CONSTRUCTION MANAGEMENT PLAN – STAGE 2

Pendle Hill High School

Cornock Ave, Toongabbie

Template Rev December 2020
Uncontrolled copy once printed

taylorau.com.au

TAYLOR

Project Plan Information

Project Name: Pendle Hill High School

Project Address: Cornock Ave, Toongabbie

Prepared By:	**Approved By:**
George Boutros	Eddie Abramian
Preparation Date:	**Approval Date:**
09/06/2021	24/06/21

Distribution Information

Distribution	
Schools Infrastructure	Copy
TSA Management	Copy

Revision Information

Rev Date	**Revision Description**	**PM's Initials (Acceptance of Changes)**
24/06/2021	First Issue	EA
29/06/2021	2 – Planner Comment Amendments	EA
02/07/2021	3 – Additional Comments from Architectus	EA

Table of Contents

1. Introduction

This Construction Management Plan (CMP) has been prepared to communicate the management strategies that will be utilised on the Pendle Hill High School project. It describes the construction methodologies, processes and procedures from site establishment through to practical completion.

Specifically, this document addresses the following items:

- Project Overview and Description
- Safety
- Management & Training
- Project Structure
- Project Procurement
- Site Location, Hours of Work and Site Interface
- Stakeholder and User Group Communications
- Noise and Vibration Management Plan
- Project Communications
- Security Access
- Site Induction, Safety Briefing and Security Awareness
- Construction Methodology, Site Set up, and Materials Handling
- Surfaces and Existing Services Protection
- Environmental Management Plan
- Waste Management Plan
- Site Establishment, Site Access and Hoardings
- Pedestrian and Traffic Management
- Programming and Planning
- Quality Management Plan
- Completion Plan
- Documentation Management
- Industrial Relations

The Construction Management Plan will be continually developed and revised throughout the construction process.

2. Project Description

Construction of new buildings to include 14 new permanent teaching spaces and the following core facilities built to Stream 12: - Lecture Learning unit, Library Unit, Administration Unit, Staff Unit, Student Amenities.
As well as refurbishments to Block E (existing library) and Block A (existing administration.

Project Specific Factors to be considered in Design;
**Note these issues are additional to the base requirement for any building to be designed and constructed in accordance with the National Construction Code and relevant Australian Standards.*

Project / Site Issue to be considered	Yes	No	Comments
Heritage Issues	✓		Existing school has heritage implications
Sensitive Environment (close proximity to water, flora, fauna etc.)		✓	Not applicable
Sensitive Environment (Neighbours, live environment etc.)	✓		Build does have adjoining residential premises
Site Access Issues	✓		Stage 1 – Access restrictions requiring several meters of hoardings in order for access to be gained to blocks A & E. Stage 2 – Access of Binalong Road (main road) will require traffic control on high delivery days.
Proximity of neighbours / existing tenants	✓		Build does have adjoining residential premises
Speed of construction	✓		Refer to construction program
NABERS Rating Requirement		✓	Not applicable
Section J Complexities	✓		Compliance with Section J is a project requirement.
Client Relationship	✓		Fortnightly contractor meetings held
Site Prominence		✓	Not applicable

2.1. CMP AUTHORISATION

This Construction Management Plan of the noted revision and date is hereby authorised for use:

Reviewed by Site Manager:

Signed:  Name: George Boutros Date: 09/06/2021

Approved by Project Manager:

Signed:  Name: Eddie Abramian Date: 24/06/2021

3. Safety

It is imperative that the safety and wellbeing of all stakeholders, including the general public and visitors to the site, the client, consultants, subcontractors and all Taylor staff are addressed in all our planning, design and management decisions.

Taylor Construction Group Pty Ltd has a documented Health, Safety and Environmental (HSE) Management System. While the management systems are integrated, key documents such as the Project Workplace Health & Safety Plan (PWHS) and the Project Environmental Management Plan (PEMP) are developed as separate documents to give each area a strong individual focus. The Hierarchy of System Documents diagram below provides an overview of where the PWHS Plan fits in the management system hierarchy.

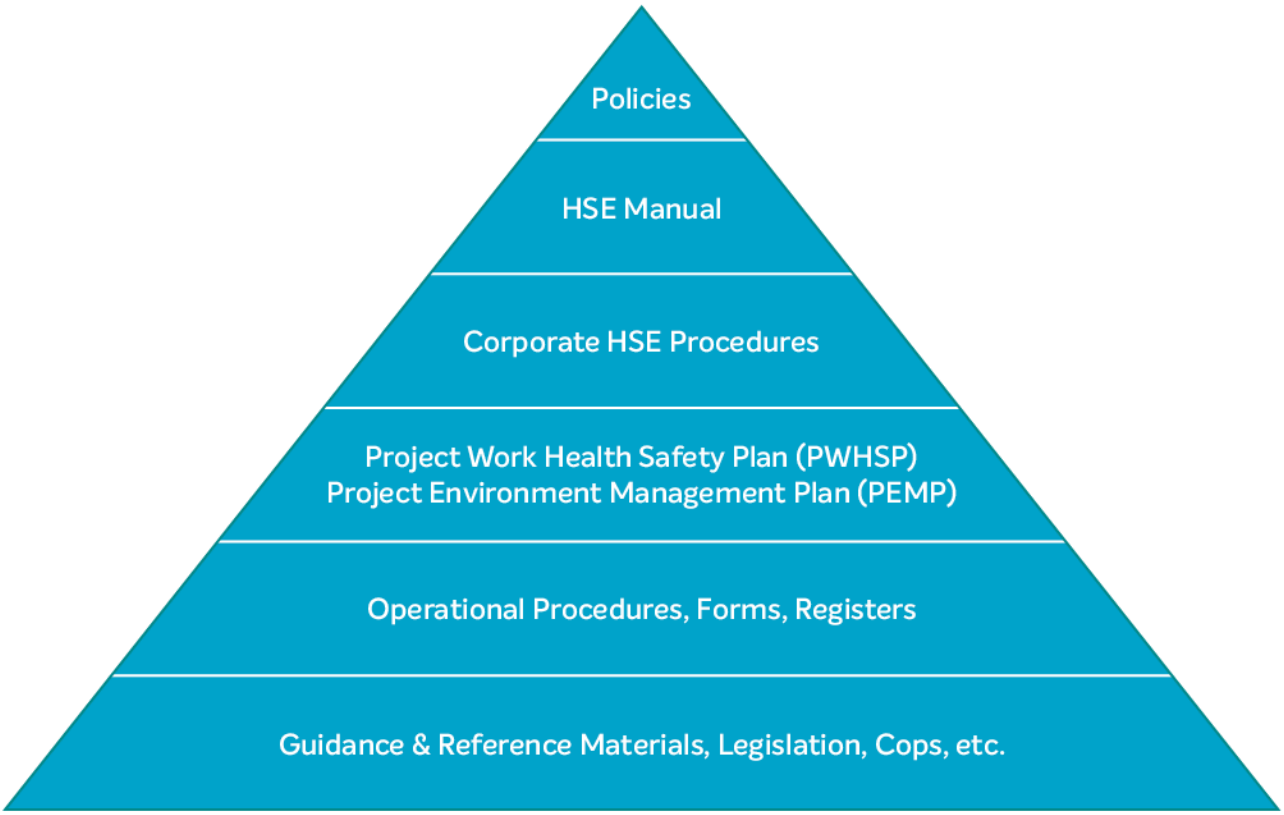
The HSE management system will share some procedures and policies with the Quality Management System as there are many activities that are common to both, examples include Document Control, Records Management, Training, Audits and Corrective Action.

