



Site -or- Construction - or- Project Management Plan

[Project Number]

[Project Name]

[Choose Date]

Revision History

Version	Date	Revision Description	Project/Site Manager Sign off
[00]	[Choose date]	[Brief description of changes]	[Name]

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1 Project Description

1.1 Project Scope and Site Description

The Banyan Tree Residences – Kangaroo Point project is located at 8 River Terrace and is a mixed use development comprising of 76 high quality apartments accommodated over 10 storeys, a roof top terrace with both penthouse and residents swimming pools and three ground floor retail tenancies over a four level underground basement. The site area of approximately 2200m² is located at the intersection of Main Street and River Terrace, Kangaroo Point, Brisbane. Banyan Tree (BT) (the Principal) has been granted approval for their Development Application from the Brisbane City Council.

A tender has recently been undertaken for the proposed early works package. This package is planned to include excavation, shoring and related foundation works. The current intent is that the Main Contractor is engaged while the Early Works are underway to allow the Contractor to have input into the finalisation of these works.

The Principal has leased the adjacent site at 543 and 555 Main Street, Kangaroo Point. It is envisaged the vacant portion of the leased site can be used by the Contractor for site accommodation, laydown areas and generally provide additional space to assist in the efficient delivery of the works.

The contract is a Design and Construct Contract. The project is to be delivered in two phases.

1.2 Planned Approach

This section may require adjustment of the plans depending on what's called for in the tender/project or deleted if an overarching description of the plans is not required.

The delivery of the works will be managed through the implementation of a series of plans targeted to specific functional areas of the project which includes but is not limited to Safety, Quality, Environment, Site Management, Workplace Relations and their associated sub plans.



The aim of these Project Management Plan's (PMP's) is to provide stakeholders with information regarding operational protocols that have been established for the performance of the works. Sub plans will often be contained within the main suite of plans, e.g. Traffic Management Plan etc. BESIX Watpac is responsible for the implementation of the PMP's and for monitoring against the performance objectives contained therein, either directly or through delegation to project team members.

Distribution of the various project plans will be registered and controlled electronically and distributed by BESIX Watpac.

1.3 [Project / Site / Construction] Management Plan Application

This Site Management Plan has been developed in consultation with BESIX Watpac's proposed project team, to provide a detailed description for construction and management of the project.

This plan provides specific information regarding the procedures BESIX Watpac intends to implement to ensure the Project works are executed safely, that there are no detrimental impacts to the environment, and there are no unexpected disruptions caused by the works.

Procedures within this plan will promote a productive and collaborative site culture, conducive to a successful project outcome.

A copy of this plan will be readily available to all project stakeholders, including subcontractors and will remain a reference document for BESIX Watpac project staff.

It is our experience that during the lifecycle of the project, this plan will be subject to amendment where deficiencies are identified, changes occur in the BESIX Watpac Construction Management System, legislation changes occur or where project works change such that the information contained in the plan is no longer accurate or valid.

Lastly, this plan should be read in conjunction with other plans that form part of BESIX Watpac's Construction Management System.

2 Project Team

2.1 Roles and Responsibility

2.1.1 Operations Manager

The Operations Manager shall be responsible for ensuring the implementation of the Company's protocols and procedures, to ensure the Principal's contractual requirements are being met for the successful delivery of this project. The Operations Manager will also coordinate any additional support from the resources available within the Head office as required.

The Operations Manager will:

- Verify that approved procedures are adopted and that any necessary complementary procedures are developed, updated and implemented as required
- Confirm that staff assigned to the project are adequately qualified and experienced in their relevant technical discipline to perform the duties of their position in a satisfactory and safe manner
- Promote training and development of BESIX Watpac personnel
- Ensure that BESIX Watpac personnel have ready access to Company policies and procedures
- Enforce compliance with BESIX Watpac's Schedule of Delegated Authority in project decision making and letting processes.

2.1.2 Project Manager

The Project Manager will have overall responsibility for planning and managing the safe **design**, construction, commissioning and delivery of the project to meet specified requirements and constraints.

Responsibilities include, but are not limited to, liaising with the Principal's Representative, key stakeholders, authorities and the consultant team in all matters concerning the works, the direction of our team, our subcontractors and suppliers, and managing all interfaces with our works throughout the course of the project.

The Project Manager will be located on-site, reporting to the Operations Manager, and will be the senior point of contact on site.

2.1.3 Site Manager

Reporting to the Project Manager, the Site Manager will ensure that the project is delivered to meet agreed objectives and targets established via the contract documents, and by the Project Manager.

Responsibilities include the planning and managing of the day-to-day construction activities and the interfaces between our works and other ongoing adjacent activities. The Site Manager will also manage medium range planning and programming that enables the safe construction, commissioning and delivery of the project.

The Site Manager will deliver these outcomes through effective direction of our subcontractors and delegation to our Foremen.

2.1.4 Foreman

Reporting to the Site Manager, the Foremen will be full time on-site and responsible for all construction activities in their delegated area or discipline.

They will direct our subcontractors and ensure that the works under their control are conducted safely, properly coordinated, and delivered to meet our program and quality commitments. The Foreman will be responsible for the two (2) weekly look ahead program in their area.

2.1.5 Design Manager

Reporting to the Project Manager, the Design Manager will lead the consultant team to diligently develop the design to satisfy the project requirements, including the procurement schedule and cost plan.

The Design Manager's responsibilities shall include:

- Ensuring that the design documents are fully coordinated, compliant with the contract documents and meet the requirements of the construction, commissioning and completion programs
- Implementing, reviewing and maintaining the Design Management Plan
- Implementing and maintaining the Project Design Change Register
- Arranging for the auditing of the design consultant's quality plans
- Ensuring that safety-in-design requirements are implemented

2.1.6 Cost Planner

Reporting to the Project Manager, the Cost Planner will provide cost planning services to the design team to assist in any value management exercises and will provide cost plan reports as the design is developed, to ensure that budget constraints are met.

2.1.7 Project Engineer

Reporting to the Project Manager, the Project Engineer will support the Site Manager to deliver the project to meet agreed objectives and targets established via the contract documents, and by the Project Manager.

Responsibilities include the planning of medium to longer term critical path type activities, especially those that require significant technical input, including shop drawing and offsite fabrication activities.

The Project Engineer will deliver these outcomes through effective engagement with the broader project team and delegation to our Site Engineers.

2.1.8 Site Engineer

Reporting to the Project Engineer, the Site Engineer will assist in the delivery of the agreed objectives and targets established via the contract documents, in the area of their responsibility.

2.1.9 Services Coordinator

Reporting to the Project Manager, the Services Coordinator will provide technical support to ensure that services works are fully coordinated, compliant with the contract documents and meet the requirements of our construction, commissioning and completion programs.

The Services Coordinator will assist the Site Manager through progressive services witness testing and with the management of individual services and integrated services testing and commissioning regimes.

2.1.10 Senior Contract Administrator

Reporting to the Project Manager, the Senior Contract Administrator will be responsible for the administration of the Head Contract and the overall administration of all subcontracts for the project. This role will manage our progress claim submissions, preparation of the contract cash flow forecast and monthly financial reporting both internally and externally.

2.1.11 Contract Administrator(s)

The Contract Administrator(s) will provide support to the Senior Contract Administrator in letting subcontract packages, preparing Head Contract progress claims, managing subcontract progress claims, and maintaining variation and RFI registers.

2.1.12 Quality and Environment Coordinator

Reporting to the Project Manager, the Quality and Environment Co-ordinator will provide advice to the project team on the implementation and administration of the Quality and Environmental processes and plans. They will assist the Project Manager, Site Manager, Foremen, Project Engineer and Site Engineer to ensure that consultants and subcontractors comply with the requirements of the plans by implementing the monitoring and testing regimes contained within those plans, receiving and administering records and through managing the audit and conformance regimes contained therein.

2.1.13 Project Safety Advisor/Coordinator

Reporting to the Project Manager, the Project Safety Advisor/Coordinator will be responsible for the site safety and environmental inductions, monitoring adherence by all site personnel to the Site Safety Rules, and together with our management team, ensure that subcontracted work is carried out in accordance with agreed Safe Work Method Statements.

The Project Safety Coordinator will also be responsible for the promotion of a proactive approach to workplace health and safety and following through on actions agreed with the Safety Committee.

