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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, investigative, 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:*

- **STAGE 1** Distribute Surveys
- **STAGE 2** Site Analysis / Interviews
- **STAGE 3** Prepare and Issue Draft Report
- **STAGE 4** Final Report Issued

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

- 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 Puke High School was an existing school prior to the new projects that have been completed. The existing school was located on the current site, situated in Te Puke Township, in the Bay of Plenty District. Te Puke High School is a large school, which caters to its local township and wider rural community. The school caters to students from Year 9 to 13. The new school facilities opened in February 2014. Approximately half of the school buildings were replaced during the build. The original school buildings, which were not demolished, consisted of classrooms, administration areas and sports facilities (these existing facilities have not been reviewed in this evaluation process). This report only revaluates the new facilities completed in 2013.

At the time of this evaluation, the school’s roll was 940 students, with a prominent ethnic representation of 46% NZ European and 35% Maori (from ERO report 2012). In addition to mainstream classes, a special needs unit had been added during the new works.

The school was designed and constructed in two stages during 2012 to 2013. A considerable amount of buildings had to be demolished to make way for the new facilities due to weather-tightness and arson issues. This can be seen on the Master Plan drawing (see page 5).

**Benchmark Data**

- **School Profile Number:** 123
- **Type:** Secondary (Years 9-13)
- **Location:** Tui Street, Te Puke
- **Site Area:** 10.1723 ha
- **Authority:** State
- **Gender:** Co-ed
- **Staff Numbers:** 65 teachers 40 support staff
- **Student Numbers:** 940
- **Environmental Rating Credentials:** N/A
- **In-use Performance:** 64kWh/m²/annum (gas and electricity combined)
- **Decile:** 5 (2012)
- **New School in-use:** 2013/14
- **Total Floor Area:** 8,373m² (50 teaching spaces - new and existing buildings)
- **Capacity:** Not known
- **Project Cost:** $14,275,000.00 (Design and Build, GMP contract)

**Project Team**

- **Master Planning:** Jasmax Architecture
- **Architect:** Jasmax Architecture
- **Structural Engineer:** BCD Group
- **Project Director:** Greenstone Group
- **Contractor:** Arrow International
3.0 PROJECT OVERVIEW

Project Timeline

- **September 2011**: Funding Approved
- **April 2012**: Contractor Appointed (Design and Build)
- **July 2012**: Design Approved
- **November 2013**: New School Facilities Completed

* No project programme available

Original Site Plan

Nett Area (from PMIS): 7,600m²

Learning Spaces (from Pedley report): 59
3.0 PROJECT OVERVIEW

Master Plan

Existing nett Area: 3610m²
Proposed new build nett area: 3646m²
Proposed relocatable building nett area: 598m²

Existing Learning Spaces: 17
Proposed new Learning Spaces: 33
Total Learning Spaces: 50
3.0 PROJECT OVERVIEW

Learning Environment Diagram

- Specialist Teaching Space
- Withdrawal Space (Closed)
- Teacher Resource Area
- Withdrawal Space (Open)
- Studio Learning
- OPEN VOLUME
- INTERNAL CIRCULATION
- EXTERNAL CIRCULATION
4.0 RECOMMENDATIONS

Conclusions and Recommendations for Te Puke High School

The evaluation team deemed Te Puke High School to have effective learning environments, which reflected sound design principles based on the BoT visions and the MLE guidelines. The new facilities were light, spacious, safe and secure. However, the evaluation team revealed a number of shortcomings that, if addressed, could improve certain areas of the school. Furthermore, this POE process aims to highlight the lessons that could be learned from these shortcomings, in order to benefit future school developments.

Below are our recommendations to improve the design and in-use performance of the new Te Puke High School buildings:

1. Occupants of the open studio spaces expressed that the acoustics were poor. The evaluation team recommends that an acoustic engineer undertake diagnostic testing under normal working conditions to provide a better understanding of this issue.

2. Some of the internal sliding door tracks, which divide the studio spaces from the withdrawal spaces, frequently misalign. These doors are designed to slide together to meet in the corner, and should have had more robust commercial tracks and hardware installed.