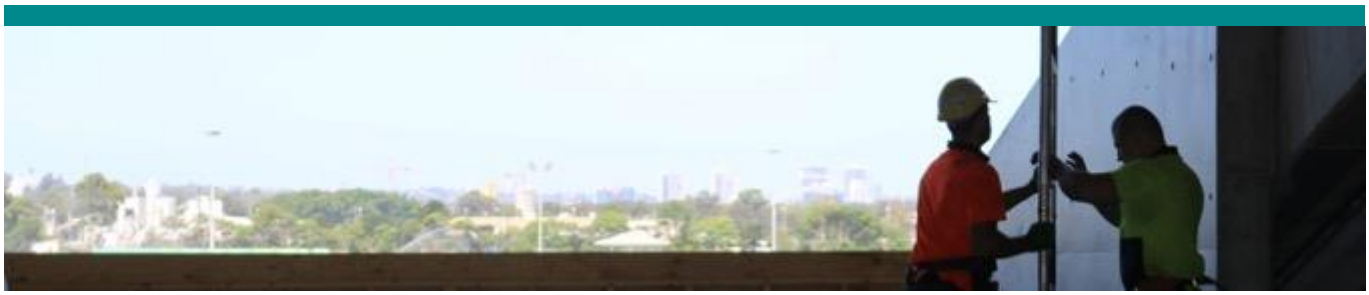
The (PWHSP) shall be referenced to assist the Project Management Team and Employees in implementing and maintaining the required level of WHS requirements on the Project in compliance with Taylor Construction Group Construction Policies, Procedures and Guidelines Governing Laws, Regulations, Standards and Codes of Practice.

The Taylor Construction Group HSE Management operational procedure is subject to continuous improvement through enhancing the skills, knowledge and commitment of its work force, and is relayed by way of site monitoring and training to all appropriate site employees, staff, subcontractors and their on-site personnel.

The PWHSP shall define the Project specific requirements for Workplace Health, & Safety to be implemented during the course of the project and is developed to comply with the requirements of the Work Health and Safety Laws 2011 and using Taylor Constructions Groups standard WHS Procedures.

3.1. HIERARCHY OF HSE SYSTEM DOCUMENTS





4. Management and Training

Each Taylor team member has both general and specific responsibilities regarding the implementation of this Construction Management Plan.

All Taylor staff and subcontractors will complete the Taylor site induction, which outlines the construction procedures and management framework specific to this Pendle Hill High School project. The induction is aimed at instilling in each person a common-sense approach to safety, to ensure they employ the responsible environmental practices and awareness needed to deliver the project in accordance with the relevant regulations and standards.

A record of all site inducted personnel will be retained on site.

All site personnel are required to have completed the WorkCover General Induction (White Card) Training. A copy of the White Card will be recorded and kept on site. This requirement will be confirmed during the site induction.

The Project Team will ensure that all personnel are made aware of their obligations under this Construction Management Plan and the general compliance with Regulations, Acts and Codes of Practices having jurisdiction over the works.

The Project Team shall:

- Coordinate the implementation of this Construction Management Plan
- Coordinate the monitoring and inspection programmes;
- Ensure personnel are trained and aware of obligations;
- Ensure that subcontractors are aware of their safety and environment obligations; and,
- Oversee other day-to-day activities required by the Construction Management Plan.
- Ensure all contractors and personnel are briefed on the unexpected finds protocol for the site.

5. Project Structure

Design Consultants	Name
Access	Morris Godding
Acoustic	Pulse White Noise
Aboriginal Archaeology	TBA
Arborist	McArdle
Architect	Architectus / FTA
Audio Visual	Rastons / Erbas
BCA/NCC	BMG
Civil Engineering	Indesco
Communications	Rastons / Erbas
Electrical including Security and Lighting	Rastons / Erbas
ESD	Aurecon / Erbas
Fire Services (Dry)	Rastons / Erbas
Fire Services (Wet)	Moeco / Erbas
Flood Study	Not applicable
Geotechnical and Environmental	Douglas and Partners
Heritage	TBA
Hydraulic	Moeco / Erbas
IT Communication Services	Rastons / Erbas
Landscape	FTA

Mechanical	ICR / Erbas
Structural	Indesco
Substation	Erbas
Surveyor	TBA
Vertical Transportation	TBA
Client Retained Advisory Consultants	
Environmental	Kleinfelder
Fire Engineering	Innova
Geotechnical and Environmental	Douglas & Partners
Hazardous Materials	Schools Infrastructure (Register)
IT Communication Services	ICT
Project Manager	TSA
Quantity Surveyor	Wilde & Woollard

5.1. APPROVALS STATUS

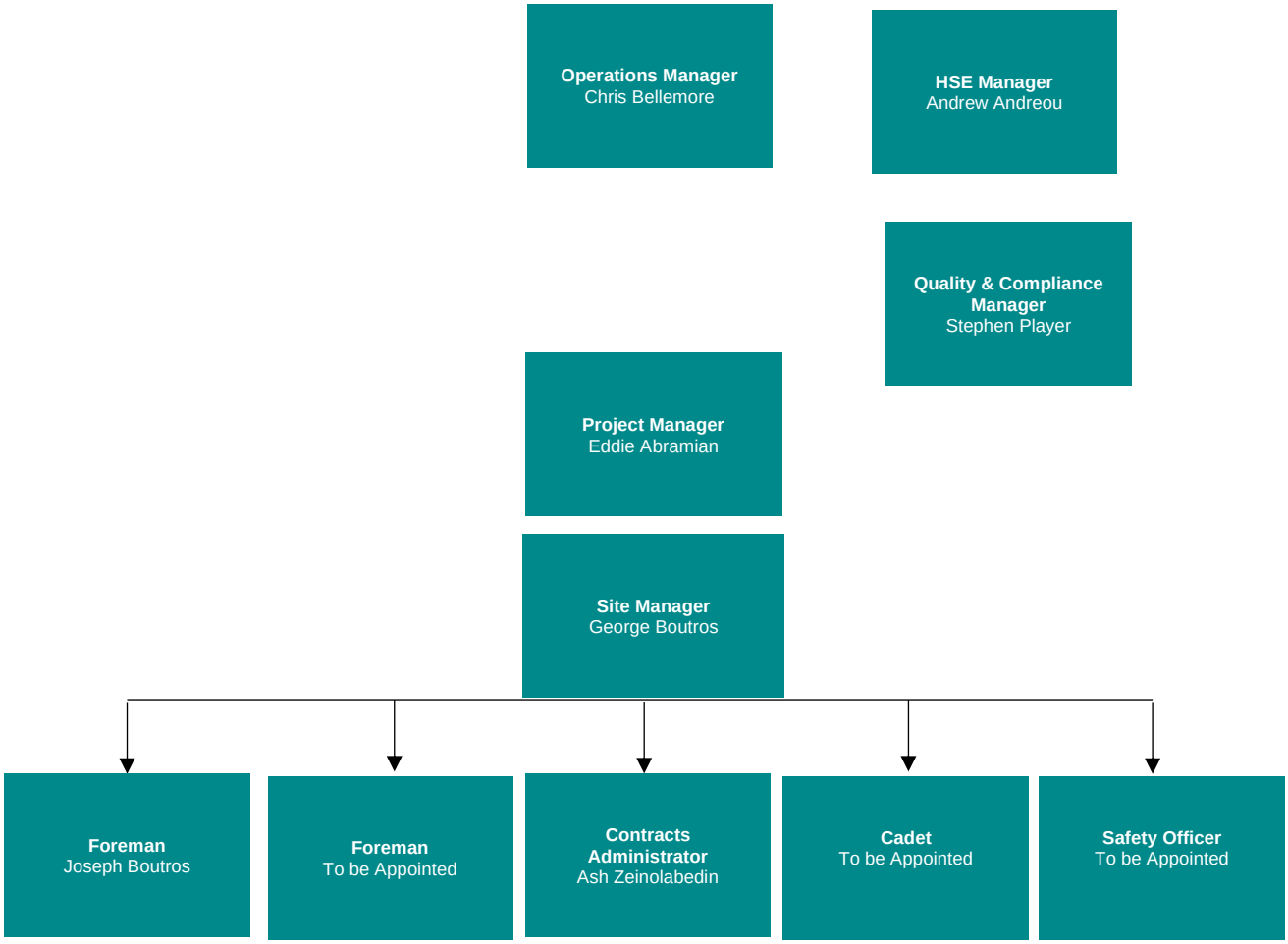
Stage 1:

1. Corncock Avenue: Exempt Development
2. Block A: Exempt Development
3. Block E: CDC Approved

Stage 2:

1. State Significant Development: Pending

5.2. PROJECT ORGANISATIONAL CHART



6. Project Procurement

A crucial element for the Taylor Project Team will be the development of a detailed Procurement program.

