

POST-OCCUPANCY EVALUATION REPORT



TE KARAKA AREA SCHOOL

GISBORNE DISTRICT | JUNE 2015

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1.0 INTRODUCTION

Overview

Post-Occupancy Evaluation (POE) encompasses the collections of information about the facilities' technical performance; functionality, operational processes, and examines buildings as they are actually used by the various stakeholders. This information can be then compared to the original design intentions to determine the extent to which these goals were met, based on the users' evaluation of how effectively the building works. POE can therefore help the Ministry of Education (MoE) to collect and use timely, relevant, and well-disseminated evaluation information to impact the design of future facilities.

There are various levels of POE, ranging from a very high level review to a detailed diagnostic study. There is a widely accepted POE process model that sets three levels of POE that can be undertaken, i.e. indicative, investigate, and diagnostic:

Indicative

Indicative post-occupancy evaluations provide information on significant successes and problems and can be as simple as a walk-through evaluation. Selected interviews can also be included as part of the walk-through, or separately. Generally, indicative post-occupancy evaluations involve simple surveys of occupants to establish their views on the physical project outcome, and in some cases, the project process.

Investigative

Investigative post-occupancy evaluations are more detailed and require formal data collection techniques. These interviews need to be structured and unambiguous. More time and resources are required for this type of review than for an indicative review. Questionnaires (standard or customised) can be used to survey the occupants. Structured interviews and recording of responses can also be included for analysis together with responses to questionnaires. Investigative post-occupancy evaluations can be used for detailed evaluation of both the physical project outcome and the project process.

Diagnostic

A diagnostic POE is more detailed than both of the previous types. These reviews are comprehensive and generally initiated for large-scale project reviews, or when serious problems have developed or when the review is part of a rigorous research project. A diagnostic POE requires expert advice and management. The scope of these types of post-occupancy evaluations can be designed to encompass all aspects of projects according to needs.

The following POE report is based on indicative and some investigative processes and techniques. Further diagnostic evaluations may be required to understand the findings in greater detail and context.

POE Team

The assessment for this evaluation was carried out by reviewers with expertise in design; master planning, ICT, education, construction and sustainability. The team was composed of professional architects; education designers, project managers, and construction experts.

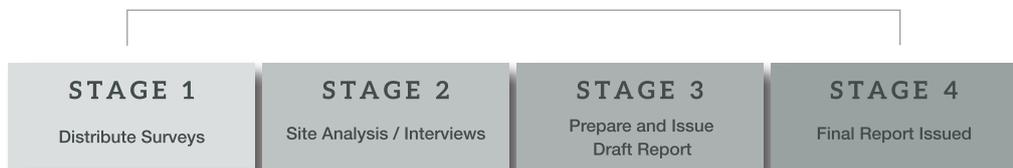
2.0 POE METHODOLOGY

The POE was comprised of indicative and investigative techniques carried out by the POE team. The process of the design/delivery of the project along with the overall facility was evaluated, with more indicative focus given on the learning environments. Multiple methods of data collection were used such as:

- Architectural documentation
- Full project walk-through evaluation
- Benchmark data compiled
- Staff and individuals surveyed
- Interviews with key stakeholders i.e EBOT, BoT, Principal and leadership teams involved in the design phases of the project
- Students, parents and families were not interviewed

The POE process started with an introduction meeting held with the school to discuss the process and the requirements from the school during the POE.

There were four key stages in the evaluation:



The project was evaluated under 10 categories to gain a holistic view:

- Identity / Context
- Site Plan
- School Grounds
- Organisation
- Buildings
- Interiors
- Energy and Services Strategies
- Feeling Safe
- Long Life, Loose Fit
- Successful Whole

The evaluation team asked standardised questions about the facility during the on-site investigations along with specific surveys for the users. The data from these strategies form the basis of the evaluation. We have standardised the questions, metrics and on-site analysis with the view to form better comparable cross-project data, and be able to draw more accurate conclusions overall.

3.0 PROJECT OVERVIEW

Te Karaka Area School is a rural school situated in the Te Karaka Township, in the Gisborne District and caters for Year 1 to 13 students. The new school facilities opened in February 2014, replacing Waikohu College and Te Karaka Primary School.

The roll has fluctuated since it opened. Currently, there are 174 students, and 94% are Māori. Iwi connections are mainly to Ngā Ariki Kaiputahi, Rongowhakaata, Ngāti Porou, Ngāi Tuhoe, Te Aitanga-ā-Māhaki and Te Whanau-a-Kai (from ERO report 2013).

In addition to mainstream classes there are two immersion Rumaki Māori classes offered from Year 1 to 10.

The Area School Establishment Board consulted extensively in developing the guiding philosophy and structure for the new school. There has been significant progress in establishing a positive, settled learning environment in the school (from ERO report 2013).

The school has been designed and constructed in one stage. There was a 1940's school building and a 1980's gym on site before the design and works commenced. These buildings were refurbished and some re-purposed to work in with the new school Master Plan.

Benchmark Data

School Profile Number: 624

Type: Composite

Location: 5 Kanakanaia Road, Gisborne

Site Area: 5.5337 ha

Authority: State

Gender: Co-ed

Staff Numbers: 30 full-time

Student Numbers: 170-180

Environmental Rating Credentials: N/A

In-use Performance: 56kWh/m²/annum

Decile: 2

New School in-use: 2014

Total Floor Area: 2,757m² (includes 19 teaching spaces)

Capacity: Not known

Project Cost: \$5,950,570.85 (Buildings \$4,752,085.12)
(Landscaping/Infrastructure \$1,198,485.73)



