

MultiProof application case study 1: Simple residential units

Applicant A proposes to build a series of residential developments. The initial development is to occur in Christchurch (Exposure Zone C; Wind Region A; Earthquake Zone 2) on an exposed urban site (M – medium wind speed) with future developments planned for the Auckland market (Exposure Zone C; Wind Region A; Earthquake Zone 1) and either sheltered or exposed urban sites (M and H wind speeds).

The proposed units are all single storey, either detached or semi-detached and two or three bedroom, and will be provided with garage options. The design of the units will largely rely on Acceptable Solutions. The units will all have concrete slab foundations, will be timber framed with roof trusses, and will allow for different cladding options.

How the drawings are assembled will depend on the number of options you want to offer. In this case a single application could be made and approvals sought for two MultiProofs: one for the two-bed design and one for the three-bed.

MultiProof:	A100XY
Design name:	Sol 2-bed
Design description:	2 bedroom single storey, detached or semi-detached, floor area 80m ² – 120m ² . Timber framed with zone, foundation, cladding, plan, services and ancillary options.

EXAMPLE OF DESIGN AND OPTIONS SUMMARY

The “Sol 2-bed” design is a two bedroom single storey dwelling designed for use in a range of exposure, wind, earthquake and climate zones; and sites with gradients of up to 1:12. The buildings have concrete foundations and floors, timber framed walls and a roof structure. With the exception of the roof trusses and the lintels to the double garages, which are specifically designed, the structure has been designed in accordance with NZS 3604: 2011 Timber-framed buildings. A ‘no foundation’ option is also included to allow for site specific design and steeper gradients. Plan variations allow for detached and semi-detached dwellings; a no, single or double garage option; and two layout options for the kitchen and bathroom. Cladding and window options are also included. Wall cladding options include brick veneer and EIFS (exterior insulation and finish system) with decorative stone. Roof cladding variations are limited to pressed metal tiles and longrun roofing. All windows and door frames are aluminium. Permitted variations are limited to height and configuration variations to allow for awning windows, sliding or bi-fold doors to the living areas and bedroom; and installation of up to two skylights to any of the areas permitted on the roof plan. Permitted interior material and finish variations, and heating and hot water services are scheduled.

Other permitted variations that require site specific design include decking, accessible ramps, and the addition of a conservatory.

A100XY Plan options	Zone options	Sub options
/1: 2 bed detached (no garage)	Type A (Exposure zones B & C, Wind zone up to Med, Earthquake zone up to 2, climate zone up to 2 etc.)	Foundations
/1h: /1 handed		No foundations
/2: 2 bed detached with single garage		Wall cladding 1 or 2
/2h: /2 handed		Roof cladding 1 or 2
/3: 2 bed detached with double garage	Type B (Exposure zones B & C, Wind zone up to High, Earthquake zone up to 4, climate zone up to 2 etc.)	Window/door alternatives
/3h: /3 handed		Skylight options
/4: 2 bed semi-detached (no garage)		Kitchen layout 1 or 2
/5: 2 bed semi-detached with single garage		Bathroom layout 1 or 2
/6 bed semi-detached with double garage	Type B + Snow load up to 1.5 kPa + Climate zone 3	Insulation options
		Interior finish options
		Hot water options
		Heating options

EXAMPLE OF DRAWINGS PROVIDED FOR EACH PLAN OPTION

A100YZ/2	Sol 2-bed detached unit with single garage	
	Drawing content	Comment
0	Index	
1	Floor plan (brick veneer)	
1a	Floor plan (other cladding option)	
2	Foundation plan option (brick veneer)	
2a	Foundation plan (other cladding option)	
3	Framing plan / bracing locations / framing schedule	<i>Could include framing schedules for each wind zone and bracing for different zones</i>
4	Roof framing plan (shows set out for trusses, and framing and bracing not specified by timber truss manufacturer)	<i>Could include location options for skylights</i>
5	Roof plan (tile option). Plan locates details, shows material, gutter size, gutter outlets	<i>Could include table showing surface water requirements and how provided</i>

