



Appendix 1 Architectural Scope

Nelson two storey block ILE upgrade

This architectural scope is intended for architects and the wider design teams 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 and should be read in conjunction with the design plans ([option 1 and 2](#)). Assumptions and exclusions are also detailed in this section.

Preliminary outline scope

Layout option 1

Walls	Demolish a portion of wall between existing spaces: classrooms and circulation, classrooms and locker area, classrooms and teacher resource, classrooms and upper floor landings [#] to form openings. - Allow to repair floors, plasterboard walls and trim openings.
	Remove windows where required for bracing walls and new lift, 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. - Insulate acoustically and/or thermally and re-line ¹ .
	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 walls in the learning spaces and locker bays to create breakout and teacher work/resource rooms to meet bracing requirements. - Insulate acoustically and line.
	Install portals including foundations and connections on lower and upper floors. - Allow to repair floors, repair plasterboard walls and soft board ceilings.
	Build lift shaft and smoke stop lobbies on ground and first floor including foundations and lift support structure clad with paint finish weatherboard on cavity battens over RAB board with appropriate flashings to soffit, cladding below and openings either side. New windows to exterior upper floor lobby and new doors to exterior of ground floor lobby.
	Remove existing linings where required for fire separation to stairwell and lift lobby upgrades [#] . - Reconnect timber framing with connections appropriate to bracing type. - Insulate acoustically and achieve fire rating and re-line ¹ .
	Remove existing openings to toilets and reframe, insulate, and reline. Form new openings into toilets. - Allow to repair floors, repair plasterboard walls and trim openings.
	Form new staff toilet off the teacher work /resource space.
	Paint finish to toilets.
	Acoustic pin board from floor to minimum 2.2m height (ideally the whole

	wall) with a Noise Reduction Coefficient (NRC) of 0.40 paint finish above to learning and breakout spaces.
Ceilings	Line over existing soft board ceiling in learning, breakout spaces and stairs with plasterboard lining.
	Fix high sound absorbing ceiling panel (NRC 0.85 minimum) in learning, breakout spaces and stairs and lift lobbies*.
Floor coverings	New carpet tiles generally to learning spaces, stair wells, lift and toilet lobbies. Heavy duty latex backed polypropylene carpet at external openings.
	New selected coved vinyl to existing toilets and new staff toilet.
Joinery	12 x 1.2m teacher work bench and shelves over.
	12 resource cupboards 1.2m wide x 0.4m deep 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. New windows to exterior upper floor lift lobby. New exterior glazed doors to exterior of ground floor lobby.
	Repair or install new catches, hinges and window winders where required.
	(See also wall section on removing windows for bracing).
Interior Doors	Re-hang toilet lobby doors in new locations.
	New fire doors to the ground floor stair wells with vision panels. New glazed smoke stop doors between lift lobby and learning space on both floors.
Hydraulics	Allow for the repair/replacement of under bench hot water cylinder including cold water connection.
Heating	Allow for the repair and relocation of existing heaters.
Electrical	Allow for minor alterations and relocation of electrical services.

* If inter-floor acoustic and/or fire separation is not currently in place then add enhancement B16.

Fire engineering design maybe required.

Layout option 2

Walls	Demolish a portion of wall between existing spaces: classrooms and circulation, classrooms and locker area, classrooms and teacher resource, classrooms and upper floor landings [#] to form openings. - Allow to repair floors, repair plasterboard walls and trim openings.
	Remove windows where required for bracing walls and lift, 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. - Insulate acoustically and/or thermally and re-line ¹ .
	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 walls in locker bay and toilets to form breakouts and teacher work/resource rooms to meet bracing requirements as required. - Insulate acoustically and line.
	Install portals including foundations and connections on lower and upper floors. - Allow to repair floors, repair plasterboard walls and soft board ceilings.
	Build lift shaft and smoke stop lobbies on ground and first floor including foundations and lift support structure clad with paint finish weatherboard on cavity battens over RAB board with appropriate flashings to soffit, cladding below and openings either side.
	Remove existing linings where required for fire separation to stair well upgrade [#] . - Reconnect timber framing with connections appropriate to bracing type. - Insulate acoustically and achieve fire rating and re-line ¹ .
	Remove existing toilets and walls, reform new toilet configuration, including a new staff toilet off staff work/resource space.
	Paint finish to toilets.
	Acoustic pin board from floor to minimum 2.2m height (ideally the whole wall) with a Noise Reduction Coefficient (NRC) of 0.40 paint finish above to learning and breakout spaces.
Ceilings	Line over existing soft board ceiling in learning, breakout spaces and stairs with plasterboard lining*.
	Fix high sound absorbing ceiling panel (NRC 0.85 minimum) in learning, breakout, stairs and toilet and lift lobbies.
	Reline toilets with plasterboard linings.
Floor coverings	New carpet tiles generally to learning spaces, stair wells, lift and toilet lobbies. Heavy duty latex backed polypropylene carpet at external openings.
	New selected coved vinyl to existing toilets and new staff toilet.
Joinery	12 x 1.2m teacher work bench and shelves over.
	12 resource cupboards 1.2m wide x 0.4m deep 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.