Project Team

Master Planning: Gary Pidd Architect Ltd

Architect: Gary Pidd Architect Ltd

Structural Engineer: Jeff Kell Ltd

Contractor: Stead Construction Ltd

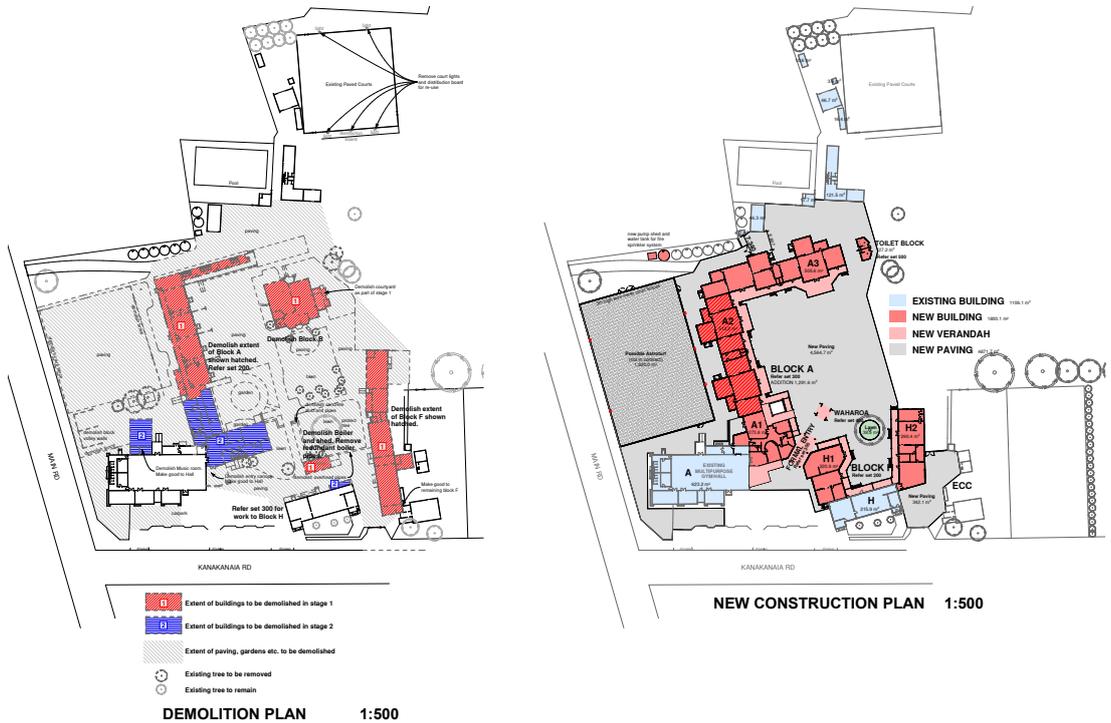
3.0 PROJECT OVERVIEW

Project Timeline



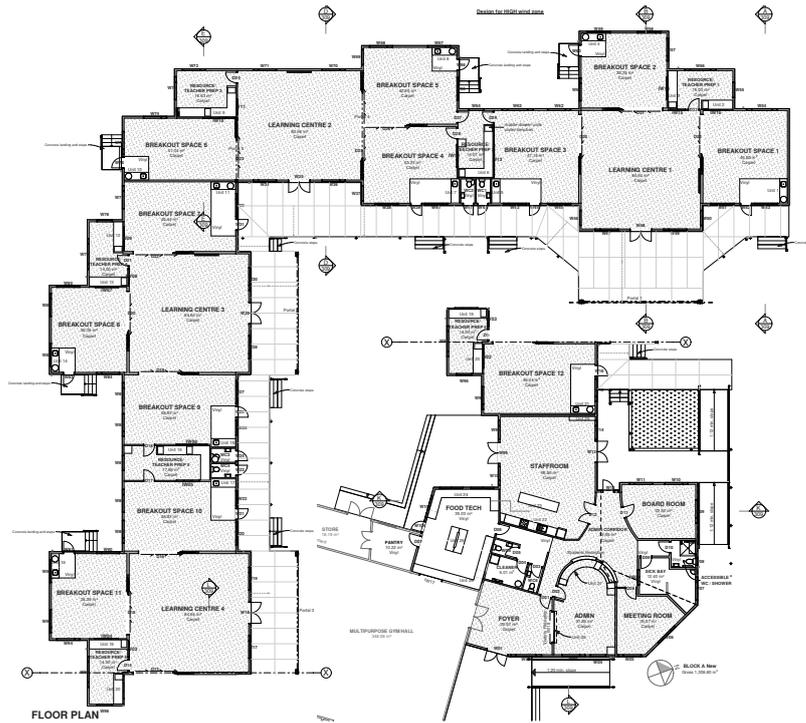
* No project programme available

Master Plan

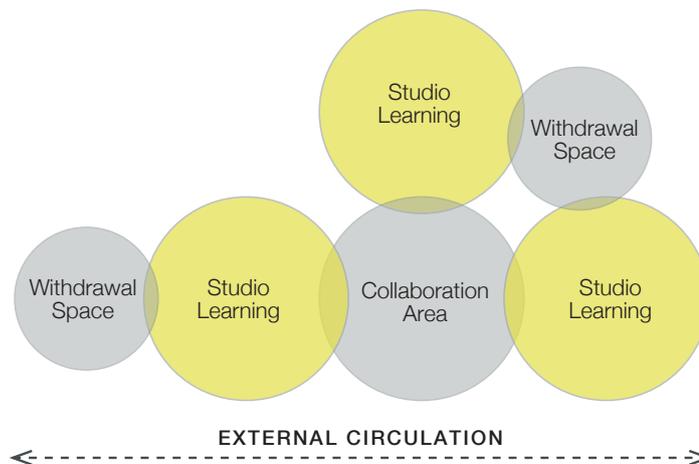


3.0 PROJECT OVERVIEW

Learning Environment Floor Plan



Learning Environment Diagram



4.0 RECOMMENDATIONS

Conclusions and Recommendations for Te Karaka Area School

The evaluation team found that the in-use performance of Te Karaka Area School's learning environments; reflected good design principles based on the BoT visions and the MLE guidelines, and had sound facility management. The learning environment was light; spacious, safe and secure, and well used. However, the evaluation team revealed a number of shortcomings that, if addressed, could improve certain areas of the school (as addressed throughout this report). Furthermore, this POE process aims to highlight lessons that could be learned from these shortcomings and carried forward in order to benefit future school developments.

Below are our recommendations to improve the design and in-use performance of the Te Karaka Area School buildings:

1. Exterior landscaping materials need to have sufficient slip resistance to ensure safety. The tiles in front of the gym and administration appear unfit for purpose in this regard.
2. The size and weight of doors should be considered in the junior areas of the school. These areas are not always designated in MLE, but consideration should be made in the design stages.
3. The specialised technology spaces are separated from the learning studios, and a strategy of integrating part, or all of the spaces, is recommended to encourage synergies between theory/practical pedagogy.
4. The external canopies should adjoin the buildings to offer full weather protection.
5. In this instance the Principal was part of the design team. This benefitted the school positively as the school's educational vision could be aligned with the facilities at the outset. Further strategies should be explored to assist the pedagogy development of new schools within the design phase.
6. Food technology is in close proximity to the hall. This brings a positive relationship between the spaces for events and community gatherings.
7. The heating and ventilation system is not working effectively. Further diagnostic investigation is recommended (further detail on this in report).
8. Development of a systematic handover and aftercare programme is recommended to help schools ease into their new facilities with a better understanding of its operational needs on a day-to-day basis. A sound benchmark to help with the development of this strategy is the "Soft Landings Framework - CABE UK". This framework provides a step-by-step process, which could be customized and made relevant to new school's built in New Zealand. (<https://www.bsria.co.uk/services/design/soft-landings>)

5.0 ANALYSIS AND FINDINGS

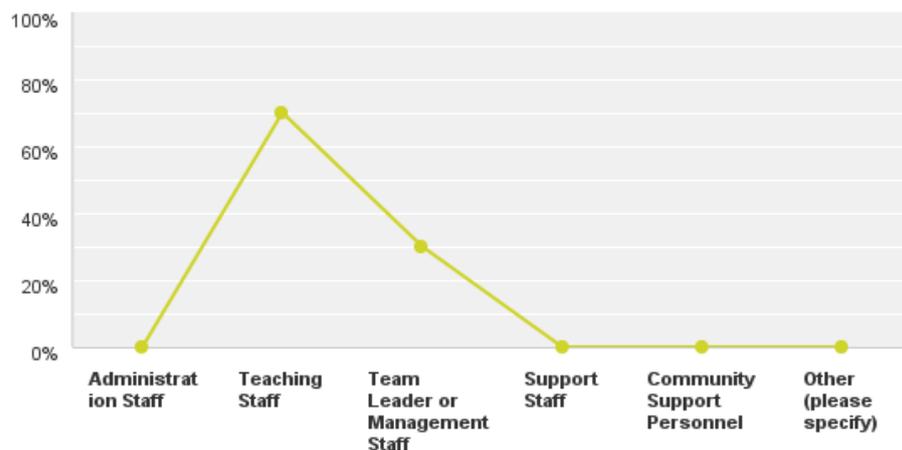
Introduction to Findings

Staff participation for this report was 43% with 13 out of 30 staff completing the survey. Surveys were issued on the 11th of May 2015. The staff interviews and on-site evaluation were carried out on the 19th of May 2015. The site visit was on a sunny day with light winds. The school's learning areas were not occupied at their normal levels due to student participation in regional activities. All areas of the school were evaluated during one site visit over a five-hour period.

Demographic Profile of those Interviewed

Of the 13 personnel interviewed 78% were teaching staff and 22% were team leaders or in management roles. All staff who responded worked full-time. 78% of the personnel interviewed stated they spent 8 hours or more in the facilities each working day, while 22% of the respondents stated they spent 6-7 hours in the facility each working day. Of the personnel interviewed, their time was spread across a wide range of spaces during the working week. 96% of those interviewed spent up to 5 hours per week in the office; learning environment, withdrawal spaces, library, technology spaces and sports facilities. 88% of those interviewed spent more than 21 hours a week in the learning environment, with 33% spending more than 35 hours.

