

Appendix 1 Architectural scope - Canterbury block

This architectural scope is intended for architects and the wider design team working with schools to ensure an optimum design suited to their existing space and site. The architectural scope has been prepared by Brewer Davidson Architects. Assumptions and exclusions are also detailed in this section.

Preliminary outline scope

Layout option 1

Walls	Demolish a portion of wall between classrooms to form 5.7m x 2.7m finished opening. - Allow to repair floors, repair plasterboard walls and trim openings, - Remove four wet area sink units.
	Remove four wet area sink units.
	Demolish toilets and coat hooks in two toilet/cloakrooms. - Allow to repair floors, re-level toilet floors, repair plasterboard walls and trim openings.
	Remove existing linings where required for bracing upgrade. - Reconnect timber framing with connections appropriate to bracing type - Insulate acoustically and/or thermally and re-line ¹ .
	Build wall in cloak rooms to create breakout spaces
	Remove existing toilet windows where bracing is required, frame in wall and re-clad with paint finish weatherboard on cavity battens over RAB board with appropriate flashings to soffit, cladding below and openings either side.
	Paint finish to toilets and remaining cloak bays.
	Acoustic pin board from floor to minimum 2200mm (ideally the whole wall) (NRC 0.40) paint finish above to learning and breakout spaces.
Ceilings	Line over existing soft board ceiling in learning and breakout spaces with plasterboard lining.
	Fix high sound absorbing ceiling panel (NRC 0.85 minimum) in learning and breakout spaces.
Floor coverings	New carpet tiles generally to learning space.
	New selected coved vinyl to wet area and toilets and remaining cloak bay.
Joinery	Two SS sink benches with art troughs, cupboards under, shelves over.
	Work bench cupboards under and shelves over.
	Four resource cupboards (1.2m x 0.4m x 1.8m high, not shown on plan).
Re-painting	Repaint interior face of external timber doors, windows and timber trims.
	Repaint interior timber doors, windows and timber trims.
	Repaint existing walls not covered by acoustic pin board in learning and breakout spaces.
	Repaint existing walls and ceilings in toilets and remaining cloak bays.
Exterior doors and windows	Repair windows and doors so that they are operable.
	Repair or install new catches, hinges and window winders where required.
	(See also wall section on removing windows for bracing).
Hydraulics	Under bench hot water cylinder complete including cold water connection.
Heating	Allow to repair and relocate existing heaters.
Electrical	Allow relocation and minor alterations to electrical services.

Layout option 2

Walls	Demolish a portion of wall between classrooms to form 3.9m x 2.7m finished opening. <ul style="list-style-type: none"> - Allow to repair floors, repair plasterboard walls and trim openings. - Remove two wet area sink units.
	Demolish portion of wall and install two new glazed doors from learning areas to toilet lobbies.
	Demolish toilets and coat hooks in two toilet/cloakrooms. <ul style="list-style-type: none"> - Allow to repair floors, re-level toilet floors, repair plasterboard walls and trim openings.
	Build wall in cloak room to create breakout spaces with glazed slider.
	Remove existing linings where required for bracing upgrade. <ul style="list-style-type: none"> - Reconnect timber framing with connections appropriate to bracing type. - Insulate acoustically and/or thermally and re-line¹.
	Remove existing toilet windows where bracing is required, frame in wall and re-clad with paint finish weatherboard on cavity battens over RAB board with appropriate flashings to soffit, cladding below and openings either side.
	Paint finish to toilets and remaining cloak bays.
	Acoustic pin board from floor to minimum 2200mm (ideally the whole wall) (NRC 0.40) paint finish above to learning and breakout spaces.
Ceilings	Line over existing soft board ceiling in learning and breakout spaces and toilet lobby with plasterboard lining, stop and seal.
	Fix high sound absorbing ceiling (NRC 0.85 minimum) in learning and breakout spaces and toilet lobby.
Floor coverings	New carpet tiles generally to learning space.
	New selected covered vinyl to wet area and toilets and remaining cloak bay.
Joinery	Refurbish two existing wet area bench and cupboards.
	Four resource cupboards (1.2m x 0.4m x 1.8m high, not shown on plan).
	Repaint interior face of external timber doors, windows and timber trims.
Re-painting	Repaint interior timber doors, windows and timber trims.
	Repaint existing walls not covered by acoustic pin board in learning and breakout spaces.
	Repaint existing walls in and ceilings in toilets and remaining cloak bays.
Exterior doors and windows	Repair windows and doors so that they are operable.
	Repair or install new catches, hinges and window winders where required. (See also wall section on removing windows for bracing)
Interior doors and windows	New glazed aluminium door to the toilet lobbies.
Hydraulics	Existing.
Heating	Allow to repair and relocate existing heaters.
Electrical	Allow relocation and minor alterations to electrical services.

