MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

POST-OCCUPANCY EVALUATION REPORT

TKKM O KAWAKAWA MAI TAWHITI

TE ARAROA | 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.

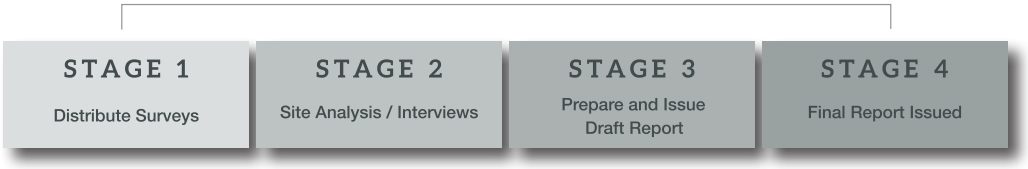
2.0 POE METHODOLOGY

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 and consultant documentation (construction drawings not available)
- Full project walk-through evaluation
- Benchmark data compiled
- Interviews with staff during walk-through
- Interviews with key stakeholders involved in the project's design phases i.e EBOT member and Principal
- 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:



It is important to note that Stage One of the POE process was not completed by the Kura. Occupant surveys were issued to the Kura May 12, 2015, however, despite encouragement by the POE team the Kura did not complete this phase before the survey closed on June 12, 2015. The POE completion deadline is the June 30, 2015. Therefore, this POE has been completed based solely on the list of collection methods as stated above, together with the POE team observations.

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

TKKM o Kawakawa mai Tawhiti was redeveloped around an existing school, located at Hick's Bay, in the Gisborne District. The sacred mountains that define the tribal boundaries of Matakoa surround the site. Students have whakapapa links to the hapu that span from Potikirua to Hiruharama.

Kawakawa-mai-Tawhiti was named by the tipuna, Pawa. The kura symbol reflects the mountains, rivers and marae of the local people. The whakatauki 'whaia te iti kahurangi, ki te tuohu koe me he maunga teitei' is included in the kura pepeha and is a reminder of the aspirations of local tipuna. Significantly, the kura symbol was designed by one of the graduates from the kura.

The kura is located within 300 meters of the ocean; the site is generally flat and exposed to the local weather conditions. The site is set in a rural coastal context and it is a significant centre for the local community. The kura has been designed and constructed in one stage.

An old 1940's school building, and two re-locatable buildings existed on the site prior to design works commencing. These buildings were refurbished and repurposed to link in with the new Master Plan.

Benchmark Data

School Profile Number: 3119
Type: Composite
Location: 22 Wharf Road, Te Araroa
Site Area: 2.8807 ha
Definition: Kura Kaupapa Maori
Staff Numbers: 13
Student Numbers: 135
Environmental Rating Credentials: N/A
In-use Performance: 53kWh/m^2/annum
Decile: 1 (2009 ERO)
New School in-use: 2014
Total Floor Area: 1,222m^2 (includes 8 teaching spaces)
Capacity: Not known
Project Cost: $3,177,142.65 (2012/13)

Project Team

Master Planning: Opus International
Architect: Opus International
Structural Engineer: Opus International
Services Engineer: Opus International
Cost Manager / Engineer to Contract: Maltbys