Q.1 Which of the following best describes your current position within the school?



5.1 Identity / Context

The school currently has two dedicated immersion Rumaki Māori classes. The school is made up of 94% Māori with multiple iwi connections. Te Reo Māori is embedded throughout the school with tikanga Māori interwoven within the school's culture and values. There is a school-wide commitment to improving opportunities for Māori students that enables them to express and celebrate their culture, knowledge and experience. Students benefit from strong links with local marae and positive role models provided by Māori staff*.

The entrance to the administration building is located in close proximity to the arrival car park. The administration entrance is of less prominence than the official/ceremonial entrance to the school.

The existing gym has been refurbished and is located at the front entrance which allows community access. The car park is positioned off a quiet local suburban road with clear and safe access. There are currently 5 buses in operation. Buses are unable to turn within the car park and have to pick-up and drop-off on the street. The school manages this process. The staff have a dedicated car park close to the learning centres, which during the interviews was noted as a positive attribute.

There is a clear hard and soft landscaping design that supports the entrance as a whole. The massing of the school buildings visible to the street is generally of a residential scale that is appropriate to its suburban residential context. The learning studios are configured behind the administration building. The technology spaces are situated in the existing refurbished classroom block, and from the street positive glimpses of learning can be seen. The claddings and the exterior colour scheme are fresh and sympathetic to the surrounds.

Scooters are well utilised at this school with ample racks provided. During the evaluation it was revealed that the scooters offered a major activity for the students during their breaks. The central outdoor space catered to this well with plenty of flat paving areas and jumps for the students.



Strong links with Māori culture and local marae



Administration (left) Ceremonial Entrance (right)



Existing gym refurbished



Central outdoor space

* (Paragraph captured from ERO 2013)

5.2 Site Plan

The appointed architect developed the new Master Plan for the school during the first design phase. The existing school continued operating during the new building project. The school operated from various off-site locations during the build phases. The school's current Principal and BoT were already established prior to the design stages starting. This allowed strategic input from the outset, enabling the school to voice and align their clear educational vision with the built environment, which has been a clear advantage in this project.

The Master Plan was designed to foster a sense of place within the school. The learning centres were positioned to frame and create a clear outdoor social/learning area in the centre of the school. This area has been landscaped to support this vision. Existing buildings were removed to create a greater sense of place; to take advantage of the surrounding views and create a better connection to the sports fields.

This strategy created opportunities for legible circulation patterns, with all-weather cover provided to the learning centres. These covered ways are multifunctional and are well utilised for outdoor learning, assembly and performance.

The placement of the new buildings are well orientated to take advantage of the sun while providing a degree of wind protection to the central area and outdoor learning spaces. The existing hall at the front of the school was also refurbished during the build.

The hard-court is positioned on the street-side of the facility, which allows good community access and interaction with the gym. The gym and hard-court are separated from the sports fields by the classroom buildings which are situated between them. There is no clear external access to these two areas and it is not known how the school manages this. The playground area is situated in the field in front of the central space. It is well located for all ages to enjoy.

The central space was well utilised by the students during our team's on-site evaluation. It was used for a variety of games and activities, and from discussions we had with the students it was evident it was a positive attribute to the school.

The Master Plan created a separate service entry, away from the student areas, for refuse removal and storage of maintenance equipment. The school has an existing outdoor pool complex. No works were undertaken to the pool during this school project.



Views and day-lighting create a sense of place



All-weather cover provided to all learning centres



Refurbished hall at the front of the school



Main central space a positive attribute to the school

5.3 School Grounds

The evaluation team concluded that the relationship between the design of the school grounds and buildings is generally positive. The school has a well-designed landscaping scheme that works with the topography. This will improve in time as the landscaping matures. Outdoor learning spaces have been designed in conjunction with the buildings. The hard landscaping utilises a variety of colours and shapes to good effect.

The school’s design allows plenty of shaded space through the use of canopies or by the buildings throughout the day.

The social spaces and play areas were well defined as a whole. Of those interviewed 89% stated that the entrance to the school was ‘totally adequate’ from the street. With all stating that the hard landscaping and canopies around the school were totally adequate and generally accessible to all.

22% stated that the ramps were ‘not at all adequate’. The external ramp joined to Block A is used to access the learning centres. This ramp was not covered by canopies and those surveyed said that it was not ideal for those using wheelchairs during wet weather (see graph Q15 below).

Of those surveyed, 55% stated that some of the internal and external finishes were ‘not safe’ or ‘quite safe’ for its occupants. The main issue was the external tiles to the entrance of the administration and gym buildings being very slippery when damp (see graph Q16 below).

The school is located on a site that is generally level. The buildings are raised on timber foundations and therefore the school has ramps/stairs/level changes to the external circulation routes. During the on-site evaluation they appeared to be well designed.



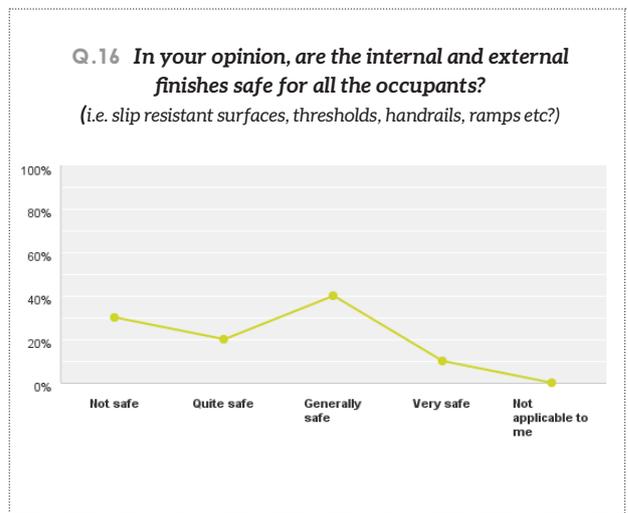
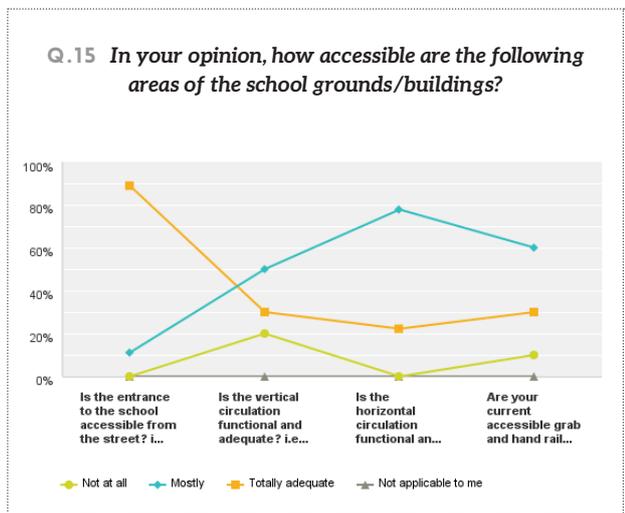
Hard landscaping used to good effect



Good sized canopies provide ample shade



Slippery tiles to entrance of both the administration and gym buildings



5.4 Organisation

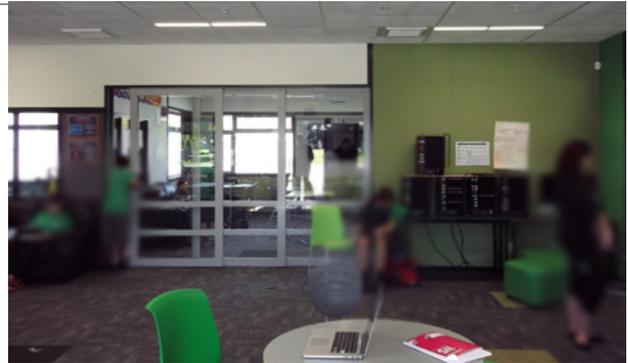
The spatial organisation of the learning centres is positioned along a lineal axis. Each learning centre is comprised of three studio type spaces (called breakout rooms in this project) divided via large glass sliding doors from a larger central collaboration or multi-functional space.

