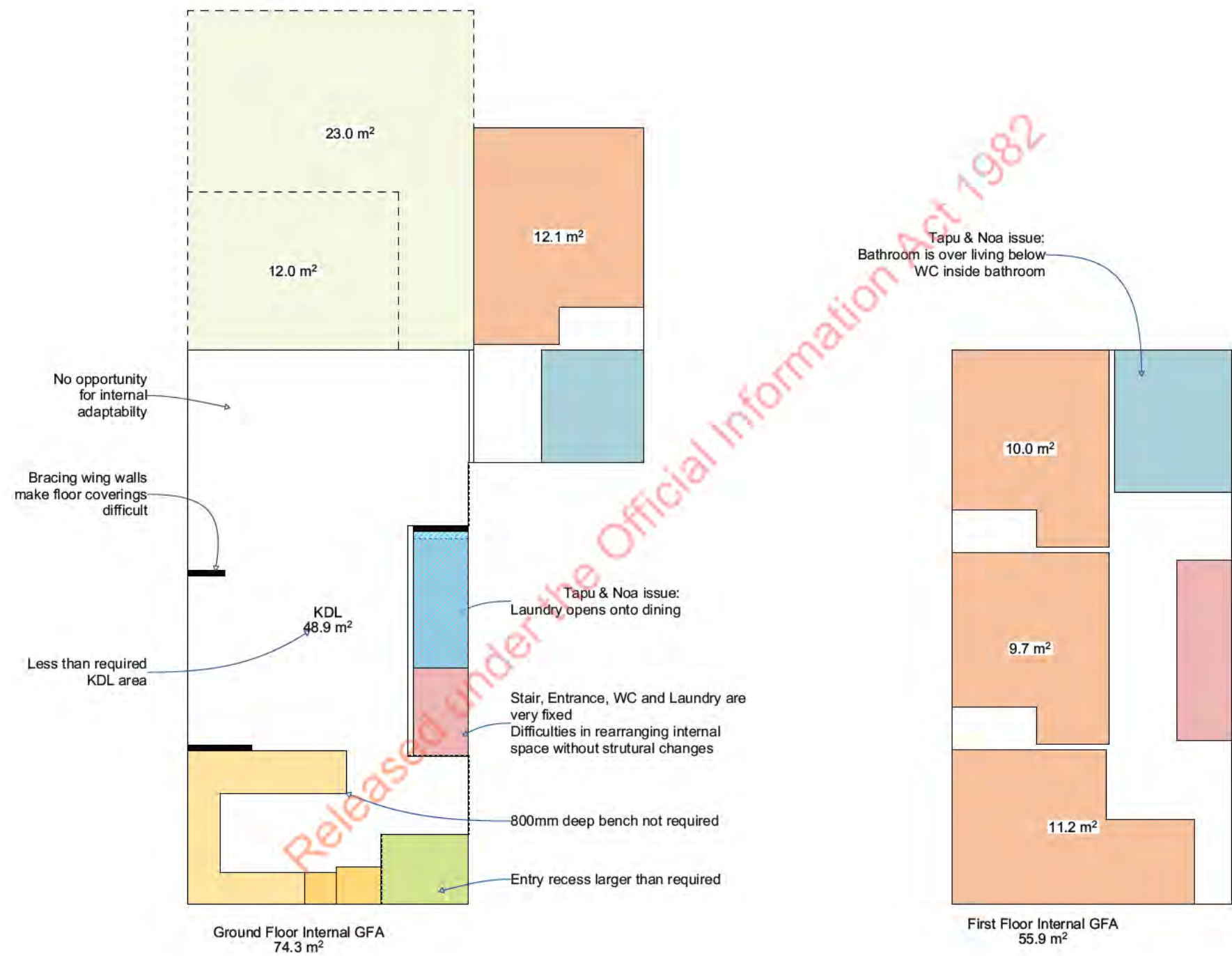


Nga Paerewa Hoahoa Spatial Area Requirements
3 Bed
excluding Internal and External Walls, Lobbies and Halls
Minimum GFA 107m2
Total 97.3 m²
Ground Floor 55.7 m²
First Floor 41.6 m²



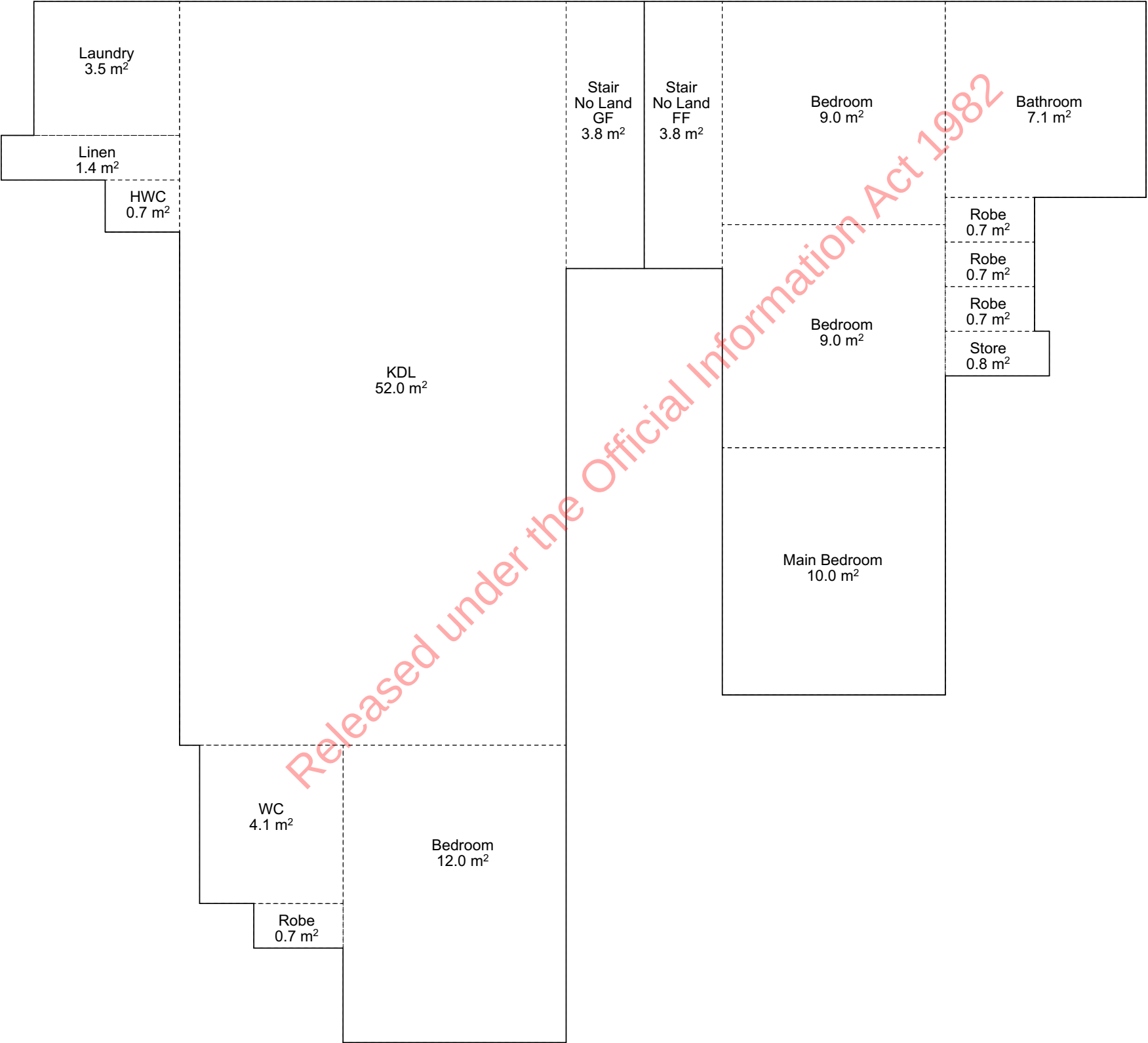
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3+1 Bed Type