3.0 PROJECT OVERVIEW

Project Timeline

May 2012
Developed Design Starts

July 2012
Detail Design Starts

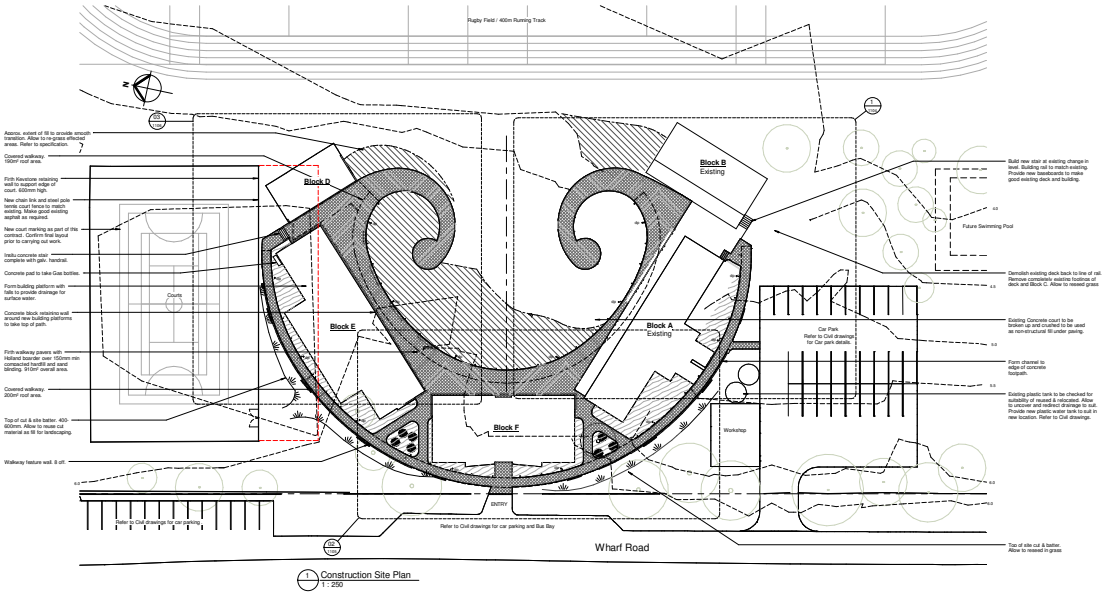
September 2012
Construction Starts

September 2013
Construction Completed

February 2014
Kura Opens

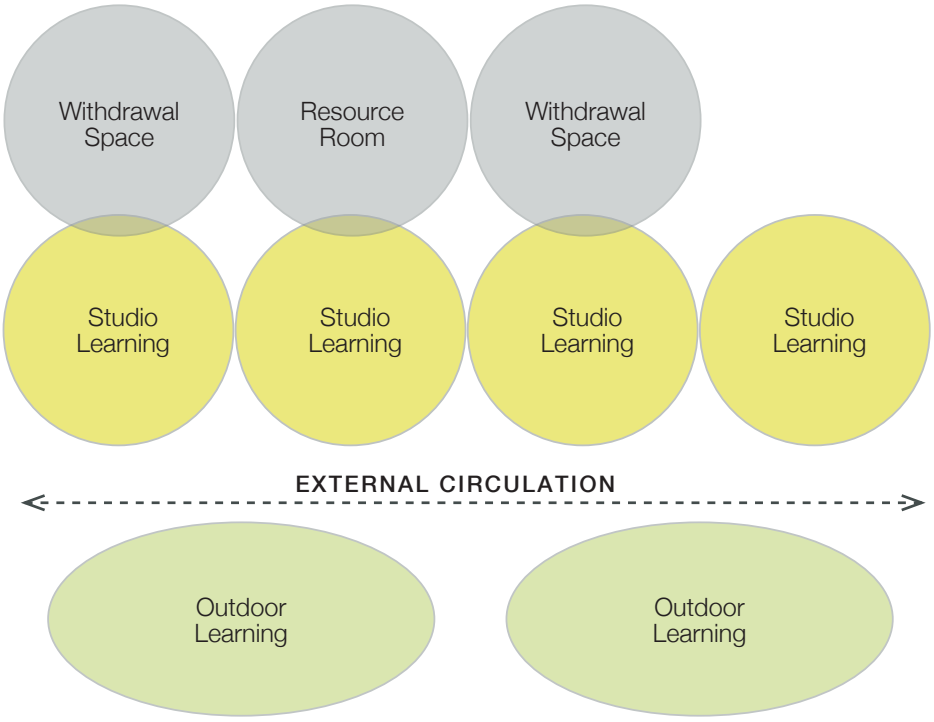
** No project programme available*

Master Plan



3.0 PROJECT OVERVIEW

Learning Environment Diagram



4.0 RECOMMENDATIONS

Conclusions and Recommendations for TKKM o Kawakawa mai Tawhiti

The evaluation team found that the in-use performance of TKKM o Kawakawa mai Tawhiti could not be fully quantified as the kura did not engage in the survey phase of the process. Conclusions have been drawn from the evaluation team's observations and on-site interviews. The quality between the junior and senior learning environments varies. The senior school and specialist learning spaces reflected good design principles, based on the BoT's educational vision, and the MLE guidelines. The junior learning environment is at, or near, full-capacity and it is not performing as effectively as the staff would like. The junior learning environment had a limited variety of learning spaces and it overheated in the warmer months.

All of the buildings were well maintained, with what appears to be sound facility management. However, the evaluation team revealed a number of shortcomings that, if addressed, could improve certain areas of the kura. Furthermore, this POE process aims to highlight lessons that could be learned from these shortcomings, in order to benefit future school developments.

Below are our recommendations to improve the design, in-use performance or simply lessons to be learned from the TKKM o Kawakawa mai Tawhiti buildings:

1. The four studios in the junior learning environment are positioned next to each other. They are divided by large glass sliding doors in a cellular type arrangement. The withdrawal spaces are positioned to the side of these studios, with limited transparency or connection. Less glass surfaces and more pinboard areas would help with reducing the amount of acoustic reverberation and sound control between the studios. Distribution of the withdrawal, or breakout spaces between the studios would have assisted with the above.

2. The size and weight of doors should be considered within junior learning environments. With the limited display space available, some of the glass sections in the doors could be replaced with a solid core and covered with pin-board, this would also improve acoustic reverberation.

3. Block D and E appear to have limited clearance from the retained landscaping. This is not a best-practice approach and a further, detailed investigation is needed in order to make recommendations.

4. In this instance, the Principal was part of the design team. This positively benefitted the kura as the kura'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.

5. Block E's internal ceiling height is low and limits the functionality of the learning centre. This is not a best-practice approach and a further, detailed investigation is needed in order to make recommendations.

6. The ventilation system (cooling) is not working effectively in the teachers' resource room off the library, and reception/administration areas. The west-facing windows have little or no protection from the sun and some of these windows are inoperable. The staff stated that the junior block was uncomfortable during summer with limited opportunity to use the ventilation provided. Further diagnostic investigation is recommended to determine a robust solution.

