

New Zealand School Reference Designs

Infrastructure Sector Forum

9 April 2021

What is the reference design catalogue?

- It's a catalogue of easily customised designs schools have told us have worked well for them and have already been repeated by other schools
- Gives schools a picture of what 'good' looks like early in the design process so they don't start with a blank piece of paper
- Architects and designs will adapt these designs for schools and sites to make sure they're the right solution

Purpose

- Project Description: Provide the Ministry with a set of *Reference Designs* for school building types..... *Exemplars* that can be **repeated** in the **design** and **delivery** of new school buildings
- Through *Te Rautaki Rawa Kura* we're progressing towards a sustainable school portfolio where all schools have access to quality learning environments by 2030.
- Reference designs will help us meet our targets for 2030 and beyond.

Why use reference designs?

- They're proven designs we know work and deliver good learning outcomes
- They meet our performance-based design standards
- Faster design process as they're easy to customise and replicate
- Reference designs can be applied in a range of ways – from using the plan arrangements to a full replication

Reference Designs for Schools – What Types?

This catalogue edition:

- Primary school teaching blocks – single and two storey
- Modular teaching blocks – single and two storey
- Upgrades of Canterbury and Nelson Blocks

Next edition late 2021

- Kura/Area schools
- Primary school multi-purpose halls; admin blocks
- Intermediate specialist spaces
- Special school 2TS satellites
- Secondary school teaching blocks – two/three storey
- Timber two storey teaching blocks

Reference Designs for Schools - Benefits

To facilitate and encourage:

- Consistent standard of design and design outcomes
- Equitable quality of teaching and learning space
- Improved delivery of schools by the Ministry
- Fewer delays or rework as a result of being clear about what we want
- Delivery of flexible learning spaces to meet today's needs and allow for tomorrow's
- Durable buildings that deliver low (improving) lifecycle costs
- Measurable outcomes against design standards - we get what we ask for



Reference Design History

Reference Design History

Nelson Blocks 1959-67



Reference Design History

Canterbury Blocks 1959-65 and Canterbury Intermediate Blocks 1963-66



Reference Design *Recent History*

Gilberthorpe School – converted Canterbury Block



Primary School Learning Environments

Design Criteria

Reference Design Functionality Criteria

We want our School Designs to have the following:

- Logical site planning
- Good internal space planning which promotes QLE and Flexible Learning Spaces
- Sensible adjacencies of activities and spaces, storage and circulation
- Workable orientation and proportions of rooms and spaces
- Passive observation and outdoor learning space
- Excellent quality learning space (DQLS) outcomes
- Optimised SPG area entitlement
- Extrudable repeatable building design for future growth
- Projects which are innovative, attractive, durable, sensible, constructible, value for money and not extravagant.

Reference Design Criteria

School Designs must respond to site and project limitations:

- Teaching space application (general vs. specialist/ cellular versus collaborative)
- Orientation to sun and weather
- Relationship with site and other buildings
- Space required around building perimeter
- Structural – rational repeatable structural solutions
- Buildable by the average build team
- Environmentally sustainable design
- Weatherproof and durable
- Easy and cheap to maintain
- Safe and secure

Reference Design Criteria

Selected School Designs generally have:

- Rational planning and structural concept
- Flexible floor plan – allowing future reconfiguration
- Teaching comfort and flexibility – different size student groupings
- Corners for teaching base, prep and reflection
- Natural flow of space with '*hold*' or '*camping*' spaces
- Double sided plan – with sun and shade options
- Resource and storage space close by
- Bag storage outdoors
- Outdoor learning – conveniently connected to classroom
- Maker spaces connected to outdoors
- Covered walkways
- Toilets with internal and external access
- Universal bathroom



Primary School Learning Environments

Single Level Teaching Blocks

Reference Design Exemplars

PRIMARY SCHOOL TEACHING BLOCKS – Single level

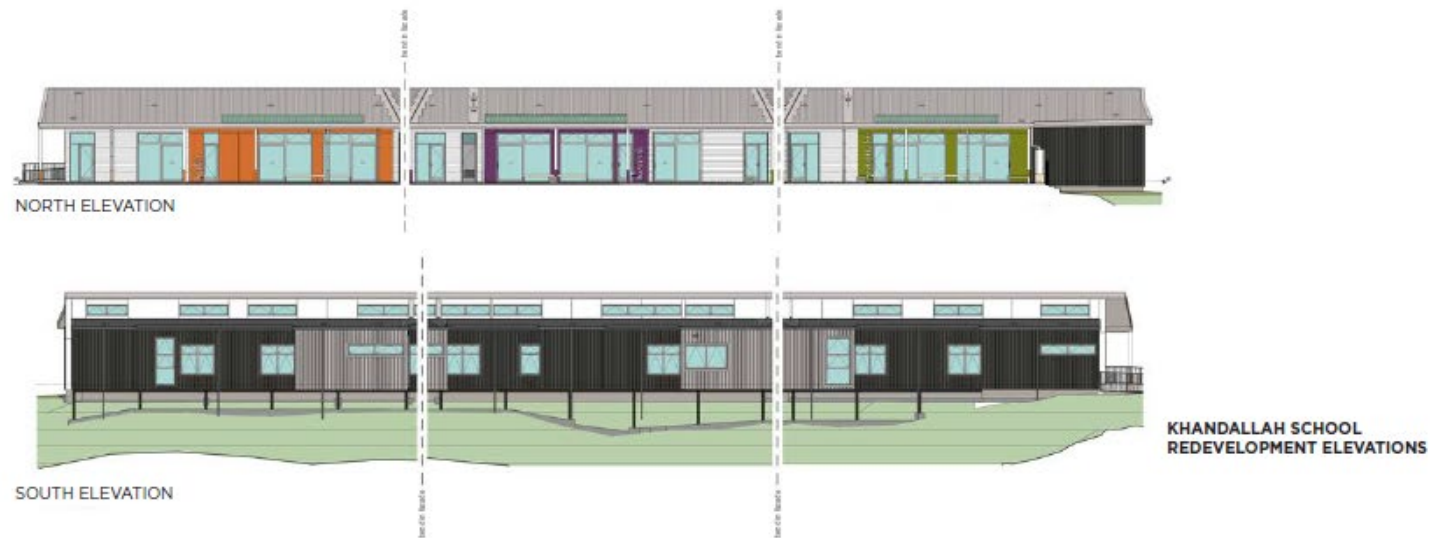
Four exemplars:

- ***Khandallah*** Primary School/ Fernridge, Te Aro, Solway & Greytown Schools similar
- ***Ashgrove*** School/ Rangiora Borough, Southbrook & Oxford Area Schools similar
- ***Gilberthorpe*** School/ Lynmore, Rolleston & Cromwell Primary Schools similar
- ***Spreydon*** School/ Wigram Primary School similar

Khandallah Primary School Teaching Space



Khandallah Primary School Teaching Space



Gilberthorpe School & 3 similar



Gilberthorpe School



Ashgrove School





Primary School Learning Environments

Two Storey Teaching Blocks

Reference Design Exemplars

PRIMARY SCHOOL TEACHING BLOCKS – Two Storey

Two Exemplars:

- ***Lyttelton*** Primary School
- ***Te Uho o te Nikau*** School / five other identical schools



Reference Design Exemplars

PRIMARY SCHOOL TEACHING BLOCKS – Two level Schools

The following six new schools are variations of the same successful school design:

- ***Te Uho o te Nikau*** (Flatbush) Primary School PPP
- Matua Ngaru (Kumeu) School PPP
- Paerata (Wesley) Primary School
- Tamaoho (Belmont, Pukekohe West) Primary School
- Te Ao Marama (Sylvester) Primary School
- Brookfields School Tauranga

Flatbush and Kumeu Primary Schools



CIRCULATION - EXTERIOR ACCESS POINTS



EXTERNAL LEAVING



CIRCULATION - FLEXIBLE CIRCULATION THROUGH THE OPEN LEARNING SPACES

Flatbush and Kumeu Primary Schools



RECREATION



STREET VIEW



COURTYARDS AND CENTRAL LEARNING HUB



PERFORMANCE SPACE



Project information

Construction: New Design and Build

Completion: 01 March 2021

Size: approx. 3000 sq m

Client: Ministry of Education

PM & TA : Beca

QS: RLB

Contractor: Form Building & Developments Ltd

Architect: ASC architects Ltd

**Design consultants: WSP Ltd, Wood Ltd, BGT
structures Ltd, Mace contractors Ltd**

Tamaoho School is a new school in Pukekohe Township, located South of Auckland. The school caters for year 1-6 primary students. The new school was required due to substantial surrounding residential developments in the Pukekohe West area. The project provides 15 teaching spaces based on an establishment roll of 350 students. Network Assessment recommends to masterplan a capacity of 550 students by 2043.

The schools includes a multipurpose space, administration block, library, resource space, Parkside Special School Satellite unit (1 teaching space) and 1 BLENNZ Satellite and Sensory Hub. The new school will provide a safe and healthy environment that will provide flexible learning spaces that can be readily modified internally over time to reflect any change in pedagogy.

Primary School Learning Environments

Modular MB2.1
Forrest Hill

Forrest Hill School Modular 2TS



Mahora School Modular 2TS





Primary School Learning Environments

Two Storey Reference Design MHA 1.0
Churton Park

Two Storey Reference Design – *Churton Park*



Two Storey Reference Design – *Churton Park*





Teaching Block Upgrades

Canterbury Teaching Block Upgrade
Gilberthorpe School

Reference Design *Recent History*

Gilberthorpe School – converted Canterbury Block



Canterbury Block Upgrade – Gilberthorpe School





Teaching Block Upgrades

Nelson Teaching Block Upgrades

Nelson Teaching Block Upgrade – Westlake GHS



Nelson Teaching Block Upgrade – Nayland College



Reference Design catalogue

What's next?

Reference Design Implementation

Key messages to schools:

- Schools are valuable, long-lived public assets, providing access to education for generations of learners/ākonga so they can learn and succeed
- Reference designs are easily repeatable school designs proven to deliver good learning outcomes
- The reference designs are not mandatory because every school and school site is unique
- Reference designs and upgrades are our first choice for school property solutions to 2030 and beyond

Reference Design Implementation

HOW TO USE ?

Options

- a. Plan arrangement only – showing form and spatial arrangement
- b. Critical dimensions and sizes
- c. 3D form defining roof forms and angles; spatial volumes; openings
- d. Spatial combinations of a set of buildings
- e. Look and feel – Elevations; colours and materials, etc.
- f. Full duplication

Reference Designs for Schools

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Do you have recommendations? Please send to:
school.design@education.govt.nz

We **shape** an **education** system that delivers
equitable and **excellent outcomes**

He mea **tārai** e mātou te **mātauranga**
kia **rangatira** ai, kia **mana taurite** ai ōna **huanga**



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