2.1.14 Offsite Management Support

The project team will be supported by the State Manager, Operations Manager, Commercial Manager, WHS Manager, Quality Assurance & Environmental Manager, Head of Design and the Planning Manager. Our senior management team will be involved in the project through monthly internal reporting and will provide additional support to the project team as required.

Our Quality Assurance & Environmental Manager and WHS Manager will also conduct audits of the project's Quality Plan, Environmental Management Plan and Safety Management Plan throughout the life of the contract.

3 Establishment

The following summarises how we will establish on-site.

3.1 Site Establishment

The Principal has leased the adjacent site at 543 and 555 Main Street, Kangaroo Point. The vacant portion of the leased site will be used for site accommodation, siting of a tower crane and concrete pumping and laydown areas. The existing driveway access off Main Street will be used for concrete truck access. Adjustments to the existing topography will be undertaken to adapt this area to suit our purposes.

On possession of the site we will mobilise and establish site facilities in the locations nominated on the Site Establishment Plan as approved by the Principal's Representative.

Following the possession of the site our construction team will establish on-site. Activities for site establishment will include:

- Erect barriers, directional signage and security fencing and gates
- Plan and install environmental protection measures including, but not limited to, the site entry shake-down grid and concrete wash out pit to avoid materials being tracked off the site; sedimentation fencing and mulch bunds to protect field gully inlets
- Connection of site temporary services to existing infrastructure
- Establish initial site accommodation sufficient to begin the works
- Establish haul roads
- Reconfiguring approved pedestrian and vehicle traffic routes, as required
- Demolish, clear and grub as may be required to establish the base line from which to commence construction
- The demolition contractor will provide a survey of the works as they leave it and hand over a dilapidation survey.

Access gates will be provided in the fencing to facilitate both pedestrian and vehicle access. All gates will be chained and locked when not in use.

In accordance with the program, our temporary fencing will be removed, and any ground disturbance will be made good.

3.2 Site Offices

The main site office accommodating our project management team will be located in the area nominated on the Site Establishment Plan.

The subcontractors' accommodation will also be located within this area with facilities configured to facilitate ease of access in all weather conditions.

3.3 Lay down/Storage Areas

Storage areas will be in the vacant lot adjacent to the site.

3.4 Cranage

BESIX Watpac proposes to use two of its luffing electric cranes - Liebherr 160 HCLs with 55m booms. Cranage has been based on the cores being formed with a crane assisted jumps, and our hook analysis shows that two cranes will be required. The precast panels require the most hook time.

While a single crane can reach the entire site, the large number of precast panels (over 2000) demands a second crane. With a second crane, a 7-day floor-to-floor cycle can be achieved.

Crane 1 will be located at Grid 4C on the River Terrace side of building. Here it penetrates the basements through a car space that can be quickly completed upon removal of the crane. At Ground Level, a planter box will need to be constructed, but there is a void on the levels above. From this position, it can reach the entire site and will conduct the lifting for construction of the basements.

Prior to the Level 1 precast panels arriving to site, Crane 2 will be erected on the vacant land to the south of the site.

Upon completion of precast erection and items out of reach of Crane 2, Crane 1 will be removed. Crane 2 will remain until the builder's lift is operational and hoist removed.

3.5 Loading Bay/Lifting Zones

It is preferable that the lifting zone be located on River Terrace (suburban road) as opposed to Main Street (arterial road). There is an existing but currently unused bus stop that will be our primary lifting zone at the south end of the site.

3.6 Hoists

A man and materials hoist will be erected prior to the structure reaching level 3. It is preferable to locate the hoist at the south end of the building close to the site sheds. The hoist will be located to feed into the balcony on the south elevation between Grids A and B. Vehicle access to the hoist will be via the loading dock entry on River Terrace. Alternatively, the corner balcony facing Main Street is an option. However, as this is over the substation, it is not ideal. These are the only sufficient openings between precast panels.

Using two tower cranes reduces the requirement for materials to be moved vertically with the hoist. Our calculations show that for personnel only, a single hoist will be sufficient.

Once the first lift is operational as a builder's lift, the hoist will be removed and balconies fitted off.

3.7 Concrete Pumping

We have planned to use a placing boom with pumping station on adjacent blocks. The boom will be erected at the lowest basement level prior to pouring the first suspended slab. A deck mounted 42m placing boom will be suitable.

3.8 Scaffolding

A full perimeter scaffold with containment sheeting will be provided around the buildings. The scaffold will serve the following purposes:

- Edge protection for work at heights

- A working deck for post tensioning and face brickwork

- Falling object protection for the public and workers on lower levels.

Full height floor-to-floor precast is difficult to install to the completed structure and creates conflict with the scaffolding. We have programmed on the basis that it will be erected progressively with the structure

rather than inserted after stripping. Fully scaffolding the buildings makes it possible to change the non-load-bearing precast to rendered block.

With the CE-08 façade panels, the spandrel panels will be integral with the wall panels. These can then be erected and propped ahead of the forming and pouring of the deck.

3.9 De-Mobilisation Strategy

Describe timing, sequencing and process for removing cranes, hoists, offices and shed removal. Account for any remediation works such as in-fills, void-filling or landscaping. Ensure a mobile crane can reach to remove cranes/hoist/boom.

Ideally the set up will be designed so that you can remove concrete booms, jump-forms and hoists with tower crane, then the cranes self-climbs down for final dismantling with a mobile.

When the crane has been internally mounted, it cannot climb down. The building structure may be designed to take the load of a rescue crane. The rescue crane will be lifted by the tower crane. Probably the rescue crane will be bolted to the highest concrete structure with cast in fittings. It will dismantle and lower the tower crane and then it will be folded up or be dismantled to a size that can be brought down in the goods lift.

Plan for how you will infill the façade where hoist and crane ties have been removed. If it is a unit block, position plant so it is tied in at balcony and not penetrating walls. If you are constructing an office block, with curtain walls, then penetrations are unavoidable. The ties and facade need to be designed so after the ties are removed, just a spandrel panel needs to be glazed and not the insertion of a full module that needs to be fed in from above.

The further the mobile retrieval crane has to reach, the larger the crane and the cost goes up considerably. This usually has to be undertaken out of hours adding to the cost of the exercise.

3.10 Lighting

Access lighting will be installed in accordance with the relevant standards. Subcontractors will provide their own task-specific lighting. There will be general flood lighting provided within the site boundaries. It is not anticipated that temporary lighting will be required along the boundary fencing.

3.11 Environmental Measures

Environmental measures including shaker grids, sedimentation fences and catch drains will be installed in the locations identified on the project Sedimentation Control Plans and constructed in accordance with Appendices 1-9 of the Aspect 4.2.5 of the EMP, amended from time to time to meet the demands of an emerging construction program. The environmental controls will be maintained for the duration of the works. Refer to the EMP for further details.

4 Project Management

The following section outlines the method by which we intend to manage key elements within the delivery process.

4.1 Security

Security will be engaged to patrol the site outside of building hours. During building hours, the site will be overseen by traffic and/or gate controllers, who will not let anyone in without a site contact.

The Site Office should be notified of any suspicious person/s or activities. Cash and/or valuables are to be secured and kept to a minimum on site. Subcontractor should not discuss activities, vital records, and amounts of cash or security procedural matters related to the site in public.

4.2 Site Access

Access routes to the works will be articulated in the Traffic Management Plan (TMP). Details of which will be provided to all of our subcontractors prior to appointment so that all persons will be aware of the location of the site and access provisions prior to arriving.

Speed limits, maintenance and safe operation of pedestrian and vehicular traffic, directional signage, loading/unloading locations and arrangements, are set out in the TMP. These will be addressed with each subcontractor as part of the initial appointment process and with every employee as part of their site-specific induction process.

Our Site Manager will ensure that we do not unduly obstruct any roads, drain or watercourse, nor damage existing fences or gates.

4.3 Dilapidation/Existing Services Survey

Prior to commencing work on the site, we will carry out a detailed dilapidation survey to identify and record salient features of the existing conditions on and adjacent to the site, of the adjacent buildings, and along the roadway around and leading to the site.

A narrative and photographic record will be produced and copied to the Principal's Representative for record purposes. A copy of this report will be maintained on-site by the Project Manager for the duration of the works.