4.0 RECOMMENDATIONS

Conclusions and Recommendations for TKKM o Kawakawa mai Tawhiti (continued)

7. The kura stated during the interviews that the library was well utilised due to its conference and audio visual capabilities, allowing spontaneous learning, cross-kura learning, performance and other activities. The kura believed this was a positive attribute as it was very isolated. The evaluation team recommends a wider ICT strategy to equip the learning studios with similar capabilities as and when funds allow.

8. The Master Plan and landscape design have created a central space, which reflects unique elements of the kura's culture. The evaluation team, however, suggests that opportunities may have been missed to reinforce the kura's unique cultural narrative further throughout the building design and wider landscaping**.**

9. Development of a systematic handover and aftercare programme is recommended to help school's ease into their new facilities with 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 low with 5 out of 13 staff interviewed during the on-site evaluation stage. No staff or senior leadership personnel completed the online surveys. Stage one of the POE was issued on the May 12, 2015. Stage Two interviews and the on-site evaluation was carried out on the May 20, 2015. The site visit was on a sunny day with light winds. The kura was under normal operating conditions, with all areas of the new development evaluated during one site visit over a five-hour period.

Demographic Profile of those Interviewed

All five personnel interviewed were full-time teaching staff. Most of the personnel interviewed stated they spent six or more hours in the facilities per working day. The personnel interviewed spread their time across a wide range of spaces during the working week. The roll of the junior school was larger than the senior school. The junior MLE environment (Block E) appeared to be near capacity during the on-site evaluation.

5.1 Identity / Context

Te Kura Kaupapa Māori o Kawakawa-mai-Tawhiti is located in Hick's Bay, in the Gisborne District.

The entrance to the administration building is located away from the designated car parking area. There is a drop-off bay in front of the kura entrance for short-term use. No other parking is provided near the entrance and staff park across the road from the kura, on the road verge. The administration building is placed near the edge of the road, which would typically create potential safety and/or noise issues, however, staff did not express any concerns or issues due to the very low traffic numbers on that particular road. The administration entrance, although noticeable, displays little prominence or expression of the kura's unique identity.

The car park is positioned on a quiet local road. It was noted that the access was not clear on arrival, with no signage or road markings. The direction to the reception from the car park was not clear on arrival as the caretakers' shed blocked the view of the pathway to the administration building.

Given the geographic location of the kura it has a wide catchment area which is serviced with bus and van facilities. There is a drop-off area for buses and vans which is well positioned at the entrance of the kura.

There is a basic hard-landscaping strategy that supports the entrance to the kura, and there is limited soft-landscaping, with modest fencing provided upon arrival.

The massing of the kura buildings visible to the street is generally of a residential scale that is appropriate to its rural context. The learning studios are configured behind the administration building. The technology spaces are situated in the existing refurbished classroom block, and is in close proximity to the senior learning environment. The kura's Master Plan created a central landscaped area in the heart of the kura with the learning studios surrounding it. The learning studios are orientated inwards towards the central landscaped area. Claddings and the exterior colour scheme are fresh and sympathetic to the surrounds.

Drop-off area at kura entrance

Entrance to administration building

Pathway from main carpark to administration building and caretakers shed

Front aspect of the kura

5.2 Site Plan

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

The Master Plan was designed to reflect the hammerhead shark and the BoT's vision of Tuakana-teina. The new buildings were carefully placed alongside the retained existing classroom blocks to form the specific shark shape. The central area is landscaped to foster a sense of place within the kura. Some buildings were retained, while some of the hard courts were removed to make way for new classrooms. The kura opens up to the east, as stated by the brief, and takes advantage of the views to the playing fields and coast.

This strategy creates opportunities for legible circulation patterns, with external cover provided to all of the kura learning centres. These covered areas are multifunctional and can be utilised for outdoor learning. Fixed seating is provided outside the learning centres to support this. As the kura did not complete the survey stage, the evaluation team was unable to gauge the effectiveness of these attributes. The evaluation team noted that there was a limited amount of fixed seating provided, in-turn limiting the way the spaces could be utilised. During the interviews it was stated that the kura were (at the time of the interview) building new flexible seating options in addition to the existing fixed seating. Further design development could have been undertaken to create more engaging outdoor learning spaces.

The new buildings are well orientated to take advantage of the easterly sun, while providing a degree of wind protection to the central area and outdoor learning spaces.

The hard-court is placed adjacent to the street, which allows good community access. There is a natural playground area, made up of felled trees and stumps, provided by the kura, which is situated at the edge of the field in front of the central space. It was stated in the interviews that the central outdoor space was well utilised by students of all ages. During the evaluation, it was used for social gathering, games and activities during breaks. The central area was mostly comprised of grass with little or no landscaping, which could have been developed further.

Buildings positioned to form the hammerhead shape

Existing buildings refurbished

Fixed seating outside learning environment

Central outdoor space

5.3 School Grounds

The relationship between the kura grounds and the buildings vary in quality, with little or no soft landscaping provided in some areas. Specific outdoor learning spaces are limited. The hard landscaping has a variety of colours and shapes used to good effect to form the pathways.

An external canopy, together with the buildings, provide shaded areas for the occupants throughout the day. This canopy curves around a path, which circulates the buildings. The canopy however, only joins the buildings above the entranceways of each classroom, by an extension to the main canopy, making weather protection limited during times of heavy rain and wind. This strategy does however allow greater solar penetration through the windows due to not being shaded by the canopy. During the interviews, the kura believed the canopies provided good protection.

