

POST OCCUPANCY EVALUATION

ORMISTON PRIMARY SCHOOL Flat Bush, Auckland



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1 EXECUTIVE SUMMARY

1.1 SCOPE OF POST OCCUPANCY EVALUATION

The Ministry of Education (MoE) commissioned Opus International Consultants Ltd to undertake a Post Occupancy Evaluation (POE) of the buildings and immediate exterior at Ormiston Primary School, Flat Bush, Auckland. The purpose of the review in accordance with the commissioning brief was to: -

Evaluate the effectiveness of the design and procurement *process*.

Evaluate the end *product* of the completed school facility in terms of its compliance with the MoE guidelines.

Evaluate the *performance* of the completed school as a suitable learning environment.

The aim of the evaluation survey is to identify the positive and negative aspects of the new school project and give recommendations that will increase the effectiveness of future school development projects. These aspects have been identified through an interview with key school staff, observations made by the survey team, and ad-hoc discussions with staff and users during the survey of the school. The key recommendations identified have been categorised into two sections, general and school specific.

This report and evaluation has been prepared based upon the MoE standards, the building code and relevant NZ standards in place at the time of the design and construction of the school. Comparing the school's design and specification to these sources provides comparative observations which will help inform the continued evolution of the MoE's guidelines.

1.2 BACKGROUND

Ormiston Primary School is a state primary school for students in Years 0 to 6. The school is located in the rapidly expanding area of Flat Bush in South Auckland, to the east of the southern motorway. The school is located alongside the sites for Ormiston Junior College (currently under construction and due to open in 2017) and Ormiston Senior College, opened in 2011.

The school was designed by ASC architects during 2013, and was constructed by Arrow International NZ) Ltd between April 2014 and January 2015. The buildings consist of one single two storey building containing a multipurpose space, administration, and four classroom spaces, and a standalone caretaker shed. The grounds feature outdoor paved and grassed areas in addition to courts, shared playing fields and a carpark.

1.3 CONCLUSION

Ormiston Primary School presents an attractive and modern learning environment that caters well to the activities and needs of a primary school.

There are many positive aspects within the school which are the result of a good approach to design and appropriate specification of materials and components. The features within the school are generally highly accessible and easy to operate, while maximising safety where possible, minimising complexity and reducing the maintenance requirement. The fully Autex-lined learning space walls provide flexibility in the arrangement of furniture and of student display areas. The wet areas are well specified to shed water and make cleaning easy. The sliding windows eliminates any overhang onto covered ways and the circulation route through the building. The provision of ready-lawn to a small section of the grounds allowed some of the turfed areas to be available to students at occupation of the school.

Users of the school have highlighted the need for an increase in the number of drinking fountains, the quality of the turfed playing surfaces, the quality and safety of (for school users) protective service enclosures on site, and protection from weather for the outdoor learning spaces. There are relatively simple design solutions that could be implemented to resolve these, and it is worth considering these in conjunction with the development of the junior college to the west to ensure the best result is achieved for all stakeholders.

In conclusion, the facilities meet the needs of the users very well. The head of school and staff reported that they were happy with how the facilities cater to their needs and provide for flexibility. They look forward to being part of the development of the area, the local community and of their school itself.

1.4 KEY OUTCOMES

A number of specific design elements were identified at Ormiston Primary School that show good practice. These include:

- Internal surface materials throughout Ormiston Primary School meet the requirements of the various school areas well. Carpet tiles are used throughout, making maintenance simpler and more cost effective while allowing appropriate variation in the floor surfacing to be in line with the use of particular area or learning space. The entirely Autex-lined walls provide flexibility in the arrangement of furniture, as well as providing additional space for student display which was appreciated by staff.
- Fixtures and fittings in bathrooms and wet areas are of high quality and allow easy access for cleaning. Effective drainage of splashed water is present, with good-practice sealing between fixtures and adjacent linings and effective runoff paths to floor drains.
- The claddings and roofs are of tried and tested materials, avoiding complex and problematic junctions and making the ongoing maintenance requirement low. For schools without permanent maintenance staff this simplicity of design and maintenance is advantageous, as it minimises the need for specialist maintenance contractors.
- The provision of a section of the grounds in ready-lawn for occupation of the school enabled students to make use of some of the grounds while the remainder was establishing. This was greatly appreciated by staff and students.
- The provision of rubber corner protection to any exposed corners of cladding around the building has made the exterior of the buildings safer for the students.

1.5 GENERAL RECOMMENDATIONS

A number of general recommendations have been identified as a result of the survey and interview at Ormiston Primary School. These include:

- Users at Ormiston Primary School suggest that the current allowance for storage of teaching equipment and resources is insufficient.
- The school's passive ventilation system relies on the opening of windows. The windows within the upper storey learning spaces are restricted from opening beyond 100mm to eliminate the risk of students falling from height. However, the restricted window openings impact the passive ventilation principles of the building's design.
- A simplified user manual for the operation of essential building systems (HVAC, lights, doors, mechanical systems) as a requirement of handover would assist staff in understanding how to use and maintain them from the outset. The as-built and manuals package is perceived by staff as too complex to make use of. A simplified user manual may assist in ensuring knowledge of the operation of the building is retained within the current school staff when personnel changes occur.
- Several instances have been identified where sharp edges or exposed fixings present a potential health and safety (H&S) hazard. These were primarily found on service enclosures on school grounds, at the bottom of external overhead lighting, and on downpipes on the building.
- Where new playing fields are to be established on the school site they need to be prepared and sown earlier in the construction phase where practicable. This would ensure the grass has the opportunity to establish itself to the level required for handover prior to the opening of the school. The provision of a section of grassed area in ready-lawn is one method of ensuring part of the overall grassed area is available at occupation.

1.6 ORMISTON PRIMARY SCHOOL – SPECIFIC COMMENTS

A number of school-specific recommendations and comments were identified from the survey and discussions at Ormiston primary:

- There are few drinking fountains on the school grounds at Ormiston Primary School. At present only one fountain is located near to the learning areas.
- Ensure school staff are adequately instructed on ongoing compliance and maintenance requirements for building systems within the school. This will ensure ongoing maintenance and compliance requirements are understood, and the requirements of product warranties is met. The staff at Ormiston Primary School reported that the 1-hour handover run-through of the buildings systems was insufficient.
- A wind tunnel effect has been created by the current building layout, between the library and a learning space on ground level.
- The users have expressed concerns regarding the security of student belongings. The current layout has exposed and non-lockable storage for student bags located in the open within the pedestrian route through Ormiston Primary.
- Users identified a lack of adequate ventilation in the upper storey learning spaces and staff room. The sliding windows cannot be opened more than 100mm, which according to users is not wide enough to allow enough fresh air into the learning spaces. An alternative means of fall protection (such as a metal mesh for example) could be installed to the upper level windows which would allow them to be opened beyond the 100mm they are currently restricted to, and greatly improve the performance of the passive ventilation.

1.7 COMPLIANCE WITH STANDARDS AND SPECIFICATIONS

The Ministry of Education wishes to understand how building standards and specifications are being met. This will help the Ministry gauge their property solution at the school in terms of technical performance, functionality, operational processes and examine buildings as they are used by various stakeholders.

A quantitative assessment of compliance of Ormiston Primary School has been undertaken, based upon analysis of project documentation provided by the MoE. The register shows that Ormiston Primary School has successfully complied with all the Ministry of Education design guidelines, New Zealand Standards, NZ Building Code guidance and territorial requirements applicable at the time of design and construction of the school that were assessed.

Further detail regarding the compliance of Ormiston Primary School can be found within section 5 *COMPLIANCE REGISTER* of this report. Additional compliance documentation can be found in *Appendix 6.1 COMPLIANCE DOCUMENTATION*.

2 SURVEY METHODOLOGY

The evaluation methodology is based on the UK Building Research Establishment (BRE) early stage POE methodology combined with specific MoE design requirements covering the procurement process from inception to completion, as well as relevant New Zealand and territorial requirements and standards. The three main assessment criteria used for the investigation are Process, Product and Performance.

PROCESS

This aspect of the POE seeks to identify how well the project performed using both a generic construction industry assessment framework and the MoE design requirements. The information will be collated from contract documentation provided by the MoE and interviews with MoE project representatives.

PRODUCT

This aspect of the evaluation seeks to understand the extent to which the facilities meet the core elements of the MoE design requirements.

PERFORMANCE

The final element of the evaluation seeks to determine the contribution that the facilities make towards the MoE goal of excellent educational outcomes. Three key elements of this assessment are functionality and fitness for purpose.

The information gathered under the above assessment criteria is collected by way of an interview with key school staff using a structured template of questions, one-to-one discussion with users of the school, observations and measurements made during a survey of the buildings and grounds, and analysis of project documentation provided by the MoE. The data is then collated under four headings in order to examine how specific building features perform and compare to the MoE design criteria and relevant New Zealand and territorial standards and requirements of the time for: -

- Accessibility
- Health & Safety
- Modern Learning Environments
- Sustainability



Figure 1

3 BACKGROUND OF THE SCHOOL

Ormiston Primary School is a state primary school for students in Years 0 to 6. The school is located at 291 Ormiston Road, Flat Bush, Auckland. The vision for the school is to "Guarantee that every learner engages in innovative, personalised world-class learning".

Taking enrolments from the southern sector of Flat Bush, Ormiston Primary School opened with a roll of 103 and currently has a roll of approximately 280 students. Additional buildings are intended to take the capacity to 700 students. The school currently has a number of Year 7 students, these students will move to the adjacent Ormiston Junior College, currently under construction and planned to open in 2017.

The school was designed by ASC architects during 2013, and was constructed by Arrow International NZ Ltd between April 2014 and January 2015. The buildings consist of one two-storey building containing a multi-purpose space, administration area and four modern learning spaces. The grounds feature a central paved outdoor courtyard and seating area, playing fields to the South, hard playing courts, an on-site car park and a standalone caretaker's shed. The master plan indicates the future learning spaces will be to the north of the current school building.