The Procurement program will outline the strategy that will divide the Project into logical trade elements. The trade element will be developed to inform the design completion programme and will be based on the following criteria:

- Capacity of the design team (to address the specific items requiring further design works)
- Capability, capacity and expertise of the sub-contractor market
- The Tender, recommendation, approval and letting process
- Construction sequence and requirements

The aim will be to develop in conjunction with the design team, a procurement program and strategy that provides sufficient time for the design team to further develop and finalise the outstanding design elements into trade package documentation, that the Administration team can procure in a timely manner to satisfy the construction requirements.

When tendering any element of the construction project staff will ensure compliance with “NSW Government Code of Practice for Procurement Procedure”. Further to this all trade works will be tendered to a minimum of 3 to 5 contractors.

All tenders will send with the standard invitation to tender form along with the following minimum documentation;

- Drawings: project specific
- Detailed Scope of Works:
- Specifications:
- SSD Requirements:
- Other project specific documentation
- Taylor Construction standard draft subcontract conditions
- Taylor Standard Forms

Following the Tender process, Project administration staff will review subcontractors based on competency, previous experience in the type of project, previous record of works (Safety, Quality and general performance) and finally price. Noting that the above history of subcontractor performance is critical to subcontractor engagement. Once a subcontractor is picked the tender recommendation is issued to Taylor Senior Management for review and approval. Upon this approval, the subcontractor will be engaged to commence works on site.

Some of the more critical upfront procurement Trade & Consultant items include but are not limited to: [review table and update]:

Item / Task Description	Lead Time
Lift	21 Weeks
FF&E	16 Weeks

Precast	8 Weeks
Substation (Post Approval)	8 Weeks

Following on from subcontractor engagement, our team will further define the long lead times and provide direction and instruction to each subcontractor to:

- provide program of each service / equipment required
- provide for submission to SINSW detailed technical data
- qualify within the program the time for submission and approval of the system / service by consultants
- immediately upon receiving approval issue instruction to services subcontractors to proceed with ordering system / equipment
- within the program ensure that the tracking schedule of delivery of the system / equipment and its integration with the overall construction programme
- the efficiency of this is provided by the tracking schedule developed - at any time status can be reviewed in relation to delivery / installation against the overall construction program.

7. Site Location and Working Hours

7.1. SITE LOCATION

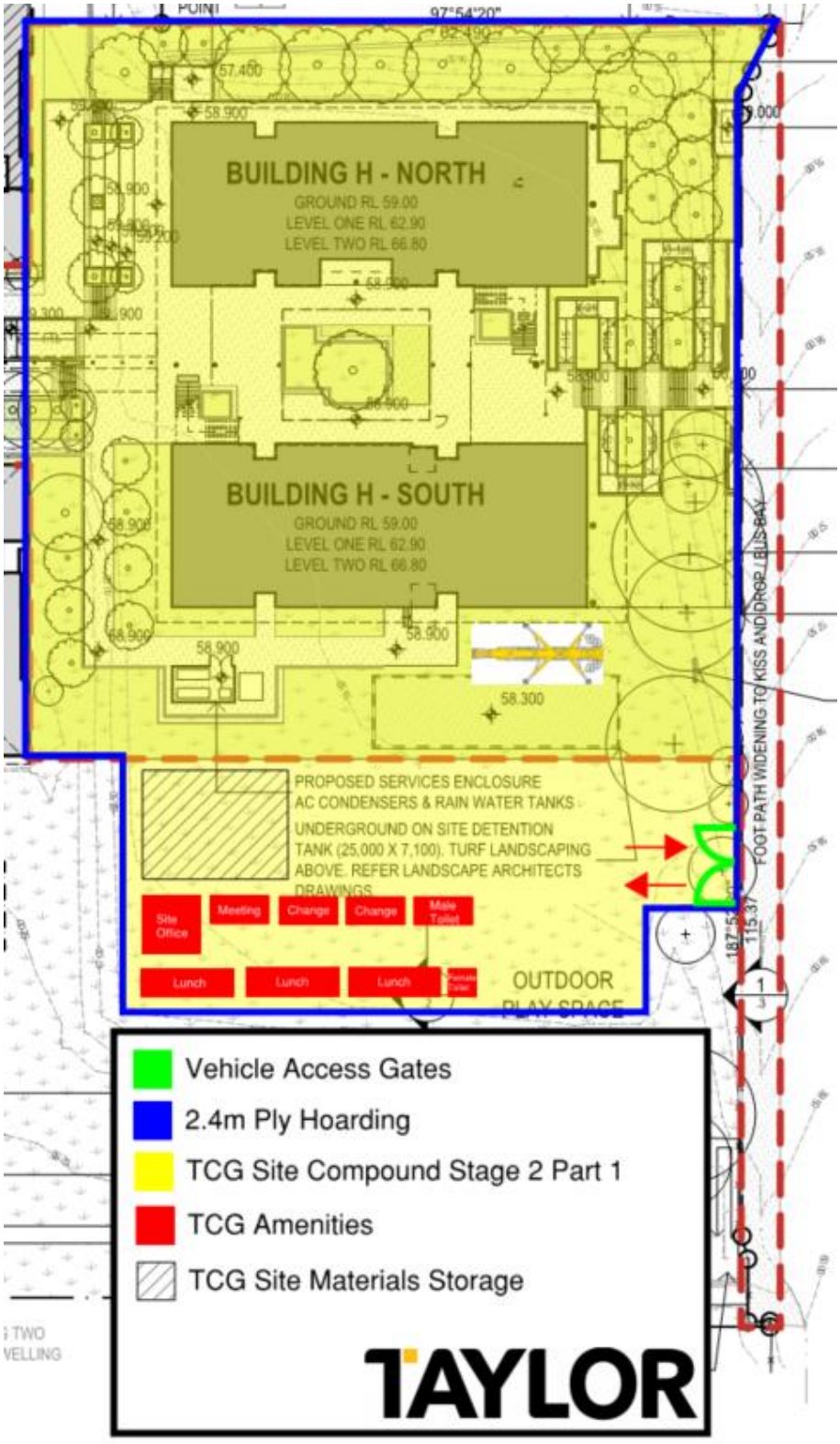
Cornock Ave, Toongabbie

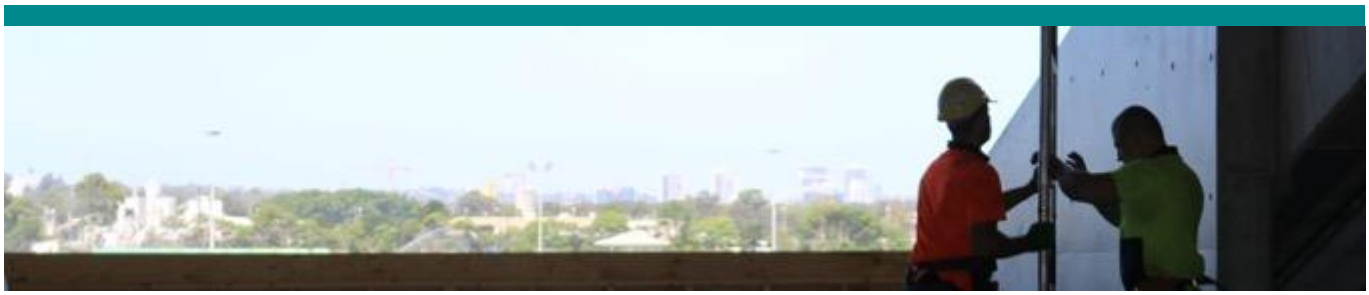
7.1.1. Aerial Photo

7.2. SITE HOURS

Monday to Friday - 7:00am to 5:00pm
Saturday – 8:00am to 1:00pm

7.3. SITE ACCESS





8. Project Interface

8.1. NOISE & VIBRATION MANAGEMENT

The Noise & Vibration Management Plan will be produced for the Project prior to commencement on site. The plan will outline the information gathering process, impact statements, control measures and implementation requirements for the site.