The outdoor social spaces and play areas for the students could have been more defined through the use of hard and soft landscaping.

The new junior classroom block and the early childhood block (Blocks D & E) have a timber foundation system. The design team has approached this by retaining the hard and soft landscaping right up to the height of each classroom entranceway situated on the covered pathway. This design approach has meant that a gap is required between the building and landscaping to meet the NZBC requirements for ventilation and weather-tightness. This has resulted in detailing and construction practices that will, more than likely, cause ongoing maintenance issues for the kura. During the interviews it was stated that the gap between the pathway and the classroom block caused a hazard and in some cases had caused injuries. A stainless steel grate had been installed to close the gap (varies from 30-80mm) for safety reasons. The evaluation team recommends further investigation be undertaken to understand this situation in more detail before making specific recommendations.

Hard landscaping designs shows a variety of colours and shapes

Curved canopy with an extension to classroom entrance

Outdoor space slopes down to sports fields below

Soft and hard landscaping retained up to the edge of the buildings

5.4 Organisation

The spatial organisation of the junior learning environment (Block E) is positioned along a lineal axis to mirror the placement of the existing classroom, Block A.

There are four learning studios in junior Block E, each comprised of an open room with a fixed whiteboard and storage unit. The studios are divided via large glass sliding doors. The kura utilises these doors to adjust the studios to their spatial and acoustic requirements. During the on-site interviews staff stated that they generally left them closed, as they needed the display space that the doors provide. Withdrawal spaces, designed for student learning, are connected to each studio. These spaces are used by teachers to house their extensive physical resources and equipment as it appears that not enough storage was allocated elsewhere in the design.

The kura installed a Lundia shelving system in one of the withdrawal spaces. From the evaluation team's experience, kura utilise a wide range of resources, and storage design should have played a more critical part in the initial design process.

The studio space is set up with a mixture of tables and chairs. From the interviews it was stated that the kura junior learning environment had reached its role capacity. The studios have no space to remove or reconfigure the furniture as the withdrawal space is allocated for teachers' resources. A whiteboard and a small amount of storage is located in each studio space. The studios have a small joinery unit with a sink in the corner. The vinyl flooring only extends out from the wet area approximately 1m. It is recommended that the vinyl extends further to allow larger groups to use the wet area.

Sliding doors between studio spaces

Teachers' resource area in withdrawal space off the studio

Lundia system in withdrawal space off the studio

A whiteboard and storage unit is provided in each studio

Wet area provided in each studio

5.4 Organisation (continued)

The studios have pinboard on the internal walls at a width of 1200mm. The evaluation team noted that the studios appeared to have limited display space due to the layout. Studios have glass sliding doors on each side of the room, with an external door and windows at the entrance of the space. A door into the withdrawal room is situated at the back of the studio, opposite the class entrance. This layout limits the amount of wall space available for pinboard display. To compensate, the staff are using the glass sliding doors between the studios as display space. Therefore they need to be shut at all times as the displayed items would not allow the doors to slide back into the wall cavity. This was reinforced during the interviews by staff stating that the studios did not have enough display area for their needs.

There is a standard 1500mm long desk in each studio for static ICT equipment. Overall the studios appear to have sufficient outlets distributed throughout the room to comply with the MOE guidelines. Due to a lack of clear wall space there is not enough room for additional fixed computers or devices. The floors have recessed floor boxes available in each studio to allow the ICT equipment to be configured in a flexible manner. During the interviews the staff stated that the recessed floor boxes were not well distributed throughout the studios and they were forced to place the computers against the walls.

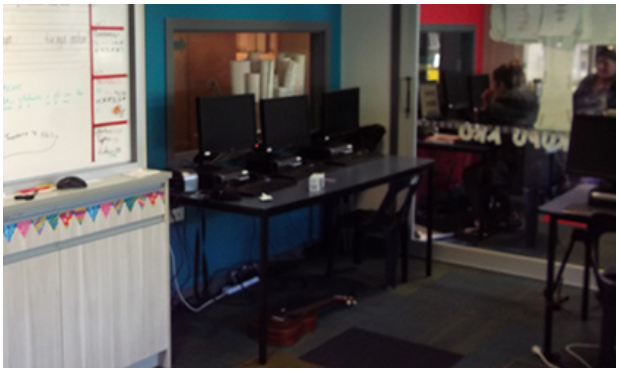
The senior Block A learning environment is located in the refurbished existing school building, with the internal layout reconfigured to suit the kura's needs. The external envelope has been upgraded with insulation and new aluminium windows/doors.

The studios are internally separated with glass sliding doors, as with the junior block. The senior block is not currently at capacity, however, it is expected to change in the short to medium term as the current junior students progress.