3. The science rooms are distributed throughout the new learning environment. The proximity of the science facilities to the studio spaces is a positive attribute to the school. The evaluation team believed that all technology spaces should have been integrated under the one roof to encourage synergies of theory/practical pedagogy. However, the school stated during the interviews, that this strategy had previously been explored, and it was understood by the evaluation team that it was not possible in this project.

5. In this instance, the Principal was part of the design team. This positively benefitted the school as the school’s educational vision was aligned with the design of the new facilities at the outset. Further strategies should be explored to assist the pedagogy development of new schools within the design phase.

7. Some of the new learning spaces are exposed to the sun from the west. This causes overheating and glare in the soft-materials building. The evaluation team recommends that a shading device (external preferred) is installed on the west facades of the new learning spaces adjoined to Cameron Road.

8. The open studio area was arranged with fixed whiteboards on two external walls facing each other. Those surveyed stated that it was too disruptive when two classes used the AV equipment at the same time. The ‘open studio space’ concept has important lessons to be learned, in particular the synergies between pedagogy delivery within open shared learning spaces. The layout and the positioning of the AV equipment, of this particular studio space, needs to be addressed. The evaluation team recommends that changes to how this space is used and/or timetabled could be of benefit.

9. Development of a systematic handover and aftercare programme is recommended to help schools ease into their new facilities so they have a better understanding of its operational day-to-day needs. 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 customised 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 86% with 52 out of 60 staff completing the survey. Surveys were issued on the May 12, 2015. The staff interviews and on-site evaluation were carried out on the May 22, 2015. The site visit was on a sunny day with light winds. The school’s learning areas were occupied at their normal levels. Approximately half of Te Puke High School was re-built and the other half remained operating during the project and was not altered. This POE report is only based on the new facilities, which opened in 2013/14. The new facilities were evaluated during one site visit over a four-hour period.

Demographic Profile of those Interviewed

Of the 52 personnel interviewed, 81% were teaching staff and 19% were team leaders or in management roles. 96% of the staff which responded worked full-time, with 4% stating they worked part-time. 32% of the personnel interviewed stated that they spent 8 hours or more in the facilities each working day, while 34% 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% spent up to 5 hours each week in the office; learning environment, withdrawal spaces, library, technology spaces and sports facilities. 46% spent more than 21 hours each week in the learning environment, with 15% spending more than 35 hours.

Q.1 Which of the following best describes your current position within the school?
5.1 Identity / Context

Te Puke High School services a diverse, and growing, multicultural community. The increasing number of families, particularly Indian families, have further strengthened the school’s commitment to inclusive cultural practices and development of positive partnerships with whanau and families*. The school has supported this vision by refurbishing the Wharenui and placing it in a central and prominent position within the school. The Wharenui is used for a variety of learning and school activities.

The entrance to the administration building is clear and well sign-posted from the arrival car park and drop-off area. The administration building was an existing building that received some recent refurbishment works.

From the street there is a clear distinction between the new modern buildings and the original existing buildings. The school occupies a whole town block including community owned fields (which it shares). This makes the school very accessible to the community. There are a number of vehicle entrances around the site. The dedicated staff parking which is in close proximity to the learning centres, was stated during the interviews as being a positive attribute.

The school operates an extensive bus and van transportation service. The carpark is well designed and has good turning capabilities for larger vehicles. During the interviews it was stated that this area worked well. There is a clear hard and soft landscaping design that supports the entrance as a whole. The massing and positioning of the new school buildings make them visible from the street and they are of an appropriate scale for the school’s surrounding suburban residential context. Some of the new learning studios are located along Cameron Road, 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.

* (Paragraph captured from ERO 2013)
The appointed architect developed the new Master Plan for the school during the first design phase. The Master Plan proposed the removal of many existing buildings which had been built over time with little consideration for a wider vision. The buildings also had weather-tightness issues. The school’s current Principal and BoT were 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 greater sense of place within the school. The learning centres are positioned to frame and create clear outdoor social and learning courtyards. These outdoor spaces have been well designed with hard and soft landscaping. The new buildings take advantage of the school grounds elevation, allowing views of the surrounding school and township. This strategy has created legible circulation patterns throughout the new facilities, and has re-connected the existing areas of the school with a more logical hierarchy of pathways. The roofs of the new learning centres extend to create covered walkways, which are multifunctional and can be used for outdoor learning, assembly and performance. The new learning centers are well orientated to take advantage of the sun. The building provides a degree of wind protection to the central outdoor space.