All construction works will be completed in a manner so as not to cause undue damage to adjoining infrastructure, properties and waterways, and will be scheduled in accordance with the approved hours as defined in SSD8216 approval.

To ensure that all items are addressed, Taylor will liaise with key representatives of Schools Infrastructure, and include in the agenda of the start-up workshop (& ongoing meetings) the following in the development of the Noise and Vibration Management Plan: -

- presence and needs of neighbouring residents,
- presence of other contractors for other works and the need for a consistent approach for the management of noise and vibration.

The required approach for the management of noise and vibration will include:

- obtaining the agreement of the Principal as to acceptable noise levels and durations within Authority requirements; obtaining the agreement by Principal of the times for undertaking noisy works;
- devising demolition and construction methodologies which will minimise the impact of noise, dust and vibration;
- using live noise levels to help plan and manage construction activities;
- maintaining noise levels below agreed limits and durations; and
- when requested, provide noise monitoring.
- Applying mitigation measure across the project to avoid where possible any interruption to staff and students during normal school programming/hours.
- Installation of 2.4m high acoustic rated ply hoarding to all site compound boundaries to mitigate against construction noise omissions.
- Excessive noisy works to be undertaken outside school operational hours and school holidays. Works such as saw cutting, jack hammering and demolition to be classified as excessive nosy works.

Taylor are to ensure that excessive dust is not generated by its works to the extent that it may interrupt the normal operations, place at risk or diminish the amenity of the local residents. In doing so, shall as a minimum consider the following:

- implement measures which prevent the generation of dust during demolition and construction works; and
- implement measures to prevent the ingress of dust to the existing surrounding buildings of [site name/location reference] during demolition and construction.

Such measures may include the provision of suitable screens, additional filtration on air intakes or other suitable provisions.

8.2. COMMUNICATION

Understanding the desired communication protocol from commencement is key between all stake holders, whether it is the Project Working Group representative or Taylor coordinating the weekly project control meetings Taylor is experienced in adapting to all required communication methods. We will be utilising a web-based platform (Aconex) for document and general communication control or work on a more conventional method and communicate change and general reporting via weekly project control meetings for Taylor & consultant integration then followed by a weekly site meeting to inform contractor of change or revised project outcomes.

All meetings will be minuted and distributed to all required stake holders. Taylor conducts internal WHS & QA audits weekly as part of our FSC accreditation we are happy to distribute outcomes and report to interested stake holders.

For financial and project operation communication we operate via traditional communications for change, variation, sample & design notices which are all registered. For daily onsite QA check we operate off an ITP itemised sheet which is signed off by site staff, contractor & Project Manager. We track our Gantt chart program weekly via a tracking base line percentage complete, we issue this in our weekly reporting.

All project communications will be in accordance with the project specific Communications and Stakeholder Management Plan (CSMP), which clearly outlines the delineation of roles and responsibilities between Taylor and Schools Infrastructure, including how we will support Schools Infrastructure with the execution of stakeholder engagement and communications activities. This CSMP document outlines the agreed plan to manage stakeholder and community engagement during the delivery of the Pendle Hill High School Project. As a living document, the CSMP may be updated from time to time by agreement between the Taylor and Schools Infrastructure, to reflect the associated changes to stakeholder and communications management.

8.3. SITE INDUCTION, SAFETY BRIEFING & SECURITY AWARENESS

All Taylor staff and subcontractors will complete the Taylor site induction, which outlines the construction procedures and management framework specific to this Pendle Hill High School project and will at all times hold these current induction certificates.

The induction is aimed at instilling in each person a common-sense approach to safety, to ensure they employ the responsible environmental practices and awareness needed to deliver the project in accordance with the relevant regulations and standards.

A record of all site inducted personnel will be retained on site.

All site personnel are required to have completed the WorkCover General Induction (White Card) Training. A copy of the White Card will be recorded and kept on site. This requirement will be confirmed during the site induction.

9. Construction Methodology

9.1. KEY CHALLENGES

Our experience will ensure the project risks are managed through our construction management plans. Taylor has undertaken a preliminary project risk analysis and captured and addressed in the Risk Management Plan and Risk Register.

9.2. DESIGN MANAGEMENT

As a professional delivery firm of Design & Construction services, efficient and effective management of the design process, including design development, detailing, and prototyping is critical to ensuring a successful project outcome.

From a program sense, ensuring all designs are fully detailed, code compliant, client brief compliant, and coordinated is a critical path activity which if not managed correctly will delay approvals from client and authorities, which in turn will delay construction on site.

The Design Management Process when managed correctly, not only ensures the project construction phase gets off to a positive start, but ensures the overall goals, objectives and design intent is incorporated into the project.

These include

- Obtaining all necessary approvals and compliance with DA Conditions;
- Effective Stakeholder identification, engagement and agreement;
- Effective Risk Management Strategy through the Safety In Design Process;
- Zero safety incidents;
- Zero security incidents;
- Completion of all items outlined in the Project Performance Requirements (PPR)
- Ensuring the project design meets the client requirements and design intent;
- Deliver the project within budget and time constraints;
- Meeting all key milestone dates as established in the approved project program.

This Project Design Plan is project specific and incorporates the client's requirements with the Taylor Group Management System to control the design management processes for the project and forms a partner document to the Project Management Plan.

There are three sections to the Plan:

1. Introduction & Design Management Plan Control
2. Project Issues and resources
3. Appendices and attachments

The first section, Introduction & PDP Control, provides information in regard the project, the design obligations for the project, how the Plan is structured and operates, and serves as an index, distribution and revision control register.

The second section, Project Issues and Resources details the requirements for Design Control in accordance with ISO 9001:1994.

The third section, Appendices and Attachments, contains any schedules, programs, flowcharts or Work Instructions etc. referenced throughout the plan, included (where applicable) to provide project specific procedures not covered by standard Taylor Group Management System procedures, or documented to amend a standard procedure where contractually required.