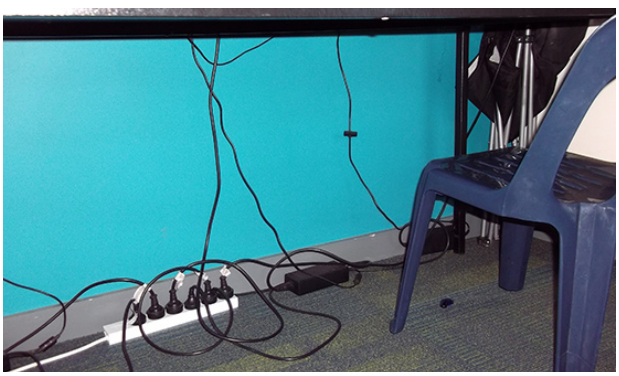
Flexible furniture options within each studio allow students to move furniture easily to accommodate performance or group learning. There are dedicated storage rooms in this block for teaching resources. During the interviews it was stated that they were well utilised but could be bigger.

Sliding doors used as display space

Pinboard in junior studio



Fixed computers in junior studio



Limited power points available

5.4 Organisation (continued)

There is an existing refurbished toilet block, which is connected to the senior block with a canopy.

The specialist science and technology spaces are positioned beside the senior classroom block, inside existing pre-fabricated classrooms (Block B). The science and food technology rooms were well laid out with good storage and facilities. There are positive assets to the kura.

The library is easily located on the site for both students and staff, and is clearly visible as you enter the kura through the main entrance. Glimpses of student learning can be seen as you enter the building, which is a positive attribute. The library is also easily accessible to community. It is designed as a multi-functional room, positioned away from the learning studios in the administration building (Block F).

The library building is connected to the learning studios with continuous external canopies. The space has good AV capabilities and flexible furniture to allow for a variety of learning typologies to take place. Fixed computers are clustered together against one wall, however, there are limited power outlets provided.

Senior learning environment

Food technology classroom

Fixed computers and flexible seating in the library

Science classroom

Limited power points available

The library has flexible furniture and good AV capabilities

5.5 Buildings

Construction

The new learning centres have been built using standard timber frame construction. These buildings are clad with a flat-sheet type product with negative expressed joints. All new buildings generally have eave protection and an external gutter system, which collects water for re-use. There are small low-pitch roofs at the entrance of the kura that have no eave protection. These roofs will require ongoing monitoring.

Ground and Building Clearance

As discussed in section 4.2 (school grounds), the new buildings are positioned closely to the retained landscaping. This has resulted in what appears to be low ground clearances at the back of Block E. The evaluation team could not find a sub-floor access hatch to understand this issue in more detail. From an external observation there are low clearances between the cladding and the landscaping. It is not known if surface water finds its way under the classrooms or how maintenance can be carried out in the sub-floor area. It is recommend that further investigation is carried out in order to conclude robust recommendations.

Roof Construction and Joinery

The roofs are constructed with lightweight metal cladding. All external joinery is aluminium, and in most instances the doors are hinged. It was stated during the interviews that the kura do not experience any operational issues with the doors. It was stated that the window winders however were difficult to operate and slow to use. The evaluation team did not review all window winders, but those that were reviewed required maintenance for ease of operation.

Toilets

Toilets are positioned in-between Block D and E and are externally accessed. This location provides good access for the junior students, as well as from the hard-court area. External canopies protect the toilets from weather and they have level thresholds for accessible access. The senior block has good access to toilets, and staff utilise the administration bathroom facilities. As the kura did not engage with the survey process, it is not known if they are, or are not, satisfied with these facilities.

Low pitch roof at front of administration building

Block E appears to have low ground clearance and limited sub-floor ventilation

Mowing strips around the building would have been beneficial

Toilets positioned in-between Block D and E

5.6 Interiors

Of those interviewed, it was stated that staff were generally "more pleased" with the overall quality and internal layout of the senior learning environment over the junior learning environment. The main feedback from the interviews was the lack of display space; the sliding internal doors (bi-folds would have been preferred by the kura), and the poor ICT connectivity in the junior block.

The evaluation team observed that the junior block had limited access to a variety of internal and external learning spaces. The studios were well utilised but did not have any withdrawal or breakout spaces due to teachers occupying them for resource storage. The ceilings of junior learning environment slope and provide good height to the studios. However, the withdrawal spaces adjoined to the studios had low ceilings, with the lowest floor to ceiling height being approximately 2.1m. This does limit the flexibility of the space and it is not recommended as an acceptable height for a learning environment. As construction drawings were not available to the evaluation team, it is recommended further investigation is carried out before conclusions are made.

The ceiling volume in the senior learning environment is generous - a feature retained from the existing building. The interiors are vibrant and well laid out, as are the food technology and science classrooms.

Low ceilings in the junior block

Senior learning environment

Teachers' resource area (withdrawal space)

5.6 Interiors Continued

Ventilation

Ventilation is supplied to the learning centres via a natural ventilation scheme (manual operable windows). The junior learning environment is designed 'diagrammatically' as two rooms deep, which minimises the effectiveness of cross-ventilation. One studio in this block has external windows on both sides for effective cross-ventilation.

The withdrawal spaces at the back of the studios have operable windows. If the internal door between the withdrawal space and the studio is left open a limited amount of cross ventilation could occur. It was stated in the interviews that the rooms in this block become very hot in summer. The withdrawal spaces face north and windows have limited solar protection. Further investigation needs to be carried out to understand the effectiveness of the overall ventilation/ cooling strategy.