Prior to commencing any construction work we will undertake a review of the existing services information, consult with any existing building and maintenance services information, carry out 'Dial Before You Dig' investigations then physically pot hole to identify existing in ground services where our works will be carried out. We will then prepare an overlay drawing of those services and maintain that drawing in the induction room, noting that our induction procedures will address working with or near existing services.

4.4 Control of Employees on Site

Perimeter fencing and lockable gates will be provided as noted in Section 3.1 above. Turnstiles and access cards will be used to control and monitor personnel site access.

Way finding signage will be erected to direct workers to the site and site office which will also be appropriately and clearly signed. Lockable gates and specific signage will be erected to prevent unauthorised entry. We will ensure that we do not compromise existing fencing and will ensure that our subcontractors and suppliers are fully conversant with site access rules (point of entry, go and no go zones as further noted below). This will be achieved through our procurement processes, subcontract start up meeting, and at the employee induction.

All visitors will be either escorted onsite by an inducted member of the project or inducted by our site staff prior to going onsite. Right of entry provisions will be implemented, and any required notifications of entry advised to appropriate parties.

4.5 Site Induction Procedures

Our Project Safety Management Plan (PSMP) requires that each person working on the site will undergo a project specific induction. Regular visitors must also undergo this induction. Without exception, no person will be allowed unescorted on-site without first having completed this induction.

Prior to attending site specific induction training all subcontractors MUST have completed the statutory General Induction and be the holder of a 'Blue or White Card' or a mutually recognised interstate equivalent.

Site Safety and Environmental inductions will be provided by our Project Safety Advisor/Coordinator in the site meeting room **each day, Monday to Friday, at 6:30am.**

The induction will address issues of general safety (scaffolding, ladders, electrical safety, PPE etc.) and our site specific safety and environmental requirements as set out in the EMP and PSMP. **Partial online inductions will be completed prior to attending the initial on-site induction, to assist with the efficient on-boarding of new starters to the project.**

4.6 Safe Work Considerations

The subcontractor must, at least 10 days prior to commencing work, ensure that they document and implement a site-specific Safe Work Method Statement (SWMS) to BESIX Watpac's satisfaction. The subcontractor must also consider the potential environmental impacts in relation to the project and must comply with the requirements of BESIX Watpac's EMP. Risk mitigation measures are to be documented within site SWMS to our satisfaction, in accordance with the PSMP.

The subcontractor must also ensure that all persons under their control (including their own subcontractors where applicable) have been adequately trained and inducted to perform the works in accordance with Legislative Requirements and provide evidence of such training and induction to BESIX Watpac.

Subcontractors, their employees and their sub-subcontractors must observe all rules, regulations, notices, instructions and health and safety requirements, which are applicable to the area in which they are working.

Insofar as the compliance with the requirements of the contract permits, the subcontractor shall:

- a. Provide all resources and take all measures necessary to protect people and property, including the environment;
- b. Avoid unnecessary interference with the passage of people and vehicles;
- c. Prevent nuisance and unreasonable noise and disturbance; and
- d. Ensure no existing services are disrupted without prior consultation and approval.
- e. Direct their workers to work in safe areas on the project, should their work area environment change to the extent that it poses an immediate and imminent risk to the health and safety of its work group.

It is the responsibility of the subcontractor and employees to ensure that all subcontractors under their control observe all rules, regulations, notices and instructions that are applicable to the area in which they are working.

4.7 Environment

Subcontractors are to conduct their works in accordance with the requirements as set out in the contract documents and BESIX Watpac's EMP. A copy of the EMP is maintained in the Site Office. All subcontractors must make themselves aware of the content and comply fully with all conditions contained therein.

The transport, storage and use of fuels, oils, chemicals and other potential contaminants are to be such as to prevent leaks and spills direct to the environment. This includes minimising on site holdings and storing materials in bunded areas. In the event of a spill, and where it is safe to do so, the subcontractor is to take all practical steps to contain the spill.

If significant quantities of potential contaminants are proposed to be used during the project, the subcontractor is to provide a management proposal and as a minimum an on-site spill kit. All spills and clean-up actions conducted are to be reported to the BESIX Watpac and an environmental incident report is to be completed for site and environmental records.

The removal of any vegetation, apart from that designated in the contract documents, requires the prior written approval of BESIX Watpac.

All waste generated during the project is to be disposed of in accordance with relevant legislation.

Subcontractors are to minimise waste generation and recycle waste materials where possible as set out in the EMP. Work sites are to be kept free of general litter at all times. Under no circumstances is waste, including surplus soil, to be disposed of on Principal land without the express written approval of BESIX Watpac.

Existing roads, footpaths and walkways are to remain clear at all times.

4.8 Vehicle Access

The existing driveway access off Main Street will be used for concrete truck access. Adjustments to the existing topography will be required to adapt this area to suit our purposes.

All vehicles entering the site are to be registered and are to obey displayed speed limits. Vehicles are to abide by all road traffic authority regulations; these regulations are enforced.

Trucks and earthmoving equipment in particular must be maintained to ensure that noxious weeds are not introduced. Subcontractors are to ensure that the wheels, tracks and body of all constructional plant are free of weeds, mud or concrete slurry before entering or leaving the Site. This is a mandated access requirement.

Subcontractors are to ensure that the car parks in their area are maintained in a clean and tidy condition at all times and only to park in designated areas approved by BESIX Watpac.

Vehicles are not to be parked on grassed areas (unless specifically authorised), on any roadway, footpath or traffic island, in any breezeway or under any building not nominated as a designated general car park.

Vehicles are parked at the owner's risk and no responsibility will be accepted for loss or damage to vehicles in parking areas or to any goods or things carried in or on the said vehicle whether caused by negligence or in any manner whatsoever.

All directions and instructions given by a representative of the Principal, in the performance of their duties, are to be obeyed. Disciplinary action may be taken against any person who disregards any direction, or any instruction given by the representative in the performance of their duty.

Wearing of seat belts is mandatory.

4.9 Works Interruption Notices

Works Interruption Notices (WIRs) will be provided to the Principal's Representative where works would affect their activities (services disruptions, road closures etc). Notice will be provided in advance of such operations so that appropriate arrangements can be put in place to minimise disruption.

4.10 Approval Procedures

Key notice and approval activities, as nominated in the Conditions of Contract, are listed in the Program. We will procure project plans, samples, shop drawings, as built drawings, O&M manuals, warranties, certificates, guarantees and the like as early as is practicable, within the approvals time lines relevant to the particular issue, and will formally transmit those items to the Principal's Representative for requisite approvals.

All of the above will be forwarded under our transmittal notice that will specify the items transmitted, the action required and the timing of the response. Samples will be tagged so that signatures can be affixed to confirm acceptance of the approved item.

We will maintain registers of all of the above, and will retain approved drawings and samples on-site for reference.

The Project Quality Plan will also incorporate all approvals requirement so that testing and witness testing can be organised, communicated and managed in accord with agreed processes and to the timing required to progress the works in accordance with the Construction Program.

Registers of all approval submissions will be maintained and can be incorporated in monthly reporting if requested.

4.11 User Group and Stakeholder Management

Consultation between users and stakeholders and our team will be managed through the Principal's Representative and with our Project Manager / Site Manager.

Subject to how the Principal's Representative wishes us to interface with Users and Stakeholders, we will provide briefings on upcoming activities so that users are properly informed. Works will be planned to keep disruption to a minimum.

Issues requiring this interface will include but are not limited to:

- Services cut ins / alterations

- Services installations outside the site boundary

- Work required in occupied areas

- Traffic management

- Interface with the Principal's other contractors.

4.12 Temporary Services

We will procure the temporary services necessary for the proper conduct of the works including power, water, sewer, telephone and data communications.

We will liaise with relevant authorities for the provision of these services, pay for their use where required throughout the course of the works and for their removal and making good immediately prior to Practical Completion.

Temporary power usage will be provided with suitable circuit breaker protection.

Temporary power, water and amenities will be provided for the use of our subcontractors as required by statute.

We note also with respect to the identification and protection of existing services on the site that aspect 4.2.2 of the EMP refers and that our site rules also specifically address procedures for excavation to ensure the ongoing integrity of both temporary and permanent services.