The Wharenui is prominently positioned within the school grounds and forms a key part in creating the ‘heart’ of the school. The evaluation team observed the Wharenui being used for learning and outdoor activities, with students engaging positively with the surrounding outdoor space. The library was well positioned in relation to the Wharenui for easy access. A tuck shop adjoined the library building. It was stated in the interviews that the students enjoyed the library during their breaks.

The central courtyards between the new learning studios are well designed and articulated. During the evaluation they were used for a variety of games and activities. It was evident from impromptu discussions with the students that the courtyards were a positive attribute to the school.
The technology buildings are positioned away from the new learning centres and are connected with a clear and legible pathway. The horticulture and caretaker facilities have been positioned between the learning centres and the technology blocks, which assist with the transition of ground levels.

There are multiple service entrances around the school, which allow vehicles and pedestrians to easily access the technology spaces; learning centres, student areas, the central refuse area, and the areas that store the maintenance equipment.
5.0 ANALYSIS AND FINDINGS

5.3 School Grounds

The evaluation team concluded that the relationship between the design of the school grounds and its buildings were well resolved and positive. The school’s well-designed landscaping scheme works in harmony with the site’s topography to create a sense of place. As the soft-landscaping matures it will only improve over time. Outdoor learning spaces have been designed in conjunction with the building placement. The hard-landscaping utilises a variety of colours and shapes to good effect.

The design of the building’s roof extensions provides the school with plenty of outdoor shaded areas. The evaluation team believed these to be a positive attribute of the school.

The school is located on a site which slopes from Tui Street down towards the Te Puke domain. The new learning centres are constructed on top of concrete slab floors. The technology facilities are built on raised timber foundations. The ramps, pathways, entrance ways, social spaces and play areas were well defined overall. Survey participants were asked for their perceptions of how accessible the school grounds and buildings were, of which 89% stated that the entrance to the school was either ‘mostly’ or ‘totally adequate’ from the street. 93% stated that the hard-landscaping, ramps, stairs and handrails around the school were either ‘mostly’ or ‘totally adequate’ (see graph Q15 below).

64% of those surveyed stated that the internal and external finishes were either ‘generally safe’ or ‘very safe’ for its occupants. 27% stated that the finishes were only ‘quite safe’. This issue was mainly due to the misalignment of the internal glass sliding doors tacks, which made them difficult to use. It was stated that some of glass sliders had fallen out of their tracks. The evaluation team noted that remedial works to some of the sliding doors had been carried out (see graph Q16 below). It is recommended that further investigation is undertaken to understand this issue in more detail before recommendations can be made.

Q.15 In your opinion, how accessible are the following areas of the school grounds/buildings?

Q.16 In your opinion, are the internal and external finishes safe for all the occupants?
   (i.e. slip resistant surfaces, thresholds, handrails, ramps etc?)
5.4 Organisation

The six new learning centres are generally positioned along a lineal axis. Each learning centre (which is referred to as a pod by the school) is comprised of an open studio space, a large withdrawal space, and an enclosed smaller withdrawal space. As the building is not a conventional shape there are small differences to the layout of each learning centre. These differences are subtle but well considered. A teacher’s resource area, storeroom and a specialist science room is positioned between each learning centre. There is a 600-800mm ground level difference between each learning centre.