Due to the kura's geographical location, at certain times of the year, the kura is subjected to windy conditions. During the interviews it was stated that during high winds they are unable to open the windows, as it is disruptive to the learning environment. If the windows in the junior block's withdrawal spaces are left open during a windy day, the kura stated that the ceiling tiles can dislodge from the ceiling track. This is an important situational observation that requires further diagnostic evaluation to be able to provide technical feedback and recommendations.

As the kura did not engage with the surveys their perceptions of the air-quality are not known. Diagnostic testing of the IAQ is not part of this POE process. However, on the day of the evaluation the air inside the learning environment was fresh and adequate.

Withdrawal space windows

Withdrawal space windows

Studio windows

Dislodged ceiling panel

5.6 Interiors Continued

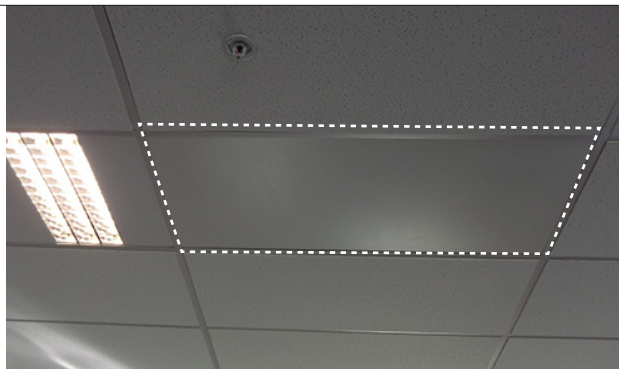
Internal Temperature

The kura's location is subject to considerable sunshine hours. According to those interviewed, the current cooling strategy does not provide stable comfort levels in summer which, 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.

Radiant heating panels control the temperature in the learning environments. Electric ceiling and wall-mounted heaters are used in the library and administration areas. An air-conditioning unit is located in the Principal's office. It was stated in the interviews that in winter the library temperature can be "cold and uncomfortable at times".

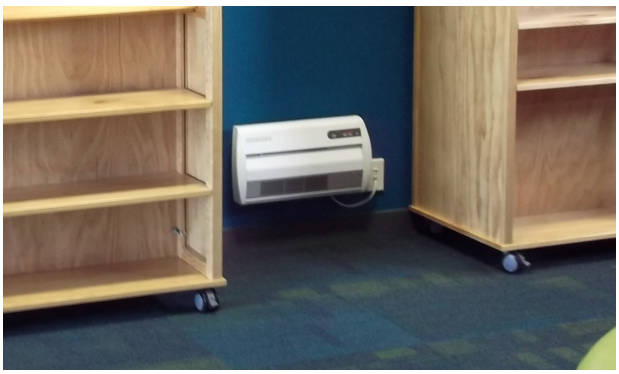
It was stated in the interviews that the resource room situated off the library, along with the reception area, often overheated in summer. During the evaluation it was a sunny, clear day (mid-May) and the resource room was warmer than desired. The evaluation team noted that these rooms face west and have little or no solar protection. In addition, the windows in these rooms are inoperable and therefore no external ventilation is able to occur. This does cause issues for the kura during the summer months and further investigation into the heating and ventilation strategy is recommended. Mechanical design documentation was not available, therefore it is not possible to provide recommendations regarding these ventilation issues.

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



Radiant ceiling panel

Administration / Reception area wall heater



Library wall heater

Resource room situated off library

5.6 Interiors Continued

Acoustic Environment

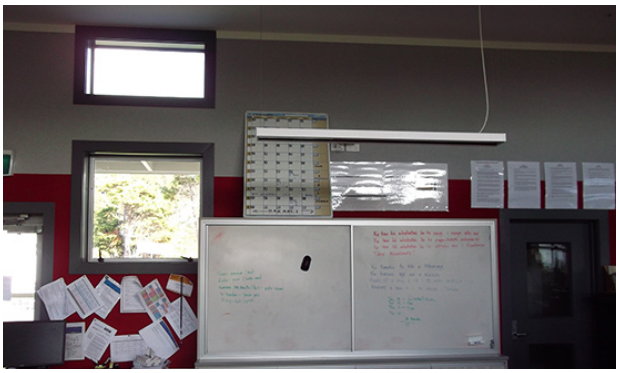
The acoustics of the junior learning environment are controlled with a mixture of a suspended ceiling tiles, pinboard panels on internal walls (Autex or similar), and carpet tiles. Each junior studio has transparent internal glass sliding doors on both sides, separating each studio space. A considerable amount of reverberation is evident due to the amount of glass surfaces. Three out of the four walls in the middle two studios are mainly glass. It was stated in the interviews that the acoustics in these particular studios were not as effective as the two outer studios. The kura stated that they kept the glass doors between the studios closed most of the time as they believed it was less disruptive.

The ceilings in the senior learning environment are finished with plasterboard; pinboard panels on the walls and carpet tiles on the floor. The plasterboard ceiling acoustics could become problematic in the future, if and when, the senior learning studios reach capacity (particularly the studio with resilient flooring). The senior studios are divided by small breakout spaces with lower ceilings. This strategy will assist in reducing the reverberation and transmission between each studio.