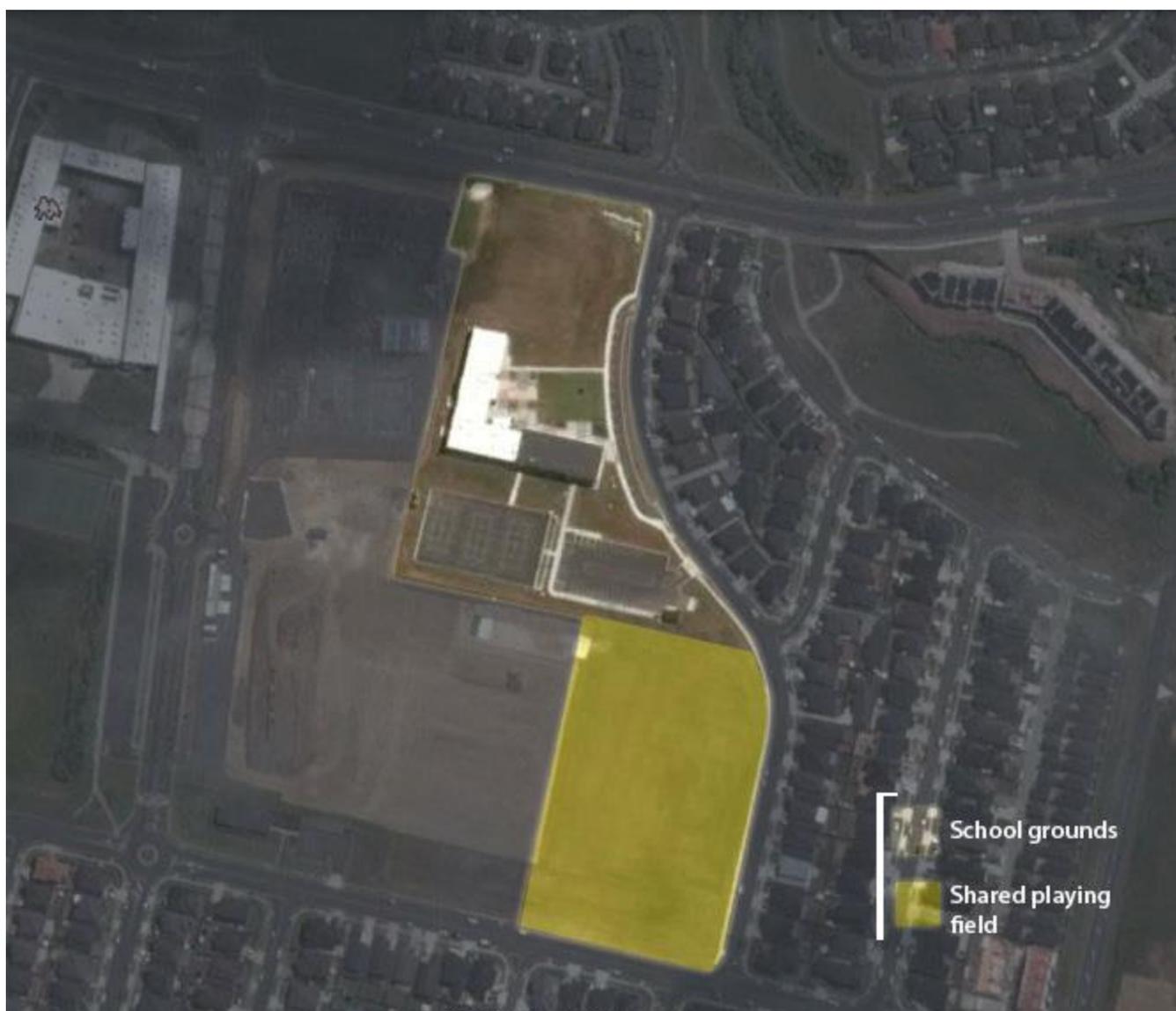


Figure 2

4 EVALUATION

4.1 ACCESSIBILITY

Positives: -

- The pickup/drop-off zone is positioned in front of the school, and is separate from car parking areas. There are accessible car parks provided within the pick-up/drop-off zone directly adjacent an accessible path to the buildings. See Figure 3 of the drop off zone.
- Accessible visitors car parks are provided within the separate car park as close to reception as possible. The pedestrian route from the car park to reception is accessible for high dependency users via a concrete path and ramp with the accessible handrails provided. Figure 3 and Figure 4 show the accessible car park within the drop-off zone and within the car park respectively. Figure 5 shows the pathway from the car park to reception.
- Access for emergency vehicles is provided from within the pickup/drop-off zone. Removable and lockable bollards are in place adjacent to the roadside of the school buildings, which provide a barrier between student and vehicle areas, while enabling access to vehicles in an emergency. See Figure 6.
- Circulation routes generally connect all areas of the school with a clear and simple accessible route, which the simple L-shaped building layout assists. Hallways are wide and unobstructed by services. As the building is two storey, there are lifts from the covered ways to provide access to all levels for high dependency students.
- The layout of Ormiston Primary School is such that it will provide pedestrian flow through to the adjoining junior college when it is completed. See Appendix 6.3 for how this connection is planned to function.
- Since the school opened signage has been installed, which staff report has made the main entry to reception far more easily locatable for visitors coming to site.
- The building layout is easily understood by users, assisting with wayfinding through its looping circulation route. Tactiles are provided at lifts and footings of stairs to support sensory way finding for users. See Figure 7.
- Building entrances are well located and designed for accessibility. They are well lit and protected from weather, as well as providing a level approach for accessibility for disabled persons. Additional lips were installed at some building entrances post-build to provide level access from all entrances.
- The Principal reports that the school has been received well by the local community. Local community groups make use of the school's facilities, such as the multipurpose space, out of hours. The block containing the multipurpose space and administration area is separately securable from the rest of the school.
- The Principal described the roller doors on the northern wall of the Multi-purpose space as exceptional. The ability to open up the



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7

space to the outdoor paved and grassed areas to the north was appreciated as it simplifies access to this space for larger groups, and provides greater connection to the grassed playing fields.

- Staff reported that the large amount of glazing to walls in the Multipurpose Space greatly assists oversight to the grounds. See Figure 8, looking from the south through the multipurpose space.

Negatives: -

- There was no pathway provided from the school buildings to the paved playing courts in the original design. The only means of access was via the path to the car park, then from the car park to the playing courts. An additional path between the school buildings and paved playing courts has since been provided. See Figure 10.
- The Principal reports that doors can be difficult to open for students. The door closers provide too much resistance to opening for the students to operate, thus creating a potential H&S concern in case of emergency.
- The means of access to the hard surfaced playing courts from the upper level learning spaces is either via the external stairs and through the reception, or by going around the perimeter of the building. Staff reported that students using reception as a through-route is disruptive, and there is no dry or covered alternative route for use during poor weather. See Figure 11 of the reception area, looking toward the North, and Figure 12 looking south.
- The roller doors to the gym can only be opened from within the gym, and during poor weather they cannot be used as rain will enter the space. During poor weather the only means of covered access to the gym is through the reception area. The entry door to the south has no cover. See Figure 13 of the gym roller doors looking north.
- The Principal reports that the south doors from reception to the hard playing courts and carpark are too exposed. When open, the doors catch the wind and create a H&S issue. If propped open, the doors create a wind tunnel through reception. See the south reception doors in Figure 10 and Figure 12.
- A 'wind tunnel' has been formed in the external walkway through to the junior college. The walkway is at ground level between the library space and the learning spaces. A temporary measure has been put in place to mitigate the effect of the wind (a timber fence), however this has proven to be ineffective. Note that this issue may be resolved once the adjacent junior college and the pedestrian route between the schools is completed. Electronic key-fob locks have been fitted since occupation so students cannot use the problematic exits.
- There is no rear exit from the learning spaces on the south and east sides from the upper level. Staff report that for these users to access the hard playing courts they must walk down the stairs and then around the school building.
- Where the removable bollards are in place to allow access for service and emergency vehicles, there is no dropped kerb /vehicle



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12

crossing. Any vehicles coming through the emergency/service access must mount the kerb.

- The Principal indicated that the path to the south of the building was too narrow to be used as a pathway, despite users having to use this path to access the paved playing courts and car park to the south of the school. The school has extended the width of the path to meet their needs. See Figure 14 of the widened pathway.
- There was no means of access for students to the health space, Principal and teacher work areas behind reception, except by coming through reception and the administration area. The staff felt that this layout did not provide the level of availability to students that they were looking for. During the build process the school staff requested a side door be installed. It allows staff to access the administration space more easily, as well as allowing them to bring students into the teacher work spaces, health space and Principal's office without coming through the reception area. See Figure 15 with window to Principal's office and side door further down the glass wall.
- The multipurpose space and attached bathroom and kitchen facilities are not separately securable from the administration and reception space. There is no way to control access to reception by after-hours users of the multi-purpose space. Staff report that this is only an issue on rare occasions, as out-of-hours users generally respect and take care of the facilities.
- There were initial problems with vehicle flow in the car park. The car park is marked only for parks for the current capacity of the school as per Greenstar. This meant a large amount of the car park was unmarked, and vehicle flow became an issue. The school have since installed wheel stops in temporary locations to control traffic flow.



Figure 13



Figure 14



Figure 15

4.2 HEALTH AND SAFETY

Positives: -

- Where there are small protrusions into circulation routes or pedestrian paths, these have adequate corner protection on to protect students. See Figure 16.
- There are good lines of sight to the majority of the grounds from the learning spaces. The building's form provides long and clear sight lines along its perimeter and of the school grounds to the northern and eastern directions. Staff report that there are few places where users can't be seen from the upper floors.
- The reception area has good line of sight into the health space. This makes monitoring ill students less onerous for reception staff. See Figure 18 with the health space through the glass door and window to the left of the image.
- Windows do not open onto out onto circulation routes anywhere in the school. This has been achieved by specifying sliding windows. See Figure 17.
- The Principal has stated the fencing along the main roads surrounding the school is effective as a barrier for students. Pool fencing runs along the main (Ormiston) road, with timber bollard fencing between the drop-off zone and school grounds.



Figure 16

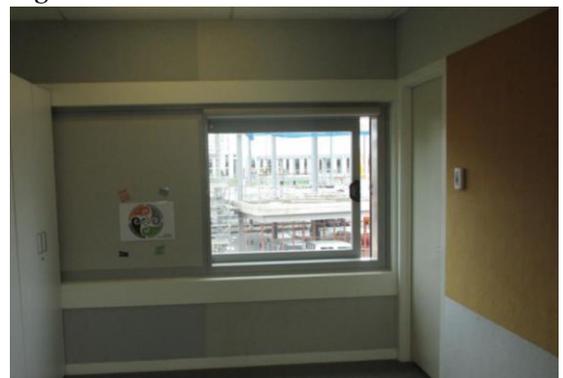


Figure 17

Temporary fencing was in place to the south and west of the school, where construction on the junior college was taking place.

