



**Project: MOE – FLS Reference
Designs for Standard Classroom
Upgrade – Formula Block**

Accessibility Report

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1. Introduction

This report considers the accessibility requirements of existing standard single-storey four-classroom Formula Type classroom block at various Ministry of Education (MOE) schools throughout New Zealand. The proposed works include upgrading the existing standard four-classroom Formula Block to create a “Flexible Learning Space (FLS)”, previously referred to as “Modern Learning Environment (MLE)”. Three options of a similar layout have been considered for the Formula Block FLS upgrade - Options 1, 2 and 3.

Option 1 consists of four interconnected classrooms equivalent in size with three breakout rooms, two existing toilets remaining as is, a shared wet area and two small group areas.

Option 2 is similar to Option 1, also consisting of four interconnected classrooms equivalent in size with three breakout rooms, two existing toilets remaining as is, a shared wet area and two small group areas, but with fewer partitions.

Option 3 consists of four interconnected classrooms equivalent in size with three breakout rooms, one of which is being converted from one of the two existing toilets; two small group areas and a new toilet.

The proposed works are therefore alterations in terms of Section 112 of Building Act 2004. This states that:

112 Alterations to existing buildings

A building consent authority must not grant a building consent for the alteration of an existing building, or part of an existing building, unless the building consent authority is satisfied that, after the alteration, the building will -


- (a) comply, as nearly as is reasonably practicable with the provisions of the building code that relate to-
 - i. means of escape from fire; and
 - ii. access and facilities for persons with disabilities (if this is a requirement in terms of section 118); and
- (b) continue to comply with the other provisions of the building code to at least the same extent as before the alteration.

The Building Act: 2004 requires in section 4 (2) (k) for 'the need to provide, both to and within buildings to which section 118 applies, facilities that ensure that reasonable and adequate provision is made for people with disabilities to enter and carry out normal activities and processes in a building '.

Section 118 of the Building Act requires that access and facilities for persons with disabilities to and within buildings be considered for facilities to which the public are to be admitted, whether for free or on payment of a charge ... This includes educational institutions, including public and private primary, intermediate, and secondary schools, universities, polytechnics, and other tertiary institutions.

To demonstrate compliance with the above this report makes use of the Acceptable Solutions in the New Zealand Building Code Clause D1/AS 1, NZS 4121:2001 Design for Access and Mobility Buildings and Facilities.

Note that this report considers only those requirements necessary for the standard four-classroom Formula Type classroom block themselves to comply with accessibility requirements. Because each school where Formula Blocks are existing will have different configurations of site layout, vehicle and pedestrian access, building usage etc. a generic and comprehensive accessibility report is not possible. Therefore any particular school with Formula Blocks present would need a site specific



accessibility report that would consider all the necessary requirements for access by people with disabilities. Site specific items have been identified in the report and denoted as such in this report.

Note also that the requirements of this report may not be applicable to those Formula Blocks where the school can provide equivalent teaching facilities elsewhere on site for staff and/or students with disabilities.

2. Proposed Building Work

2.1 Drawings and Specifications

This report is based on drawings by Brewer Davidson Architects Ltd.

Table 1: Reviewed drawings

Drawing Title	Drawing No.	Rev.	Date
Formula Block MLE Upgrade Option 1	1501-F003	B	8/06/2015
Formula Block MLE Upgrade Option 2	1501-F004	B	8/06/2015
Formula Block MLE Upgrade Option 3	1501-F005	B	8/06/2015

2.2 Formula Block

The standard single-storey, four-classroom Formula Block of Ministry of Education (MOE) is a standard classroom block constructed at various schools throughout New Zealand between 1962 and 1970. Construction consists of a light-weight timber frame with weatherboard or brick façade and corrugated iron roofing. Typically, existing Formula Blocks consisted of four classrooms with shared cloakroom and toilets.

The proposed works include upgrading the existing standard four-classroom Formula Block to create a “Flexible Learning Space (FLS)”, previously referred to as “Modern Learning Environment (MLE)”. Three options of similar layout have been considered for the Formula Block FLS upgrade - options 1, 2 and 3.

Option 1 consists of four interconnected classrooms equivalent in size with three breakout rooms, two existing toilets remaining as is, a shared wet area and two small group areas.