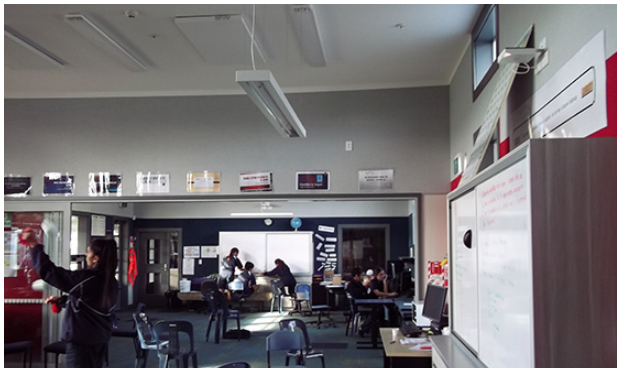
The majority of the walls are fitted with floor to ceiling acoustic pinboard panels, whereas the junior block walls were only fitted with 1200mm wide bands. During the interviews it was stated that the acoustics in both the senior block and the technology spaces were performing well.

The acoustics of both the junior and senior learning environments were evaluated on a typical day. The junior learning environment was near capacity and the senior learning environment was operating at approximately 60%. As the kura did not engage with the surveys their perception of acoustic performance is not completely understood.

Junior learning environment



Floor to ceiling pinboards in senior learning environment



Floor to ceiling pinboards in senior learning environment

Senior learning environment

5.6 Interiors Continued

Artificial Lighting

The junior learning environment had recessed ceiling lights. Artificial lighting appeared to be well distributed throughout the space and effective at the time of evaluation.

The senior learning environment had surface-mounted lighting. They appeared to be well distributed throughout the learning environments and effective at the time of evaluation.

The library and administration spaces use recessed ceiling lights. The artificial lighting in these areas appeared to be well distributed throughout and effective at the time of evaluation. During the interviews it was stated that the artificial lighting was working well for the kura.

Natural Day-Lighting

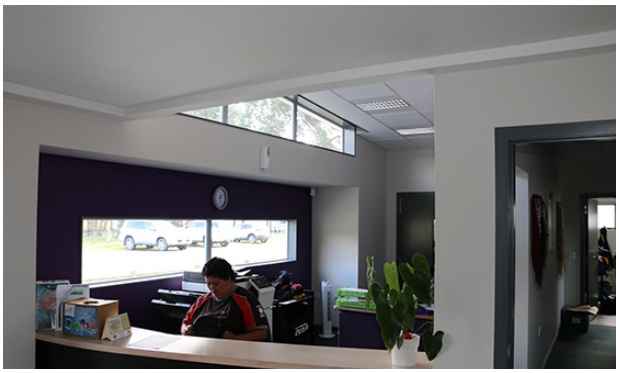
Day-lighting is generally controlled on the courtyard side of the kura by the external curved canopies. The junior learning environment faces towards the courtyard. Three of the four studios only have south-facing windows to capture day-light. The end studio does not have a withdrawal space behind it and therefore has daylight from the north and south. The evaluation team considered this to be beneficial to the learning studio. The withdrawal spaces connected to the studios are facing north-west. These rooms have little or no protection from solar heat gain and it is recommended they have a shading device installed (external preferable).

The Master Plan has positioned the learning centres in a semi-circle (hammerhead) shape. Therefore, each building faces a different way in relation to north. This has resulted in the users experiencing a wide range of day-light quality in the studios and withdrawal spaces. During the interviews it was noted that in summer there is too much glare, and over heating occurs in the staff room, Principals office, library resource room, the withdrawal spaces in the junior learning centre, and the administration area. These spaces are generally the spaces facing north-west or west with little or no solar protection. Some of these spaces do not having opening windows. The evaluation team considered that the buildings are not sufficiently responding to the orientation they are facing. As the kura did not engage with the surveys their perception of day-lighting is not completely understood.

South facing windows in junior learning studios

End studio with north and south facing windows

Resource room off the library



Reception area

5.6 Interiors Continued

ICT

The kura uses fixed computers and digital devices to assist with their teaching. The junior learning environment is comprised of two to four fixed computers per studio. Due to the current size and layout of these rooms there is no space available for additional fixed computers, only flexible digital devices. The senior learning environment has withdrawal spaces with fixed computers and other IT equipment. During the interviews it was stated that the senior space had sufficient digital resources and it was working well for the users.

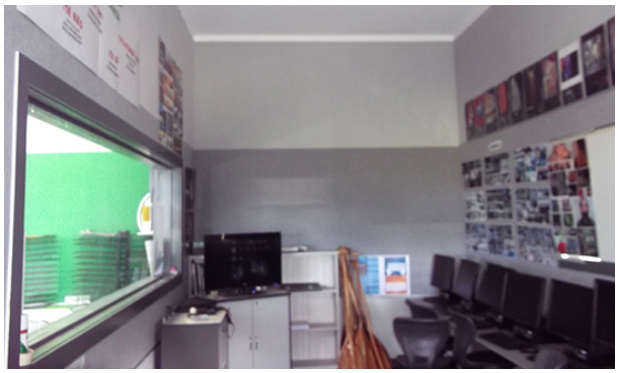
The library space had seven or eight fixed computers for timetabled use. A digital TV provided users with good access to online resources for group teaching. It was stated in the interviews that this was a positive attribute as the students, staff and community could utilise the teleconferencing capabilities to connect with other kura or educational leaders. It is an important capability for all MLE, especially for relatively isolated schools. By distributing additional digital resources throughout the kura, rather than just the library, the kura would have better accessibility to their cultural groups for education, performance, competition etc.