4.13 Noise and Vibration

To minimise nuisance caused by construction activities, BESIX Watpac will ensure the Principal, their Representative and their stakeholders are fully briefed on the proposed works. The timing of any works which could cause possible disruption Principal operations or infrastructure can only be completed at times approved by the Principal.

No work will be performed outside the agreed hours without the prior authorisation of the Principal's Representative.

Through these processes we aim to minimise our direct impact and assist the Principal's Representative with user expectation management.

To manage noise and vibrations created by machinery, operating times will be considered to minimise disruption to surrounding properties. Vibration generated by equipment will be managed by placing rubber mats or springs between the equipment and the floor or wall (for example, in boiler rooms, with commercial mixers, in refrigeration motors and exhaust equipment). Our site inductions will address the issue of noise and vibration control and our work practices will comply with the relevant Australian Standard, eg AS 2436-2010 "Guide to noise and vibration control on construction, demolition and maintenance sites".

Vibration management strategies include:

- Conduct a survey of properties in the immediate precinct of the site including notes together with a photographic record of existing conditions
- Ensure equipment and machinery is operated and maintained in accordance with industry standards
- Conduct any blasting, rock breaking, drilling or piling activities under strictly controlled conditions.
- Construction activity is by nature noisy, hence noise mitigation measures that will be considered include:
 - Fit mufflers/silencers to pneumatic tools (e.g. breakers)
 - Use residential-grade mufflers on major items of plant
 - If impact piling is adopted, place a resilient pad (dolly) between the hammer head and the pile
 - Enclose the hammer head and the top of the pile in an acoustic screen
 - Substitute impact piling for bored piling or hydraulic piling
- Conduct construction activities between the approved hours of work of 6:30am to 6:30pm Monday to Saturday
- Operate and maintain plant, equipment and machinery in accordance with acceptable industry standards and turned off when not in use
- Power generators used for after-hours lighting are positioned and acoustically treated, as far as practical, to minimise noise emissions.
- BESIX Watpac will notify the Principal in advance if any of the following activities are to be undertaken on Site and are likely to disturb occupants within the adjacent facilities:
 - » Impact drilling concrete, floors or masonry
 - » Chasing into walls
 - » Use of explosive powered tools
 - » Electric sawing of any material

- Any noisy activity that may need to take place outside normal (Monday-Friday 6:30am to 6:30pm) business hours
- Out of Hours Work – BESIX Watpac will provide at least five days' notice to the Principal prior to requiring access to the Site out of the access hours. A minimum of two personnel must be present on site when work is being conducted outside the access hours.

4.14 Publication of Photographs/Images

We will take photographs or video footage of items relevant for contractual record purposes, and or particular reporting requirements as agreed with the Principal's Representative.

Our induction procedures specifically prohibit bringing photographic / video equipment onto site.

We will reinforce in our inductions that none of our employees, subcontractors, suppliers or other persons working on the site takes photographs of Principal facilities, vehicles and or personnel without the specific prior written approval of the Principal's Representative, nor take any photographs without carrying the relevant authorisation on their person.

4.15 Site Maintenance and Cleaning

Each area will be maintained in a clean and tidy manner. We will maintain sufficient material on-site to effectively manage the works and will ensure that materials are stacked out of the way of access pathways and in a safe and secure manner.

Our subcontracts contain provisions specifically to address the maintenance of required housekeeping standards including keeping work areas clear and clean and contributing to whole of site cleaning activities as may be required from time to time.

Housekeeping will be critically and formally reviewed on a daily basis by our Project Safety Advisor/Coordinator, and informally by our site management team and representatives of the Safety Committee to ensure required standards are maintained.

Cleaning will be undertaken progressively and by all on-site to maintain standards. Waste material will be deposited in bins provided for the purpose.

4.16 Maintenance of Existing Services

The maintenance of existing services is a key issue requiring effective and timely management. In order to manage the installation process, we will implement protocols to ensure that building services are maintained, and when an alteration is contemplated that the work is planned to avoid operational dysfunction.

Site inductions note that our management strategies and protocols deal with the identification of all services, the process by which application must be made to affect proposed alterations, and the procedures that must be implemented prior to and during such alterations proceeding.

Our protocols include identification prior to digging and 'pot-holing' to accurately locate existing services within an excavation zone. These arrangements will be developed to contain project specific communication channels to keep stakeholders 'in the loop' when work such work is planned.

4.17 Signboard

We will provide a project signboard in accordance with the requirements of the Contract. The signboard will be removed, and the area made good prior to Completion.

Any other proposed signage will be discussed with the Principal's Representative.

4.18 Site Records

Our administrative systems contain a standard filing system for all project records.

The records include the numbers of persons on-site and a summary of general activity being undertaken on a daily basis. These records can be made available for perusal by the Principal's Representative.

4.19 Site Storage

The EMP deals with materials handling and storage. We will ensure that materials are stacked neatly and are maintained in a tidy manner within the site boundaries, in locations and in quantities sufficient to carry-out the works, and to maintain access to and from the works so hazards to persons and equipment are minimised.

The EMP also deals with management of flora and fauna. The works will be carried-out in accordance with the requirements identified more fully in the contract documents.

4.20 Installed Equipment

Installed equipment will be protected against damage from dust, dirt, shock or other cause as required in our subcontract agreements.

4.21 Emergency Procedures

The PSMP and site induction processes incorporate our emergency evacuation procedures.

Drawings showing assembly points, escape pathways and emergency contact numbers are included in PSMP and will be prominently displayed at various locations around the site including the induction room, lunchrooms, amenities areas and main project office.

Escape pathways must and will remain clear of obstructions at all times and will be formally checked at least daily by our Project Safety Advisor/Coordinator as part of his site inspection regime.

The above process will form part of the induction for all workers.

4.22 Fire Fighting Equipment

Suitably sized dry chemical fire extinguishers will be provided in each site office and areas on-site where activities are being performed that may create a fire hazard. As part of our WHS process, we require our subcontractors to obtain 'hot work permits' for such activities, noting the scope includes for the provision of fire extinguishers of a type appropriate to the hazard as set out in our procedure SWP 24 – Welding and Allied Processes.

We will ensure that existing fire hydrants are not compromised by construction activity.

After the building has reached an effective height of 12m we will ensure that the required hydrants and hose reels for the building be operational in at least every storey that is covered by the roof or the floor structure above, except the two uppermost storeys; and any required booster connections are installed.

5 Construction Methodology

5.1 Typical Floors

Based on the floor plate size, two pours per floor will be required. The south pour will be the first pour on each floor, as it contains the lift core and has direct access to the sheds and laydown area. Stair 4 will be poured concurrently during the first pour to maintain access. As such, the hoist will be erected on the south side. The balcony on Grid 7 A-B is the only sufficient size opening between the precast on this face.

5.2 Vertical Structure

After excavation is complete, there is minimal time to procure a jump, so the lift shaft core will be formed with a crane assisted jump. The two stair cores will also be crane assisted jumps. By keeping the shafts ahead of the slabs, internal stair access to both pours will be maintained.

The lifts do not have a Lift Motor Room at the top. As the structure progresses, we will install a false deck at level 8, allowing installation of the lift car in the basement to facilitate rails and appointments. Once the lift over-run lid is constructed, the lift installation will be completed. The first lift commissioned will become a builder's lift, allowing the hoist to be removed.

Key to delivering this project in a timely manner is the erection of precast. The precast takes multiple forms both as façade and structure.

With the CE-08 façade panels, the spandrel panels will be integral with the wall panels. These can then be erected and propped ahead of the forming and pouring of the deck.

5.3 Building Fit Out and Finishes

Following the progressive removal of soffit formwork on each floor, the general rough-in of services will commence. Our construction team will concentrate on coordinating this process and set up procedures to progressively inspect, test and tag services prior to closing any cavities. "As Built" documentation will also be progressively updated prior to closing of any cavities.

Partitioning will follow the services rough-in process with plasterboard being installed as the envelope is progressively closed in. Services fit off and decorative finishes will be installed following partition works noting that resilient finishes and joinery will be installed once each floor has been waterproofed.

Once the new substation is energised, the existing can be decommissioned and removed.

5.4 Commissioning and Completion

During the Project Definition phase, the Construction Program will be enhanced to contain production of the required handover documents. This includes milestones for the provision of draft documents, approvals, progress validation, completion of interim documents and final documents.