The studio space in each learning centre is utilised for general teaching of up to two classes at a time. A smaller breakout space is positioned to the side of the studios and is utilised for smaller group activities. A wet area is generally provided in this location. The enclosed withdrawal spaces were well utilised at the time of the evaluation. The larger withdrawal space was large enough to hold a full class. The glass sliding doors, which slide out from each corner of this space, allow the withdrawal and studio spaces to be modified for learning as required. The evaluation team believed that the flexibility of this space in particular, was a positive attribute of the learning centres. The learning centres were set up to allow for a variety of learning scenarios depending on the pedagogical needs of the school. A varied selection of furniture and seating options enable its users to reconfigure the spaces as needed. The evaluation team noted that the open studio area was arranged with fixed whiteboards on two external walls facing each other. Whiteboards with AV capabilities are utilised by teachers. The evaluation team noted that this aspect could prove disruptive when two classes utilised the whiteboards or AV equipment at the same time as they were in close proximity to each other.

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?

Open studio space could be disruptive if two classes are utilising the whiteboards or AV as they are in close proximity.
34% of the surveyed occupants stated they had ‘good access’ to a variety of quality internal and external learning spaces to facilitate their pedagogy. 40% stated that they only had either ‘quite good access’ or ‘poor access’. Survey comments stated that “the open studio area was noisy and disruptive and there were not enough classrooms for teaching theory” (see graph Q8 above).

There are clear links between the indoor and outdoor spaces with good transparency provided. On the day of the evaluation the external sliding doors were open in some of the learning studios.

The library was designed to be multifunctional, as is typically seen in modern tertiary institutions. Along with traditional library spaces it also provides large open seating and a number of breakout rooms. During the interviews staff stated that the library building was well utilised by the students.

The technology spaces are housed within repurposed buildings, which were shifted onto the school grounds. There are three technology buildings linked together with new canopies which form a landscaped outdoor courtyard. The technology spaces have been fitted out with a variety of open classroom areas and smaller withdrawal spaces. The technology areas have excellent specialist equipment. The arrangement of the wood and metal technology areas meant that the students had to move to another building in order to complete their theory. During the interviews it was stated that “there is not enough teachers’ resource area, the buildings were cold in winter, hot in summer and it can be disruptive when it rains heavily”. The evaluation team noted that efforts have been made by the school to improve these areas, however, the shortcomings of its configuration would have only been resolved with new purpose-built facilities, which was not possible in this round of works.
The new learning centres are built with a structural steel system that spans the width of the building. The exterior walls are constructed with timber frame and clad with a mixture of brick veneer and a flat-sheet cladding system. These buildings employ simple building techniques and are considered low-risk. They are generally described as having a mono-pitch form, with good eave protection and external gutters. During the interviews it was noted that the school was not experiencing any abnormal maintenance issues. The buildings were in good condition and there were no obvious indications that the structure would not be easily maintained and have a long service life.

The technology buildings are mostly clad in profiled metal and, in general, do not have eaves. The roadside elevations of the soft-material technology building are clad in painted plywood. The evaluation team noticed, in one instance, what appeared to be poor gutter detailing. This item will require ongoing monitoring by the school’s maintenance team.

All roofs of the new facilities are clad with profiled metal. All joinery (internal and external) is aluminum framed. The external doors and windows are tinted with a grey glass to assist with reducing solar heat-gain.

The new learning environment’s toilets are externally accessed, well distributed and accessible. Each unisex toilet is accessed from its own external door so that only one person can enter the toilet at a time. The technology block’s toilets follow a similar design. The toilet doors are very visible from the outdoor spaces and provide teachers with good passive-surveillance of these areas. Of those surveyed 67% considered the toilets to be either ‘quite convenient’ or ‘conveniently located’ for students in all weather conditions. 30% stated that the toilets were ‘not conveniently located’ for staff as there was only one staff unisex toilet for each learning centre (pod), which they commented was not sufficient (see graph Q12 over page).
5.5 Buildings (continued)

Staff Collaborative Spaces
A teacher resource room is connected to each learning centre. The room occupies a fixed workstation allocated to each teacher and a storage area for resources. During the interviews it was stated that this area worked well for teachers to plan, schedule and develop their pedagogy. The evaluation team believed the resource rooms were well positioned within the learning environment. A small amount of storage was available in the learning centres behind the two whiteboard units, however most of the physical resources and equipment was stored in the teachers’ resource area. The evaluation team considered that more storage could have been provided for the size of the facility.