The kura has a clear educational vision and it is constantly developing their ICT strategy to align with this. IT development is managed from within the kura, with assistance from a professional IT company when it is required by the kura. During the interviews it was stated that the staff and students were experiencing computer/server connectivity problems. It was also expressed that the digital devices in the junior block could not connect effectively which the kura said inhibited their learning opportunities. Connectivity had been an issue since the kura opened and it was still unresolved at the time of this evaluation.

Library area with digital TV

Fixed computers in library area

Fixed computers in junior learning environment



Fixed computers in senior learning environment

Fixed computer in junior learning environment

5.7 Energy and Services Strategies

The design team did not adopted a sustainable rating scheme for the buildings or infrastructure (Greenstar or similar). During the interviews it was stated that the energy consumption of the new buildings was higher than expected. The evaluation team quantified the kura's energy usage over a 12 month period and noted 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 made.

Water

The location of the kura means it is reliant on a potable water system. The roofs collect the water for consumption and for the sprinkler system. It was stated during the interviews that insufficient water storage was provided. Geographically, this kura has limited rainfall for relatively long periods throughout the year, therefore the kura must be very careful with its water consumption.

Services documentation was not available for this evaluation. In order to make a compressive recommendation on this issue, the evaluation team suggests that a detailed investigation is undertaken.

The potable water tanks

The sprinkler tank draws from the potable water tanks

5.8 Feeling Safe

The kura opens out onto a large central area, which has excellent passive-surveillance. The kura boundaries are generally fenced with either beach or bare coastal land beyond. During the interviews it was stated that the kura had a great relationship with the community and no vandalism of note had occurred. As the kura did not engage with the surveys, the users' perceptions of safety and bullying is not understood.

The central area has excellent passive-surveillance

5.9 Long Life, Loose Fit

At the time of this evaluation, the kura had been operating in their new facilities for 1.5 years. During this time the role has grown. Although exact numbers are not available, it appeared to the evaluation team that the junior learning environment was at, or near, capacity with the senior learning environment being utilised at approximately 60% capacity. The learning studios have tables and chairs that are adjusted to create the required space for learning. It was stated in the interviews that the furniture is working effectively.

A residential method of construction, combined with a commercial structural approach, has been applied to the junior learning environment's structure. This effectively limits the amount of bracing or load bearing on its internal walls, allowing the internal spaces of the building to be adapted should the need occur. The ceiling's mono-pitch roof is generous in height at one side of the building but slopes down to only 2.1m in the withdrawal spaces (as discussed in section 5.6 Interiors), which could potentially limit the flexibility of the overall space for future alterations. Due to the low ceiling height it is likely these spaces will be limited to storage spaces, or similar, in any future refurbishment projects as they are not recommended for effective learning environments. Unfortunately no construction documents were available for this project to verify our observations, therefore professional assumptions have been made about the construction.

Even though the Master Plan successfully represents the kura's concept, it does not appear to allow for significant growth. The new buildings have been placed between the road, the sports fields, the hard-court and the new asphalt car park. If role growth occurs, any future buildings will need to be positioned away from the existing learning centres. These new buildings will need to be connected by hard landscaping, and possibly canopies. A more cost-effective growth strategy should have been designed into the Master Plan.

The new classroom buildings have timber foundations, and although not ideal, it may be viable to reposition them on the site to allow for additional facilities to be built, should it be required. The kura's current role is near capacity, therefore a growth strategy may need to be implemented in the near future.

Junior learning environment building

Junior learning environment building

5.10 Successful Whole

The evaluation team, on the day of observation, believed the kura's facilities to be pleasant and well maintained.

At the conclusion of the on-site evaluation, the evaluation team asked those interviewed if they had any final comments;

The common responses were:

1. There is "not enough display area in the junior studios"
2. "The junior studios are, at times, too warm and are uncomfortable in summer"
3. Resource room off the library is "too hot with poor ventilation"
4. "The Lundia shelving system is poorly located within the kura". The kura stated that a more accessible and central location would have been preferable for both junior and senior teaching staff.

   (Evaluation team observation: It appears that a designated area for the Lundia shelving system was not allowed for in the Master Plan. The kura have set up the shelving system inside one of the junior students' withdrawal spaces. This is not an ideal solution as the space is small and teaching resources will continue to grow over time. There is also only one access point into the room through the main studio which can be disruptive to students).

Not enough display space in the junior studios

West-facing windows in the resource room off the library

Lundia shelving system in the withdrawal space

5.10 Successful Whole (continued)

At the end of the on-site evaluation, the evaluation team asked those interviewed what parts of the kura they were most pleased with and what was most useful to them or the students.

The top three responses were:

1. The "shark-head" narrative used within the design (central outdoor area)
2. The continuous external canopies
3. The proximity of the learning environments to the sports fields

Central outdoor area

Continuous external canopies

Senior block on left-hand side, junior block on right-hand side, and central outdoor space in middle

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