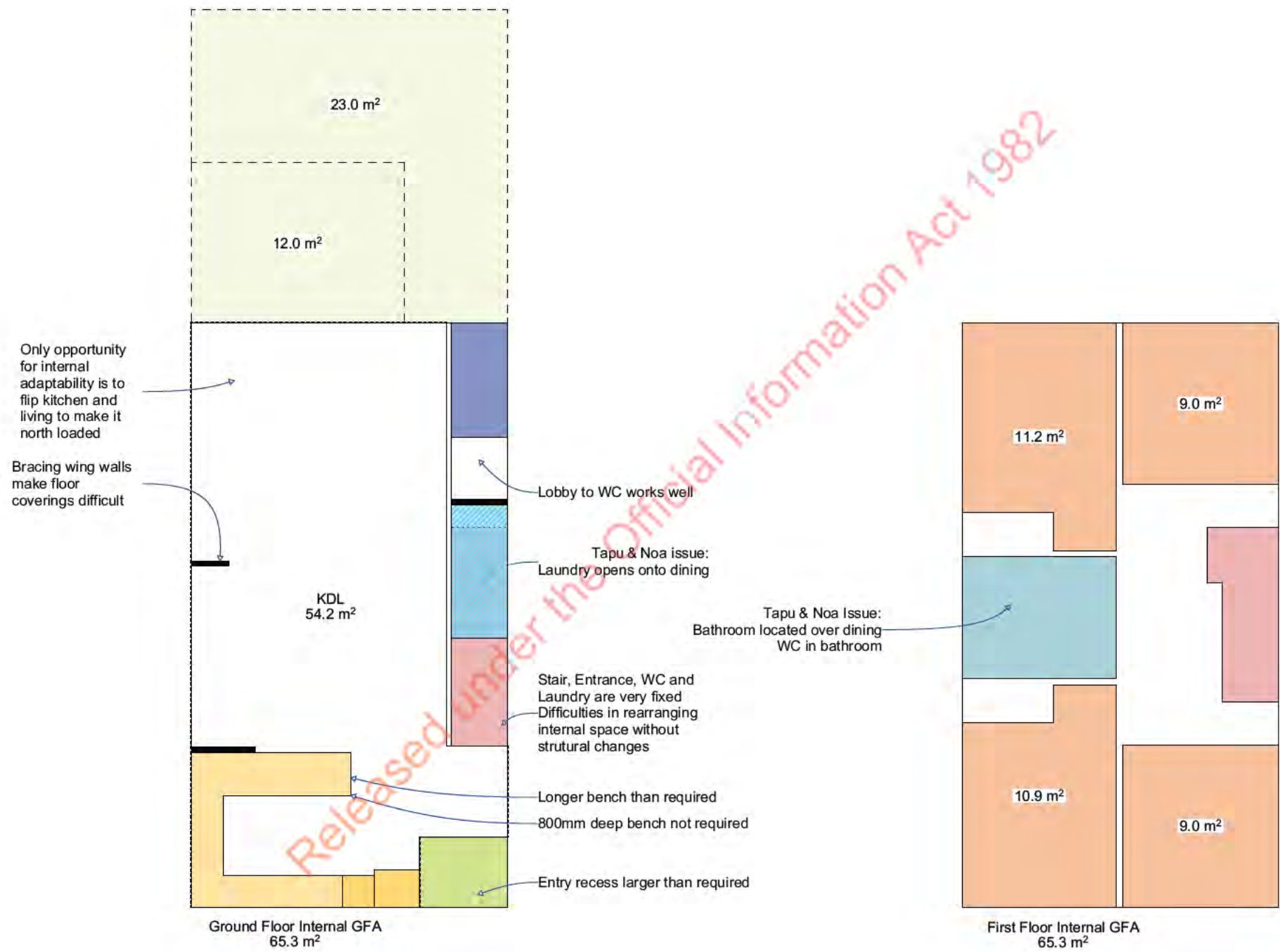


Nga Paerewa Hoahoa Spatial Area Requirements
4 Bed (one down)
excluding Internal and External Walls, Lobbies and Halls
Minimum GFA 130m2