The school utilises these doors to adjust the studios to their spatial and acoustic requirements. The central collaboration space is set up to allow for a variety of different learning scenarios depending on the pedagogy being taught. A selection of furniture and seating options allow for this. During the on-site evaluation the students had arranged the spaces to suit a variety of self-directed, group-learning and presentation spaces. Staff, during the on-site interviews, stated that the students enjoyed a real sense of ownership of their space.

The learning centres are duplicated four times (generally) to form the teaching area that is known as Block A.

89% of the surveyed occupants felt they had either 'good access' or 'excellent access' to a variety of quality internal and external learning spaces to facilitate their pedagogy. 22% stated they had only 'quite good access' (see graph Q8 below).

The learning centres are adjoined with small spaces that have built-in benches and static ICT equipment. These withdrawal spaces are transparent and accessible from both sides. The equipment is well distributed throughout the learning centres.



Breakout rooms are divided by large glass sliding doors



Central collaboration space

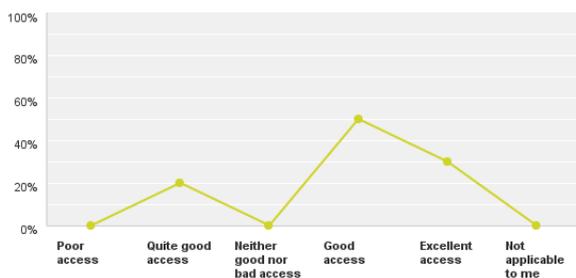


Students engage in self-directed learning



Students enjoy a sense of ownership of their space

Q.8 In your opinion, do you feel you have good access to a variety of quality internal and external learning spaces to facilitate your pedagogy?



5.4 Organisation (continued)

There are clear links between the indoor and outdoor spaces with good transparency provided. Students use the flexible furniture to position themselves within the studios, or outside under the canopies. During the interview it was noted that this flexibility was a positive aspect of the design due to the warm climate.

The library, specialist technology spaces, performance room, radio room and the teachers' resource room are positioned away from the learning studios (refer to Block H on the Master Plan Drawing, page 6).

These specialist facilities are joined together with a continuous external canopy. The existing building in this location was refurbished and re-purposed into what is now the specialist technology spaces.

It was noted during the interviews that the location of the technology areas worked well for the school and for the students needs.

The library is in an accessible location for students and staff. The space is set up with a selection of physical resources and a Lundia shelving system. The design of the library building maximises space for book racks. This arrangement limits the size of the windows and transparency of the space, therefore the space is not as multi-functional as it may need to be for future use.

The learning centres are all under one roof. This singular building approach turns halfway along the length 90° to form the central outdoor space. The building orientates well to the school grounds and maximises the day-lighting indoors. The roof gables from the central learning space extend outside to form protected spaces that are well utilised for performance and gatherings. This is seen as a positive attribute of the design, which support's the school's learning vision.



Flexible learning spaces inside and out



Technology building with continuous external canopies



Technology building's internal space



The external performance space is seen as a positive attribute of the overall design



Bookshelves in the library

5.5 Buildings

The learning centres have been built using standard timber frame construction with horizontal weatherboard cladding. The school buildings have good eave protection with external gutters. These buildings are simple and low-risk. During the interviews it was noted that the school is not currently experiencing any abnormal maintenance issues. The buildings are in good condition and there are no obvious indications that the structure will not be easily maintainable and have a long service life.

The gym is mostly clad in a weatherboard, with the roadside elevations to the gym clad in a more modern flat sheet material. These areas appear to have internal gutters, which is not recommended. This will require ongoing monitoring maintenance by the school.

The school's location meant that it needed a potable water storage system. The roofs collect the water for reuse. During the interviews it was stated that the system at handover was undersized for the school's needs and the school had to limit the attendance of the students shortly after opening due to water shortages. Further investigation is required to understand this issue in more detail before making any recommendations.

The roofs are clad with lightweight profiled metal. The internal and external joinery is aluminium with a grey tinted glass to assist with reducing solar heat-gain. It was stated in the interviews that no door closers or hold-open devices were provided at handover and the school had to have these installed for safety.

The technology block has toilets and an inclusion unit. Two externally accessed student toilets are provided between each learning centre. In addition, there is an external block of stand-alone toilets by the sports fields and pool area. From the surveys it was stated that this toilet block has on going weather-tightness issues and further investigation is recommended.

Of those surveyed 56% of users thought the toilets were conveniently located for students in all weather conditions (see graph Q12 over page). It was stated in the interviews that the toilet doors were difficult for the Year 1 and 2 students to open, along with the sinks/taps being too high. This is a common situation in area schools. The pedagogy can be more flexible in MLE schools and it is not always appropriate to have designated junior student toilet areas and customised cabinets. A situational approach is recommended.



Learning centres built with standard timber frame construction



Gym clad in weather board and flat sheet metal



Portable water storage system undersized for usage



Stand-alone toilet block

5.5 Buildings (continued)

Collaborative Spaces

The design has provided a space for the teachers, the senior leadership team and Principal to collaborate separately, away from the learning centres. During the interviews it was stated that this works well as it is a space for teachers to plan and schedule their pedagogy. This space was well utilised and seen by the evaluation team as a positive attribute for the school.

Storage

Of those surveyed 40% stated there was 'not sufficient' storage within the learning centres for resources or teaching equipment. A further 40% stated there was only 'quite sufficient' storage, with 20% stating there was 'sufficient' storage. There are freestanding resource storage units in the learning centres. The majority of the physical resource equipment is kept in the storeroom attached to the teachers' collaboration space. From discussions during the interviews the school's leadership team has a clear strategy on resource storage and the current set up is working well for them.

Internal Doors

During the interviews it was noted that the interior sliding doors are too heavy for the junior users and the bottom guides continually required realignment, and on-going management by the school. Consideration should be given to this by future design teams.

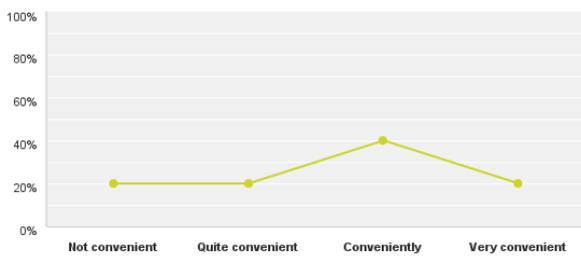


Teacher planning and collaborative spaces

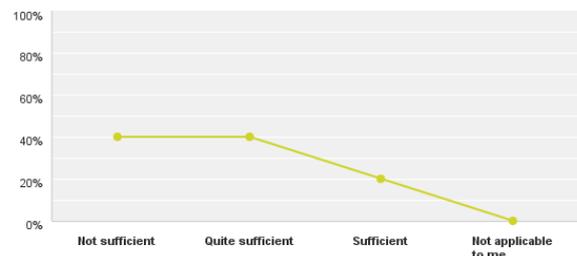


Large internal sliding doors are difficult to use

Q.12 Are the toilets in the school conveniently located for students in all weather conditions?



Q.32 Is there sufficient storage for your resources and teaching equipment?



5.6 Interiors

Learning Environment

77% of those surveyed were 'quite satisfied' or 'very satisfied' with the overall quality of their learning environment. 44% of those surveyed were either 'happy' or 'very happy' with the internal layout of their learning environment. 55% were either 'quite happy' or 'neutral' in their perception (see graph Q7 below).