Programming of Commissioning and Completion will commence early in the project and be refined progressively to ensure that when the time comes, any issues regarding both design and methodology have been resolved. The commissioning program will address:

- Specific commissioning and certification requirements for each of the main services components, on a stand-alone basis and where interfaced with other services BMS/Fire, Fire/Mechanical
- Statutory inspection and certifications such as smoke and fire services testing, sanitary and trade waste, BCA compliance / Local Authority requirements
- All items required for contractual handover e.g. architectural, structural services inspection and certification

- Demobilisation checklists
- Authority requirements
- Subcontractor's and consultant's commissioning programs
- Draft and final handover documentation including "as constructed" documentation and operating manuals
- Witness testing
- Principal Training.

Not less than 2 months prior to the completion of the project the Completion and Commissioning Plan will be submitted and implemented. The Plan will detail how the commissioning and completion activities will be implemented on the project and lay out a pathway of activities for the successful testing of the works and training of the Principal's personnel in the management of the new building. Adherence to our commissioning and completion program will ensure that all services are finalised as required, interface testing is completed satisfactorily, test certificates and warranties are provided to the building certifier in a timely manner.

5.5 Types of Plant and Equipment to be used

Plant and equipment used will include:

- 2no.tower cranes
- Builders' hoists
- Mobile cranes – both Franna style and truck mounted for installation of culverts, sheds and pipes
- Roller – civil works
- Miscellaneous delivery vehicles including crane trucks, concrete agitators and tippers
- Concrete pumps
- Concrete trucks
- Scissor lifts.

6 Communications

To ensure that key stakeholders are accurately informed of our activities, we will proactively participate in the proposed meeting schedule set out in the Contract and ensure that the level of our representation is commensurate with requirements.

Establishing an effective communication structure at the outset with the Principal's Representative is an essential element to the management plan for the project and we would expect to initially manage this process through the Start-up / Induction meeting.

A comprehensive written monthly report will be published and distributed prior to each meeting as required. The Monthly Project Report will address at least the following:

- A comprehensive progress narrative supported by photographs
- RFI Register
- Programming and progress reporting detailing the state of work against the approved Contract Program, and anticipated key issues to be delivered / undertaken in the following month
- Summary of the numbers of workers on-site
- Financial reporting including variations, committed cost, cash flow forecast (and actual vs. predicted), forecast additional likely costs, and total estimated cost
- A summary of QA activity including NCR register, summary of test results and audit reports
- Evidence of compliance with the EMP and other project plans
- WHS including current and historical injury statistics (and outcomes vs. targets contained in PSMP), compliance with that plan, incident and or near miss reports including remedial action to prevent recurrence, audit reports
- Industrial relations
- Building Code 2016
- Authorities
- Security
- Complaints / remedies
- Commissioning and Handover
- Defects rectification

Other issues as may be reasonably mutually agreed with the Principal's Representative.

In addition to the above, we will implement at least the following meeting processes.

6.1 Project Meetings

Site meetings provide a forum for regular and formal interaction between the consultants and our site management team.

The aim is to ensure that the participants initiate all necessary actions to maintain the quality and delivery requirements of the project.

These meetings will be minuted and will generally be held fortnightly, chaired by the Project Manager. It is an obligation of the participants that all actions arising from the meeting will be dealt with and closed out by the required action date recorded in the minutes.

We will address planning and coordination, services infrastructure management, traffic management, complaints, area access, fencing, handover and completion, decanting and occupation and the like in this forum.

6.2 Subcontractor Coordination Meetings

Subcontractor meetings provide a forum for regular and formal interaction between our subcontractors and the site management team and will address issues including, but not limited to, site safety, quality management, environmental management, coordination between trades, programming, progress, technical issues, shop-drawings and sample submissions, **Building Code 2016 requirements**, interface coordination with Principal users and general industry matters.

These meetings will generally be held weekly on-site and chaired by the Project Manager.

Minutes will be taken by the Project Manager and distributed to all attendees within two days of the meeting. As with all meetings, it is an obligation of the participants that all actions evolving from the meeting will be dealt with and closed-out by the required action date recorded in the minutes.

6.3 Safety Committee Meetings

All meetings will be conducted in accordance with the requirements set out in detail in the PSMP and stipulated in legislation.

6.4 Completion and Commissioning Meetings

These meetings will be minuted and chaired by the Project Manager and will focus on the specifics of completion and commissioning activities.

Specific issues will include, but not be limited to, the tests required to be completed; testing programming; testing responsibilities; applicable standards; timing; acceptance criteria; witnessing requirements and the like. Additionally, we will address procurement of necessary certifications (consultants / building surveyor / Principal's Representative, and the provision of warranties, as built drawings, operation and maintenance manuals, all of which will be required to ensure we demonstrate that conformance with project requirements has been achieved.

These meetings begin early in the project and will focus on progressively preparing documents within a framework we will propose for agreement with the Principal's Representative.

6.5 Internal Team Meetings

We will conduct weekly internal team meetings that will focus on safety, quality, progress, coordination and key planning issues.

6.6 Issue Specific Meetings

We will conduct a range of issue specific meetings to address matters including but not limited to: quality; environmental and safety audits (internal, external and subcontract); planning; costing; variation; and information transfer (drawings, RFIs, shop drawings, manuals, approval and the like).

6.7 Toolbox Meetings

These meetings focus on issues ranging from individual subcontract work practices and planning, through to whole of site management / planning issues. Toolbox meetings are generally conducted on a weekly basis and records of the meeting are maintained.

6.8 Complaints Mechanism

Our aim is to carry out our activities in a manner that minimises our impact on the normal operations surrounding the site. Should any complaints be received, they will be logged in the project Complaints Register.

The Project Manager will be responsible to act on and manage all complaints. The Complaints Register will be updated to note the actions implemented to close-out each issue. This register will be reviewed as part of our Team Meeting processes.

6.9 HSEQ Communications

Where circumstances necessitate the communication of specific HSEQ information, a **S03-01-02 HSEQ Communication** or **S03-01-03 HSEQ Alert** is to be raised by the National/State Safety Manager, or State Quality & Environment Manager, and distributed to the relevant audience.

With the exception of occurrences of a confidential nature, where the HSEQ Communication or HSEQ Alert is applicable to the project, a copy is to be:

- Distributed to the relevant subcontractor/s;
- Displayed on the project notice board; and
- Discussed as part of the next consultation arrangement on the project, being the project safety committee meeting, subcontractor meeting and/or toolbox talks.

7 Traffic Management

7.1 Public Interface and Maintaining Security on the Site

The site perimeter will be fully enclosed with a solid hoarding (up to 1.8m) and a full perimeter scaffold with containment sheeting will be provided around the buildings.

All gantries, hoardings and scaffold will be installed and maintained to reflect the quality of the development being constructed. Full engineering certification and ongoing scheduled inspections shall be adhered to in accordance with BESIX Watpac's management plans and procedures.

7.2 Traffic Control

Solid hoardings will be maintained for the duration of the works with entry and exit gates installed for site access for vehicles during construction.

Effective traffic management will be essential to avoid manoeuvring hold-ups, queuing and blockages.

To reduce any confusion on the part of drivers, and the public, appropriate graphic signage will be erected in key locations to give clear direction and advise the public of safe access routes. BESIX Watpac will instruct all construction delivery vehicles as to the required route to the site.

BESIX Watpac will engage the services of a Traffic Management consultant to formulate and implement a Traffic Management Plan. Traffic Controller's will be employed Traffic Controller's throughout the project. The traffic controller's responsibility is to coordinate the flow of construction traffic into and out of the loading zones, with the pedestrians and general traffic.

7.3 Pedestrian Management

Separation of the public and construction activities is an essential part of our methodology.

Temporary barricades will be placed in areas to control public access points around the site perimeter. We will select routes that are logical and easy to follow and provide signage to inform and direct the public through paths of travel to currently-operational areas, and to foster good relations.

Pedestrian management will be via the use of Traffic Controllers.

7.4 Parking

No labourer parking will be allowed on site. Tools and materials will be stored on site so that workers do not need to bring these to site on a daily basis. These requirements will form part of our site inductions.