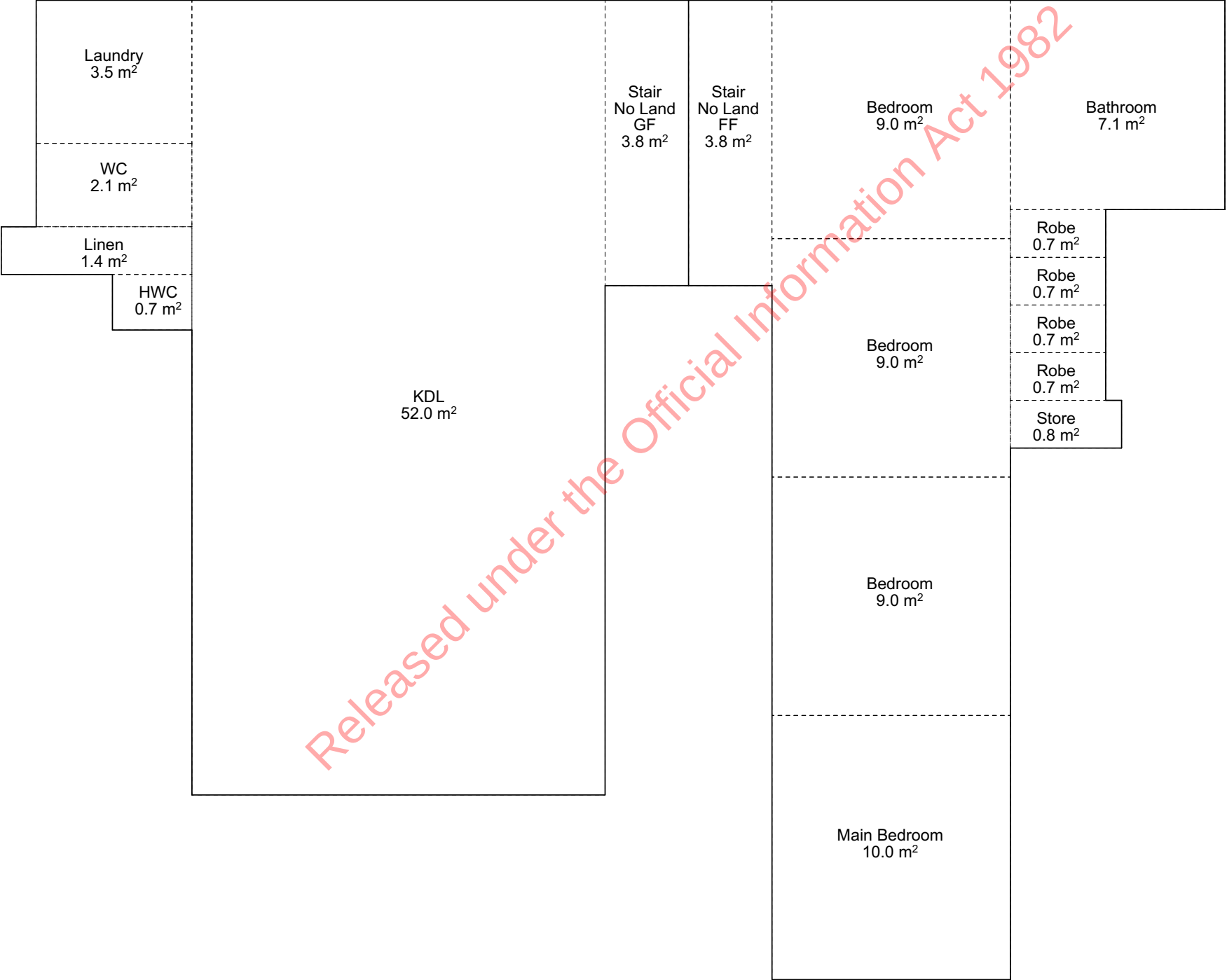
Total 120.1 m²
Ground Floor 78.3 m²
First Floor 41.9 m²



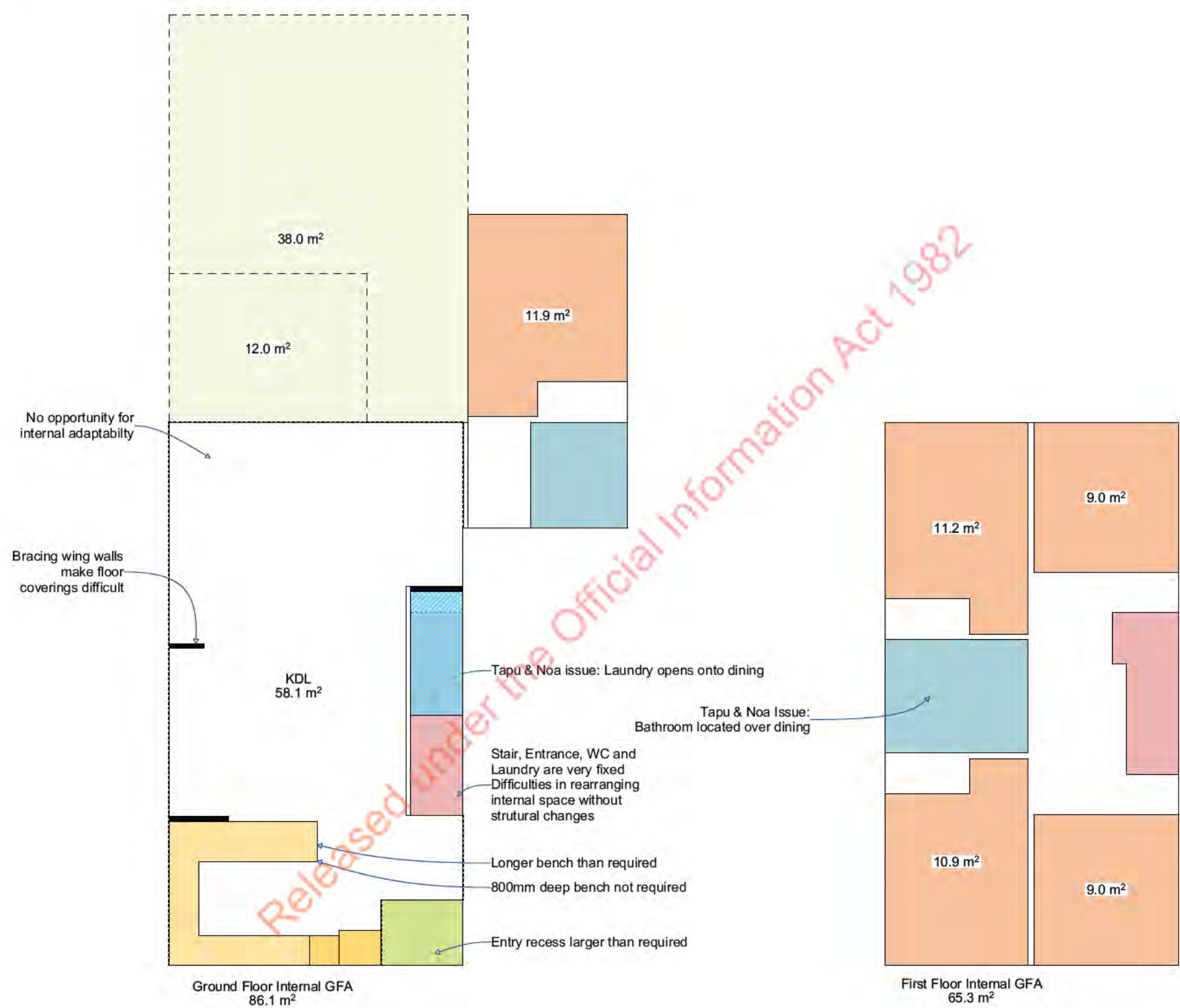
4 Bed Type



Nga Paerewa Hoahoa Spatial Area Requirements
4 Bed
excluding Internal and External Walls, Lobbies and Halls
Minimum GFA 130m2
Total 115.1 m²
Ground Floor 63.5 m²
First Floor 51.6 m²