- The time lock system allows flexibility in the times the facilities are used (e.g. by external community groups), by allowing the Principal to secure the buildings on a timed basis, as opposed to needing to be on site to ensure the buildings are secured after use. The Principal reported that after some initial difficulty in understanding the system, he now finds it intuitive to use.
- There is good observation into toilet lobbies from adjacent circulation areas. Large vision panels are in place in doors to allow oversight for student safety.
- Staff advised that all areas of the school appear adequately lit. Downlights and bulkhead lights effectively illuminate the building perimeter, exterior entrances and walkways. There is pole-mounted lighting to the drop-off zone and car park areas. The pole-mounted lighting includes bird protection as seen in Figure 19.
- General power outlets that may be used by students up to Year 8 are 10mA Residual Current Device (RCD) protected. The High Dependency Space has a General Power Outlet (GPO) located for the hoist/change table and a GPO adjacent to the WC.
- Each building has an alarm sounder system to notify occupants when there is an emergency. The High Dependency Space has an emergency call button within reach of the WC.
- All toilets, kitchens and wet areas are provided with mechanical extract ventilation. This ensures any air pollutants are removed as close as possible to the source.
- Tactile features have been provided on stairs to assist with students, staff or visitors who are visually impaired. See Figure 20.

Negatives:

- The Principal reported that the polished concrete surface on the stairs and upper storey covered way was slippery, especially during and after rain. While the balustrades prevent students from slipping and falling from height, staff advised that the risk of students falling onto the concrete surface requires significant management. The Principal advised that an alternative coating was trialled to provide more friction to the surface. The two trials of the alternative coating were unsuccessful. The top layer of the polish has now been 'ground off' and this is much better solution." See Figure 22.
- The Principal reports that the doors on the south side of the school are subject to considerable wind pressure. He also reports that the floor mounted latches to hold-open doors have tripped people due to their location on circulation routes.
- The playing fields to the south cannot be seen from the reception as the carpark on the crest of the rise blocks line of sight. While intended as the shared playing field, the school encourages students to play in front of the school building instead. The location of the reception does not have full oversight of access routes into the school. Staff feel that oversight of the southern boundaries and of visitors and entrances is lacking.



Figure 18



Figure 19



Figure 20



Figure 21



Figure 22



Figure 23

- Window controls have winder handle at child's head height. See Figure 23.
- The reception desk cannot be closed off from the reception area. Staff advised that this can be a problem when counting cash, when in a lockdown situation, or when the multi-purpose space is used by a community group. See Figure 18.
- The Principal is concerned about security for student storage cubbyholes in the open walkway. He considers that this will become more of an issue once there is pedestrian traffic to the adjoining Junior College. See Figure 24.
- The plant room access ladder is too lightweight (in rated weight capacity), secured at only one point (at the top with a rope), and is on too steep an incline. WorkSafe New Zealand ladder guidance published in 2013 indicates this is not aligned with best practice for safety of ladders. See Figure 25.
- There are a number of sharp fixings and brackets to rainwater downpipes that protrude into the path of pedestrians and could cause injury. See Figure 26.
- There are minor safety concerns with the enclosures to services on the grounds (not attached to buildings). The Montrose box at the front of the school is on a lean and has no protection for children. There is a sharp edge on the canopy for the gas services enclosure, and this is located in an area where students can play.



Figure 24



Figure 25



Figure 26

4.3 MODERN LEARNING ENVIRONMENTS

Positives: -

- The Principal reports that the heating and hot water system throughout the school is good and that staff found it effective.
- The roller doors in the Multi-purpose space work well to open up this space to allow indoor/outdoor activity. See Figure 27.
- Staff reported that the installation of the Autex lining to all walls in the learning spaces prior to installation of furniture has contributed to good acoustics, a versatile display area and has allowed flexibility in furniture placement. See an example of this lining in Figure 28.
- The manual controls for the opening windows are preferred by the staff and seen as less of an invitation for children to play or tamper with controls.



Figure 27

- The passive “cross ventilation” in the lower level learning spaces is effective due to the easy use of window openings.
- Users confirm that learning areas meet the needs of the school. This also extends to the lower level external areas outside the teaching spaces where they are used for additional space, and with good shelter being provided from the walkway above.
- Users consider the practical teaching areas in the learning spaces are good. The length of the sink is good, these sinks have two taps but only one outlet – staff commented that two outlets would be better. Power outlets are located to facilitate the activities for which these spaces are used. The power supply is appropriate for specialist equipment.
- Users report the lighting system is appropriate and achieves a comfortable environment. No glare issues were reported by users.
- Overhead projectors and TV sets are provided where required. Outlets for power and data are provided also. Wireless data provided throughout. Telecommunications outlets are located to facilitate the activities for which these spaces are used.
- Outdoor learning areas and marked courts have access to a tap and drinking fountain. The drinking fountain is adjacent the entrance to the courts, and includes a tap.
- Break out rooms (quiet areas) are good for older students to use as independent learning areas, but are seen by the Principal as being less effective for the younger students who use them on an occasional basis.
- Toilets and bathroom fittings and linings are well specified and are easy to clean. See Figure 29.

Negatives: -

- The mechanical ventilation system provides fresh air when a high level of CO2 is reached. Staff report that in summer this system is ineffective as it increases the room temperature to uncomfortable levels. Hot (summer) air from outside is drawn in to the rooms by the system to provide fresh air when the CO2 sensor limit is reached.
- The staffroom on the upper level has four windows restricted to 100 mm opening. Due to this restriction there are insufficient openings to provide passive ventilation. Users report that this room is frequently uncomfortable and overheated. Users report that the upper level learning spaces also have this problem.
- Classroom areas have high level louvres on multiple manual winders. Users report these take time to wind open or closed. Normal height windows are readily used instead of louvres.
- Ceiling mounted fan coil units are used, providing fresh air/return air mix as well as air heating to some spaces. The users have complained about the systems being too complicated for them to operate.



Figure 28



Figure 29



Figure 30



Figure 31



Figure 32

- Internal breakout rooms have no mechanical or passive ventilation as there are no vents or windows opening to the exterior within these spaces, despite many of them being adjacent an external wall.
- Reception has insufficient opening windows to provide ventilation. Reception staff also identified the winders to windows are slow and noisy.
- There is no shade provided to any outdoor seating within the school grounds. See Figure 33.
- Drinking fountains are provided by the sports courts, and are considered sufficient by users for that area. However, users are concerned that there are not enough drinking fountains throughout the rest of the school. See Figure 34 of the fountain adjacent the playing courts.
- Staff commented on the lack of discreet work areas for teachers to be able to use when not carrying out formal teaching in classrooms. Staff report that the staff toilets are cramped, providing minimal space and with access problems due to poor door arrangements. The staff toilet does comply with the relevant building code standards of the time.
- The Principal has questioned the practical merit of the floor power boxes and general power point layout. The current arrangement has little use for the school operations and is not practical for either staff or students. See Figure 35.
- Users confirm that there is insufficient storage provided for school resources and equipment. The current storage provided is the standard sliding shelf units in the admin area.
- Exterior door handles to the externally accessed bathrooms near the multi-purpose space were noted to be corroding. This indicates that the steel installed is not suitable for the level of exposure they experience. See Figure 36
- The Principal reported that the original ceiling tiles in the Multi-purpose Space were not fit for purpose. The tiles *“regularly fell out onto the floor below when struck by sports balls, which prevented learners using the space without a high level of supervision.”* Fastening clips were tried as a solution but were unsuccessful, and as a result all the tiles needed replacing at the end of the first term. The new tiles were designed for a sporting environment.



Figure 33



Figure 34



Figure 35



Figure 36

4.4 SUSTAINABILITY

Positives: -

- Bicycle and scooter parks are available on site. Users report these are effective, and they appreciate these have been located in an area with good lines of sight from learning spaces for security of the bikes/scooters.
- The exterior cladding, which consists primarily of brick, fibre cement and profiled metal, has been well specified for durability. The cladding material selections meet MoE Weathertightness and durability requirements, as well as those of the building code. See Figure 38.

Carpet tiles have been installed to all learning spaces and high traffic areas. The specification of carpet tiles enables replacement of only damaged areas of the flooring, as opposed to replacing carpet through an entire room. See Figure 39.

- Ormiston Primary School has a rainwater harvesting system in place. The two large water storage tanks are located by the courts. These are linked to act as a 'first flush' system, which removes the majority of microbiological contamination. See Figure 40.
- The school has a vegetable garden area, and a worm farm for composting organic waste. These are used as an educational facility within the school. See Figure 41.
- The rubbish enclosure adjacent the car park is unused as the school has instituted a 'take-home rubbish' policy.
- Services are adequately protected while still being accessible to service personnel. External services are installed at ground level within protective cages with profiled metal roofs. See Figure 42.
- Water supply has an isolation valve system that enable maintenance and alterations, and has backflow prevention devices fitted at all sources of contamination. The water supply fixtures provide adequate pressure while minimising water use through the use of low flow outlets.
- Each separate building has an external tap that is secure and requires a key to operate, and playing fields have access to a tap.
- In all areas lighting is controlled by occupancy sensors achieving a good level of energy efficiency. Lamps are a standardised type and long life and adequately protected from the environment.
- Mechanical, electrical and plumbing services have been designed and installed with main focus on efficiency throughout the school. The distribution board is fitted with a maximum demand meter. The hot and cold water system is appropriately controlled to provide energy efficiency.



Figure 37



Figure 38



Figure 39

Negatives: -

- The Principal confirms that O&M manuals were provided but they are difficult to navigate. The one hour handover provided to staff was insufficient to appreciate and understand the amount of information provided and the operation of the facility. O&M manuals are on site but electronic copies were not provided according to staff. There was also the need for a servicing plan for the air-conditioning to be provided but none is available.
- A separate caretaker's storage shed was put up by the contractors during the build period, but does not appear to have been part of the masterplan. The door does not shut properly and the unit is already showing signs of corrosion at the base due to lack of ground clearance. See Figure 43 and Figure 44.
- Much of the grass seed was sown with insufficient time allowed to enable the grass to develop. The result has been poor surfaces with thin grass coverage, and highly uneven ground. This meant the school had to wait a whole term before the entire playing fields could be used. The Principal reported that the poor quality of grass coverage and unevenness of playing field make this inaccessible for the students due to H&S. It should be noted that due to this restriction the contractor provided a section of 'ready-lawn' directly in front of the school building, due to the lack of alternative areas for the students to occupy during breaks.
- The mechanical heating and ventilation systems are perceived as complicated for the school, and the regular maintenance requirement is onerous and disruptive to the learning environment at times. Users report that fan coil units used within ceiling spaces continue to be noisy and their maintenance causes disturbance to classes during school time. These aspects must be weighed against perceived energy efficiency and Greenstar rating.
- Ormiston Primary School's heating system is a centralised hot water system that distributes around the school. As such it is not fully zoned, so separate areas of the building cannot be separately controlled easily, and after hours heating use cannot be measured separately.
- Protective ground boxes at the base of light poles are easily damaged. These now expose the pole foundation and sharp edges to students. See Figure 45.
- The Principal reported drainage of the sports field as "woefully inadequate, with regular water runoff into and across the carpark and onto the road".