7.5 Signage

Way-finding signage will be erected to direct workers to the site and site office which will also be appropriately and clearly signed.

We will ensure hoardings are not compromised and that our subcontractors and suppliers are fully conversant with site access rules (point of entry, go and no-go zones). This will be achieved through our procurement processes, subcontract start-up meeting, and at employee inductions.

7.6 Footpaths

Pedestrian usage on both of these frontages is minimal.

There will be a bus stop on Main Street that remains in its current location upon completion of the project. We propose negotiating the temporary relocation of this bus stop during construction, so that this footpath can be closed. However, it is still our intention to do all our unloading off River Terrace.

With the building fully encapsulated with scaffold and no lifting over the Main Street Footpath, a gantry will not be required.

To close the footpath along River Terrace is preferable. A temporary pedestrian crossing will be constructed south of our site to divert any pedestrians to the west side of the road. If this is not possible, a gantry will be required along the loading zone.

There is currently a bus stop (no shelter) on River Terrace at the Southern end of the site. This is not currently in use and the bus stop zone will be used as our primary unloading zone. Along the face of our site, southbound traffic merges from one lane down to two lanes. Outside of peak traffic times, we will create an earlier merge to increase our loading zone to within 30m of the intersection.

8 Commissioning and Handover Plan

Our commissioning process begins with the development of the Commissioning and Handover Plan. This plan sets out the method and manner of testing and commissioning sufficiently to demonstrate to the Principal's Representative that we have met our contractual obligations in order to achieve Practical Completion of the Works.

The process begins with the implementation of inspection and test plans that identify the inspection and tests to be undertaken and witnessed and the records required to be progressively produced.

Records from this process include signed inspection and test plan documentation, reports, certification and or Consultant reports. Documents may include engineered fill compaction tests, water quality tests, concrete tests, geotechnical testing, progressive testing of in-ground services and services rough-in to buildings, services fit-out and terminations together with condition performance testing for all systems.

Final testing and commissioning will be managed via check sheets specifically developed for the purpose. Final systems testing will be undertaken by our subcontractors under our supervision. It is expected that the process will be witnessed by the Principal's Representative, design consultants, Building Surveyor and local Fire Services as appropriate. Sufficient notice will be provided to all involved for the witness inspection process to ensure attendance.

Final testing and commissioning include whole of project individual system testing, and whole of project integrated systems testing. Testing sufficient for the relevant Authority (where applicable) and consultant to sign off acceptance of the system prior to the Building Surveyor issuing the occupancy certificate will be conducted.

Our team will be vigilant in their ongoing works inspections and will ensure that any defects identified are addressed progressively.

We will complete the physical work progressively, conduct final inspections and commission the works, and at the scheduled completion, deliver the works so that no deficiencies and non-conformances remain in the Works. Our target is to achieve defect free outcomes. Should any minor defects remain post Completion, they will be expeditiously remedied.

We will prepare our Operational and Maintenance Manuals will be prepared progressively and provide drafts for the Principal's Representative review and acceptance prior to scheduled completion dates. As-built drawings will also be progressively prepared.

These documents will be provided to meet specified requirements, noting that O&M manuals will be similarly formatted and be of a standard and quantum sufficient for the Principal to operate and maintain the works post Completion. Final As-Built drawings and final commissioning data for incorporation in the Operational and Maintenance Manuals in accordance with the Contract Requirements will be delivered.

9 Defects Liability Period

During the Defects Liability Period (DLP) we will attend to any defects that may arise and carry out planned and unplanned maintenance to ensure the works remain fit for occupation.

Planned maintenance will be carried out in accordance with the schedules in the Operational and Maintenance (O&M) Manuals for the works. Records will be maintained of all attendances and of the works undertaken.

At the expiration of the defects liability period, a DLP Review Report will be provided that captures our maintenance and defect management endeavours during the DLP, which will be provided if requested.

10 Industrial Relations Management

BESIX Watpac is committed to a standard of industrial relations that promotes safe, productive and efficient work practices.

BESIX Watpac's main objective is to professionally manage workplace and industrial relation matters to achieve positive outcomes through:

- Complying with all applicable industrial laws, regulations, statutory obligations, awards, and National and State codes of practices and guidelines
- Complying with BESIX Watpac enterprise agreements
- Promoting a workplace culture which encourages timely and effective resolution of any complaint, dispute or grievance through consultation and understanding of common purpose
- Ensuring amenities and ablutions facilities meet industry standards and are properly maintained
- Addressing industrial relations in our subcontracts
- Establishing communications mechanisms on-site so that we are recognising industrial issues as early as possible and taking remedial action before they escalate
- Ensuring that all commitments made to all parties are deliverable in the first instance and are fully implemented
- Recognising the potential for safety to become an industrial issue, being diligent in identifying safety hazards and maintaining a safe work environment
- Performing as a responsible and contributing member of industry and the community.

10.1 Project Industrial Relations Management

We are committed to the achievement of responsible and sound management of employee relations on our projects. The cornerstones of our employee relations strategy are ethical conduct, mutual trust and teamwork.

10.2 Industrial Relations Coordination

Our industrial relations strategies will be managed by the Project Manager and implemented by our site team and subcontractors. A reporting strategy will be in place to ensure that any issue that does arise is effectively dealt with, and that pertinent information is communicated throughout our team.

All Industrial Relations reporting shall be done in accordance with the Building Code 2016.

10.3 Compliance

We will ensure that during the life of the project that we will comply with all employment and legal obligations, including but not limited to:

- Payment of remuneration to employees
- Annual leave
- Long Service Payment Scheme registration
- Workers' Compensation insurance (including self-insurance arrangements)
- Superannuation fund membership and contributions
- Code of Conduct requirements.

11 Programming

The program includes both the Design Phase and Construction Phase activities. We have submitted both of these as a single program to illustrate the links between the two phases. The Major headings are:

- Key milestones and overview activities - summary bars for the major stages of the project and key milestone dates
- Project definition – Consultant engagement, validate and develop the design, project plans and authority approvals process to allow construction
- Trade documentation and procurement - this schedule is on a trade-by-trade basis documentation, engagement of subcontractors, off-site processes up until materials land on site for installation.
- Construction – All on site works.

Part of our resourcing methodology involves analysis of critical activities to understand resourcing requirements throughout the Project. Prior to construction, detailed resource profiles will be produced and discussed with our Site Manager, Foremen and subcontractors and where possible, we will match the gang sizes used by our subcontractors.

11.1 Calendar Methodology

A working day calendar has been included which has been adopted in the program for activities on-site. This shows all statutory and other planned non-work days during the duration of the contract.

Our Program is based on a five day working week excluding public holidays, rostered days off and a two week Christmas shut down period.

Our program is calculated using the working day calendar.

The calendar outlines scheduled RDOs, however different trades are on different agreements and the days they do not work will vary. Therefore, the site will be open all days except Sundays and public holidays.

11.2 Master Program

This program will be the prime tool by which the project team will monitor the progress of the works and manage the delivery of each stage and the works as a whole.

BESIX Watpac will use its internal programming resources to provide comprehensive programming services for the project. Our Senior Planner will prepare a comprehensive Master Program that comprises a detailed network of design, procurement, construction, commissioning and hand-over processes. We will use this Master Program to progressively measure our performance.

11.3 Project Definition Phase

During the Project Definition Phase, BESIX Watpac will provide programming advice and input.

Once appointed as the Design and Construct Contractor, we will develop the Master Program based on initial engagement and information from the Principal, Principal's Representative, stakeholders, consultants and relevant authorities. This will be an overview program, setting out the manner and time by which the project milestones will be achieved.

We will also prepare a target program that will be distributed to relevant stakeholders. The target program will set dates inside contractual requirements and will be a tool by which we drive the earliest completion practicable.

The Master Program will be updated as necessary to reflect significant changes throughout the life of the project. We will also prepare a range of sub-programs.

Process constraints and how they affect buildability will be explored during Project Definition phase. We will then use the Program to focus on early works and long lead time items, so the end product can be constructed simply, robustly, safely and economically without sacrificing quality, functionality or aesthetics.

During this Phase, the program may indicate that a material or product has an unacceptably long -lead time. These will be identified as early as possible to explore expediting or substitution with a comparable item. The possibility of undertaking early works packages will also be raised.