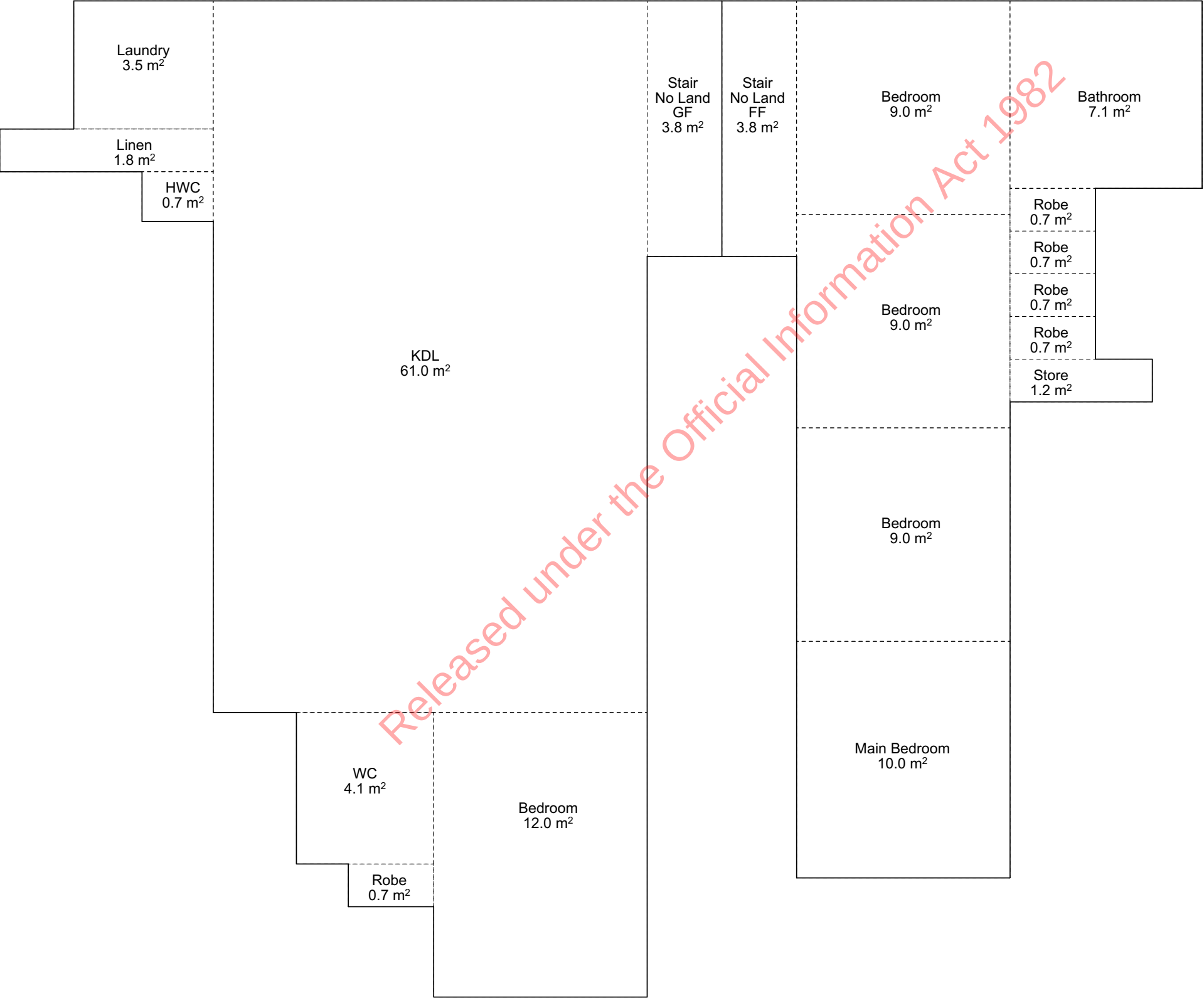


4+1 Bed Type

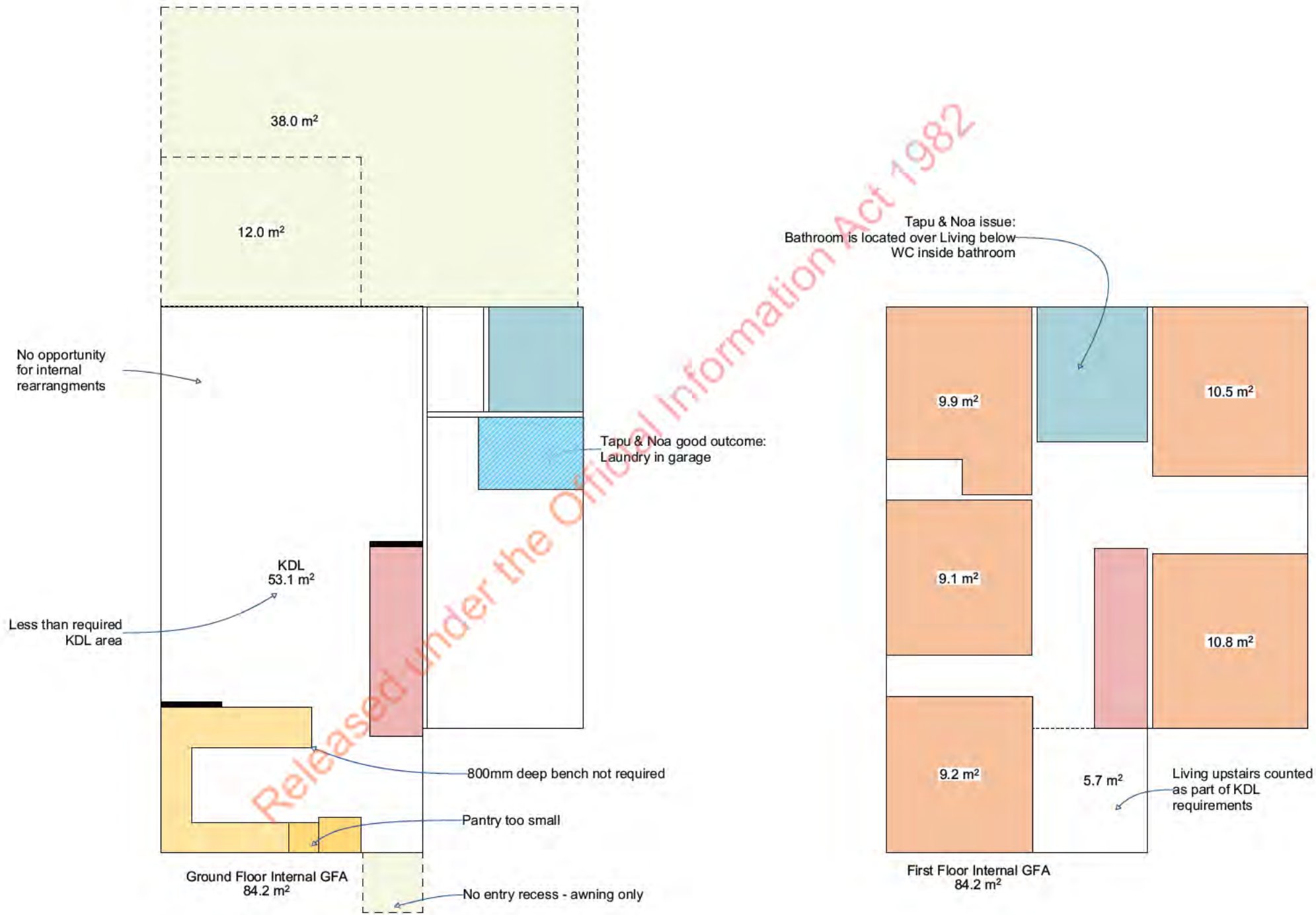


Nga Paerewa Hoahoa Spatial Area Requirements
5 Bed (one down)