Layout option 3

Walls	Demolish a portion of wall between classrooms to form 5.7m x 2.7m finished opening. <ul style="list-style-type: none"> - Allow to repair floors, repair plasterboard walls and trim openings. - Remove four wet area sink units
	Demolish half the wall between all classrooms and the four toilet/cloakrooms.
	Demolish toilets and coat hooks in areas to become breakout spaces and new toilets. <ul style="list-style-type: none"> - Allow to repair and re-level floors, repair plasterboard walls. - Construct new walls to form three breakout areas with 1.8m x 2.2m openings in three walls and 1.2m x 2.2m opening in the fourth. - Construct new wall in classroom space between new toilets. - Acoustically insulate and line (STC 45). - Construct new toilet cubicle walls. Acoustically insulate and line.
	Remove existing linings where required for bracing upgrade. <ul style="list-style-type: none"> - Reconnect timber framing with connections appropriate to Bracing Type. - Insulate acoustically and/or thermally and re-line¹.
	Remove existing toilet windows where bracing is required, frame in wall and re-clad with paint finish weatherboard on cavity battens over RAB board with appropriate flashings to soffit, cladding below and openings either side.
	Paint finish to toilets and toilet lobby.
	Acoustic pin board from floor to minimum 2200mm (ideally the whole wall) (NRC 0.40) paint finish above to learning and breakout spaces.
Ceilings	Line over existing soft board ceiling in learning and breakout spaces and toilet lobby with plasterboard lining, stop and seal.
	Fix high sound absorbing ceiling (NRC 0.85 min) in learning and breakout spaces and toilet lobby.
	New plasterboard ceilings to toilet cubicles.
Floor coverings	New carpet tiles generally to learning and breakout spaces, and toilet lobby.
	New selected coved vinyl to wet area and toilets cubicles.
Joinery	Two SS sink benches with art troughs and HPL bench with cupboards under between, shelves over.
	Work bench cupboards under and shelves over.
	Four resource cupboards (1.2m x 0.4m x 1.8m high, not shown on plan).
Re-painting	Repaint interior face of external timber doors, windows and timber trims.
	Repaint interior timber doors, windows and timber trims.
	Repaint existing walls not covered by acoustic pin board in learning and breakout spaces.
	Repaint existing walls in toilets.
Exterior doors and windows	Repair windows and doors so that they are operable.
	Repair or install new catches, hinges and window winders where required.
Interior doors and windows	New solid core timber door to toilet cubicles and glazed aluminium door with sidelight to the toilet lobby.
Hydraulics	Under bench hot water cylinder complete including cold water connection.
	New toilets and hand basins.
Mechanical	Exhaust system for toilet cubicles to exhaust out though wall.
Heating	Allow to repair and relocate existing heaters.
Electrical	Allow relocation and minor alterations to electrical services.

Additional enhancement options

B1	Layout option 1 and 2: Install glazed hinged door in opening to breakout rooms.
B2	Layout option 3: Install 3x 1.8m wide x 2.0m high glazed hinged (or sliding) doors in opening to breakout rooms.
B3	Outdoor learning area <ul style="list-style-type: none"> - Remove two sets of concrete landing and steps to doors where deck is to be constructed. - Construct 50m² of timber decking (or concrete pad if ground clearance insufficient). - Construct 50m² canopy roof.
B4	Remove three exterior window sets and replace with aluminium windows and glazed hinged or sliding doors to exterior deck.
B5	Layout option 1: Install 9m wide x 2.7m high glazed aluminium sliding partition in opening to form large breakout room.
B6	Layout option 2 and 3: Install 5.7m wide x 2.7m high glazed aluminium sliding partition in opening to form large breakout room.
B7	Improve rain noise mitigation and internal acoustics <ul style="list-style-type: none"> - Remove soft board ceiling lining. - Nog between roofing members. - Insulate acoustically and/or thermally.¹ - Line the ceiling with plaster board lining, stop and seal. - Fix high sound absorbing ceiling panel in learning and breakout spaces.
B8	Improve acoustic separation between new learning and breakout spaces and the existing toilets. Layout options 1 and 2. <ul style="list-style-type: none"> - Remove existing linings to remaining walls (not requiring bracing upgrade). - Insulate acoustically and re-line. (STC 45)
B9	Improve thermal performance of envelope <ul style="list-style-type: none"> - Remove remaining existing linings to remaining external walls. - Insulate² and re-line.³
B10	Replace spouting with commercial grade UPVC spouting and UPVC soil grade downpipes <ul style="list-style-type: none"> - Replace roof with building wrap, safety mesh and Trapezoidal 0.55BMT prefinished roofing, and associated flashings. Select appropriate roof protection based on your corrosion zone and roof pitch.⁴ - Paint finish downpipes to match spouting.
B11	Repair and re-paint exterior cladding.
B12	Exterior doors and windows. <ul style="list-style-type: none"> - Option A: Replace exterior glazing with minimum 6.38 laminated glass or as required to NZS 4223. Repaint windows and doors. Replace window winders. - Option B: Replace window frames and glazing with commercial grade powder coated single (or double where required for thermal performance) glazed aluminium windows and doors. All glazing toughened or laminated as required to NZS 4223. Trickle vents to upper most window panes. New window winders.
B13	Accessible Ramp Access <ul style="list-style-type: none"> - H3.2 timber decking, baseboards and joists, H4 bearers and H5 piles. - All structure separate from existing building. - Galvanised tubular steel hand rails and balustrades to ramps. - 3M grip tread tape to ramp timber decking.