9.2.1. Project objective:

The redevelopment of the Pendle Hill High School aims to:

9.2.2. Project Description:

Taylor has developed specific procedures within our management systems to control the Design Management process, ensuring it is systematically and effectively implemented on all projects. Through each stage of design development, a preferred procedure will be established to work through final design development, approvals, services, miscellaneous detailing, and, shop drawings, involving relevant stakeholders to collaboratively discuss the works to date and the aims moving forward. Effective procedures we have developed to ensure successful Design Management outcomes are:

- Design Management Plan and Programme- the DMP identifies specific design tasks, outlines stakeholder user group engagement requirements, provides targeted staged approval dates, and, design presentation dates;
- Safety in Design Risk (SiD) Register- describes and assesses potential WHSE risks and how to avoid or resolve them, as identified from an ongoing “Designing Out Our Risk” (DOOR) process which aims to eliminate hazards at their source;
- Meetings/Workshops:
    - Project Start-up Meeting- establishes relationships between all parties and identifies any outstanding issues remaining from the tender process for resolution;
    - Design Meetings- held with the design team to progress, review and coordinate the design, address any issues, and, review the status of construction documentation across every discipline;
    - Design Presentations- and associated reports are scheduled within the Design & Construction programme to ensure that the entire project team are aware of their “reporting” requirements;
    - Design Review Meetings- through each stage of design documentation and prior to formal submission to the client representative, a review of the design is conducted by the design team; and
    - Project Control Group Meetings - monthly opportunity for Schools Infrastructure, at an executive level, to stay informed of the construction progress, status the samples approvals progress, raise concerns or discuss potential opportunities.
- Design Verification and Validation- consultant and subcontractor issue design certification at the conclusion of each design phase;
- Authorities Liaison- The Design and Project Managers will be the liaison contact with all authorities and will manage the remaining statutory approvals process;
- Sustainability & “Entire Life” Capability- ensuring that project construction is developed sustainably ensuring that the ongoing efficiency of the building and systems will reduce operational outgoings;
- Design Approval:
- Documentation Submission- in accordance with the head contract provisions for review and approval by the contract superintendent;
- Time for Client Approval- adequate time is allowed in each design stage for approvals;
- Sample submissions- will be statused at regular PCG meetings;

- Reporting- a design progress report will be issued to the PCG detailing the status of each design submission, authority approvals, and, sample approvals.

Every project is unique and comes with its own set of challenges, and in addition to the Design Management procedures and tools described above we have identified some project specific areas which will require to be addressed and resolved during the project establishment pre-construction phase. Items requiring attention are:

A Design Finalisation Plan shall be established which will schedule specific areas of the project which require design development and coordination to be finalised and locked into the Construction Management Plan and Construction Programme. Critical items of the design finalisation plan consist of: -

- Engagement of any remaining consultants required in addition to the Lead Consultant.
- The development and finalisation of the design including management of all user group consultation to enable sign off by users' groups and specifications.
- Undertaking completion of any design/documentation relating to FFE schedules and Room Data Sheets/Room Layout sheets for all areas.
- All activities, including provision of temporary works or facilities, required for excavation, construction, procurement / receipt / transfer / supply, installation and commissioning of FFE, and commissioning of the new building and surrounding landscaping / civil works.
- Preparation of an identification plan and all sign off and submission documentation for new easements including all surveys.
- Organize and manage Safety in Design Workshops.
- Actively identify Value Management Smarts and present these in a suitable manner to the Principal.
- Preparation of / lodgement of / obtaining necessary approvals and licenses for the construction, occupation and operation of the facility (with input as necessary from the Principal).
- Supply of all Design Compliance certificates and other mandatory certificates.
- Preparation of all required Management Plans and Systems.
- Monthly Report covering cost, time, quality, authorities, design, contracts, construction, risk, WH&S, etc.;

In addition to the Design Presentations and Design Review Meetings mentioned above, Taylor are cognisant of the importance of Schools Infrastructure and TSA Management who will have the ultimate responsibility for the buildings maintenance and upkeep. The Design Approval process would be extended to include presentation for sign off by all relevant stakeholder departments identified, including this Asset Management team.

9.3. GENERAL CONSTRUCTION

In a project such as this one, forward planning and preparation is the key to success.

Upon contract award, our project team will develop the pre-commencement management plans, which include: -

- Project Quality Management Plan,
- Communications and Interface Management Plan,
- Community Involvement Plan,
- Document and Records Management Plan,
- Design Management Plan,
- Construction and Environmental Management, including Remediation Action Plan,
- Risk Management Plan and Risk Register,
- WHS Management Plan,
- Emergency Response Plan,
- Hazardous Materials Management Plan,

- Quality Management Plan,
- Environmental Management Plan,
- Tendering Probity Plan,
- Construction Noise, Dust
- and Vibration Management Plan,
- Waste Management Plan,
- Commissioning Testing, Witnessing and Completion Plan,
- Defects Management Plan,
- Traffic and Pedestrian Management Plan,
- Training Plan,
- Relocation Plan, and
- Dilapidation Report.