Storage
Of those surveyed, 71% stated that there was ‘not sufficient’ storage within the learning centres for resources or teaching equipment. A further 16% stated there was only ‘quite sufficient’ storage, with only 8% stating there was ‘sufficient’ storage. Respondents stated that the storage spaces provided were very limited in their size and configuration and there was not enough space for students to store their work (see graph Q32 below).

Internal Doors
During the interviews it was stated that the interior sliding doors in the learning centres required track realignment from time to time. These doors will require continual management and maintenance by the school. Future design teams should give consideration to the specification of the doors and their associated hardware.

---

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?
Learning Environment

23% of those surveyed were ‘satisfied’ with the overall quality of their learning environment. 21% were neutral in their perceptions and 56% of those surveyed were only ‘quite satisfied’ or ‘not satisfied’ with the internal layout of their learning environment. Survey respondents stated that the over-head projectors (OHP), when in use, disrupted the other classes in the studio space. They also commented that it was awkward to separate classes within the open studio space; that late attendees disrupted all of the classes in the learning centre, and that it was also too noisy (see graph Q7 below).

26% of those surveyed thought the internal finishes were ‘effective’ and met the needs of the staff. 21% thought they were only ‘quite effective’ and 42% of those surveyed thought they were ‘not effective’. The main responses from those surveyed were “inadequate whiteboard space in the open studio area, sliding doors become misaligned, and little or no display space provided” (see graph Q33 below).

It was evident to the evaluation team that not all staff believed that the new facilities were supportive to their pedagogy. During the interviews it was stated that the school is developing new ways for the spaces to be used and timetabled for better pedagogy delivery. This is a huge undertaking and a critical step for the school. There were considerable differences between the existing classrooms at the school and the new MLE facilities. It is recommended that further support be given to new schools for their pedagogy development prior to moving into new MLE facilities.

69% of those surveyed were either ‘quite satisfied’ or ‘very satisfied’ with the quality of the library space. The evaluation team considered the library space to be a successful and positive attribute to the school (see graph Q6 below).
Ventilation

Ventilation is supplied to the learning centres via a natural ventilation scheme. The overhead windows are opened with electrically operated window actuators, and are switched off and on manually. Ceiling fans are used to assist with air movement. 27% of those surveyed stated they had good control of the ventilation in their spaces throughout the seasons. 54% stated they had limited control over the ventilation. The main responses from those surveyed were; that the ceiling fans didn’t provide enough assistance, and that the electric window openers didn’t open enough to provide effective ventilation (see graph Q19 over page).

The learning centres are designed diagrammatically within an open space. A cluster of individual rooms adjoins this space, each of them with external windows. The studio space has windows on both sides to allow for effective cross-ventilation. On the day of the evaluation, some windows were open and the learning environment appeared to be well ventilated. No mechanical documentation was available to the evaluation team, therefore observation was used to understand how ventilation was provided.

Of those surveyed 69% stated that the air quality was either ‘quite sufficient’ or ‘comfortable’ in supporting the students learning. 27% stated the air-quality was ‘not sufficient’. The majority of the responses from those surveyed were about the technology buildings. These buildings are of lesser quality with considerable shortcomings when compared with the new learning environments. Other comments included; little or no solar protection, sub-standard insulation, and poor air-flow in the workshop areas (see graph Q17 below).

40% 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 withdrawal spaces were often very stale in winter months. Further diagnostic investigation is recommended before conclusions can be quantitated (see graph Q18 over page).

5.0 Analysis and Findings
5.6 Interiors (continued)

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?
Internal Temperature / Heating

The school operates two gas-fuelled boilers to heat the learning environments. A ducted air system in the ceiling delivers heated air to the learning studios. The air is heated by hot water from the boilers. The heating system is controlled from a central location.

There are wall-mounted radiators in the teachers’ resource area, and the original school buildings. The technology buildings utilise heat-pumps for heating.