Option 2 is similar to Option 1 but with fewer partitions.

Option 3 consists of four interconnected classrooms equivalent in size with three breakout rooms, one of which is being converted from one of the two existing toilets; two small group areas and a new toilet.

Refer to Figure 1, Figure 2 and Figure 3. All three options have two proposed locations for outdoor covered learning space:

- Outdoor covered learning area Option 1: from gridline A to B
- Outdoor covered learning area Option 2: from gridline D and beyond

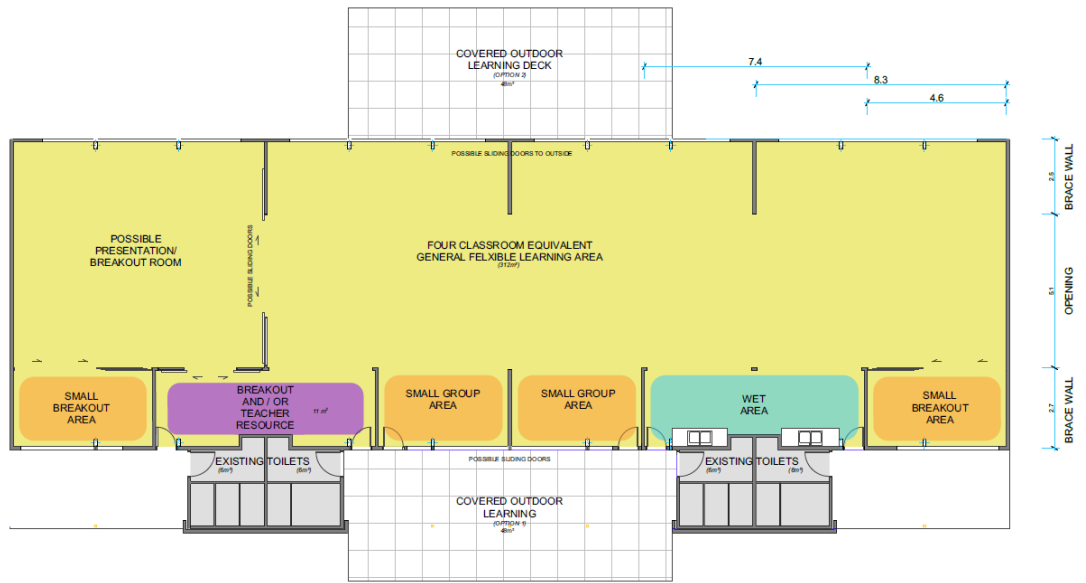


Figure 1: Formula Block FLS upgrade Option 1

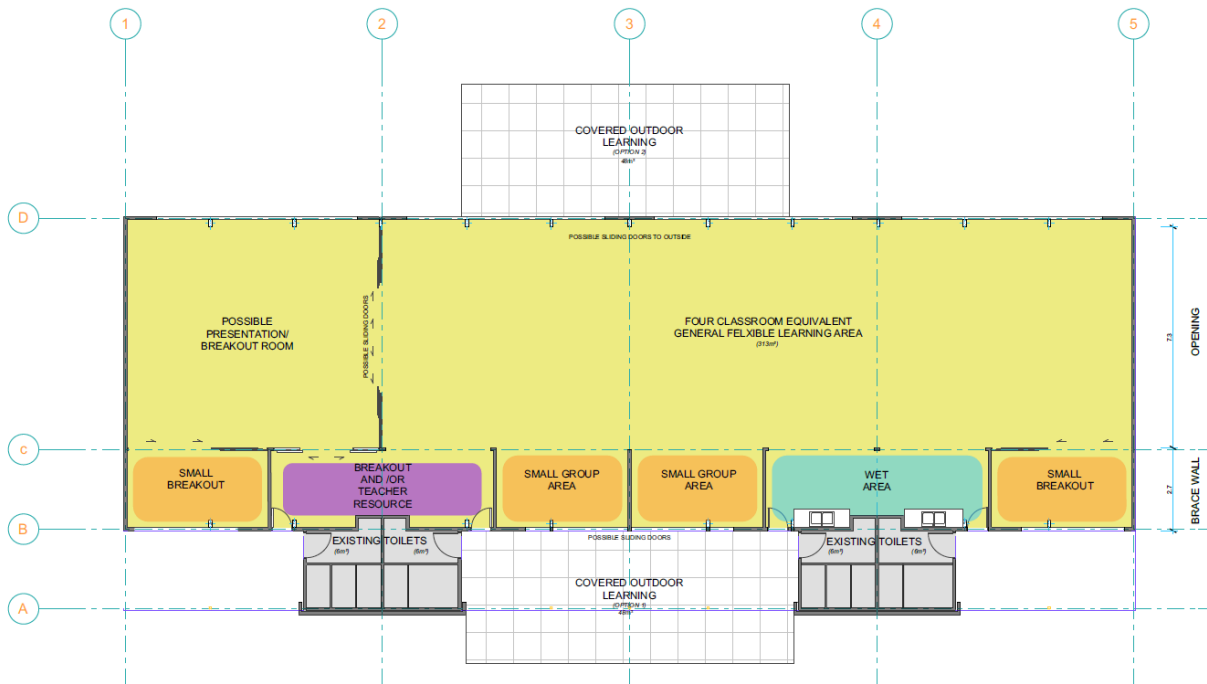


Figure 2: Formula Block FLS upgrade Option 2

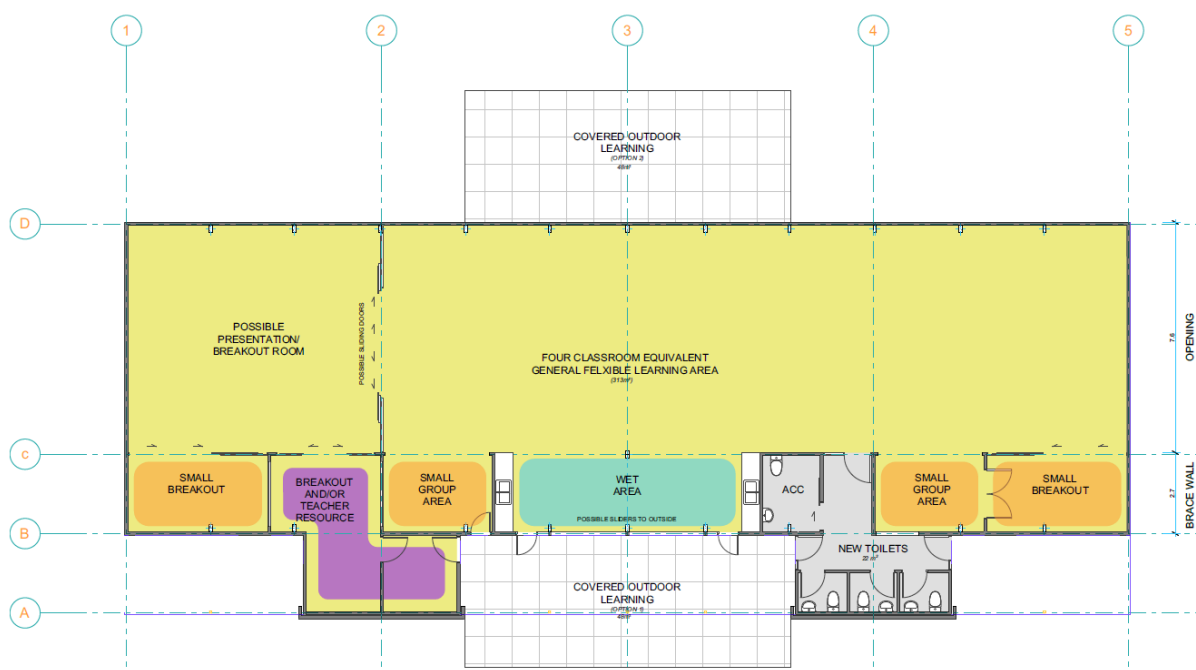


Figure 3: Formula Block FLS upgrade Option 3

3. Accessible Car Parks

This is a site specific item. Accessible car park requirements of NZS 4121 for the school site are given in Table 2.