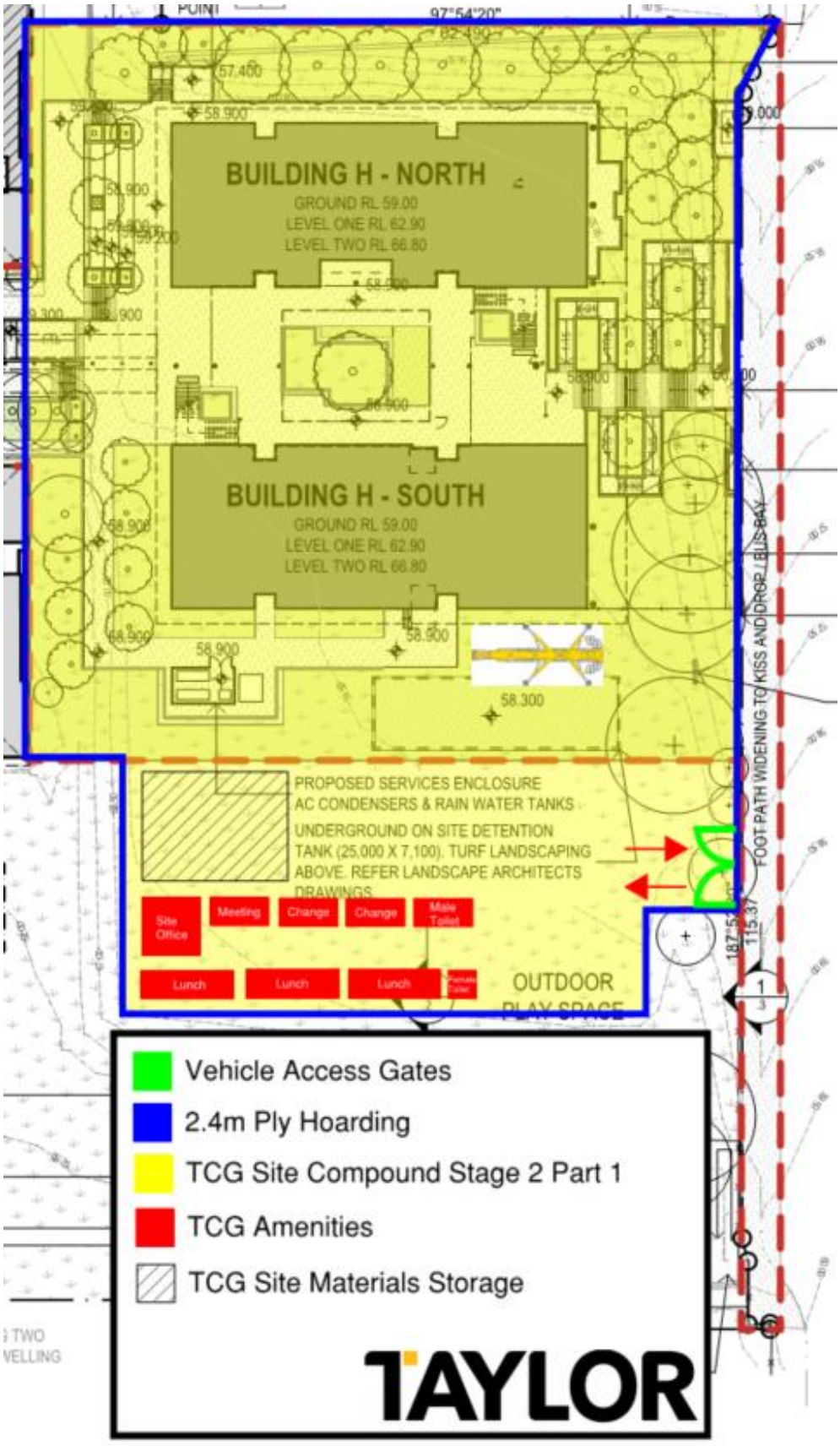
9.4. TEMPORARY POWER

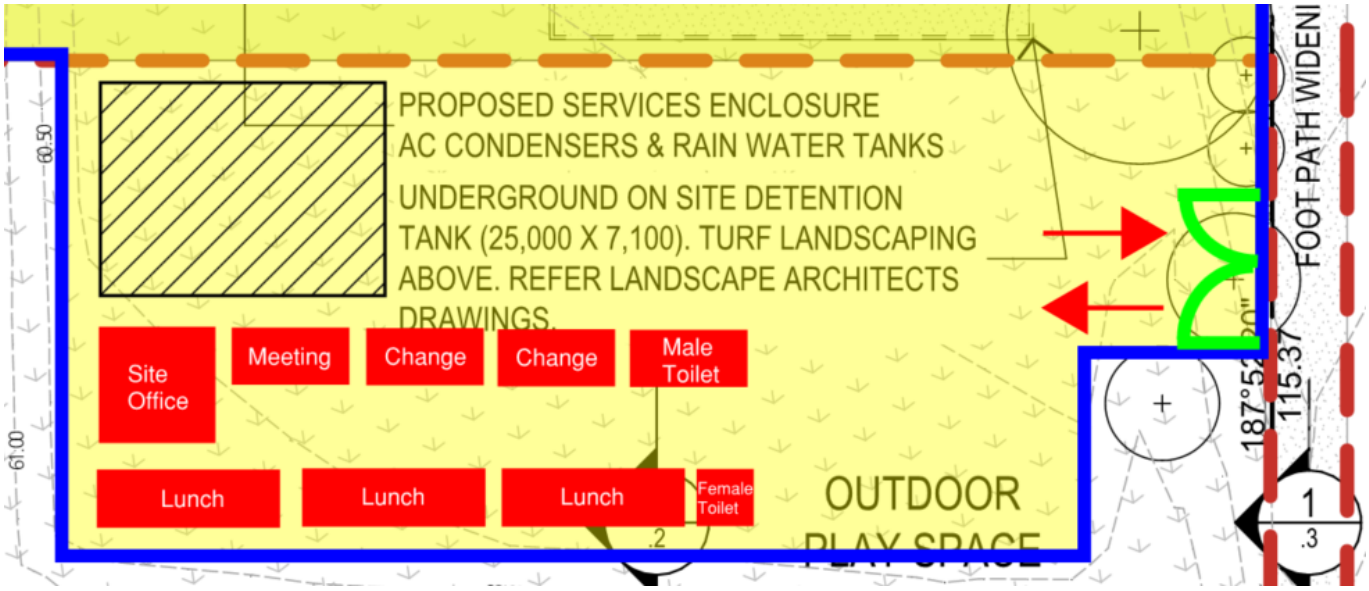
Temporary power boards will be setup in each work area for power distribution and use by the trades, and for the site compound.

Each board will have earth leakage protection in line with OH&S requirements and building industry standards.

9.5. SITE OFFICE SET UP AND WORKER AMENITIES

Site Establishment and Hoardings Plan





9.6. PROTECTION OF EXISTING SURFACES AND EXISTING SERVICES

Taylor will take special care to preserve existing surfaces and elements adjacent to the Site intact and in the condition existing at the date of the Contract and will provide the necessary protective measures to ensure such preservation. These surface protection installations will be installed at the very commencement of the project (to the satisfaction of [client]), will be monitored and replaced (as required) during the project, and removed completely at the end of the project.

Barricades, guards, fencing, temporary roads, footpaths, warning signs, lighting, watching, traffic flagging, safety helmets and clothing, removal of obstructions, protection of services and anything else necessary will be provided to:

- protect people and property, adjoining properties and trees;
- avoid unnecessary interference with the passage of people and vehicles; and
- prevent nuisance and unreasonable noise and disturbance
- ensure that the works do not obstruct or damage roadways or footpaths and drains on or adjacent to the Site.

Prior to works commencing on site, searching and verification of existing services will take place. Performed in a grid basis to ensure completeness, this will be undertaken via various means including but not limited to: -

- Review of existing “As Built” documentation
- Visual inspection
- The use of ground penetrating radar.

Each identified service will be exposed by non-destructive techniques (vacuum extraction), confirmed if still active, surveyed, marked and diverted if required and still active.

9.7. ENVIRONMENTAL MANAGEMENT

Taylor will develop and submit the project specific Environmental Management Plan compliant with the current NSW Government Environmental Management Systems Guidelines (EMS Guidelines). This Plan will detail the site specific environmental risks as identified under the contract.

The monthly Environmental Management Monthly Report with be submitted with each progress claim, signed by our representative and including the information specified below, as evidence of implementation of the Environmental Management Plan and in accordance with the contract Environmental Management requirement.

9.8. WASTE MATERIALS RECYCLING

Taylor will prepare a “waste materials recycling plan” and encourage subcontractors to adopt this policy. Particular recycling procedures that will be targeted on this project are: -

Implement waste minimisation and management measures, including:

- the implementation of formal Waste Management Plan which targets a recycling rate of over 80% for construction & demolition waste.
- recycling and diverting from landfill surplus soil, rock, and other excavated or demolition materials, wherever practical;
- separately collecting and streaming quantities of waste concrete, bricks, blocks, timber, metals, plasterboard, paper and packaging, glass and plastics, and offering them for recycling where practical.

Ensure that no waste from the Site is conveyed to or deposited at any place that cannot lawfully be used as a waste facility for that waste.

Taylor will monitor and record the volumes of waste (by weight/tonnes) and the methods and locations of disposal, and submit a progress report every two months, and a summary report before Completion, on the implementation of waste management measures, including the total quantity of material purchased, the quantity purchased with recycled content, the total quantity of waste generated, the total quantity recycled, the total quantity disposed of and the method and location of disposal.

Included in the Waste Recycling and Purchasing Report will be waste disposal certificates and/or company certification confirming appropriate, lawful disposal of waste.

Skip bins will be located within the site compound area for all site rubbish. This will then be scheduled and removed from Site for the waste Management company to sort and recycle as per the waste material recycling plan.

9.9. CONSTRUCTION STAGING AND SEQUENCING

Site establishment and works staging on this project will be competed in generally the below order:

Stage 1 – Cornock Ave, Block A and Block E renovation works

Stage 2 – Block H Main Build Works

9.10. CONSTRUCTION PROGRAM

Please refer to attach tender construction works program.

9.11. SERVICES

Taylor have a holistic approach to services. This considers the design, procurement of equipment, installation and commissioning in that each stage/phase complements and works together to deliver the project to meet Schools Infrastructure expectations.

During the installation the Taylor team will be implementing services inspections across the board of all services and systems. Inspections will be on a daily and weekly walk through with the nominated services sub-contractor, weekly site walk through inspections with the Schools Infrastructure consultants and designated personnel. The inspections will not only be confined to the installation but also include off site inspection of plant and equipment to ensure that what has been designed, specified, manufactured is correct and operates correctly.

Taylor inspection schedules will be used to record the designated areas and services inspected and where applicable any defects found. The defects will be reviewed and discussed and agreed by the inspection personnel as to the validity of the defect and where found to be a “defect” the appropriate measures will then be put into place for rectification and verification within a designated time frame.

