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MultiProof application case study 2: Prefabricated classroom units

Applicant B proposes to build prefabricated classrooms in a number of locations for use throughout New Zealand. The units will be transportable and able to be assembled in a number of configurations. The designs of the units will be optimised so that a single design can be used at a wide range of locations. Site work will include site services, foundations, connecting walkways, and connections to existing services infrastructure.

MultiProof: A100YZ

Design name: One Plus One

Design description: Modular classroom and resource units able to be assembled in a range of configurations. The modules are timber-framed and transportable and allow for a range of permitted variations.

EXAMPLE OF DESIGN AND OPTIONS SUMMARY

The "One Plus One" design comprises a series of prefabricated modular units able to be assembled in a range of configurations up to a maximum area of xxxm^2. The modules are all single level and are designed for use in a range of exposure, wind, earthquake and climate zones. Ten basic modules are proposed. The modules are all timber framed and specifically designed. Permitted variations include layout options for the classrooms which allow for library or laboratory use; foundation or no foundation options; window and door options which allow for substitutions or for these to be moved; services options which allow for the heating and hot water services to be standalone or connected to centralised plant and fire safety options which allow for additional fire safety features.

Other permitted variations that require site specific design include decking, accessible ramps, and covered walkways, and configurations outside the typical configurations provided.

Modules	Zone options	Sub options
B1 Basic classroom unit 1	Type A (for example, for Exposure zones B & C, Wind zone up to Med, Earthquake zone up to 2, climate zone up to 2 etc.)	Foundation / no foundation
B2 Basic classroom unit 2		Library layout
E1 End module		Laboratory layout
C1 Corner module		Material variations
R1 Resource module 1	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
R2 Resource module 2		Heating options
T1 Toilet module 1		Hot water options

Modules	Zone options	Sub options
T2 Toilet module 2		Fire safety options
	Type B + Snow load up to 1.5 kPa + Climate zone 3	Soft fit-out options
		Covered way and ramp options

EXAMPLE OF DESIGN AND OPTIONS SUMMARY

A100YZ	Prefabricated classroom units	
	Drawing content	**Comment**
	Index	
	Configuration options	
	Layouts showing the range of configurations	*If required to ensure that each configuration is considered for fire safety*
	Elevations of a range of configurations	*To enable the assembly details to be referenced*
	Roof plans of range of typical configurations	*Could include table showing surface water requirements and how provided*
	Modular packages:	
	B1 Module Type A drawings (such as floor plans, floor framing plan, roof framing, roof plan, section, elevations)	*May not need separate drawings for Type B zone option if schedules for each type are provided on the drawings*
	B1 Module Type B drawings	
	B2 Module etc.	
	Standard construction detail package:	
	Standard construction details for each of the modules	
	Construction details for on-site assembly	
	Window, door and glazing schedules	*Could be a standard options sheet with a range of alternatives; and/or rules on locations and substitutions*
	Floor plan layout options: such as classroom; library; laboratory	*Could be a standard options sheet*
	Interior finishes schedule	*Could be a standard finishes sheet with a series of options*
	Interior details, for example key details to baths, showers, wet areas etc.	*Standard detail sheet*

	External works details:	
		Optional but could include any standard options such as for covered walkways etc.
	Services package:	
	Fire safety plans of a range of typical configurations	
	Services plans showing the services required to demonstrate compliance: such as artificial lighting; heating, ventilation etc.	*Could include rules to allow for flexibility*
	Services plan / details	*Could be a standard sheet detailing the heating options*
	Plumbing services plan	*Any appliance options will need to be stated e.g. Serviced from central plan / Low pressure HWC (minimum . . ..L) / Gas instantaneous hot water system*
	Other information:	
	Fire safety report	
	Calculations, producer statements etc.	*For each option*
	Specification	*Standard for all options*
	Inspection /QA process	