The learning environment provides good access to a variety of internal and external learning spaces. Those interviewed confirmed this with 89% stating they had 'good' or 'excellent' access (see graph Q8 over page).

The evaluation team noted that there were limited wet areas within the learning centres and the vinyl flooring did not extend far enough from the sinks for flexible use.

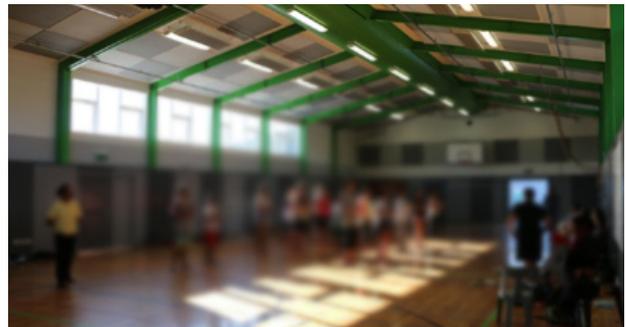
89% were 'quite satisfied' with the quality of the space in the library.

Sports Facilities

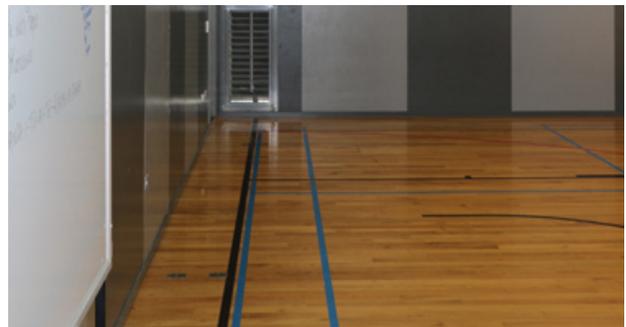
44% were 'quite dissatisfied' or 'very dissatisfied' with the sports facilities. The main feedback on this was that the gym court is very close to the side of the hall. Therefore a very limited number of spectators can stand and watch the sports games. There is no seating area provided in the hall and although the hall was an existing building, adjoining areas were refurbished. Further investigation is required to ascertain why no allocations for seating or spectator areas were made (see graph Q6 below).



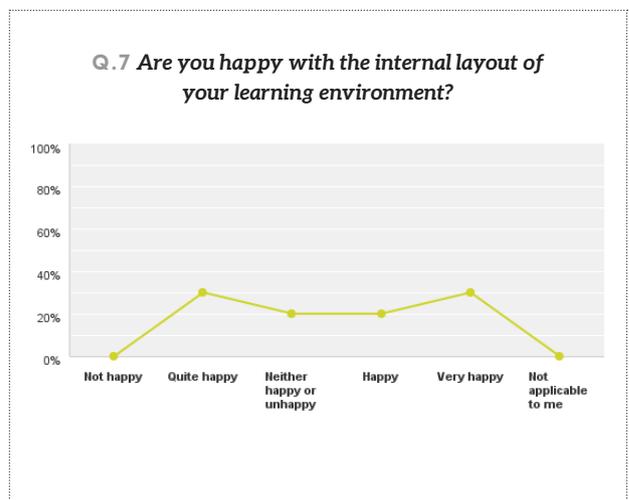
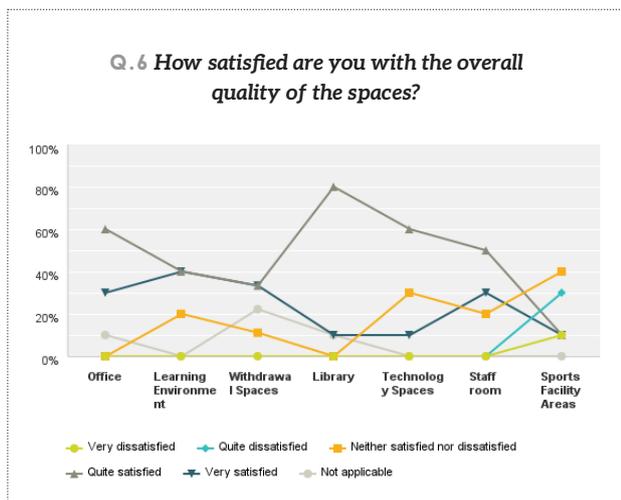
Typical learning environment



No allocations for seating or spectator areas were made in the hall



No allocations for seating or spectator areas were made in the hall



5.6 Interiors (continued)

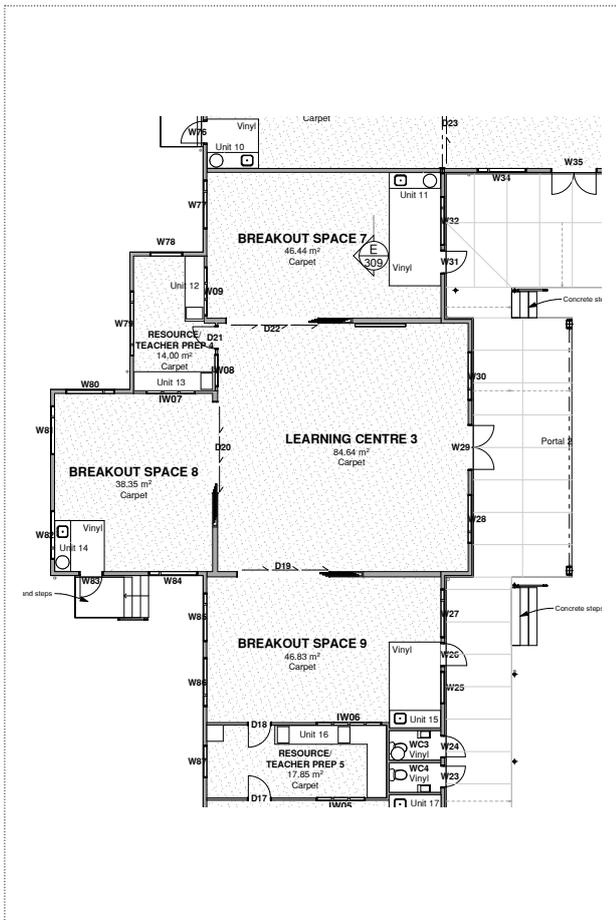
Ventilation

The ventilation is supplied to the learning centres by a natural ventilation scheme (manual operable windows). Mechanical extraction fans in the ceiling assist with air movement and circulation and extract stale air out through the roof. The learning centres are designed diagrammatically as a cluster of rooms. The below floor plan shows areas which are two rooms deep, which will minimise the effectiveness of cross-ventilation strategies. The withdrawal spaces (breakout spaces) on either side of the central collaboration space (learning centre) have operable windows on both sides to allow cross-ventilation. Further investigation is recommended to understand the effectiveness of these windows for ventilating the learning environment.



Operable windows

Learning Centre Floor Plan



Ventilation extract grill in ceiling



Ventilation extract grill through roof

5.6 Interiors (continued)

Ventilation Continued

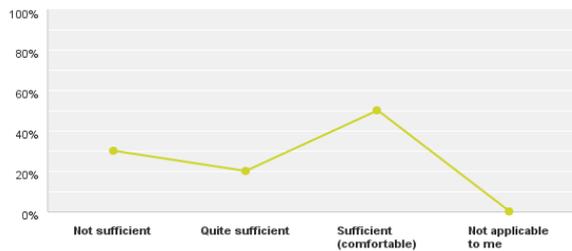
Of those surveyed 66% stated that the air quality was either ‘quite sufficient’ or ‘comfortable’ in supporting the students learning, with 33% stating it was ‘not sufficient’. This is deemed a medium-high score for ventilation discomfort and further investigation is recommended. Of these, 33% commented that windows did not provide enough fresh air and that it was often stale or musty (see graph Q17 below).