Figure 40



Figure 41



Figure 42



Figure 43



Figure 44



Figure 45

5 COMPLIANCE REGISTER

The Ministry of Education wishes to understand how building standards and specifications are being met. This will help the Ministry gauge their property solution at the school in terms of technical performance, functionality, operational processes and examine buildings as they are used by various stakeholders.

The register below provides an assessment of where the project has met both the stated Ministry and/or New Zealand design standards and specifications in place at the time of the project. This is a high level assessment of compliance based upon the documentation provided by the MoE and observations and user perceptions collected on site.

Additional compliance documentation can be found in *Appendix 6.1 COMPLIANCE DOCUMENTATION*

Summary of Standards	Yes	No	N/A	Comments
Building Act 2004 Building Regulations (NZBC) Resource Management Act 1991 Local District Plan	<input checked="" type="checkbox"/>			Building consent was approved by Auckland Council during 2014 and 2015. All aspects of the building appear to be covered in the CCC documentation. As the project received approval from Auckland Council (the building consent), this confirms the requirements of the Building Regulations, Resource Management Act and territorial requirements as they applied to Ormiston Primary School were met. Code of Compliance Certificates provided once project was built are as follows: <ul style="list-style-type: none"> - Stage 1 of 4: Foundation, Plumbing and drainage (BC 20140616) - Stage 2 of 4: Structural frame/ Amendment: Balustrade connection to stage 2 structure frame (BC 20141207/A1) - Stage 3 of 4: Building enclosed and services (architectural) (BC 20141210) - Stage 4 of 4: Internal Fitout (BC 20141762)
Building Warrant of Fitness (BWOFF)	<input checked="" type="checkbox"/>			The Building Warrant of Fitness was displayed at Ormiston Primary School as required, and was current at time of survey. This document indicates that the school is compliant with ongoing maintenance requirements of the specified systems within the buildings. <ul style="list-style-type: none"> - Compliance Schedule No. 4756.
Accessibility design for people with special needs	<input checked="" type="checkbox"/>			Based upon observations and measurements at Ormiston Primary School, the facilities are compliant with: <ul style="list-style-type: none"> - 'NZS 4121:2001 Design for Access and Mobility – Buildings and Associated Facilities'. Provision of accessible routes, ramps, balustrades, lifts, stairs, car parks, bathroom facilities, desks/counters entrances at Ormiston Primary School all meet the minimum requirement of this standard. Compliance of these aspects was assessed by site measurement and analysis of as-built drawings. Additional lips were installed at additional (originally non-accessible) building entrances (post build), which have further improved the accessibility of the entranceways to the school building.

Summary of Standards	Yes	No	N/A	Comments
Acoustics	<input checked="" type="checkbox"/>			<p>The MoE document “<i>Designing Quality Learning Spaces – Acoustics</i>” published in 2007 outlines the requirements and suggestions for improving acoustics within learning spaces.</p> <p>Observations of lining materials within learning spaces indicates that these comply with the recommendations within the DQLS. Wall linings are fabric (Autex), and ceilings are suspended tiles, and floors are carpet tiles. These materials all feature within the MoE DQLS guidelines for addressing noisy environments, high sound reverberation or transfer of noise between spaces. Insulation has been installed to exterior walls, which also reduces the sound transfer between spaces.</p> <p>Users indicated that noise was generally not an issue within the learning spaces, despite these being open plan and with several learning groups occupying them at once, which shows that the acoustic guidelines of the MoE have been complied with.</p>
Flexible Learning Spaces	<input checked="" type="checkbox"/>			<p>Ormiston is a new school, and as such the MoE requires its learning spaces to be <i>Flexible Learning Spaces</i>, which are “<i>more open than traditional classrooms and can often accommodate more than one class and several teachers. They are often made up of many different sized spaces so they can support different ways of teaching and learning and be used for different types of activities. Many spaces have glazing between them to create open and light spaces that can be indirectly supervised.</i>”</p> <p>Complying requires a number of flexible space types to be defined within the floorplans. These can be found within the <i>FLS</i> section of the MoE website under Property.</p> <p>Complying with the <i>Flexible Learning Spaces</i> requirement includes ensuring the facilities meet the <i>Designing Quality Learning Spaces (DQLS) Guidelines</i> also.</p> <p>Ormiston Primary School’s masterplan had identified all of the required space types within its facilities. These were also observed on site. Staff indicated that the main learning spaces were designed well for flexibility and encouraged students make use of the different area types in their everyday learning.</p>

Summary of Standards	Yes	No	N/A	Comments
Fencing	<input checked="" type="checkbox"/>			<p>This fencing at Ormiston Primary School is compliant with The Fencing Act 1978. The Act defines a number of terms around fencing, details the legal obligations and rights of parties constructing a boundary fence, and details the application of the act. As the MoE owns the adjacent land plots at Ormiston Primary School and is currently developing them, compliance is not onerous.</p> <p>MoE guidelines for fences are in the form of recommendations. These address aspects such as:</p> <ul style="list-style-type: none"> - Design and specification of types of fencing - Designing low visual impact fencing - Avoiding hazardous fencing (H&S Act 1992 is applicable to Ormiston Primary School) - Further details for schools catering to special needs users. <p>Fencing at Ormiston Primary School included the following:</p> <ul style="list-style-type: none"> - Metal pool type fencing (to Ormiston Road and adjacent boundaries) - Timber bollard barrier (to boundary between drop-off zone and school grounds) - Temporary fencing from the adjacent construction site - A combination of timber and metal mesh fencing to the south and west. <p>All fencing on site was compliant with the NZ standard. The permanent fencing was in line with MoE requirements, and the remaining fencing is temporary during construction of the adjacent junior college.</p>
Fire Protection and Fire Safety Design	<input checked="" type="checkbox"/>			<p>The Compliance Schedule (12A) provided as part of the BWOF indicates compliance with NZ Building Code, Resource Management Act and territorial requirements on the systems listed below:</p> <ul style="list-style-type: none"> - SS 1.1 Automatic systems for fire suppression (sprinklers) - SS 2.1 Automatic / manual emergency warning systems - SS 3.2 Access controlled doors egress - SS 4 Emergency Lighting Systems - SS 7 Automatic Back-flow preventers - SS 8.1 Passenger Carrying lifts - SS 9 Mechanical ventilation / Air conditioning systems / smoke control - SS 14.2 Signs for all systems - SS 15-B Final exits – Means of escape - SS 15-C Fire separation - Means of escape - SS 15-D Signs – Means of Escape - SS 15-E Smoke separation – Means of escape <p>According to MoE guidance, the fire alarm system must comply with:</p> <ul style="list-style-type: none"> - New Zealand Standard 4512:2010, or - School Fire Alarm Specifications (MoE SFA1 – 2006 MoE document outlining MoE fire alarm requirements for BOT members) <p>Ormiston Primary School also has an on-site evacuation plan approved by the NZ Fire Service, which is required by the MoE for all schools with greater than 100 occupants.</p>

Summary of Standards	Yes	No	N/A	Comments
Glass	<input checked="" type="checkbox"/>			<p>The current MoE requirements require Grade A Safety glass where:</p> <ul style="list-style-type: none"> - -there is a risk of people falling against it - -in all doors and panels around doors - In higher risk buildings (e.g. swimming pools and gyms) - Where glass starts less than 1.6m from the lowest point (adjacent ground/deck, etc.). Note this requirement is higher than that of NZS 4223:1999 which requires school buildings where glazing begins at 800mm or less from ground level to be safety glass) <p>We were unable to determine precisely what MoE guidelines were in place during the design of Ormiston Primary School, as MoE guidance has been updated in April 2016 according to the MoE website.</p> <p>In all other instances glass is required to be installed to:</p> <ul style="list-style-type: none"> - NZS 4223:1999 Glazing in Buildings – Human Impact Safety Requirements (note – this standard has been superseded in 2016. The 2016 amendment is not applicable to Ormiston Primary School due to it being designed and built prior to that amendment) - The particular clauses within this standard that apply only to schools include 303.9 and 303.10 <p>MoE guidelines also suggest (but do not require) implementing:</p> <ul style="list-style-type: none"> - Double glazing - Anti-graffiti film <p>The glazing at Ormiston Primary School was observed to be in line with requirements. Safety glass was installed in locations as defined above, and the install and details in the as-built drawings appeared to be in line with the NZ standard.</p> <p>The following CCC was issued that certifies compliance with the NZ standard, building code and territorial requirements is:</p> <ul style="list-style-type: none"> - Stage 3 of 4: Building enclosed and services (architectural) (BC 20141210)

Summary of Standards	Yes	No	N/A	Comments
Indoor Air Quality and ventilation / Air Conditioning	<input checked="" type="checkbox"/>			<p>Ventilation complies with the functional and performance requirements of NZBC Clause G4 Ventilation.</p> <p>The specified mechanical ventilation/ air conditioning systems within the building are shown to comply with BWOFF compliance requirements under:</p> <ul style="list-style-type: none"> - SS 9 Mechanical ventilation / Air conditioning systems / smoke control <p>The BOWF compliance document above proved compliance with the following standards and codes:</p> <ul style="list-style-type: none"> - NZBC G4/As1 - NZS 4303:1990 – Ventilation for acceptable indoor air quality - AS/NZS 1669.2:2002 - AS/NZS 5261:2003 <p>The PS3 (Producer Statement 3) certifies that the contractor constructed these elements as per the relevant standards and consented drawings.</p> <p>MoE requirements for ventilation and Indoor air quality are part of the document “Designing Quality Learning Spaces: Ventilation and Indoor Air Quality”.</p> <p>Based upon user comments and observations, Ormiston Primary School complied with the “Best Practice” guidelines on pg51 of this document. The ventilation systems were automatically operated by CO2 sensors within Ormiston Primary School, and this system provided air quality within the acceptable range as per NZS 4303.</p>