excluding Internal and External Walls, Lobbies and Halls
Minimum GFA 155m2

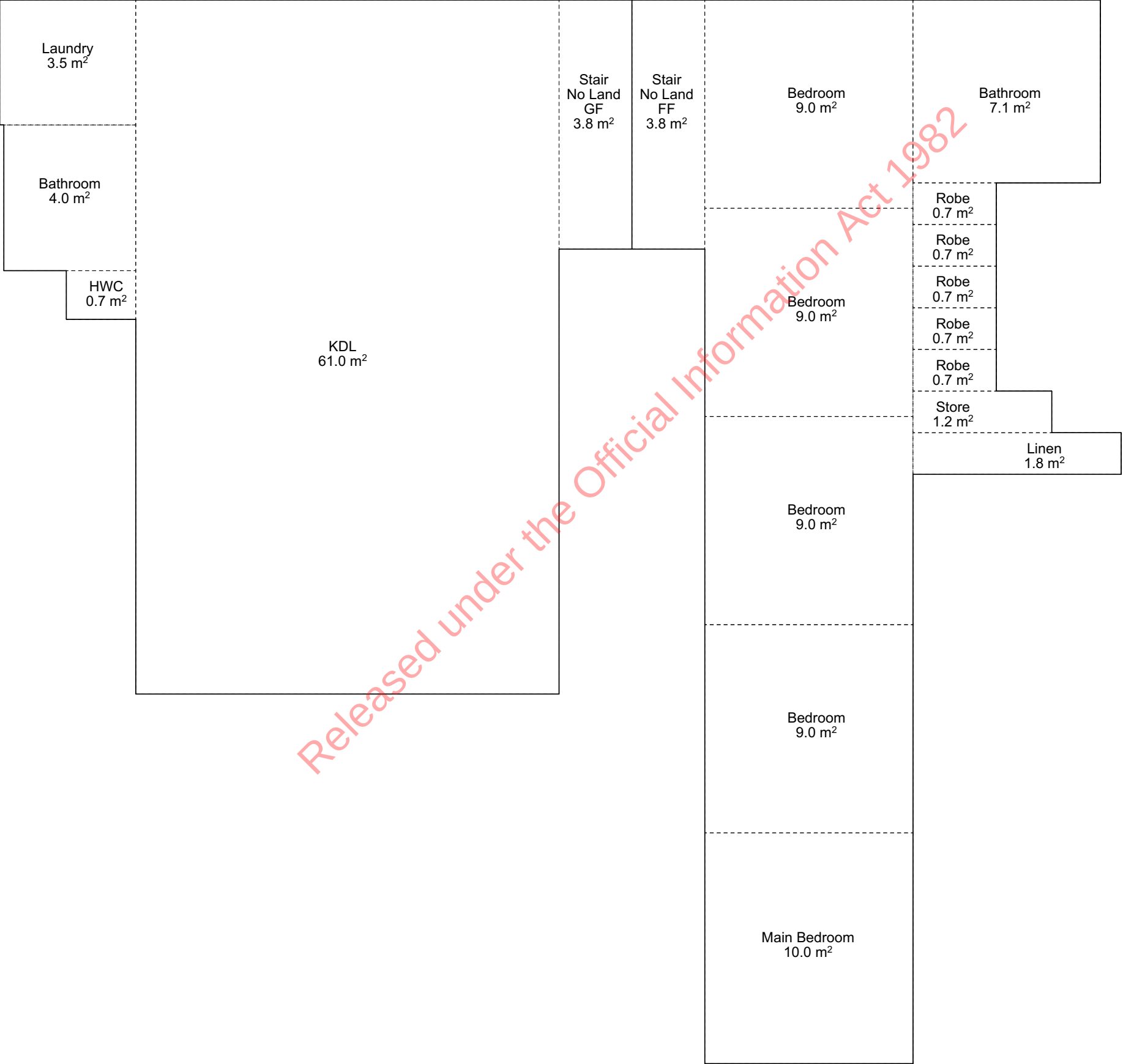
Total 139.6 m²
Ground Floor 87.6 m²
First Floor 51.9 m²