¹ Care needs to be taken to avoid condensation issues caused by retrofitting insulation, particularly where building wrap and cavity cladding systems are not present. This can cause as many moisture problems such as weathertightness. It is recommended that heat and moisture transfer simulations for each type of construction is carried out.

² As above note 1.

³ Use: 55mm R1.4 rigid friction fitted high density semi rigid insulation batt where building wrap is not present or 90mm R2.2 friction fitted insulation batt where building wrap is present.

⁴ Investigations should be undertaken before re-roofing to confirm that the existing low pitch roof and flashings have not caused weather tightness issues. Care must be taken with the selection and detailing of roofing for the low pitch roof over the cloak bays to ensure that they achieve the requirements of the manufacturer's warranty.

Toilets

Layout option 1 and 2

Six existing toilets have been retained, three female and three male. Accessible toilets have not been provided, it is assumed for this option that accessible facilities are already provided for elsewhere in the school.

Layout option 1 uses building code toilet calculation option 4.⁵

Building code toilet calculation option 4 Single sex pans only, plus accessible unisex.		
	Number required	Number provided
Female		
Pans	2	3
Basins	1	2
Male		
Pans	2	3
Basins	1	2
Unisex		
Accessible facilities	1	0

Layout option 3

Student toilets have been re-configured so they are accessible from both the interior and exterior, clearly visible to ensure a high level of passive surveillance is possible and that the lobbies have two exits.

The toilets are self-contained cubicles and an accessible toilet has been provided.

Layout option 2 uses building code toilet calculation option 1.⁶

Building code toilet calculation option 3 Unisex only		
	Number required	Number provided
Facilities	3	3
Accessible facilities	1	1

For all options, as toilets are being rationalised in the upgraded block, school wide toilet calculations should be carried out to confirm adequate toilet numbers are continued to be provided. It has been assumed that teacher toilets and accessible toilets are provided elsewhere in the school.

⁵ Toilet calculations have been made using the 'Calculator for toilet pans, basins and urinals' (<http://www.building.govt.nz/calculator-for-toilet-pans/>), based on the 'average' student population of 4 x 26 = 104 students per block.

⁶ As above note 5.

Assumptions and exclusions

Individual examples of each of the standard classroom block types vary in their dimensions, materials, construction and site context, they may have been refurbished and altered over the years, or they may be in a condition that require significant maintenance work.

We have assumed:

- » The buildings are in reasonable condition, structurally sound and weathertight.
- » Existing walls are lined with plaster board.
- » Ceilings are lined with soft board tiles.
- » Buildings maybe uninsulated and may have no building wrap.
- » There is no asbestos present in the building. Asbestos testing may need to be undertaken prior to further design and/or construction work as per the Ministry's policy.
- » The opening windows are sufficient for natural ventilation and daylight, both for learning areas and toilets.
- » Roof pitch is sufficient for trapezoidal profiled metal roofing.

As individual blocks vary, electrical, data, lighting, mechanical and hydraulics consultants have not yet provided design input into the layouts or scope of works. Rework of these systems will need to be undertaken on a block by block basis.

An acoustic consultant has reviewed and commented on the planning options. They have not given advice on material selections or mitigation of exterior noise sources should they be present. The proposed strategy for internal acoustics places the emphasis on acoustic absorption rather than acoustic separation. Where acoustic separation is required is provided with sliding internal doors they will be glazed to preserve connectivity and without seals to ensure ease of operation by young students. Laminated glass is specified to provide a level of acoustic separation. High levels of absorption will be used to 'deaden' the noise within the learning spaces which will make the acoustic separation less critical.

The enhancements will bring the buildings closer to the DQLS Guideline recommendations, however this is not confirmation that will meet those guidelines or that the building will meet current building consent requirements. A full building analysis, detailed design and scope of works may be required for this. Although some monetary sums have been allocated in the budgets, excluded from these preliminary layout designs are costs associated with:

- » Building condition assessments of cladding and weather tightness.
- » Detailed building survey measure of existing building.
- » Hazardous materials such as asbestos.
- » Thermal performance and insulation calculations.
- » Aggravated thermal bridging mitigation.
- » Weather tightness assessment.
- » Coastal and sea spray corrosion resistance.
- » Detailed design, documentation, tendering and construction observation fees.
- » Building services design, including lighting, heating, hydraulics, electrical and data.
- » Acoustic design.
- » Fire protection design.
- » Weathertightness assessment.
- » Project management fees.
- » Consent fees.