Summary of Standards	Yes	No	N/A	Comments
Lifts in School Buildings	<input checked="" type="checkbox"/>			<p>Lifts were compliant with current MoE requirements. These were used to assess the lift as time relevant MoE standards for lifts were unable to be determined, and current building code and standards have been unchanged since 2001:</p> <ul style="list-style-type: none"> - Lifts shall be commercial quality with a fully enclosed car (must have internal walls). No platform or stair lifts. - Internal lift-car dimensions are at minimum 1800mm x 1500mm to provide enough space for a student in a motorised wheelchair and a carer to be able to manoeuvre. - Lift controls should be mid-way on side wall/s (may be in addition to controls positioned adjacent to the lift doors). - Car entry doors should be bi-parting (have 2 doors that open from the middle). <p>The BWOFF schedule shows compliance with both performance/installation standards and the inspection and maintenance requirements. The specified system requirements in place are those of the NZ Building Code, noted as:</p> <ul style="list-style-type: none"> - SS 8.1 Passenger Carrying lifts <p>This shows compliance in design and performance with the following NZ Building standards and codes:</p> <ul style="list-style-type: none"> - NZS 4332:1997 - NZS 4121:2001 Design for Access and Mobility – Buildings and Associated facilities - NZBC D2/AS1 <p>The lifts provided are in accordance with Section 118 of the Building Act, which requires that people with special needs have access to every part of that building.</p> <p>The lifts are also in accordance with Section 9 of NZS 4121:2001 Design for Access and Mobility – Buildings and Associated Facilities.</p>
Lighting	<input checked="" type="checkbox"/>			<p>The compliance schedule provided as part of the BWOFF indicates compliance on the systems listed below:</p> <ul style="list-style-type: none"> - SS 4 Emergency Lighting Systems <p>This shows compliance in design and performance with the following NZ Building Code Standards:</p> <ul style="list-style-type: none"> - NZS 2293.2:1995 (UPS for emergency lighting) <p>For a Building Consent to be approved by Auckland Council, the lighting design of Ormiston Primary School needed to comply with the following standards:</p> <ul style="list-style-type: none"> - AS/NZS 1680.2.4 1997 – Interior lighting – Part 2.4: Industrial tasks and processes - AS/NZS 1680.1 – Interior and workplace lighting – Part 1: General principles and recommendations <p>Users indicated that the lighting was satisfactory throughout the interior spaces, and that the perimeter and flood lighting was effective also.</p>

Summary of Standards	Yes	No	N/A	Comments
Security	<input checked="" type="checkbox"/>			<p>Observations at Ormiston Primary School show that it complies with MoE requirements for security design in schools, including the <i>2002 MoE Standard specification for the supply and installation of a security alarm system Part 2</i> (Technical Specification).</p> <p>This document includes a requirement for compliance with the following NZ standards, which building consent approval shows:</p> <ul style="list-style-type: none"> - NZS 4301:1993 Intruder Alarm Systems - NZS 4512:1997 Fire Alarm Systems in Buildings - NZ Electrical Wiring Regulations 1976 and Amendments - NZ Radio Interference Regulations and Interference Notices (Radio and Television) - NZS 127:1949 Steel conduit and fittings (BS 31) - NZS 1300:1965 General requirements for electrical appliances and accessories - NZS 4219:1983 Seismic Resistance of Engineering Systems in Buildings - NZS 6207:1892 Electrical wiring, UPVC conduit - NZS 6601:1980 Safety requirements for mains operated electronic and related apparatus for household and similar use - NZS 9002:Quality Systems and Installation <p>The school also complies with current MoE requirements, which include:</p> <ul style="list-style-type: none"> - Security system provided which discourages people entering the school without permission, alerts staff neighbours and passers-by that someone has entered without permission, can scare off intruders before they steal/do damage, alerts security guards. - <p>The school also has a lock-down function for student security, should an intruder enter site.</p>
Sprinkler systems	<input checked="" type="checkbox"/>			<p>The Compliance Schedule provided as part of the BWOFF indicates compliance on the systems listed below:</p> <ul style="list-style-type: none"> - SS 1.1 Automatic systems for fire suppression (sprinklers) <p>Ormiston Primary School is fitted with an automatic fire sprinkler system installed to NZS 4541 2013 NZBC C/AS1.</p> <p>This system is connected to the NZ Fire Service through a signal generating device.</p> <p>The sprinkler system is a heat activated system which is linked to alarm the NZ Fire Service.</p>
Structural and Geotechnical design	<input checked="" type="checkbox"/>			<p>The Building Consent issued by Auckland Council covered the structural and geotechnical aspects of the engineering and design in the following documentation:</p> <ul style="list-style-type: none"> - Stage 1 of 4: Foundation, Plumbing and drainage (BC 20140616) - Stage 2 of 4: Structural frame/ Amendment: Balustrade connection to stage 2 structure frame (BC 20141207/A1) - Stage 3 of 4: Building enclosed and services (architectural) (BC 20141210) - Stage 4 of 4: Internal Fitout (BC 20141762) <p>These Code of Compliance Certificates show that these aspects met NZ Building Code and Territorial Authority requirements.</p>

Summary of Standards	Yes	No	N/A	Comments
Toilets	<input checked="" type="checkbox"/>			<p>Compliance of bathrooms and toilets is assessed against:</p> <ul style="list-style-type: none"> - NZBC G1 Personal Hygiene (October 2011) <p>This standard sets out spatial requirements of bathrooms, as well as the required provision of sanitary fixtures for the number of occupants in the building. It defines how many people the facilities must be designed for (a factor of the total number of users of the building), as well as, for example, details such as number of urinals per cistern.</p> <p>There were no further requirements specific to the MoE at the time of design of Ormiston Primary. The design of the bathrooms meets the intent of NZBC G1, and meets the spatial and layout requirements set out in NZBC G1/AS1. The requirements are met in terms of provision of number of sanitary fixtures, baths and showers for number of occupants in the school.</p>
Weather-tightness	<input checked="" type="checkbox"/>			<p>A weathertightness review was performed on the final documents for the school by consulting firm Mott MacDonald. The review, dated 25 September 2014, confirmed that <i>“As a result of this process we can confirm that there are now reasonable grounds for believing that the design complies with sound weathertightness practice.”</i></p> <p>The documents reviewed were dated 27 August 2014. The project was reviewed at Developed Design Stage (06/03/14 and 29/04/14). The designers responded to these reviews on 1/6/14, and a third commentary document/review was issued on 27/8/14. These timings appear to fall appropriately within the project timeline. Approximately 12 issues were identified for resolution prior to construction.</p> <p>The current MoE weather-tightness and Durability requirements for schools were published in August 2014, and are therefore not applicable to Ormiston Primary School. MoE requirements that were in force at the time of the design and construction of Ormiston Primary School were not available for reference.</p> <p>Observations on site revealed that the selected claddings and materials are in line with current MoE requirements listed in the August 2014 Weathertightness and Durability Requirements.</p>

6 APPENDICIES

6.1 COMPLIANCE DOCUMENTATION

The following documentation has been appended to this report as evidence of compliance with the relevant MoE guidelines, NZ standards and requirements of the territorial authority:

- Code of Compliance certificates
- Compliance Schedule (BWOFF)
- PS3 General construction work
- Weathertightness review

04 AUG 2015

27 July 2015

Arrow International Ltd
1 Broadway
Newmarket
Auckland 1023
Attn: Michael Bowman

Dear Sir or Madam

Building consent number:	20141210
Address:	291 ORMISTON RD FLAT BUSH 2016
Description:	STAGE 3 of 4: Building enclosed & services (architectural)
Area Office:	Manukau Building Consultants 277 Te Irirangi Dr, Flat Bush, Auckland 2016 (09) 272 7890

Code Compliance Certificate (CCC) approved

We refer to the building consent for the above described work. Please find attached your code compliance certificate issued under s.95 of the Act, which confirms the satisfactory completion of this project.

If you have any further queries regarding this matter, please contact the undersigned on (09) 262 8967 option 2 or email quoting the above building consent number.

Yours faithfully



Keita Tofilau
Building Support Team
BUILDING CONTROL - SOUTHERN
Email: bconsent@aucklandcouncil.govt.nz

Code compliance certificate

Section 95, Building Act 2004
(Form 7 – Building (Forms) Regulations 2004)



THE BUILDING

Building consent number:	20141210	Date building consent issued:	13/06/2014
Street address of building:	291 ORMISTON RD FLAT BUSH 2016		
Legal description of land where building is located:	LOT 3 DP 478463		
Building name:	285-291 ORMISTON RD FLAT BUSH - Ormiston Primary School		
Location of building within site/block number:	285-291 ORMISTON RD FLAT BUSH	Level or unit number:	
Currently, lawfully established use: [include number of occupants per level/land per use if more than 1]	Communal non-residential		
Year first constructed:	2014		

THE OWNER

Name of owner:	HER MAJESTY THE QUEEN (EDUCATION PURPOSES)		
*Contact person:			
Mailing address:	Private Bag 92644, Symonds Street, Auckland 1150		
Street address/ Registered office:	Level 3, Eden Building, , Cnr Edwin street & Normanby Rd, Auckland		
Phone Number:	Landline:	Mobile:	
Daytime:	09 632 9457	After hours:	Facsimile No: 09 632 9401
Email address:	colleen.tebbutt@minedu.govt.nz		
Website:			

FIRST POINT OF CONTACT FOR COMMUNICATION (Must be in New Zealand)

Full name:	Manukau Building Consultants		
Mailing address:	PO Box 76 516 Manukau City, 2104		
Street address/ Registered office:	277 Ti Irirangi Drive Manukau City, 2104		
Phone Number:	Landline:	Mobile:	
Daytime:	2727890	After hours:	Facsimile No: 2727892
Email address:			

Code compliance certificate

Section 95, Building Act 2004
(Form 7 – Building (Forms) Regulations 2004)



BUILDING WORK

The following building work is authorised by this building consent:

STAGE 3 of 4: Building enclosed & services (architectural)

CODE COMPLIANCE

The building consent authority named below is satisfied, on reasonable grounds, that:

- ✓ The building work complies with the building consent;
- ✓ The specified systems in the building are capable of performing to the performance standards set out in the building consent.

ATTACHMENTS

- ✓ Compliance schedule

On behalf of Auckland Council:

Date issued:

27/07/2015

Print name:

Ian McCormick

Position:

Manager, Building Control

Auckland Council, Private Bag 92300, Auckland 1142

28 July 2015

Arrow International Limited – Michael Bowman
1 Broadway
Newmarket
Auckland 1023

Dear Sir or Madam

Building consent number:	20141762
Address:	291 Ormiston Road, Flat Bush 2016
Description:	STAGE 4 of 4: Internal fitout
Area office:	Manukau Building Consultants 277 Te Irirangi Dr, Flat Bush, Auckland 2016

Code Compliance Certificate (CCC) approved

We refer to the building consent for the above described work. Please find attached your code compliance certificate issued under s.95 of the Act, which confirms the satisfactory completion of this project.

If you have any further queries regarding this matter, please contact the undersigned on (09) 262 8967 or email quoting the above building consent number.