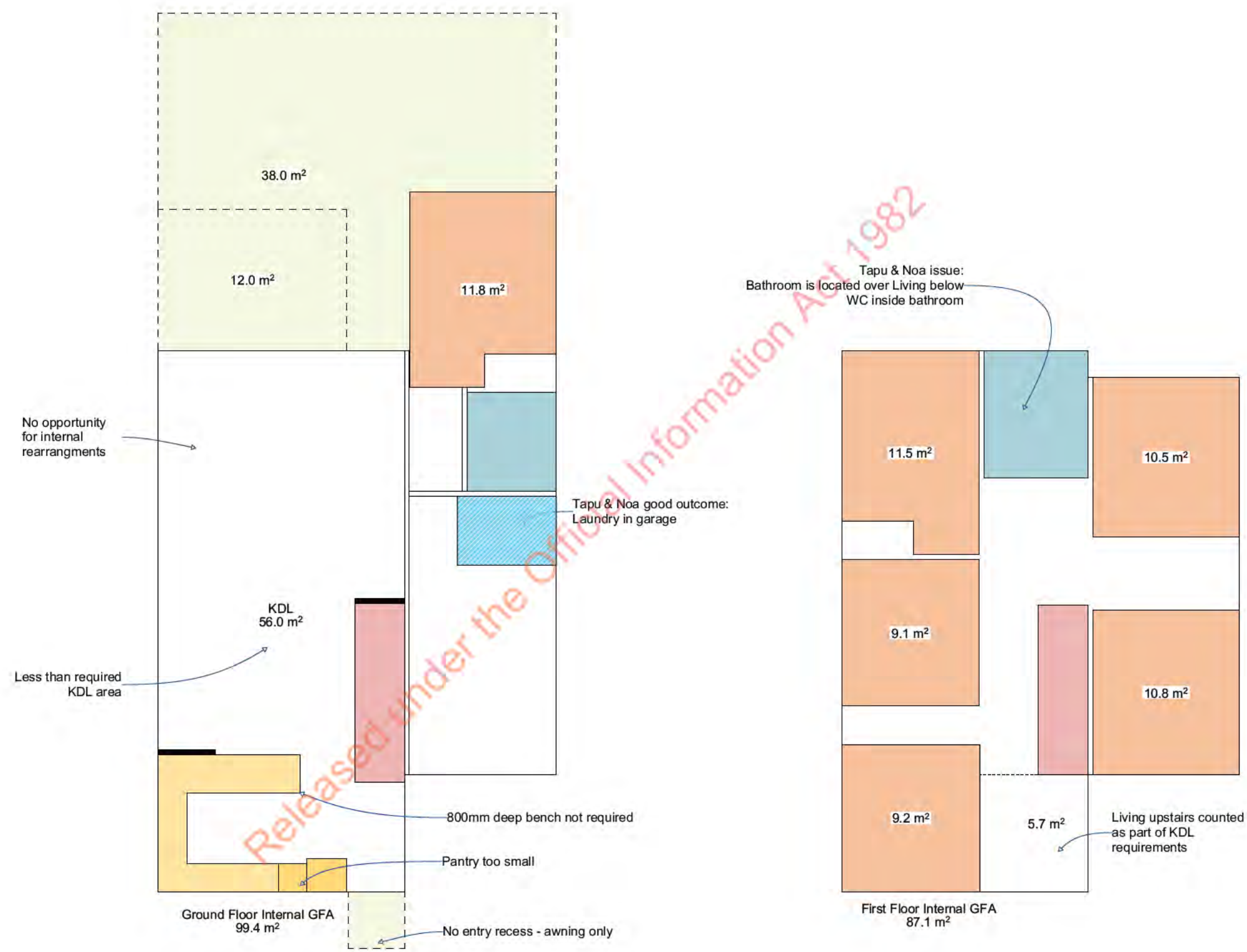
5 Bed Type



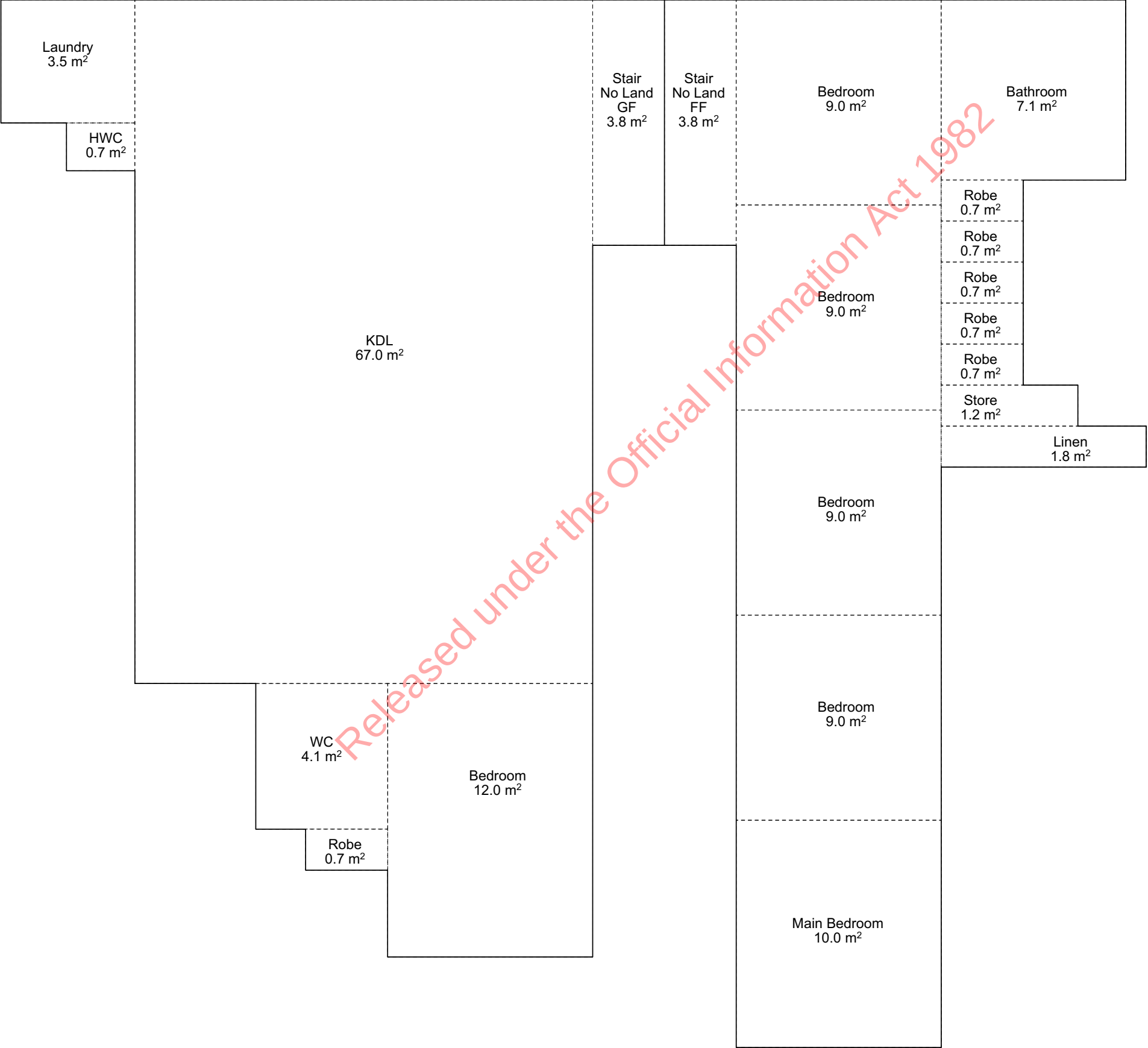
Nga Paerewa Hoahoa Spatial Area Requirements
5 Bed
excluding Internal and External Walls, Lobbies and Halls
Minimum GFA 155m2
Total 136.4 m²
Ground Floor 73.0 m²
First Floor 63.5 m²



5+1 Bed Type



Nga Paerewa Hoahoa Spatial Area Requirements
6 Bed (one down)
excluding Internal and External Walls, Lobbies and Halls
Minimum GFA 155m2
Total 155.3 m²
Ground Floor 91.8 m²
First Floor 63.5 m²



Floor Plan Studies

How can we design for adaptability and variation in the floor plan, while ensuring Maori design principles are maintained?