55% of those surveyed stated that the air was ‘very stale’ or ‘quite stale’ at the end of the day during the winter months. Users stated that the extract system did not provide sufficient ventilation in winter or cope with the heat-gain in summer (see Q18 graph below).

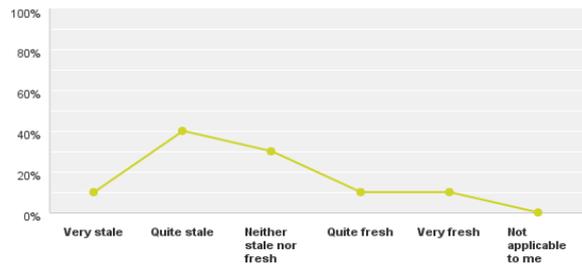
The windows are manually operated and designed to an accessible height. 44% of those surveyed stated they had good control of ventilation of their spaces throughout the seasons. Although those surveyed stated that the windows and the extraction system did not control the cooling in summer (see graph Q19 below).

It was evident that the school’s location is subject to considerable sunshine hours. According to those surveyed the current cooling strategy did not provide stable comfort levels in summer and at times inhibits the effectiveness of the learning environment. This is a situational observation that would require further diagnostic investigation to be able to provide technical feedback and recommendations.

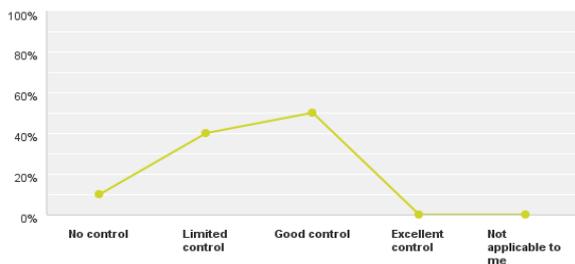
Q.17 In your opinion, generally is the air supplied to the learning areas of a sufficient quality to support the students learning?



Q.18 In your opinion, does the air inside the building smell fresh or stale from time to time? (i.e. at the end of the day or during winter time)



Q.19 Do you have adequate control over ventilation in your space throughout the different seasons?



5.6 Interiors (continued)

Internal Temperature / Heating

Radiant heating panels provide heating to the learning environments. The heating system is automated from a central location. 78% of those surveyed stated that the internal temperatures of the learning areas were generally sufficient to support student learning (see graph Q20 below).

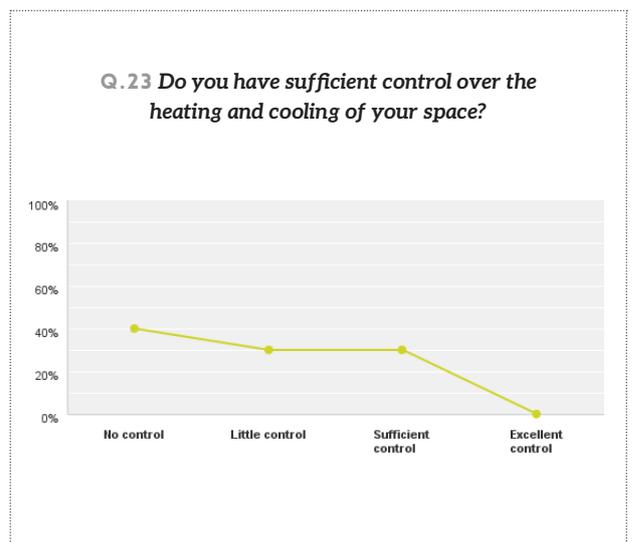
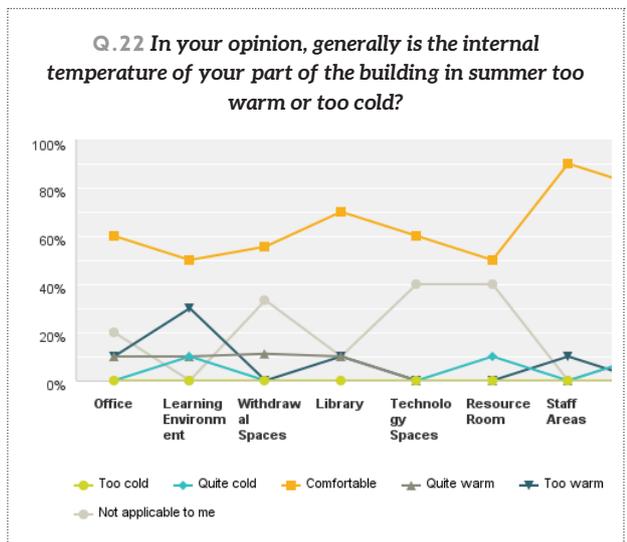
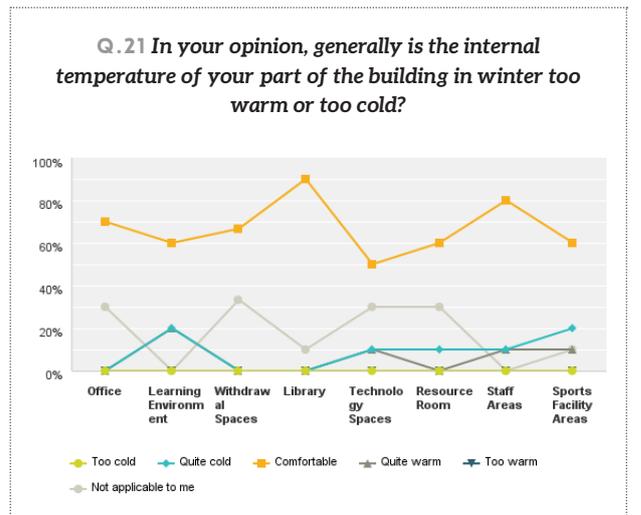
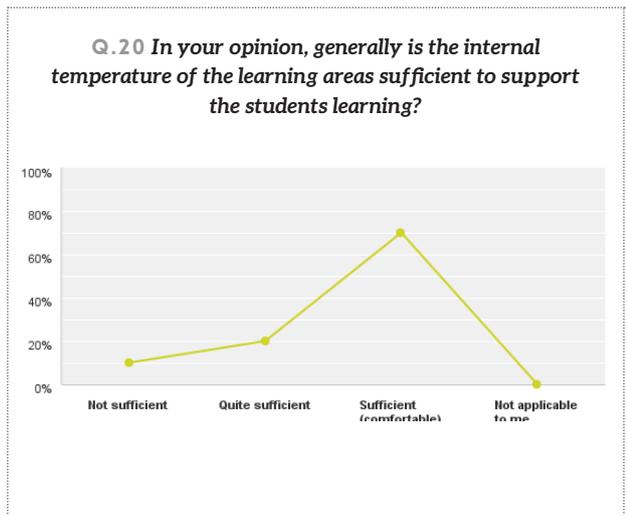
70% of those interviewed stated they had little or no control of the heating in their space as it is automated (see graph Q23 below).

It was stated during the interviews that the system did not turn off sometimes or did not turn on in the mornings when it was required. 60% of those surveyed stated that during winter the learning environment was comfortable.

Internal Temperature / Cooling

30% stated that the internal temperature in the learning environment during summer was 'too warm'. The current cooling strategy for summer was the main concern voiced by the survey respondents (see graphs Q20, Q21 and Q22 below).

The strategy of natural ventilation and cooling (mechanically assisted or otherwise) will generally result in wider internal temperature deltas. The OPEX and CAPEX benefits for natural ventilation is evident. However the in-use practicalities of these systems need further in-use investigation before the evaluation team can provide any recommendations or guidelines. There are also geographical influences and building design that will affect each strategy.



5.6 Interiors (continued)

Acoustic Environment

The acoustic environment of the learning centres is controlled with a mixture of suspended ceiling tiles, pin-board on internal walls (Autex or similar), and carpet tiles. There are transparent internal sliding doors that can close off the learning studios or withdrawal spaces when required.