Yours faithfully



Sohail Mohammed
Building Support Team
BUILDING CONTROL- SOUTHERN
Email: bondrefunds.manukau@aucklandcouncil.govt.nz

Code compliance certificate

Section 95. Building Act 2004
(Form 7 – Building (Forms) Regulations 2004)



THE BUILDING

Building consent number:	20141762	Date building consent issued:	26/08/2014
Street address of building:	291 ORMISTON RD FLAT BUSH 2016		
Legal description of land where building is located:	LOT 3 DP 478463		
Building name:	285-291 ORMISTON RD FLAT BUSH - Ormiston Primary School		
Location of building within site/block number:	285-291 ORMISTON RD FLAT BUSH	Level or unit number:	
Currently, lawfully established use: [include number of occupants per level/land per use if more than 1]	Commercial		
Year first constructed:	2015		

THE OWNER

Name of owner:	HER MAJESTY THE QUEEN (EDUCATION PURPOSES)				
*Contact person:	Private Bag 92644				
Mailing address:	Symonds Street, Auckland, 1150				
Street address/ Registered office:	Level 3 , Eden 5 Bldg, Cnr Edwin St & Normanby Rd				
Phone Number:	Landline:		Mobile:		
Daytime:	09 632 9457	After hours:		Facsimile No:	09 632 9401
Email address:	collen.tebbutt@minedu.govt.nz				
Website:					

FIRST POINT OF CONTACT FOR COMMUNICATION (Must be in New Zealand)

Full name:	Manukau Building Consultants				
Mailing address:	PO Box 76 516 Manukau City, 2104				
Street address/ Registered office:	277 Ti Irirangi Drive Manukau City, 2104				
Phone Number:	Landline:		Mobile:		
Daytime:	2727890	After hours:		Facsimile No:	2727892
Email address:					

Code compliance certificate

Section 95, Building Act 2004
(Form 7 – Building (Forms) Regulations 2004)



BUILDING WORK

The following building work is authorised by this building consent:

STAGE 4 of 4: Internal fitout

CODE COMPLIANCE

The building consent authority named below is satisfied, on reasonable grounds, that:

- √ The building work complies with the building consent;
- √ The specified systems in the building are capable of performing to the performance standards set out in the building consent.

ATTACHMENTS

- √ Compliance schedule

On behalf of Auckland
Council:

Date issued:

28/07/2015

Print name:

Ian McCormick

Position:

Manager, Building Control

Auckland Council, Private Bag 92300, Auckland 1142

22 July 2015

Arrow International Limited – Michael Bowman
1 Broadway
Newmarket
Auckland 1023

Dear Sir or Madam

Building consent number:	20140616
Address:	291 Ormiston Road, Flat Bush 2016
Description:	Stage 1 of 4: Foundation, Plumbing and Drainage
Area office:	Manukau Building Consultants 277 Te Irirangi Dr, Flat Bush, Auckland 2016

Code Compliance Certificate (CCC) approved

We refer to the building consent for the above described work. Please find attached your code compliance certificate issued under s.95 of the Act, which confirms the satisfactory completion of this project.

If you have any further queries regarding this matter, please contact the undersigned on (09) 262 8967 or email quoting the above building consent number.

Yours faithfully



Sohail Mohammed
Building Support Team
BUILDING CONTROL- SOUTHERN
Email: bondrefunds.manukau@aucklandcouncil.govt.nz

Code compliance certificate

Section 95, Building Act 2004
(Form 7 – Building (Forms) Regulations 2004)



THE BUILDING

Building consent number:	20140616	Date building consent issued:	29/04/2014
Street address of building:	291 ORMISTON RD FLAT BUSH 2016		
Legal description of land where building is located:	LOT 3 DP 478463		
Building name:	285-291 ORMISTON RD FLAT BUSH - Ormiston Primary School		
Location of building within site/block number:	285-291 ORMISTON RD FLAT BUSH	Level or unit number:	
Currently, lawfully established use: [include number of occupants per level and per use if more than 1]	Communal non-residential		
Year first constructed:	2015		

THE OWNER

Name of owner:	HER MAJESTY THE QUEEN (EDUCATION PURPOSES)		
*Contact person:			
Mailing address:	Private Bag 92644, Symonds St, Auckland 1150		
Street address/ Registered office:			
Phone Number:	Landline:	Mobile:	
Daytime:	09 632 9457	After hours:	
Facsimile No:			09 632 9401
Email address:	colleen.tvutt@minedu.govt.nz		
Website:			

FIRST POINT OF CONTACT FOR COMMUNICATION (Must be in New Zealand)

Full name:	Manukau Building Consultants		
Mailing address:	PO Box 76 516 Manukau City, Auckland 2104		
Street address/ Registered office:			
Phone Number:	Landline:	Mobile:	
Daytime:	09 2727890	After hours:	
Facsimile No:			09 2727891
Email address:			

Code compliance certificate

Section 95, Building Act 2004
(Form 7 – Building (Forms) Regulations 2004)



BUILDING WORK

The following building work is authorised by this building consent:

Stage 1 of 4: Foundation, Plumbing and Drainage

CODE COMPLIANCE

The building consent authority named below is satisfied, on reasonable grounds, that:

- ✓ The building work complies with the building consent;
- ✓ The specified systems in the building are capable of performing to the performance standards set out in the building consent.

ATTACHMENTS

- ✓ Compliance schedule

On behalf of Auckland
Council:

Date issued:

22/07/2015

Print name:

Ian McCormick

Position:

Manager, Building Control

Auckland Council, Private Bag 92300, Auckland 1142

22 July 2015

Arrow International Limited – Michael Bowman
1 Broadway
Newmarket
Auckland 1023

28 JUL 2015

Dear Sir or Madam

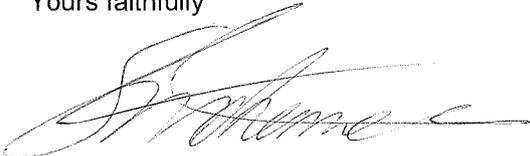
Building consent number:	20141207A1
Address:	291 Ormiston Road, Flat Bush 2016
Description:	STAGE 2 of 4: Structural frame/Amendment: Balustrade connection to stage 2 structure frame.
Area office:	Manukau Building Consultants 277 Te Irirangi Dr, Flat Bush, Auckland 2016

Code Compliance Certificate (CCC) approved

We refer to the building consent for the above described work. Please find attached your code compliance certificate issued under s.95 of the Act, which confirms the satisfactory completion of this project.

If you have any further queries regarding this matter, please contact the undersigned on (09) 262 8967 or email quoting the above building consent number.

Yours faithfully



Sohail Mohammed
Building Support Team
BUILDING CONTROL- SOUTHERN
Email: bondrefunds.manukau@aucklandcouncil.govt.nz

Code compliance certificate

Section 95 Building Act 2004
(Form 7 – Building (Forms) Regulations 2004)



THE BUILDING

Building consent number:	20141207, 20141207A1	Date building consent issued:	13/01/2015
Street address of building:	291 ORMISTON RD FLAT BUSH 2016		
Legal description of land where building is located:	LOT 3 DP 478463		
Building name:	285-291 ORMISTON RD FLAT BUSH - Ormiston Primary School		
Location of building within site/block number:	285-291 ORMISTON RD FLAT BUSH	Level or unit number:	
Currently, lawfully established use: [include number of occupants per level and per use if more than 1]	Communal non-residential		
Year first constructed:	2015		

THE OWNER

Name of owner:	HER MAJESTY THE QUEEN (EDUCATION PURPOSES)				
*Contact person:					
Mailing address:	Private Bag 92644, Symonds Street, Auckland 1150				
Street address/ Registered office:	Level 3, Eden Building, , Cnr Edwin street & Normanby Rd, Auckland				
Phone Number:	Landline:		Mobile:		
Daytime:	09 632 9457	After hours:		Facsimile No:	09 632 9401
Email address:	colleen.tebbutt@minedu.govt.nz				
Website:					

FIRST POINT OF CONTACT FOR COMMUNICATION (Must be in New Zealand)

Full name:	Manukau Building Consultants				
Mailing address:	PO Box 76 516 Manukau City, 2104				
Street address/ Registered office:	277 Ti Irirangi Drive Manukau City, 2104				
Phone Number:	Landline:		Mobile:		
Daytime:	2727890	After hours:		Facsimile No:	2727892
Email address:					

Code compliance certificate

Section 95, Building Act 2004
(Form 7 – Building (Forms) Regulations 2004)



BUILDING WORK

The following building work is authorised by this building consent:

STAGE 2 of 4: Structural frame/Amendment: Balustrade connection to stage 2 structure frame.

CODE COMPLIANCE

The building consent authority named below is satisfied, on reasonable grounds, that:

- √ The building work complies with the building consent;
- √ The specified systems in the building are capable of performing to the performance standards set out in the building consent.

ATTACHMENTS

- √ Compliance schedule

On behalf of Auckland Council:

Date issued:

22/07/2015

Print name:

Ian McCormick

Position:

Manager, Building Control

Auckland Council, Private Bag 92300, Auckland 1142

BUILDING CONTROL

28 July 2015

HER MAJESTY THE QUEEN (EDUCATION PURPOSES)
PRIVATE BAG 92644
SYMONDS STREET
AUCKLAND, 1150

Dear Sir / Madam

BUILDING WARRANT OF FITNESS - COMPLIANCE SCHEDULE No: 4756
BUILDING ADDRESS: 291 ORMISTON RD FLAT BUSH 2016
LEGAL DESCRIPTION: LOT 3 DP 478463
BUILDING CONSENT No: 20141762

The above building contains specified systems listed under Schedule I of the Building Regulations 2005. Council must therefore issue a Compliance Schedule Statement pursuant to section 104A of the Building Act 2004.

This Statement is attached and must now be displayed publicly in the building for the first 12 months of the period of the Compliance Schedule, as required by section 105(e) of the Building Act 2004 (see below). We also attach a copy of the Compliance Schedule.