Taylor strives to ensure a “defect free” services installation at the completion of the project. Implementing the above will demonstrate to the Schools Infrastructure that defects have not been allowed to “sit and wait” but have been addressed quickly and rectified efficiently

9.12. COMMISSIONING, TESTING, WITNESSING AND ACCEPTANCE

Taylor has a complete understanding of the design requirements for the new project by way of the Schools Infrastructure consultant's specifications, documentation, inspection of the site and the Schools Infrastructure speciation standards. As referenced in the Taylor Services Commissioning Methodology document, Taylors goal is to ensure that a safe, efficient, operational, sustainable and economical project is delivered. This process will begin during the design phase, continue through the construction and installation of the services and will be completed by way of the services commissioning process.

"Commissioning is the process by which plant, equipment and systems, which are installed and completed or approaching completion are tested to verify that the operational functions according to the design objectives and / or specifications are met".

Achieving a successful outcome on any project depends on the extent of understanding of the client's requirements, expectations and goals.

At the core of Taylors commissioning methodology is to demonstrate to Schools Infrastructure that the Taylor commissioning methodology ("commissioning process") understands, achieves and exceeds Schools Infrastructure requirements and goals.

Taylor's experience in realising and understanding the critical nature of developing and more to the point, putting into practice the commissioning process of developing, strategy, management and procedures will allow Schools Infrastructure expectations and requirements have been met.

The commissioning process consisting of the detailed planning, documenting, scheduling, testing, adjusting, verifying, recording and training is at the core of delivering fully functional equipment and systems as per the design objectives and documentation

Taylor will focus the services design, installation and commissioning teams on the requirements necessary for a successful functional and energy efficient building.

This Taylor commissioning methodology demonstrates that the requirements and outcomes outlined in the design specifications and documentation, that the procedures that will be put into place will deliver a successfully operational building that will be the milestone.

Taylors commissioning process is to ensure that it is not only that correct and necessary documentation is in place but that Taylor senior and experience personnel, knowledgeable and dedicated, with proven track records to manage the process as well as communicating and liaising with members of Schools Infrastructure and the consultant team are in place.

This objective is simple and will be successful: Taylor will work closely with the Schools Infrastructure personnel and the consultant teams to ensure that the performance criteria of each individual item of equipment and service, independently and as a fully integrated whole is met to enable a seamless handover.

The Taylor commissioning process is easily broken down into the following:

1. **Design Phase:**

- Design intent
- Commissioning viability
- Incorporation of Australian Standards
- Authority integration
- Alternate solutions and certification
- Clear and concise documentation
- Liaison with Schools Infrastructure and consultants

2. **Construction / Installation Phase:**

- Commissioning Plan
- Commissioning Process/ Methodology
- Commissioning Program
- Commission Team Matrix
- Implementation
- Pre-Commissioning
- Commissioning
- Recommissioning
- Final Commissioning
- Records and Reports

3. **Testing / Demonstration Stage / Completion:**

- Procedures
- Notifications
- Start Up
- Individual Systems
- Functional Integration
- Verification / Recording
- Certification
- Authority integration
- Summary and Final Reports
- Operational and Maintenance Manuals
- Training
- Handover

4. **Tuning:**

- 12-month duration

- Inspection / Records
- Re testing and verification against records
- Certification

9.13. COMPLETION AND HANDOVER

Taylor will ensure that all works are complete, commissioned, working and are effectively integrated with the on-going building fine-tuning. A detailed Completion Plan will be implemented prior to Practical Completion.

Progressive site inspections by all consultants and the client's representatives are required to ensure that works are carried out in accordance with the design documentation. Taylor will diligently manage a project Quality Management System ensuring full inspection prior to closing in risers, plenums, ceilings and the like. Monthly inspections will be carried out by the Architect and the Design Consultants. Consultants will issue reports outlining findings, reoccurring issues, potential design issues and required rectification and reinspection if required. Progressive inspections and sign-offs will be conducted so to ensure minimal defects at handover.

We understand the importance of commissioning in that all the building services and functions need to operate at the highest efficiency under all conditions. All services and functions will be witnessed, tested, commissioned (for the pre-occupation condition) prior to handover and effectively integrated with on-going building fine-tuning to ensure efficiency and effectiveness in the occupied and fully operational building.

As part of our handover procedure, training for the facility management team or other nominated people will be programmed and provided before the building is handed over. The training will include the operation of all the services, the function of all the building facilities and any other requirements as needed.

9.14. PEDESTRIAN AND TRAFFIC MANAGEMENT

TTW have prepared their Transport and Accessibility Impact Assessment

A detailed Emergency Management Plan will be developed prior to site establishment works as part of the Taylor WHS plan.

10. Industrial Relations

Taylor methodology is one of pro-activeness and inclusiveness with all the stakeholders in the industrial relations arena. Taylor has certified agreements with the major construction unions. Taylor policy is one of ensuring that all its employees and site management have a full working understanding of all the relevant agreements and the requirements under these agreements.

11. Quality Assurance and Early Defect Rectification

Taylor recognises that delivery of a quality product and especially the management of defects is a primary driver of our client's level of satisfaction. This has a major influence on Taylor's 'repeat business' marketing strategy.

On each project, a 'defects free handover' is a primary aim of each project team. To achieve this, Taylor adopts the simple strategy of openly discussing and setting quality expectations and benchmarks. As trades approach their final weeks on site, defects become a primary meeting agenda item in co-ordination minutes, with inspections carried out by the design team and Taylor site staff.

During the installation the Taylor team will be implementing services inspections across the board of all services and systems. Inspections will be on a daily and weekly walk through with the nominated services subcontractor, weekly site walk through inspections with the universities consultants and designated personnel. The inspections will not only be confined to the installation but as well off-site inspection of plant and equipment to ensure that what has been designed, specified, manufactured is correct and operates correctly.

Taylor inspection schedules will be used to record the designated areas and services inspected and where applicable any defects found. The defects will be reviewed and discussed and agreed by the inspection personnel as to the validity of the defect and where found to be a "defect" the appropriate measures will then be put into place for rectification and verification within a designated time frame.

11.1. QUALITY, OHS&R AND ENVIRONMENTAL MANAGEMENT SYSTEM

a) The Taylor Management System is certified to ISO9001, OH&S to ISO4801 and Environment to ISO14001. It resides on Cheops Web.

b) The Management System has several levels of documentation and is controlled within Cheops Web, the company's Intranet:

- Management System Overview documents – Quality (Q), Environment (E) and Occupational Health & Safety (S)
- Procedures – e.g. QSE-P-#, E-P-#, S-P-#, SE-P-#
- Project Management Plans
- Forms
- Various information libraries

11.2. PROJECT / SITE AUDITS – QA, OHS, ENVIRONMENTAL, PROCEDURES

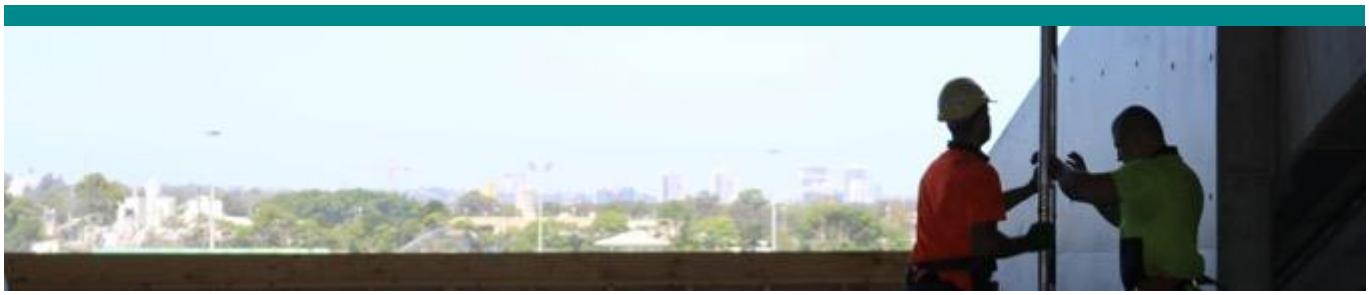
a) Projects audits shall be scheduled by the Project Manager and form part of the company's audit schedule. Refer Audit procedure QSE-P-14

b) Audits shall address the requirements of ISO900, ISO14001, AS4801, Taylor's Management System and the various Management Plans.

c) The aim of the audits is to not only verify compliance with this Project Management Plan but to also identify improvements to this plan and the Management System as a whole.