The ceiling heights are generally 2.7m and with good distribution of acoustic pin-board on the walls. The acoustics appeared effective with limited reverberation noticed during the evaluation (observational testing only).

The learning centres were evaluated on a non-typical day with the learning environments at approximately 50% capacity due to regional school activities. Of those surveyed, the staff talked positively about the acoustic environment. 78% described the acoustic environment as ‘comfortable’ with 33% describing the spaces as ‘clear’ (multiple answers allowed) (see graph Q24 below).

When asked to rate their classroom acoustic environment 40% stated it was ‘acceptable’ with 60% stating it was ‘good’ or ‘very good’ (see graph Q25 below).

When asked if staff or students are interrupted by any noises coming from outside the building, 22% stated lawn mowing was an issue, which is a solvable operational item.

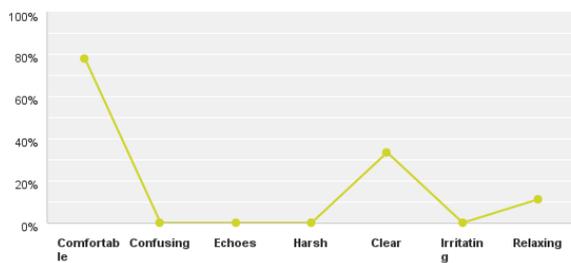
44% stated they are interrupted by noise from people on the external decks that are situated along the sides of the learning centres. 33% stated they are interrupted by noise from other learning spaces (see graph Q26 over page).

When asked if there were any other sources of distracting noise from inside the space 100% stated there were none.

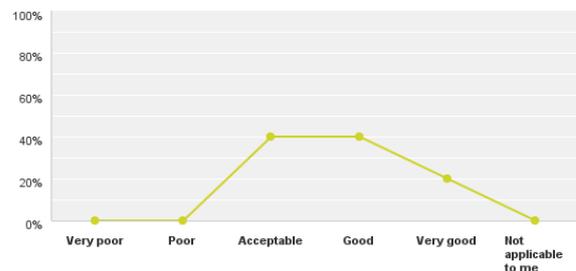


The internal acoustic environment within the learning centres are controlled with a mixture of suspended ceiling tiles, pin-boards, carpet tiles and large sliding doors assist to control sound between studios

Q.24 Which words best describe the acoustic environment of your space? (Select as many as apply)



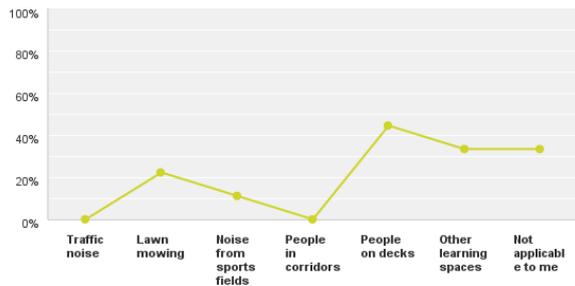
Q.25 In your opinion, how do you rate your classroom acoustic environment?



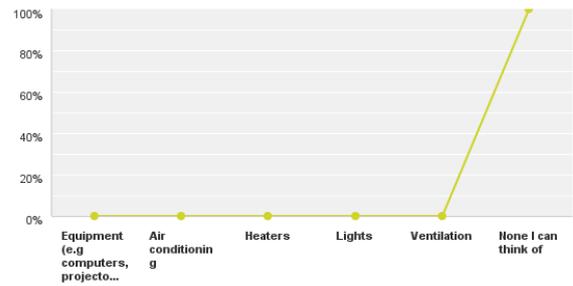
5.6 Interiors (continued)

Acoustic Environment Continued

Q.26 Are your students disrupted or distracted by any of the following noises within your learning space?
If yes, please specify the noise sources (select all that apply).



Q.27 Please specify any other sources of intrusive/distracting noises inside your space:



Acoustic pin-board, carpet tiles and suspended ceiling tiles



Acoustic pin-board, carpet tiles and suspended ceiling tiles

5.6 Interiors (continued)

Artificial Lighting

Recessed ceiling lights provide artificial lighting in the learning environment. They appeared to be well distributed and effective at the time of our evaluation.

When asked if the lighting levels were sufficient, 70% of those surveyed stated there was 'sufficient' or 'quite sufficient' artificial light to perform their professional role (see graph Q29 below).

Natural Day-Lighting

The learning environments generally have standard eave overhangs. Day-lighting is controlled to the north and east by 2m wide canopies connected to the buildings. The Master Plan design configured the new learning centres in an 'L' shape alongside existing buildings to create an overall 'U' arrangement. Each building faces a different way in relation to north, therefore users experience a variety of light quality in the studios and withdrawal spaces. 50% of the users stated that the buildings were 'not effective' or only 'quite effective' at controlling the natural light throughout the day. The learning studios with rooms exposed to the west were defined by the users as the most problematic. They stated it is difficult to use projection equipment and parts of the room are not usable on a bright or warm day. A type of shading device is recommended in these locations (external preferable) (see Q30 graph below).

In three locations the roofs extend out 3-5m to the north or east. These areas provide good protection for outdoor learning or performance throughout the year.



Recessed ceiling lights



Standard eave overhangs



2m wide canopies

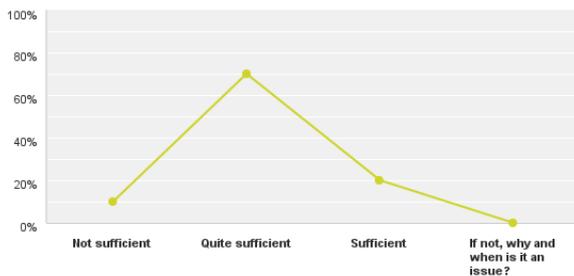


Extended roof

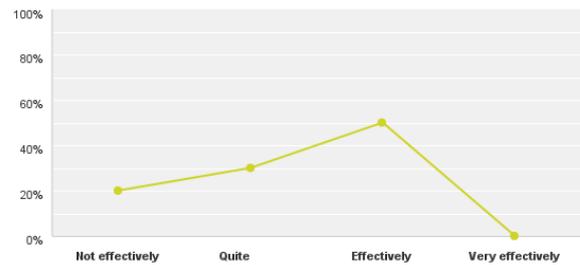


The extended roofs provide good protection for outdoor learning or performance throughout the year.

Q.29 In your opinion, is there sufficient artificial lighting in your part of the building to perform your role?



Q.30 In your opinion, does the building effectively control the natural light throughout the day? (Via eaves/blinds/curtains/shades)

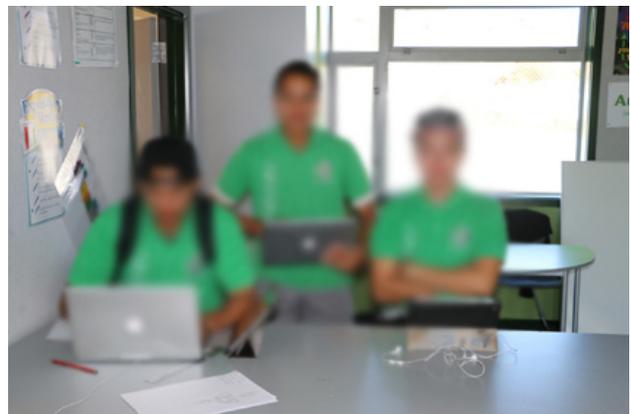


5.6 Interiors (continued)

ICT

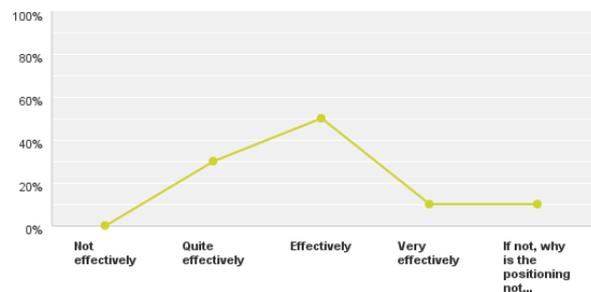
The school has a 1:1 ratio of digital devices to students. They generally utilise Apple TV in lieu of traditional projection equipment. The school has a clear educational vision and it is constantly developing their advanced ICT strategy to align with this. IT development is managed from within the school because of the clear vision they have and the relative isolation from appropriate service providers. 60% of those surveyed stated the ICT is effectively positioned for teaching and learning. The school has SNUP technology and appears to be utilising its investment in devices and digital resources effectively.