Please note Sections 105 and 108 of the Act which specify your obligations as owner of the building:

105 Obligations of owner if compliance schedule is issued

An owner of a building for which a compliance schedule has been issued must ensure:

- (a) *that each of the specified systems stated in the compliance schedule is performing, and will continue to perform, to the performance standard for that system; and*
- (b) *that the owner provides to the territorial authority an annual building warrant of fitness in accordance with section 108; and*
- (c) *that the compliance schedule is kept:*
 - (i) *in the building; or*
 - (ii) *in another building in the district of the territorial authority; or*
 - (iii) *in some other place agreed by the owner and the territorial authority; and*
- (d) *that the compliance schedule is available for inspection by any person or organisation who of that has a right to inspect the building under any Act; and*
- (e) *that, for the first 12 months of the period of the compliance schedule, there is displayed publicly in a place in the building so that users of the building can have access to it a statement by the territorial authority in the prescribed form stating:*
 - (i) *the specified systems covered by the compliance schedule; and*
 - (ii) *the place where the compliance schedule is held.*

108 Annual building warrant of fitness

- (1) *An owner of a building for which a compliance schedule has been issued must supply to the territorial authority a building warrant of fitness in accordance with subsection (3).*

- (2) *The purpose of a building warrant of fitness is to ensure that the specified systems stated in the compliance schedule are performing, and will continue to perform, to the performance standards for those systems that are set out in the relevant building consent.*
- (3) *The building warrant of fitness must:*
 - (a) *be supplied on each anniversary of the issue of the compliance schedule; and*
 - (b) *state that the inspection, maintenance and reporting procedures of the compliance schedule have been fully complied with during the previous 12 months; and*
 - (c) *have attached to it all certificates, in the prescribed form, issued by a licensed building practitioner that, when those certificates are considered together, certify that the inspection, maintenance and reporting procedures stated in the compliance schedule have been fully complied with during the previous 12 months; and*
 - (d) *have attached to it any recommendation made by a licensed building practitioner that the compliance schedule should be amended to ensure that the specified systems stated in the compliance schedule are performing, and will continue to perform, to the performance standards for those systems; and*
 - (e) *be in the prescribed form; and*
 - (f) *contain the prescribed information.*
- (4) *The owner must publicly display a copy of the building warrant of fitness in a place in the building to which users of the building have ready access.*
- (5) *A person commits an offence if the person:*
 - (a) *fails to display a building warrant of fitness that is required to be displayed under this section; or*
 - (aa) *fails to supply to the territorial authority the building warrant of fitness in accordance with subsection (1); or*
 - (b) *displays a false or misleading building warrant of fitness; or*
 - (c) *displays a building warrant of fitness otherwise than in accordance with this section.*
- (6) *A person who commits an offence under this section is liable to a fine not exceeding \$20,000.*
- (7) *In subsection (3)(d), a reference to a licensed building practitioner is a reference to the licensed building practitioner or licensed building practitioners who carried out the inspection, maintenance and reporting procedures stated in a compliance schedule during the previous 12 months.*

Council may issue Infringement Notices (imposing fees of up to \$2000) for certain breaches of the Act, such as not obtaining a compliance schedule or failing to display a building warrant of fitness.

Should you have any questions in regard to this letter, you may contact the Building Warrant of Fitness department on phone 09 262 5766 and follow the automated prompts.

Yours faithfully



Building

Environmental Operations

On behalf of: **Auckland Council**

In Your Reply Please Quote: CS No. 4756

Compliance Schedule Statement No: 4756

Issued under section 105 of the Building Act 2004



THE BUILDING:

OWNER:

Street address:	291 ORMISTON RD FLAT BUSH 2016	Name:	HER MAJESTY THE QUEEN (EDUCATION PURPOSES)
Legal Description:	LOT 3 DP 478463	Postal address:	PRIVATE BAG 92644 SYMONDS STREET AUCKLAND, 1150
Building name:	ORMISTON PRIMARY SCHOOL	Agent Name:	
Location of building within site / block:		Registered office:	
Level / Unit No:		Telephone:	
Current lawful use:	COMMUNITY BUILDING, SCHOOL	Mobile:	
Year first constructed:	2014	Email:	
Maximum occupancy No:		Purpose group:	

SPECIFIED SYSTEMS PERTAINING TO THIS BUILDING

- | | |
|--|---|
| <p>SS 1.1 - AUTOMATIC SYSTEMS FOR FIRE SUPPRESSION (SPRINKLERS)
(Performance Standards: F7.3.1-3.3 C/AS1 NZ Building Code NZS 4541:2003 & 2007 part 12, NZS 4515:2003 & 2009 part 8, NFPA25, AS 1851:2005 s.2, AS2845 2010 Backflow)</p> <p>SS 3.2 - ACCESS CONTROLLED DOORS EGRESS
Includes: Doors that have security control measure installed on or as part of it e.g.
Swipe Card Access
Proximity Sensor Access
Key Pad Access
Delayed Egress
(Performance Standards: NZ Building Code C2.3.3, C3.3.2.C3.3.3, NZS 4232:1998, NZS 4239:1993 App A, AS 4178:1994 s.4, AS 5007:2007 App.E, AS4085:1992 App.A, AS4290:1995 & 2000)</p> <p>SS 7 - AUTOMATIC BACK-FLOW PREVENTERS
(Performance Standards: NZ Building Code G12.3.2 – 3.4, AS 2845:2010 part 1 & 3, AS 3500:2003)</p> <p>SS 9 - MECHANICAL VENTILATION/AIR CONDITIONING SYSTEMS/SMOKE CONTROL
(Performance Codes: NZ Building Code G4, AS, NZS668:1998, AS1851:2005, AS/NZS3666.2:2002, NZS4302:1987 part 2, AS/NZS 3896:2008, AS 4276.1:2008)</p> <p>SS 15-B - FINAL EXITS MEANS OF ESCAPE
(Performance Standards: NZ Building Code C Documents)</p> <p>SS 15-D - SIGNS MEANS OF ESCAPE
(Performance Standards: NZ Building Code F8 NZS 4121:2001)</p> | <p>SS 2.1 - AUTOMATIC / MANUAL EMERGENCY WARNING SYSTEMS
(Performance Standards: NZ Building Code F7, NZS 4512:2010, AS 1851:2005, NZS 4515:2009)</p> <p>SS 4 - EMERGENCY LIGHTING SYSTEMS
(Performance Standards: NZ Building Code F6, NZS 6742:1971, AS/NZS 2293.2:1995 s.3, NZS6104:1981)</p> <p>SS 8.1 - PASSENGER CARRYING LIFTS
(Performance Standards: NZ Building Code D2.3.1, D2.3.2, D2.3.3, D2.3.4, D2.3.5, NZS4332:1997 part 2.5, EN81:2003, EN115:2008, Power Lift Rules at time of installation)</p> <p>SS 14.2 - SIGNS FOR ALL SYSTEMS
(Performance Standards: NZ Building Code F8/AS1, NZS 4121:2001)</p> <p>SS 15-C - FIRE SEPARATION MEANS OF ESCAPE
(Performance Standards: NZ Building Code C Documents C/AS1, AS/NZS 1905.1:1997, NZS 4232:1998)</p> <p>SS 15-E - SMOKE SEPARATION MEANS OF ESCAPE
(Performance Standards: NZ Building Code C Documents C/AS1, AS/NZS 1668:1998)</p> |
|--|---|

Records:

The inspection, maintenance and reporting procedures for the above-specified systems are described in the maintenance manual, which is attached to and forms part of this Compliance Schedule.

Signed on behalf of
Auckland Council by:



Name and
role:

Ian McCormick
Manager Building Control

Date of issue:

28 July 2015

Auckland Council, Private Bag 92300, Auckland 1142

Compliance Schedule No: 4756

Issued under section 105 of the Building Act 2004



THE BUILDING: OWNER:

Street address:	291 ORMISTON RD FLAT BUSH 2016	Name:	HER MAJESTY THE QUEEN (EDUCATION PURPOSES)
Legal Description:	LOT 3 DP 478463	Postal address:	PRIVATE BAG 92644 SYMONDS STREET AUCKLAND, 1150
Building name:	ORMISTON PRIMARY SCHOOL	Agent Name:	
Location of building within site / block:		Registered office:	
Level / Unit No:		Telephone:	
Current lawful use:	COMMUNITY BUILDING, SCHOOL	Mobile:	
Year first constructed:	2014	Email:	
Maximum occupancy No:		Purpose group:	

SPECIFIED SYSTEMS PERTAINING TO THIS BUILDING

- | | |
|--|---|
| <p>SS 1.1 - AUTOMATIC SYSTEMS FOR FIRE SUPPRESSION (SPRINKLERS)
(Performance Standards: F7.3.1-3.3 C/AS1 NZ Building Code NZS 4541:2003 & 2007 part 12, NZS 4515:2003 & 2009 part 8, NFPA25, AS 1851:2005 s.2, AS2845 2010 Backflow)</p> <p>SS 3.2 - ACCESS CONTROLLED DOORS EGRESS
Includes: Doors that have security control measure installed on or as part of it e.g.
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(Performance Standards: NZ Building Code C2.3.3, C3.3.2.C3.3.3, NZS 4232:1998, NZS 4239:1993 App A, AS 4178:1994 s.4, AS 5007:2007 App.E, AS4085:1992 App.A, AS4290:1995 & 2000)</p> <p>SS 7 - AUTOMATIC BACK-FLOW PREVENTERS
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(Performance Standards: NZ Building Code D2.3.1, D2.3.2, D2.3.3, D2.3.4, D2.3.5, NZS4332:1997 part 2.5, EN81:2003, EN115:2008, Power Lift Rules at time of installation)</p> <p>SS 14.2 - SIGNS FOR ALL SYSTEMS
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(Performance Standards: NZ Building Code C Documents C/AS1, AS/NZS 1905.1:1997, NZS 4232:1998)</p> <p>SS 15-E - SMOKE SEPARATION MEANS OF ESCAPE
(Performance Standards: NZ Building Code C Documents C/AS1, AS/NZS 1668:1998)</p> |
|--|---|

Records:

The inspection, maintenance and reporting procedures for the above-specified systems are described in the maintenance manual, which is attached to and forms part of this Compliance Schedule.

Signed on behalf of
Auckland Council by:



Name and
role:

Ian McCormick
Manager Building Control

Date of issue:

28 July 2015

Auckland Council, Private Bag 92300, Auckland 1142

Producer statement construction (PS3)

General construction work



Relevant Codes and Standards

Approved document G4, Ventilation
NZS 4303, Ventilation for Acceptable Air Quality
1682.1 & 2, Fire Damper Specification & Installation
AS 1668, Part 2, Mechanical Ventilation
for Acceptable Indoor Air Quality
AS1668.2, Use of Mechanical Ventilation & A/C in Buildings
NZS5261 Gas Installations
NZS 4219, Seismic Resistance of Engineering
Systems in Buildings
SMACNA, Duct Construction Manual
CIBSE Commissioning Codes
Greenstar New Zealand- Education Tool

NZBC Clauses

B2 Durability
C3 Spread of fire
G4 Ventilation
G11 Gas as and energy source

Associated Mechanical System

Fresh air rate
Fresh air rate
Fire dampers
Extract Systems

Toilet extract volume
Heating Boilers
Seismic Restraint

Sheetmetal ductwork
Commissioning
Fresh Air rates, CO2 and Zone Control

Memorandum



To Architect

Kevin.sanderson@ascarchitects.co.nz

From John Sutherland**Our reference 301819****Ormiston Primary School 123****Project Manager**

michaelbowman.arrowinternational.co.nz

Office Auckland**Date 25/09/2014****Your Reference 13823****Subject****Ormiston Primary School****Weathertightness Review of Documents****Sign - off**

We have reviewed the final documents for the above project issued for **Sign-off** and received by email on 27 August 2014.

The project was approved for review as a Fast Track project and has been reviewed at Developed Design Stage (06/03/14 and again at 29/04/14) as drawings came available during April. We issued our first review as a mark-up with a verbal commentary on 13/03/14 following with a written and verbal commentary and a mark-up of the architectural drawings as they stood on 29/04/14.