Exterior doors and windows	Repair windows and doors so that they are operable. New windows to exterior upper floor lift lobby. New exterior glazed doors to exterior of ground floor lobby.
	Repair or install new catches, hinges and window winders where required. (See also wall section on removing windows for bracing).
Interior Doors	New glazed aluminium door to the toilet lobbies. New solid core toilet cubicle doors. New fire doors to the ground floor stair wells with vision panels. New glazed smoke stop doors between lift lobby and learning space on both floors.
Hydraulics	New student toilets and hand basins including supply and waste and repairs to existing facilities.
Heating	Allow for the repair and relocation of existing heaters.
Electrical	Allow for minor alterations and relocation of electrical services.

* If inter-floor acoustic and/or fire separation is not currently in place then add enhancement B16.

Fire engineering design maybe required.

Additional enhancement options

B1	Layout option 1: - 4 x 1.8 m wide interior glass sliding doors to 4 small breakout rooms.
B2	Layout option 2: - 4 x interior glass sliding doors to the 2 medium breakout rooms on the ground floor. 2 x 1.4m & 2 x 3.6m wide doors.
B3	Layout option 1 or 2: - 2 x interior glass sliding doors to the 2 large breakout rooms on the ground level at one end. 1 x 1.8m & 1 x 2.8m wide doors.
B4	Layout option 1 or 2: - 4 x interior glass sliding doors to the 2 large breakout rooms on the upper level at one end, 3 x 1.2 & 1 x 2.6m wide doors.
B5	120m ² Outdoor learning area on the ground floor. - Construct timber decking and stairs (or concrete pad if ground clearance insufficient). - Construct free standing canopy roof over area including spouting, downpipes and connection to storm water.
B6	Provide sliding/hinged doors to outside learning area. - Remove six exterior window sets (two structural bays 3.7m wide) and wall beneath, replace with aluminium windows and glazed hinged or sliding doors to exterior deck.
B7	Improve rain noise mitigation and internal acoustics. - 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, breakout spaces and the existing toilets. - Remove existing linings to remaining walls (not requiring bracing upgrade). - Insulate acoustically and re-line (Sound Transmission Class 45).
B9	Improve thermal performance of envelope. - Remove remaining existing linings to remaining external walls. - Insulate ² and re-line ³ .
B10	Replace spouting with commercial grade UPVC spouting and UPVC soil grade downpipes. Replace roof with building wrap, safety mesh and trapezoidal with 0.55BMT prefinished roofing, and associated flashings. Select appropriate roof protection based on the corrosion zone and roof pitch ⁴ . Paint finish downpipes to match spouting.
B11	Repaint exterior.
B12	Re-clad exterior (excluding ends). Note this excludes the additional cost of asbestos removal.

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 as weather tightness. It is recommended that heat and moisture transfer simulations for each type of construction used in the buildings is carried out.

² As above note 1.

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

B13	Re-glaze existing exterior doors & windows. <ul style="list-style-type: none"> - Replace exterior glazing with minimum 6.38mm laminated glass or as required to meet NZS 4223. Repaint windows and doors. Replace window winders.
B14	Replace exterior doors & windows. <ul style="list-style-type: none"> - 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 meet NZS 4223. Trickle vents to upper most window panes. New window winders.
B15	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.
B16	Inter-floor acoustics and fire separation [#] <ul style="list-style-type: none"> - Remove existing soft board or plasterboard ceiling. - Min 100mm layer of acoustic batts. - Two layers of 13mm plasterboard on resilient rails.
B17	Stair case upgraded to current code [^] <ul style="list-style-type: none"> - Replace handrails and balustrades - Fill in risers

[#] Exact system to be specified in accordance with fire and acoustic engineers' advice.