11.4 Delivery Phase

Three key programs will be required for the Delivery Phase including:

- The Document and Procurement Program
- The Construction Program
- The Completion and Commissioning Program.

11.5 Documentation and Procurement Programs

Documentation and Procurement Programs will be produced during the Design Phase. Details of the Documentation and Procurement Programs will be drawn down from the Master Program, and align with agreed methodology, key milestones and approval dates.

The Documentation and Procurement Programs will be used to help manage the project through, for example, aligning cash-flow with procurement and delivery to ensure appropriate delivery with minimal handling and eliminating risks associated with double-handling items etc.

We have found that the definition and scope of each package is critical to the success of the project. Verification of and the completeness of the extent of the packages will avoid many problems that lead to cost overruns. Design documentation and procurement activities are a common cause of delay to the overall program and can lead to disruption and additional costs. It is essential that we plan these activities to reduce the risk of delay and disruption.

We will use analysis of float to reduce the concentration of resources on non-critical activities and transfer them to more critical activities. This will improve efficiencies and provide value for money.

Documentation will be programmed to be supplied in a manner and at a consistent rate with minimal peaks and troughs, which will enable all parties to process the documentation within the time required by the contract, aligned with the procurement schedule and in a manner that avoids construction delays.

The Project Planner and BESIX Watpac's Contract Administrators will work in-conjunction with the rest of the project team to calculate a Procurement Program, ensuring that priority is given to the completion of design for those critical trade packages required early in the construction process or with long-lead times.

We can use the Procurement Program to improve cash flow by delaying the start of high capital expenditure activities with adequate float. This will also reduce the risk of damage and double handling of items delivered on-site too early before they are ready for installation.

Detailed procurement scheduling will be linked to the construction network to monitor:

Trade package documentation

Pre-selection of competent tenderers

Tendering and letting of trade packages

Preparation, submission and approval of shop drawings

Authority approvals

Fabrication

Off-site testing, quality inspections and test plans; and

Delivery and Installation.

11.6 Construction Program

The Construction Program is a critical, integrated tool for the successful management and delivery of any construction project.

At the outset of the Documentation and Procurement Phase, a detailed Site Management Plan incorporating a detailed Construction Program will be produced addressing each individual element.

The Site Management Plan will include a staffing program, position descriptions and responsibilities, mobilisation checklist, procurement program, construction program, program materials handling and major plant, site layout and reporting procedures.

The Project Manager, in conjunction with the Site Manager, Foreman and the Project Planner, will establish the Construction Program, which will draw overall parameters, milestones and key dates from the Master Program.

11.7 Monitoring and Updating

Throughout the project, the program will be updated to reflect site activities. The Construction Program will be used to both monitor and control, where:

Monitoring is the process of measuring the actual progress and comparing it with planned progress, and

Control is the process of deciding on and taking action to control any activities where the actual progress does not match the planned progress.

If updated data shows an unsatisfactory completion or milestone date, then project logic, durations or resources will be altered to ensure that a plan has been devised to bring the project back on schedule.

The Four-Week Program is the final level of programming and is carried out at the workplace.

The Site Manager and Foreman will work with the Project Planner to produce a short-term rolling schedule in bar-chart format showing three weeks ahead and the week just completed.

This program is sufficiently detailed to enable the next three weeks work to be planned efficiently and should detail every activity in the Foreman's jurisdiction, on a day-to-day basis, required to achieve all the other programs.

The detailed four-week look-ahead program will be monitored daily and updated weekly. It will be distributed before the weekly subcontract coordination meetings where it will be discussed and adjusted if required.

The overall Construction Program will be updated monthly as part of the Monthly Report, or when major changes require adjustments to the program.

All programs will be distributed with a written report. At a minimum, the report will contain the status of critical and near critical activities, clarification of matters difficult to communicate on a bar-chart, an action list and identification of future problem areas.

12 Human Resources

12.1 Site Team

The site team will include the following key functions:

- Project management
- Design management
- Site management
- Safety management
- Quality and environmental management
- Administration
- Construction labour – direct, subcontractors and suppliers.

12.2 Personnel Selection and Recruitment

The site team will be confirmed during the planning stage subject to the condition and specific risks associated with the site.

BESIX Watpac has a strong industry presence including a long-term, directly employed labour force, which will be mobilised for this Project.

BESIX Watpac recognises the importance of consistency and familiarity when working on a large ongoing project and where possible we will seek to ensure continuity of construction resources across the project.

Project recruitment for subcontractors will focus on maximising local resources in accordance with BESIX Watpac's Local Industry Participation policy.

12.3 Training and Competency

S04-02-01 Operational HSEQ Training Matrix identifies the minimum role-specific, mandatory training requirements for BESIX Watpac personnel.

Induction of new workers will be conducted in accordance with internal procedure S04-01 Induction. Verification of the workers' competency will be conducted in accordance with internal procedure S04-03 Competency.

Training activities shall be recorded in training records. These shall include both:

The competency requirements of the individual BESIX Watpac employee; and

The key skills and competencies required for all BESIX Watpac employees.

All BESIX Watpac employee training records shall be maintained by the HR Advisor.

At the start of each project, the Project Manager will prepare C-FRM-077 Project HSEQ Training Needs Analysis (TNA). This is based upon project and Principal specifications. At a minimum, the TNA must consider:

The pre-tender evaluation and development

The construction methodology development

The knowledge and competency of WHS requirements in the workplace and/or on projects

The knowledge and understanding of BESIX Watpac HSEQ policies and procedures, and where applicable, project HSEQ policies and procedures;

The activities performed by subcontractors to execute their scope of works;

The activities performed by the workers and the environment in which the activity is performed;

The equipment operated by workers

The materials used by workers; and

Other relevant legislative requirements pursuant to the 'Certification of Competency'.

Employees seeking to inspect the TNA can request a copy from the Project/Site Manager. The TNA will be reviewed on an annual basis, or more regularly if required by the needs of the project.

Employees in supervisory roles, or promoted into supervisory positions, knowledge and competencies are assessed and evaluated via their direct line management structure. This occurs through direct contact with their line manager and performance appraisals during the life of the project. At any stage during the project that it is identified that the person requires additional safety related training, the Operations Manager, HR Department and State Safety Manager should be contacted to determine the appropriate training course for the individual to attend.

All BESIX Watpac employees who are required to perform activities identified in S04-02-01 Construction HSEQ Training Matrix and TNA shall receive the appropriate course of instruction to enable them to perform the activity in a competent manner.

Where project-specific training needs are identified for works being undertaken by BESIX Watpac personnel, it is at the discretion of the Project Team to identify which individuals need the training/qualifications, and then to ensure the training is provided.

Where any new or unforeseen workforce requirements are identified (e.g. a change in construction methodology that introduces new hazards), the WHS TNA must be reviewed. Where additional WHS training is required, the TNA must be updated and the training provided.

BESIX Watpac senior management, project site management and site supervisors and foreman shall receive training in WHS legislation and WHS management principles and practices. Promotion of BESIX Watpac employees to supervisory and management roles shall be dependent upon attainment of the required WHS knowledge and competencies.

For internal and external run WHS courses, a formal assessment of the participant's competency, including theoretical and practical testing, is to be conducted where applicable.

All WHS training courses (including induction training) developed internally by BESIX Watpac shall be:

- Consistent with the adult learning principles;
- Critiqued by relevant employees within BESIX Watpac prior to the course being delivered, to ensure the course reflects legislative requirements and minimum competency/awareness expectations; and
- Reviewed by persons competent in Certificate IV Workplace Assessment and Training or similar.
- Records of BESIX Watpac employee attendance, training programs, competency assessments, and certification for WHS-related training shall be provided to and maintained by HR in the database. Project specific training records will also be maintained with the project records.
- Subcontractor induction, training and competency requirements are specified within internal procedure S04-01 Inductions, the Project Safety Management Plans and the Project HSEQ Training Needs Analysis.
- Subcontractors engaged by BESIX Watpac are required to have a sufficient number of personnel that hold the identified qualifications (with records available) to execute the works as part of their Subcontract Agreement and in accordance with C-FRM-077 Project HSEQ Training Needs Analysis that:
 - Are equivalent to those required by BESIX Watpac employees to undertake the task (where relevant), or equivalent to those required to act in the particular position, e.g. Supervisor
 - Are required under the applicable legislation; and
 - Are proportionate with the tasks they are engaged to undertake.