39% of those surveyed stated that the internal temperatures of the learning areas were ‘sufficient’ to support student learning. 56% stated that the temperature in the learning environments was either ‘quite sufficient’ or ‘not sufficient’. The majority of the responses from those surveyed were based on the technology buildings. The most common response was that the heat pumps do not provide enough heating in winter. 75% of those interviewed stated they had ‘little control’ or ‘no control’ of the heating in their space. This is because the majority of the school is heated by a boiler system (see graphs Q23 & Q20 over page).

Internal Temperature / Cooling

It was evident that the school’s location was subjected to considerable sunshine hours. Overall the new learning environment was well designed to control the solar heat-gain. This was reinforced by 69% of those surveyed, who stated that the learning environment was generally ‘comfortable’ during winter. The lowest comfort levels were experienced in the technology buildings with 28% stating it was either ‘quite warm’ or ‘too warm’ during summer. Heat pumps are also used for cooling in these areas.

The evaluation team noted that the technology buildings generally had no eaves, and in-particular, no solar protection on the west façade of the soft-materials technology building. There also appeared to be limited levels of insulation throughout these buildings, which would contribute to the occupants’ discomfort at certain times of the year (see graphs Q21 & Q22 over page).
5.0 ANALYSIS AND FINDINGS

5.6 Interiors (continued)

Q20. In your opinion, generally is the internal temperature of the learning areas sufficient to support the students learning?

Q21. In your opinion, generally is the internal temperature of your part of the building in winter too warm or too cold?

Q22. In your opinion, generally is the internal temperature of your part of the building in summer too warm or too cold?

Q23. Do you have sufficient control over the heating and cooling of your space?
Acoustic Environment

The acoustic environment of the learning centres is controlled with a mixture of suspended ceiling tiles, pinboard panels on the internal walls (Autex or similar), and carpet tiles on the floor. Transparent internal sliding doors close off the learning studios from the withdrawal spaces when required. The ceiling level in the studios is above average in height and it slopes down to follow the roofline. The evaluation team believed the ceiling volume was a positive attribute.

The evaluation team also noticed some occurrence of reverberation during the evaluation (observational testing only). The learning centres were evaluated on a typical day with the learning environments at approximately 70%-80% capacity. Each studio was surrounded with a considerable amount of glass surfaces, which do not assist in reducing reverberation. This also limits the amount of wall area for acoustic wall panels (pinboards or similar).

The evaluation team observed the highest amount of acoustic disturbance when two classes were working in the open studio space simultaneously. 28% described the acoustic environment as ‘comfortable’ with 36% describing the spaces as ‘irritating’ and 26% described the space as ‘confusing’. The main responses were that the open studios were “frustrating, stressful, noisy and distracting”. The evaluation team noted that the larger withdrawal spaces were well utilised by classes as they could be closed off. This is more than likely a result of the acoustic performance of the open studio space (see graph Q24 over page).

When staff were asked to rate the acoustic environment of their classroom, 55% stated it was ‘poor’ or ‘very poor’. 32% stated it was ‘acceptable’ with only 8% stating it was ‘good’ or ‘very good’ (see graph Q25 over page).

When asked if staff or students were interrupted by any noises while teaching, 69% stated they were interrupted by noise from other learning spaces (see graph Q26 over page). No other noises originating from equipment, air-conditioning, computers etc from inside the learning environment where stated as being a problem (see graph Q27 over page). It is recommended that further diagnostic investigation be carried out before recommendations can be made.
5.0 ANALYSIS AND FINDINGS

5.6 Interiors (continued)

Acoustic Environment (continued)

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?

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:

[Graphs showing distribution of answers for Q.24 and Q.25]

[Graphs showing distribution of answers for Q.26 and Q.27]
Artificial Lighting
Recessed ceiling lights provide artificial lighting in the learning environment. They appeared to be well distributed and effective at the time of this evaluation.

When asked if the lighting levels were sufficient, 95% of those surveyed stated there was ‘sufficient’ or ‘quite sufficient’ light levels in order to perform their professional role (see graph Q29 below).