During the interviews, respondents stated that the ICT strategy was not effectively communicated to them at or after the design stages by the consultants. Further investigation is required to allow robust recommendations to be made to assist future schools with handover strategies.



Students and teachers utilising transportable devices for learning

Q.31 In your opinion, are the available power and data outlets, technology and audio visual devices positioned effectively for teaching and learning?



5.7 Energy and Services Strategies

The design team has not adopted any sustainable rating scheme for the buildings or infrastructure (Greenstar or similar). During the interviews the school’s leadership team stated that the energy consumption of its new buildings was higher than expected. The evaluation team quantified the school’s energy usage over a 12-month period and noted considerable fluctuations in the first year of operation. It is expected that this may stabilise over a few annual cycles following the first year of operation before a pattern can be determined and conclusions drawn. During the interviews it was noted that the first time the heating system was turned on it overloaded the electrical system.

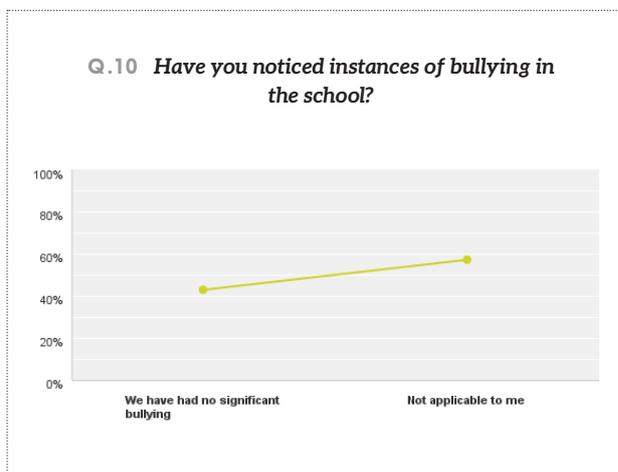
To resolve this issue the heating system is now limited to 50% of the specified output. It is recommended that further diagnostic investigation is carried out to define this situation in more detail.

The location of the school means it is reliant on a potable water system. Rainwater is collected from the roof for consumption and the sprinkler system. It was noted during the interviews that insufficient water storage was allowed for in the design. Approximately 150,000 litres of storage capacity has been added to allow the school to function.

5.8 Feeling Safe

The school opens onto a large central area that has excellent passive-surveillance. The school has residential properties on the boundaries that are generally fenced. During the interviews it was stated that the school has a great relationship with the community and no vandalism of note has occurred. 80% of those interviewed stated they felt ‘quite safe’ or ‘very safe’ on the school grounds.

The internal environments are open; transparent, well organised, with teachers being able to overlook most spaces easily. No significant instances of bullying were noted by those surveyed.



5.9 Long Life, Loose Fit

The school has been operating in their new facilities for one and a half years at the time of this evaluation. In that time there has been no significant role growth. This has meant the school is not currently utilised at the designed capacity. The learning studios have adaptable furniture and are customised by the users for their needs. The school reinforces this with an innovative approach by time-tabling the spaces in three-week time frames for the different year levels or teaching subjects. The large operable internal glazed doors allow the spaces to be adapted (when working well). Those interviewed stated it was a “great space” and provided them with “good flexibility”.

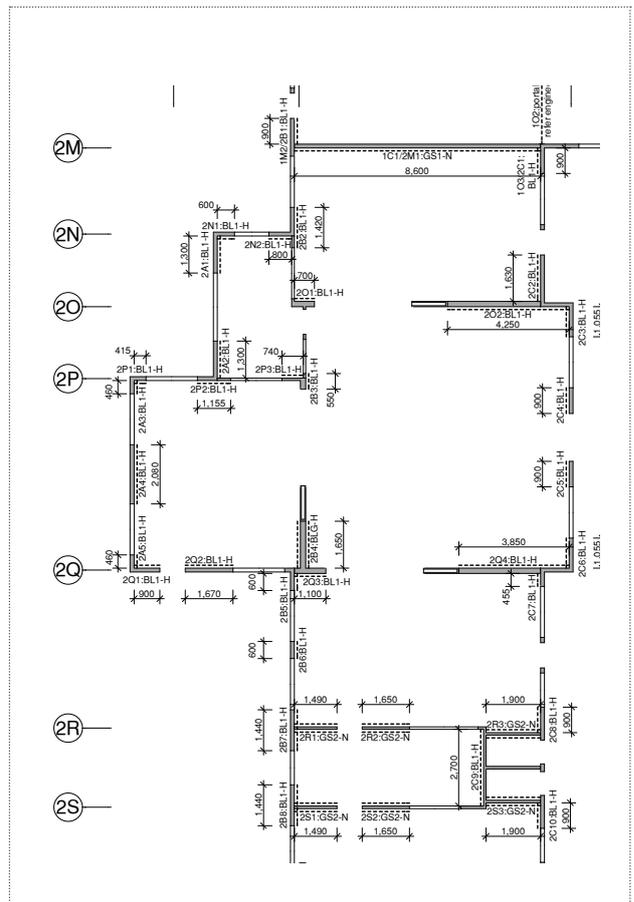
Residential methods of construction have been applied throughout. A large number of the internal walls are used for bracing, which could prove costly if alterations to the space were needed in the future. A more commercial approach to the structural design would have reduced the amount of internal load bearing and bracing walls. Although this approach may have initially cost more, it would have provided a more flexible building (see bracing plan drawing right).

The Master Plan does not appear to allow for obvious growth. The positioning of the separate toilet block potentially limits opportunities. As the school still has capacity available, this will not affect the school in the foreseeable future.



Image of the studio areas with the sliding doors open

Bracing Plan Drawing



5.10 Successful Whole

The school facilities are pleasant, well maintained and working well as a whole. During the interviews students stated that they enjoyed the “Mirror Room” (performance space) and the central outdoor space most.

The evaluation team asked those interviewed if they had any final comments.

The common responses were:

1. As the external canopies are not connected to the building “when it rains everybody gets wet when entering classrooms”
2. Staff suggested a security alarm keypad in the learning centres by the staff car park would be beneficial
3. Staff would have liked more space around the gym court for spectators

The evaluation team asked those interviewed what parts of the school they were most pleased with and what was most useful to them or the students.

The top five responses were:

1. The “openness” of the learning centres
2. The continuous external verandas
3. The cultural aspects and narrative included in the design
4. The central outdoor area
5. The buildings allow “good-flow” between learning centres



Gap between canopy and building



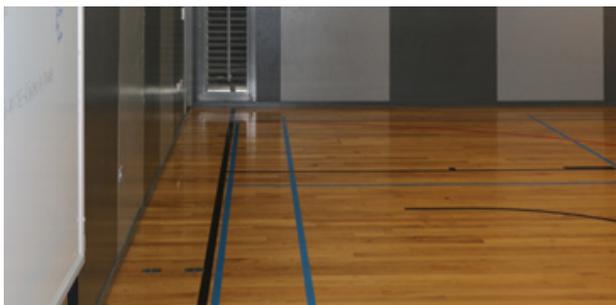
The “Mirror Room”



Gap between canopy and building



The central outdoor area



Limited space around court for spectators



Cultural aspects in the design