11.3. MANAGEMENT REVIEW

a) The Quality Management System including this Project Management Plan shall be reviewed in accordance with the procedure QSE-P-16



12. Document and Data Control

12.1. ACONEX

a) Where Aconex (or other document management software) is used on a project, forms, registers, minutes etc identified in the Project Management Plan may be replaced by the equivalent form, register, minutes etc generated by Aconex.

b) Records may be held in electronic format within Aconex and not held as hard copies.

12.2. DOCUMENTATION ISSUED BY TAYLOR CONSTRUCTION

a) The Project Manager shall be responsible for control and issue of the Project Management Plan, project procedures, project job descriptions and other project specific documentation.

- "Controlled documents" shall be controlled via Aconex. Controlled documents include:
- Project Management Plan, Project Safety Plan, Project Environmental Management Plan, etc
- Drawings
- Programme
- Specifications
- Shop drawings
- Inspection and Test Plans
- Project Forms

b) A transmittal shall be used and issued with the documents, when controlled documents are issued to 3rd parties.

c) Superseded documentation shall be marked "Superseded"

12.3. PROJECT CORRESPONDENCE RECEIVED BY TAYLOR

a) The Project Team shall be responsible for control of incoming correspondence. The Project Team shall control amendments to the specification and shall ensure that variations are received in writing, filed and the appropriate personnel advised.

12.4. PROJECT DOCUMENTATION RECEIVED BY TAYLOR

a) Project documentation received by Taylor shall be entered into Aconex and hard copies filed accordingly

b) Superseded documentation shall be marked "Superseded"

c) Copies shall be issued to the relevant parties either via Aconex or together with a Document Transmittal form.

12.5. HANDWRITTEN CHANGES

a) Handwritten changes to project documentation are allowed provided that all copies are initialled and dated by the Project Manager or Site Manager or Site Foreman.

12.6. RECORD CONTROL (QSE-OP-23)

12.6.1. Filing Structure

a) Electronic records shall be filed as below.

b) Hardcopy files shall follow the same structure.

c) Where Aconex is used, some sections may not contain any records.

13. Financial Control

The financial control for the project will be administered as per the agreed contract. Progress claims will be issued in accordance with the contract via the document control system Aconex (or agreed method). This will be issued each month on a date agreed under the contract.

Variations to the contract will be issued to the Principal in accordance with the head contract via Aconex. All notification time Frames will be adhered to as per the contract requirements,

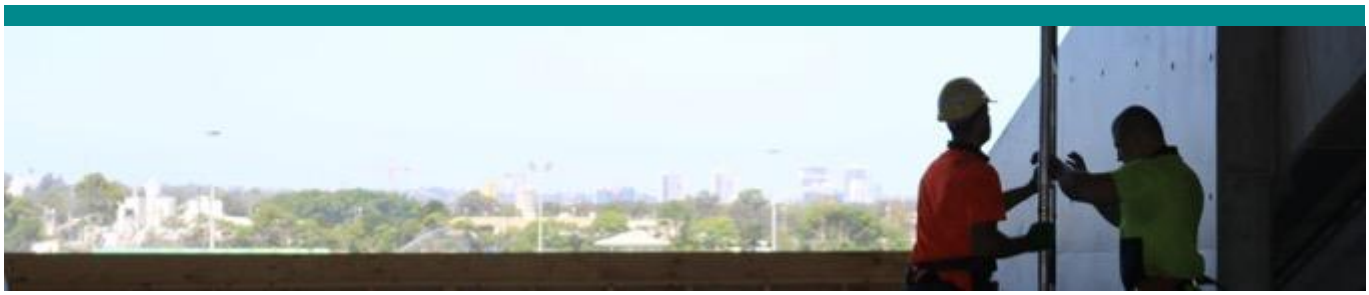
The cash flow for the project will be issued to the principal in accordance with the head contract and will be updated monthly and issued within the PCG report.

All other contractual requirements in relation to time and costs will be administered as per the head contract requirements.

14. Reference Plans

Individual project specific plans to be appended to final Construction Management Plan.

15. Risk Management Plan and Risk Register

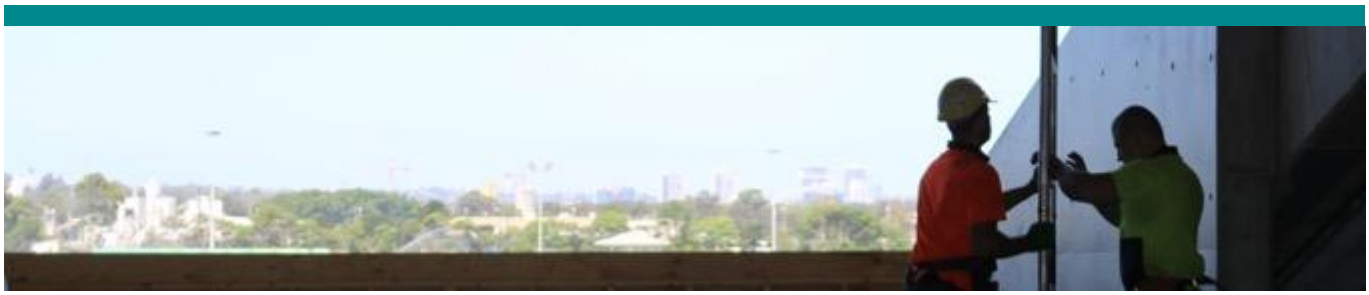


16. WHS Management Plan

17. Hazardous Materials Management Plan

18. Quality Management Plan

19. Environmental Management Plan

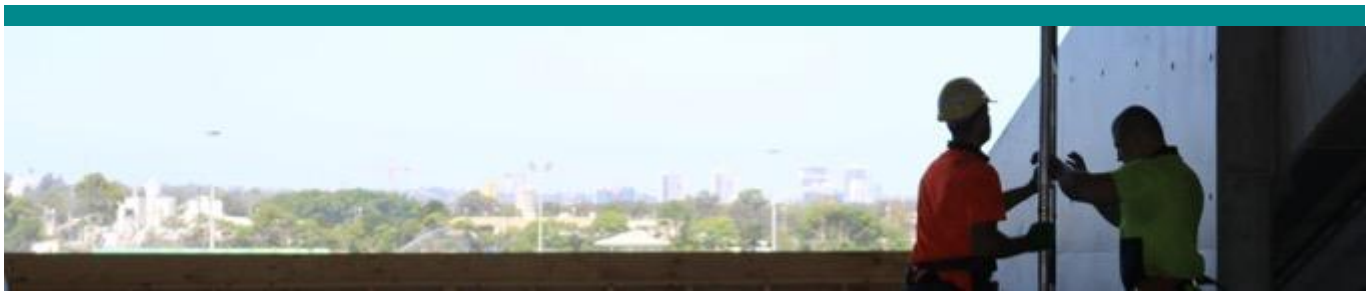


20. Construction Noise, Dust and Vibration Management Plan

21. Waste Management Plan

22. Commissioning, Testing and Witnessing Plan

23. Traffic Management Plan



24. Training Plan

Taylor Construction Group Pty Ltd
ABN 25 067 428 344

Level 13, 157 Walker St, North Sydney NSW 2060
T 02 8736 9000 *F* 02 8736 9090

taylorau.com.au

TAYLOR