Table 2: Required accessible car park provisions

NZS 4121 Requirements	
No. of accessible car parks required	<ul style="list-style-type: none"> Not less than one accessible carpark when up to 20 normal carparks are provide; or Two accessible car parks for 21 to 50 normal car parks provided and for every additional 50 normal car parks an additional accessible car park is required.
Signage	Signage for the car parking space(s) shall be readily visible from the vehicle at the entrance to the car park, or guide signs shall be provided to indicate the direction of the space. The space shall have ground marking of the International Symbol of Access (ISA) and may have directional signage.
Spatial provision	<ul style="list-style-type: none"> Car parks set at 90° to the footpath shall be not less than 3500 mm wide. Any angled car parks shall have an operational width of 3500 mm. Where the car park space is parallel and adjacent to a marked footpath on the same level as the parking space, the width of the common footpath may form part of the parking. The car parking space length shall be no less than 5000 mm. 2500 mm minimum height to be maintained from the entry of the car park to the accessible car park.
Ground condition	Accessible car park space(s) shall be provided on a stable, firm, slip resistant flat surface with a slope not exceeding 1:50.
General requirements	<ul style="list-style-type: none"> People with disabilities shall not have to pass behind parked cars when moving to an accessible route, or when approaching an entrance. Flat access shall be provided whenever possible between the car park space(s) and adjoining footpath - alternatively kerb ramps are to be provided.

4. Accessible Routes

4.1 Access- General

This is a site specific item. Where Formula Block classrooms are required to be accessible, NZS 4121 requires that an accessible route shall be provided that connects from the point of arrival on site to the Formula Block required to be accessible to people with disabilities. The main entrance to the school shall be on an accessible route. If this is not possible there shall be signage indicating the location of an accessible entrance.

4.2 Footpaths and Ramps

This is a site specific item. Where Formula Block classrooms are required to be accessible, footpaths and ramps to Formula Block shall meet the requirements in Table 3.

Table 3: Required ramp provisions

NZS 4121 Requirements	
Crossfall	Accessible route shall have a crossfall of no greater than 1:50.
Spatial provision	<ul style="list-style-type: none">• Footpaths and ramps shall have a width of not less than 1,200 mm (1,000 mm between handrails).• Ramps shall have a maximum slope of 1:12. It is preferably 1:14.• Ramps steeper than 1: 20 shall have handrails both sides extending 300 mm beyond the head and foot of the ramp.• Ramps shall have landings top and bottom, extending 1,200 mm beyond any doorway or door swing.• Maximum rise between ramp landings (and rest areas) to be 750 mm.
Handrails	<ul style="list-style-type: none">• Handrails to be between 840 and 1,000 mm above surface of ramp.• Handrail diameter between 32 and 50 mm.• Handrails to have clearance of 45 to 60 mm from wall.
Ground condition	Footpaths and ramps shall have a non-slip surface.
General requirements	<ul style="list-style-type: none">• Portable ramp is not permitted.• All ramps to have an upstand no less than 75 mm high or low rail no more than 75 mm above the ramp to prevent a wheelchair from running off the edge.

4.3 Building Entry

Refer to Figure 1, Figure 2 and Figure 3. Where Formula Block classrooms are required to be accessible, since each classroom is interconnected, it is proposed that accessible entrance to be provided at the entrance from the covered outdoor learning area between gridline A and B.

Table 4: Required accessible entrance provisions

NZS 4121 Requirements	
Level access	The entry door from the covered outdoor learning space between gridline A and B into the Formula classrooms is preferably to include no thresholds, or is to be less than 20 mm.
Spatial provision	<ul style="list-style-type: none">• 1200 mm wide by 1200 mm long manoeuvring areas are required both before and after entry door.• A minimum clear width of 1200 mm to be provided within an accessible corridor following the entry door.• The spatial provision in the proposed Options 1, 2 and 3 at the entrance from the covered outdoor learning space between gridline A and B for each options will meet the requirements as inspected from the architectural drawings.
Opening of door	<ul style="list-style-type: none">• Provide a clear opening of not less than 760 mm when the door is opened.• The single doors into Formula classrooms from the covered outdoor learning space between gridline A and B for each options are no less than 760 mm therefore expected to meet the requirement.
General requirements	<ul style="list-style-type: none">• Glazing if provided on entry doors it shall be marked in accordance with NZS 4223.3.• Entry door shall have a clear colour contrast with respect to its surroundings.