Natural Day-Lighting
The learning environments, in general, have standard eave overhangs. Day-lighting is effectively controlled by 2m wide extensions of the roof to the internal courtyard. The Master Plan design configured the new learning centres in a ‘U’ shape arrangement. Therefore, each building faces a different way in relation to north, and users experience a variety of light quality in the studios and withdrawal spaces. 76% of those surveyed stated that the buildings were ‘not effective’ or only ‘quite effective’ at controlling the natural light throughout the day. 24% stated that the light quality was ‘effective’. The main responses from those surveyed were based on the technology buildings with similar issues as noted previously.

The most problematic areas, as stated by the respondents, were those learning areas exposed to the west (adjacent to Cameron Road). They stated that it was difficult to use projection equipment at times as the screen could not be seen on a bright day (see graph Q30 below). A type of shading device (external preferable) is recommended in these locations.

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)
ICT

Mobile device trolleys were located in the learning centres. The projection equipment appeared to be well utilised. The school has a clear educational vision and it is constantly developing their ICT strategy to align with this. 60% of those surveyed stated the ICT is either ‘effectively’ or ‘quite effectively’ positioned for teaching and learning (see graph Q31 below). The school has SNUP technology and appears to be utilising its investment in devices and digital resources effectively.

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

5.7 Energy and Services Strategies

The design team did not adopt a sustainable rating scheme for the buildings or infrastructure (Greenstar or similar). During the interviews it was stated that, where possible, sustainable choices were implemented. During the on-site evaluation the team noted the school’s commitment to recycling and their impressive horticulture area. The evaluation team quantified energy usage over a 12-month period and noted considerable fluctuations in gas consumption when the boilers were operating, which was expected. The energy usage appears to be appropriate considering the age and the number of existing buildings, which are still used alongside the new facilities.

5.8 Feeling Safe

The new learning environment opens out onto a large central area, which exhibits excellent passive-surveillance. The school grounds are not fenced off from the sports fields. The school and the community share the sports grounds. The new facilities’ pathways are wide, legible, and visible. During the interviews it was stated that the school has a great relationship with the community and no vandalism of note had occurred. 61% of those interviewed stated they felt ‘quite safe’ or ‘very safe’ while on the school grounds (see graph Q9 below).

The internal environments are open and transparent enabling teachers to overlook most spaces effortlessly. No significant instances of bullying were noted by those surveyed (see graph Q10 below).
The school has been operating in its new facilities for approximately one and a half years at the time of this evaluation. The learning studios have adaptable furniture and are modified by the users to suit their needs. The large internal glazed doors allow the spaces to be adapted to suit.

A commercial method of construction has been applied to the new learning environment. The spaces are open and airy. The structure spans the width of the building, which effectively limits the amount of bracing or load bearing on its internal walls. This allows the internal spaces of the building to be internally adapted, should the need occur. The ceilings are generous in height and this is seen as a positive attribute of the learning environment. The new learning environments appear to be flexible in their use, and they would be cost-effective to adapt.

The Master Plan does not appear to allow for significant growth within new learning centres. However, there appears to be a number of older buildings, which could be cost-effectively adapted or removed to make way for new facilities. As there appears to be capacity available at the school, this may not affect the school in the foreseeable future.

Unfortunately no construction documents were available to verify our observations, therefore professional assumptions have been made about the construction.
5.0 **Analysis and Findings**

### 5.10 Successful Whole

The new school facilities are pleasant and well maintained. The outdoor spaces and the new learning environments are designed with robust material and overall it appears successful. During the interviews it was stated the students enjoyed the “outdoor quad”, the “library space” and the “Wharenui” the most.

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

The most common responses were:

1. The “noise is a problem in the learning spaces. The class next to my class is often a noisy distraction”
2. “More room for storage in the learning pods for student work would be beneficial”
3. The “technology buildings are second-hand and huge compromises had to be made”
4. The “library space is really enjoyed by the students”

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 “ability to divide the breakout rooms from the open studio spaces” was seen as a positive attribute
2. The “new learning centres are all on one level”
3. The “cultural aspects included in the project” particularly the new Wharenui
4. The “central outdoor quad” space
5. The “buildings are new, fresh and clean”

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*Images of open studio space, new learning environment and outdoor space, students utilising the library space during their breaks, and new Wharenui.*