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Typology Matrix

What new interior floor plan chasis do we need?

Kainga Ora Typology Review

26.07.23

Type	Beds at First Floor	Beds at Ground Floor (FUD Capable)	Standalone	Duplex Capable	Terrace Capable	Square Aspect	End Terrace Capable	North Load Capable
1 Bed Regional	0	1	RH-A; RH-B		Good for higher density FUD units (retirement)			
2 Bed Regional	0	2	RH-C; RH-D	Good option for smaller regional sites	Good for higher density family homes in low-height towns			
2 Bed	2	0	Possible option for regional sites with lower density	B Tapu/Noa issues	C; D Tapu/Noa issues			
2+1 Bed	2	1	A FUD capable lower density option			Option for lower bedroom contained within rectangular plan		
3 Bed Regional	0	3	RH-E; RH-F	Good for higher density family homes in low-height towns				
3 Bed	3	0	E; F Tapu/Noa issues	G Tapu/Noa issues	Needs a different plan to standalone and duplex	This could be the same as the terrace capable plan		
3+1 Bed	3	1	H; J Tapu/Noa issues	K Needs to be reworked for FUD carparking		Option to use as an end terrace for 3 bed terrace rows		
3+2 Bed	3	2	Useful for a carer to live on same level as FUD bedroom			Stepped form to be useful when sitting under HIRB controls Could be same plan as standalone		
4 Bed Regional	0	4	RH-G; RH-H Tapu/Noa issues	Good for higher density family homes in low-height towns				
4 Bed	4		O; P Tapu/Noa issues	Q Tapu/Noa issues	Needs consideration for masterplan sites	Option to use as an end terrace for 2 bed terrace rows		
4+1 Bed	4	1	R; S Tapu/Noa issues	T Needs to be reworked for FUD carparking		Option for lower bedroom contained within rectangular plan		
5 Bed	5		V; W	Needs to be aware of bulky design				
5+1 Bed	5	1	X; Y	Needs to consider FUD carparking		Option to redesign existing plan without garage		

context

Existing Typology

Proposed New Typology

These still require updates to meet Nga Paerewa Hoahoa

Many of these could be adapted from a single chassis

Notes:

Its possible a square aspect plan can be used as an end terrace, and a northloaded option

Combined square aspect units can be duplexed to be used as corner turners

A square aspect can also be used on small site as a standalone

Square aspect plans will more easily use a centralised switchback stair, allowing for a landing

Stair Options

Vertical circulation options to unlock floor plan arrangements



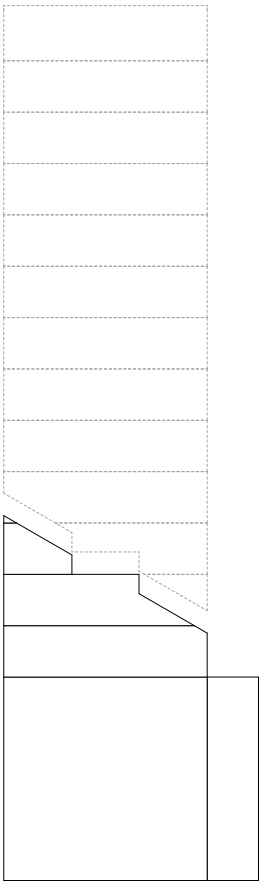
Straight Stair

- Simple to construct
- Limits use of space at top and bottom
- Uses least floor area
- Doesnt have landing

Stair Specification

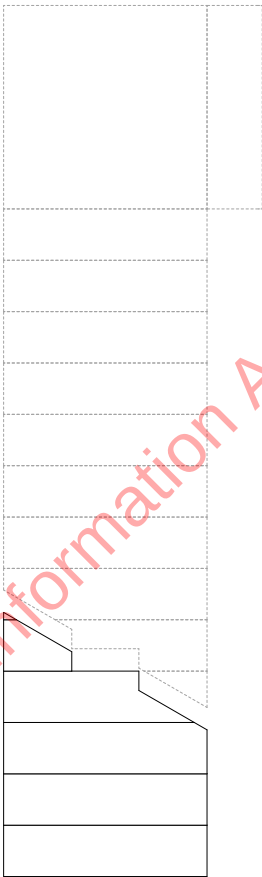
2780mm Floor to Floor
16 Risers
174mm Riser
265mm Tread + 15mm Nosing

Complies with Common Stair:
190 Maximum Riser
280 minimum tread
37 degrees max



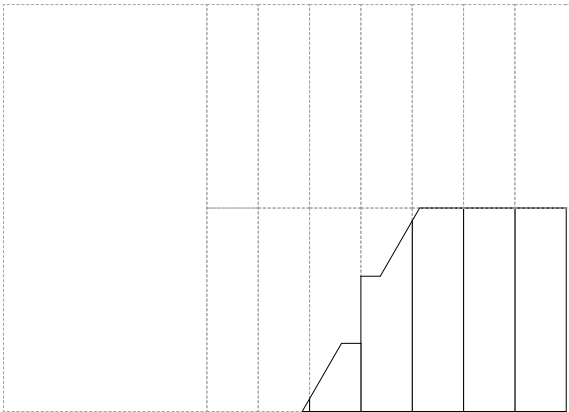
Quarter Landing at Bottom

- Simple to construct
- Opens into KDL centrally



Quarter Landing at Top

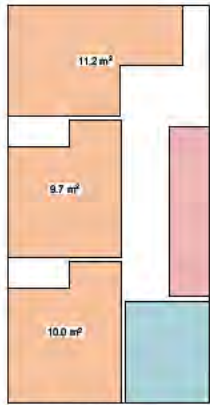
- Requires complex construction at top
- Limits use of space at bottom