4.4 Stairways and Lifts

Not applicable as the standard four-classroom Formula Type classroom block is single-storey.

4.5 Doorways and Openings on Accessible Routes

The clear minimum width of doorways on an accessible route shall be 760 mm when the door is open. Any pair doorsets on accessible routes must have at least one leaf that provides a clear opening of 760 mm. All doors shall have handles between 900 and 1,200 mm above finished floor level, and which shall be lever action with the end of the handle returned towards the door.

Doors that swing both directions must have vision panels complying with NZS4121 7.3.2. Note that revolving doors, turnstiles or similar are generally not acceptable on accessible routes.

Internal doors have no thresholds, and exterior doors have thresholds less than 20 mm high which complies with NZS 4121.

4.6 Signs

NZS 4121 requires that every complying building shall have signs to enable people with disabilities to avoid having to ask for directions. Given that the Formula Blocks will be occupied principally by staff and students who must be completely familiar with the layout to be able to perform normal functions we propose that no additional special signage for disabled facilities is necessary.

5. Toilet Facilities

Option 1, 2 and 3 do not have accessible toilet facility proposed. This is acceptable provided that accessible hygiene facilities exist elsewhere on the school site and an accessible route between

Formula Blocks and the facilities is available. Accessible toilet shall comply with the requirements of NZS 4121 in Table 5.

Table 5: Required toilet provisions

NZS 4121 Requirements	
Spatial provision	<ul style="list-style-type: none"> Minimum dimensions of 1,900 mm x 1,600 mm.
Door	<ul style="list-style-type: none"> 760 mm clear opening. If door is hinged shall swing outwards. Sliding door is acceptable.
General requirements	<ul style="list-style-type: none"> Horizontal leg of grab rail beside WC pan is fixed 700 mm above floor level. Vertical leg of grab rail is fixed between 150 and 250 mm from front of pan. Top of pan seat is 460 mm above floor. Front edge of pan seat is 700 – 750 mm from wall behind. Washbasin has 675 minimum underside clearance from floor and is located 300 mm from the front of the pan. Taps to have lever handles (hot tap to left of cold tap).

6. Public Facilities

6.1 Public Counter and Desks

Not applicable to Formula Blocks.

6.2 Telephone

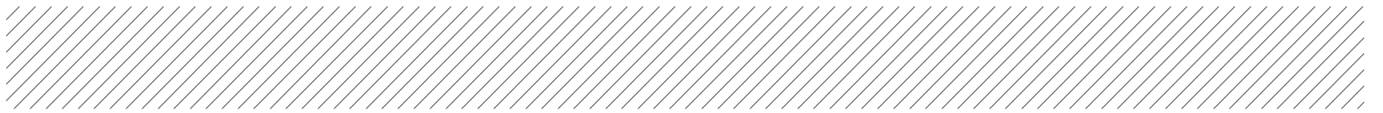
Given the current level of use of mobile telephones available, it is not considered necessary to provide a public telephone in accordance with NZS 4121.

7. Outdoor Public Areas

The entry doors into Formula classrooms from the covered outdoor learning space between gridlines A and B for each option is proposed to be the main accessible entrance (refer to 4.3 of the report). Therefore access requirements from the classrooms to the outdoor learning space between gridline A and B for each option are expected to be met provided that requirements in section 4.1, 4.2 and 4.3 of this report are met.

If the option with the covered outdoor learning space beyond gridline D is preferred, side-hung doors shall be provided to provide access to the covered outdoor learning space beyond gridline D meeting requirements in section 4.1, 4.2 and 4.3 of this report. Note that sliding door is not permitted to provide access to the covered outdoor learning space.

Overhead signs, lights, awnings and similar objects shall have a minimum of 2,000 mm clearance above the ground or finished surface of the covered outdoor learning space.



8. Conclusion

We are of the opinion that provided the above requirements are met, then proposed FLS upgrade to the existing standard four-classroom Formula Type classroom block- Options 1, 2 and 3 will meet the requirements of the Building Code for access and facilities for persons with disabilities, and will otherwise continue to comply with the requirements of the New Zealand Building Code as nearly as is reasonably practicable.



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