5a	Roof plan (longrun option)	
6	Sections (Brick veneer cladding / metal roof tiles option)	
6a	Sections (EIFS / decorative stone / longrun roofing option)	
7	Elevations (Brick veneer cladding / metal roof tiles option)	<i>Could indicate window/door options</i>
7a	Elevations (EIFS / decorative stone / longrun roofing option)	<i>Could indicate window/door options</i>
8	Foundation details (could include minimum and maximum dimensions to allow for different heights)	<i>Standard detail sheet</i>
9	Brick cladding – general details	<i>Standard detail sheet</i>
10	Brick cladding – window and door installation details	<i>Standard detail sheet</i>
9a	Decorative stone cladding details – general details	<i>Standard detail sheet</i>
10a	Decorative stone cladding details – window and door installation details	<i>Standard detail sheet</i>
9b	EIFS cladding details – general details	<i>Standard detail sheet</i>
10b	EIFS cladding details – window and door installation details	<i>Standard detail sheet</i>
11	Metal roof tile cladding details	<i>Standard detail sheet</i>
11a	Longrun roofing cladding details	<i>Standard detail sheet</i>
12	Window, door and glazing schedule	<i>Could be a standard options sheet with a range of alternatives; and/or rules on window and door substitutions</i>
13	Floor plan options: e.g. kitchen layout option, accessible shower option	<i>Could be a standard options sheet</i>
14	Interior finishes schedule	<i>Could be a standard finishes sheet with a series of options</i>
15	Interior details such as key details to baths, showers, wet areas etc.	<i>Standard detail sheet</i>
16	Services plans showing the services required to demonstrate compliance for example, artificial lighting; heating, any fans to bathrooms, smoke detector locations	<i>Sheet could include notes to provide for variation for example, "Lighting layout shows the minimum requirements to comply with clause G8. Additional fittings may be provided"</i>
17	Services plan / details	<i>Could be a standard sheet detailing the heating options</i>
18	Plumbing services plan	<i>Any appliance options will need to be stated e.g. Low pressure HWC (minimum . . .L) / Gas instantaneous hot water system</i>

Other information:		
	Risk matrix	<i>Could be provided as a standard sheet with different tables for the different options and wind zones</i>
	Bracing calculations	<i>For each option, wind and earthquake zone</i>
	Truss design, calculations and producer statement	<i>For each option, wind and earthquake zone</i>
	Specification	<i>Standard for all options</i>

EXAMPLE OF DRAWINGS PROVIDED FOR EACH PLAN OPTION

This is an example of a schedule which could be developed by the applicant to confirm the options selected from a range of permitted variations. The schedule would be completed for each new consent application.

Design Sol 2-bed(MultiProof Certificate A100XY)									
Design option	A100XY/1 Detached (no garage)								
Location	Detached					Semi detached			
	No garage	1 handed	With single garage	2 handed	With double garage	3 handed	No garage	With single garage	With double garage
	1	1h	2	2h	3	3h	4	5	6
Type A									
Type B									
Site specific foundations									
Foundations									
Brick veneer									
EIFS/Stone									
Metal tile									
Longrun metal									
Longrun aluminium									
Windows A									
Windows S									
Windows B									

Design		Sol 2-bed(MultiProof Certificate A100XY)							
Design option	A100XY/1 Detached (no garage)								
Location	Detached				Semi detached				
Door 1									
Door 2									
Skylight									
Kitchen 1									
Kitchen 2									
Bathroom 1									
Bathroom 2									
Insulation S									
Insulation +									
Gas HW									
Electric HW									
Instantaneous HW									
Storage HWC									
Gas heater 1									
Gas heater 2									
Heat pump 1									
Heat pump 2									
Lighting S									
Lighting +									
Power 1									
Power 2									
Deck									
Ramp									
Conservatory									