[^] Exact scope of upgrade to be specified in accordance with fire engineer.

Toilets

Layout option 1

Existing toilets have been retained under this option; the existing drawings indicated eight female pans and three male pans with urinal length for 4-5 students. The number of hand basins was not indicated. Accessible toilets are not generally provided in the original Nelson two storey blocks. Under this option it is assumed that accessible facilities are already provided elsewhere in the school.

The existing plans indicate that one less pan for males has been provided than the current Building Code requires. However, the urinal capacity provided is more than adequate under the Building Code toilet calculator⁵.

Building Code toilet calculation		
Single sex pans only, plus accessible unisex		
Female	Number required	Number provided
Pans	4	8
Basins	2	2
Male		
Pans	4	3
Urinals	2	2
Basins	1	4-5
Unisex		
Accessible facilities	2	0

⁵ Toilet calculations have been made using the sanitary fixture calculator (<http://www.building.govt.nz/calculator-for-toilet-pans#/>), based on the 'average' student population of 12 x 26 = 312 students per block.

Layout option 2

Student toilets have been re-configured to self-contained cubicles including accessible toilets. Lobbies are visible ensuring a high level of passive surveillance. Two means of exit from the lobbies and immediate access from the lobby to outside have not been provided. Students from the upper floors will still need to access the lower floor to use the toilets.

Layout option 2 uses the Building Code toilet calculator and has two alternatives; unisex or single sex toilet configuration (see table below). This allows the school to decide whether they prefer unisex or single sex toilets whilst ensuring that both options are possible.⁶

Building Code toilet calculation for unisex only		
	Number required	Number provided
Facilities	8	3
Accessible facilities	2	2
Building Code toilet calculation for single sex only		
	Number required	Number provided
Female pans	4	4
Female accessible	1	1
Male pans	4	4
Male accessible	1	1

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

Architectural assumptions and exclusions

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

The architectural scope assumes that:

- » 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 have no building wrap.
- » 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.

Asbestos

No allowance has been made for the presence of asbestos or its removal. Asbestos testing may need to be undertaken prior to further design and/or construction work as per the Ministry's policy.

⁶ See note 5 on Building Code toilet calculator.

Services

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

Fire safety design

The designs have been reviewed by a fire engineer and this scope of work is based on the following fire design assumptions:

- » The configuration of the Nelson two storey blocks will vary from school-to-school; therefore it is uncertain that this standard block reference design will meet the Ministry's building separation requirements. This will need to be confirmed on a site by site basis.
- » It is not practical to relocate the Nelson blocks and/or adjacent blocks on site to meet separation requirements.
- » The standard blocks are existing, with only internal flexible learning space upgrades proposed.
- » Ministry property protection requirements will be met by the inclusion of 60 minute fire rated separations and sprinkler system.
- » A "Type 2" manual alarm system is sufficient to meet the Building Code where the occupant load is not greater than 250 people and the escape height is less than 4 metres.
- » The proposed fire egress routes for the Nelson two story block, as shown on the architectural drawings, are sufficient to meet the Building Code (refer to the Fire Engineering Report).

Acoustic design

An acoustic consultant has reviewed and commented on the planning options. They have not, however, given site specific advice on material selection or mitigation of exterior noise sources.

The proposed strategy for internal acoustics, places the emphasis on acoustic absorption rather than acoustic separation. High levels of absorption will be used to mitigate noise within the learning spaces, which will make acoustic separation less critical. The design upgrade rationale assumes that the spaces are managed by the teachers, and learning activities are coordinated between them.

Laminated glass is specified to provide a level of acoustic separation while preserving connectivity. Where specific acoustic separation of learning spaces is required, options for glazed internal sliding doors have been incorporated into the layout options. Sliding doors are assumed to be installed without acoustic seals to ensure ease of operation by younger students.

General assumptions

The enhancements will bring the buildings closer to the DQLS Guideline recommendations. This, however, does not provide confirmation that they 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.
- » Addressing hazardous materials such as asbestos.
- » Thermal performance and insulation calculations.
- » Aggravated thermal bridging mitigation.
- » 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.
- » Project management fees.
- » Consent fees.