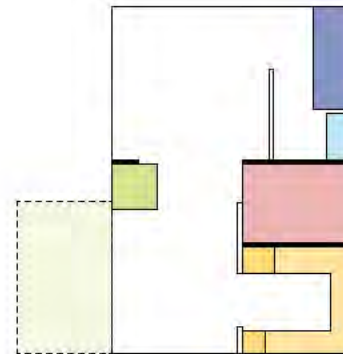
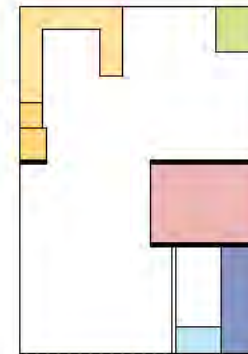
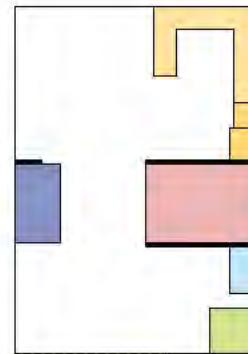
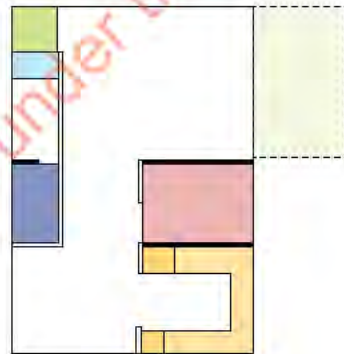
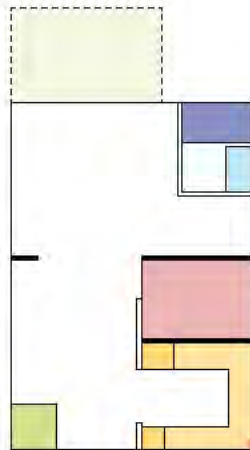
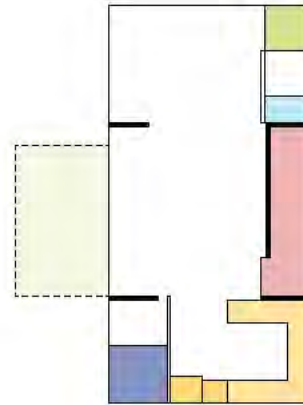
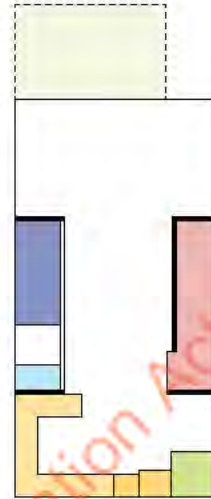
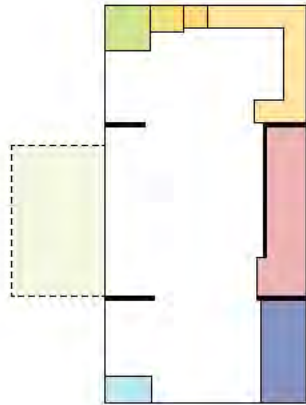
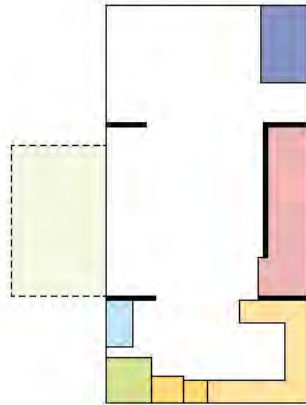
Half Landing Switchback

- Simple to construct
- Good for use in a wider type
- Uses more floor area

3 Bed Floor Plan Studies

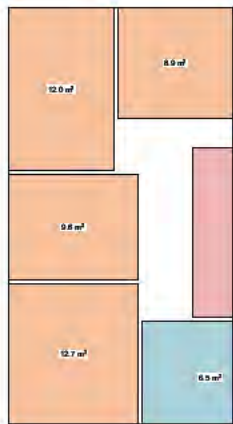


Existing Aspect
Stair: Quarter Landing at Bottom

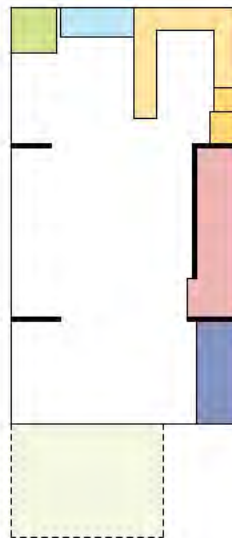
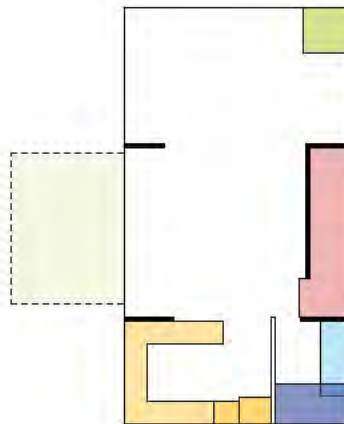
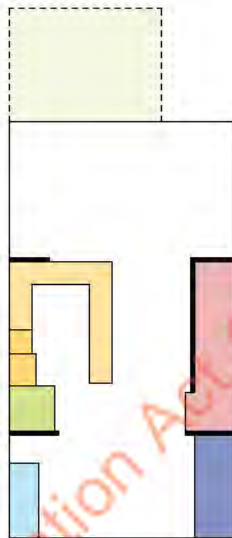
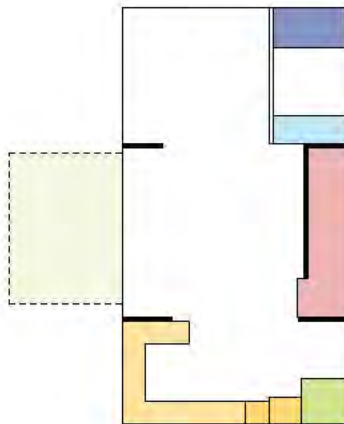
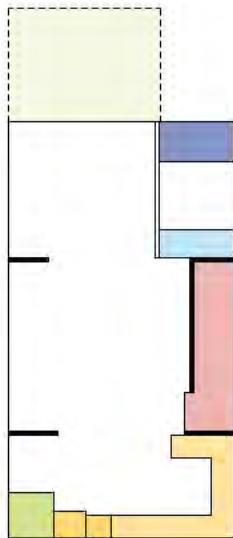


Wide Aspect
Stair: Half Landing Switchback
Terrace Capable

4 Bed Floor Plan Studies



Existing Aspect
Stair: Quarter Landing at Bottom



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