The Designer's response to the first two commentaries (Developed Design) was formally received on 01 June 2014 by email.

We issued a third commentary document dated 10 July 2014. The Designer has responded to this commentary which was formally received on 27 August 2014.

Please find items below to be addressed -

North Elevation details on Line K.:

Information on this wall is spread over a number of drawings as below. They need coordinating.

A300 External Elevations

A404 Section G-G

Details 7.8/A501, 6/A501, 34/A505, 8,9/A530, 39,40,42/A533.

Upstand soaker detail 6/A502 - show soaker detail at vertical joint.

Extra gutter detail on Line 1 Show a long section from high point to discharge over gutter on Line X , to relate details 26/A504 and 47/A506. Show how gutter sole is always above DHS purlins which have been lowered to suit.

Detail 31/A505 Consider possibility of extreme fluttering of unattached horizontal flashing in high wind conditions.

Memorandum



Detail 38/A505 Detail outlets to the wide SS gutter

Detail 59/A507 refer to Details 35,35A/A532

Details 72,73/A508 Sort out details 71,72,73,references

Details 36/A533. Show all airseals at window jambs eg 38,45. Provide large flashing at brick/HB internal angle.

Detail 48/A534 Consider need to provide something that Emseal can compress against at initial expansion and during seismic action.

Detail 50/A534 Flashings inside and outside Emseal are likely to fail under movement and external one couldn't be repaired. But also consider problem of getting good workmanship in narrow re-entrant. Close off at front with shallow re-entrant?

Detail 52/A534 20x20 Provide aluminium angles to both jambs bedded on sealant or inseal over the aluminium jamb face and mechanically fixed to bricks.

Detail 58/A535 Is the corner detail robust enough to hold together when only joined by sealant?

Overall, the Designers responses are considered to be satisfactory .and the issues listed above can be readily addressed by the Designer. Please provide us with the information requested and confirmation that they have been instructed. All other responses to previous queries are considered to be satisfactory.

As a result of this process we can confirm that there are now reasonable grounds for believing that the design complies with sound weathertightness practice.

This document is issued for the Ministry of Education who commissioned it and for specific purposes connected with the above project. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied on by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

6.2 AERIAL VIEW



6.3 DESIGN SITE PLAN

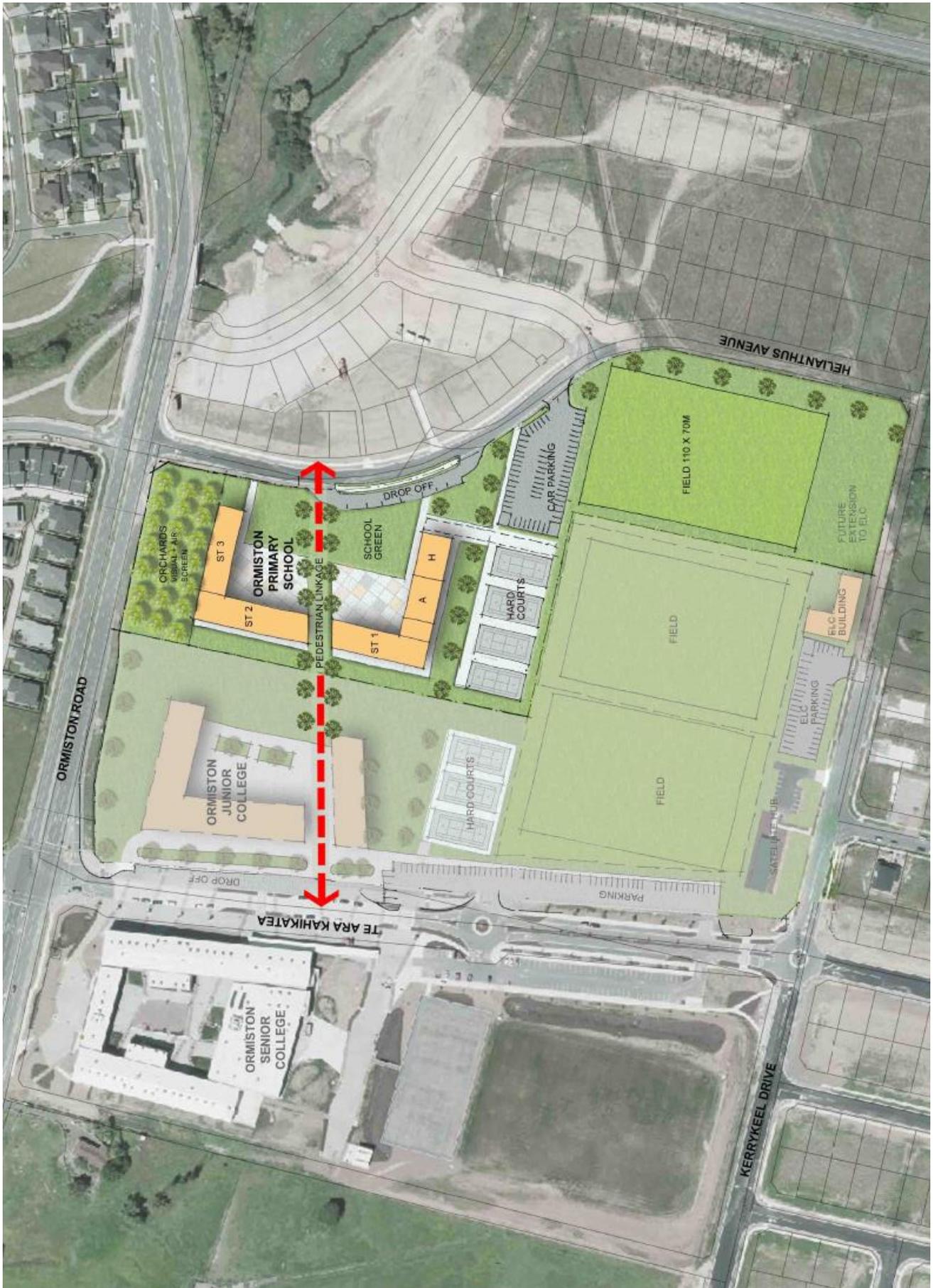
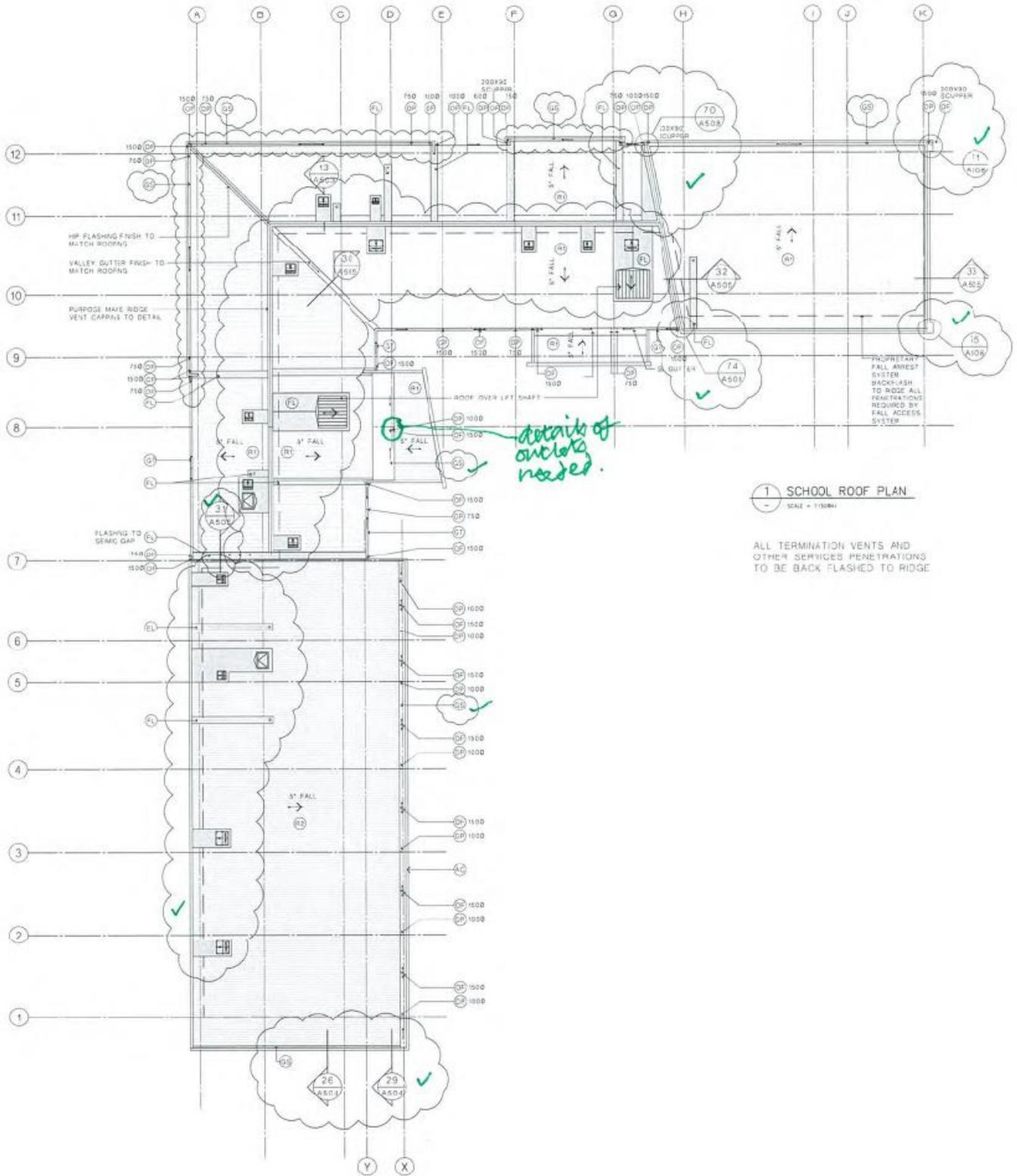


Figure 46 – The building comprising ST1, A and H were complete at the time of the survey. The building containing ST2 and ST3 is planned for future construction.

6.4 ROOF PLAN



6.5 CLIENT SUPPLIED INFORMATION

Information supplied by MOE – Ormiston Primary School, Flat Bush

- MOE Weathertightness Review Report –Mott MacDonald – 25 September 2014
- Document: Approval of establishment and construction budget for Ormiston Primary School
- Document: Cabinet approval
- Contract Documents Volume 1 of 2 (RDT Pacific)
- Contract Documents Volume 2 of 2 (RDT Pacific)
- Ormiston Primary School Masterplan Report
- Development Compliance Framework Area schedules
- Contact list – Contractors
- Certificate of Code Compliance Documentation



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