At any time additional training needs are identified BESIX Watpac project staff in consultation with subcontractor employer will arrange the required training. This may require alternative duties or suspension of the works until training has been completed. Applicable Subcontractor training records shall be maintained within project documentation.

12.4 Site Inductions

As part of our commitment to achieving an incident and injury-free workplace, BESIX Watpac will provide site inductions to its construction workforce and subcontractors to ensure that every individual is adequately informed about health and safety risks on the project.

Site specific inductions will be conducted at the project site and will be undertaken by all individuals working on the site, including the site team, construction-related personnel, BESIX Watpac's project management team and subcontractors. Inductions must be completed prior to commencing work onsite. The Site Manager will maintain an induction register of all persons who have been inducted for the Project.

Key topics to be covered by induction include:

- Community safety
- Community engagement
- Site specific hazards and their controls
- Emergency plans
- Site communication
- Incident reporting
- Plant and equipment
- Site safety requirements, environmental and security requirements
- Personal protective equipment
- Fitness for work including alcohol and drug policy and fatigue management
- Employee relations
- Responsibilities and accountabilities onsite
- Working in a live environment and minimising impacts and risks to the local community
- Traffic management.

Workers will be required to provide a copy of their General Construction Induction Card and relevant training and competency records (e.g. working at height, high risk licenses, etc) to BESIX Watpac's Site Manager prior to attending the Induction. These training certificates will be verified using the S04-01-01 Site Induction Form.

All visitors to the site will also be required to undertake a visitors induction provided by BESIX Watpac. This will include information related to site safety and the emergency plan onsite. Visitors will be accompanied by a BESIX Watpac representative or an inducted subcontractor representative at all times, unless exempt from doing so. Visitors must comply with all project site safety rules and conditions of entry to site and sign the visitor logbook upon arrival.

Delivery drivers will not be inducted but will be accompanied at all times by a BESIX Watpac representative while onsite.

12.5 Workplace Relations Framework

To respond to workforce risks associated with a project of this scale, BESIX Watpac will employ robust and proven workplace relations strategies to ensure industrial harmony throughout the Design and Construction (D&C) Phase.

BESIX Watpac will develop an Industrial Relations and Workforce Management Plan (IRWMP) following the completion of a risk identification process that took into account the variables and circumstances specific to the Project.

This assessment has enabled the development of a formal framework and management plan that will support the construction outcomes of the Project.

The IRWMP outlines BESIX Watpac's strategies for compliance with applicable Laws and Regulations including State and National Codes.

By providing a robust industrial relations framework, we will maintain a stable working environment and promote safe, productive and efficient work practices to optimise project outcomes.

13 Workplace Health and Safety

13.1 National Safety Management System

The National Safety Management System Manual has been developed to provide a systematic approach to specific policies, procedures and direction on how the BESIX Watpac Construction Group is to achieve its Work Health and Safety Policy and Objectives and comply with its statutory obligations nationally.

The National Safety Management System (NSMS) is designed to facilitate improvement in WHS performance. The NSMS is evaluated and formally reviewed on a regular basis to ensure its ongoing suitability. The system has been designed and developed in accordance with AS/NZS 4801:2001 and to meet the requirements of the Office of Federal Safety criteria.

To facilitate continual improvement and provide leadership within BESIX Watpac the National Safety Management System (NSMS) is supported by the BESIX Watpac Work Health and Safety Strategic Plan.

The NSMS is a continual improvement cycle of planning, implementing, measuring, evaluating and reviewing of the systematic approach that an organisation takes to meet its WHS obligations.

BESIX Watpac embodies a positive safety culture throughout the company and will proactively implement measures to improve WHS performance on-site.

13.2 Project Safety Management Plan

Prior to work commencing on the project, appropriate health and safety planning shall be undertaken. Included in this planning process is the requirement to develop a site-specific Project Safety Management Plan (PSMP). This Plan is designed to detail the specific activities required to be undertaken in the scope of work for the project and manage health and safety hazards through a risk management approach and is written in such a way that it can be clearly understood.

- a. Consultation between the Project Manager, Site Manager, and Project Safety Advisor /Coordinator (where applicable) is to be undertaken to:
 - a. Draft a PSMP for the project using the BESIX Watpac Template; and
 - b. Review and finalise the PSMP for use at the project prior to the project commencing.
- b. The PSMP includes the following information
 - a. the address of the workplace
 - b. the name and address of the BESIX Watpac business for the workplace
 - c. the relevant BESIX Watpac business ABN
 - d. what the consultation, co-operation and co-ordination arrangements are for the project
 - e. whether there is a Project Safety Advisor / Coordinator appointed
 - f. when the construction work is expected to start at the workplace
 - g. the forecast time frame for the works
 - h. the type of construction work to be done at the workplace
 - i. the risks at the workplace for which the BESIX Watpac business owes a primary duty of care
 - j. the proposed control measures to prevent, or minimise the level of the risks
 - k. how the proposed control measures are implemented
 - l. how the effectiveness of the proposed control measures will be monitored and reviewed
 - m. the site rules and how workers will be informed of such rules
 - n. The emergency and incident management procedures for the workplace

- o. How the BESIX Watpac business proposes to discharge its WHS primary duty of care to ensure activities at the workplace are safe and without risk to members of the public at or near the workplace
 - p. The plant to be provided for common use at the workplace
 - q. Any Principal specific requirements, safety related contractual duties and accreditation requirements specific to the project
 - r. The arrangements for collection, assessment, review and monitoring of any Safe Work Method Statements.
- c. A copy of the completed PSMP is to be signed and dated by all relevant parties as identified on the cover page and be maintained on site in a location that is readily accessible to all personnel and workers.
 - d. Provisions are to be made for the project/site team to review and evaluate the effectiveness of the Plan on a monthly basis and update as required.
 - e. Any modifications or additions to the PSMP over the scope of the project are to be communicated to all relevant Person Conducting a Business or Undertaking (PCBU) and posted on the Notice board for the workers.
 - f. PCBU's Safe Work Method Statements are to be stored on site with the project safety documentation.

13.3 Project Risk Assessment (PRA)

The Project Manager is responsible for developing, maintaining and reviewing risk control measures for all potentially hazardous situations and activities on the Project Risk Register form.

The risk register process is used to:

- Identify hazards/environmental aspects
- **Transfer residual buildability hazards identified in the design risk assessment**
- Assess the level of risk; and either
- Remove the risk or determine appropriate controls to be put in place.
- All projects are required to complete a Project Risk Register prior to commencing works. The register is to be reviewed, evaluated for effectiveness of the processes on a monthly basis and updated as required.
- Control measures for specific risks will reference where applicable BESIX Watpac Permits to Work.
- A copy of the Project Risk Register will be made available to all subcontractors to assist them in identifying applicable site hazards relevant to their works and Safe Work Method Statements.

Monitoring and review of the implementation and effectiveness of controls is required. Site Managers, Project Managers, Construction Managers and the WHS Manager are responsible for ensuring reviews of control measures take place on a continual basis:

- Any time there are changes to an activity, system of work, plant or equipment
- After an incident or near miss occurs
- As a result of any internal or third-party inspections
- After receiving information on the hazard including emerging trends such as records of incidents, first aid treatments, illness and disease
- If the control does not adequately control the risk
- After receiving a request from a Health and Safety Representative

As a result of hazards being identified on site.

Throughout this process, the Site Manager shall ensure appropriate workplace consultation takes place.

13.4 Safe Work Method Statements & Work Procedures

Safe Work Method Statements (SWMS) are required for high risk construction work.

Subcontractors are responsible for the preparation of SWMS for their work and BESIX Watpac are responsible for ensuring SWMS are prepared for all work that BESIX Watpac employees undertake. All SWMS must be developed in consultation with the workers involved and must be specific to the project for which it has been developed. The subcontractors are required to provide a copy of the SWMS to BESIX Watpac for review. Every SWMS will be reviewed prior to activity starting on site

Works that are not classed as high risk construction work may still present a risk to personnel and require a work procedure to detail how the activity is to be conducted in a safe manner. Work procedures must be developed in consultation with the workers involved and shall clearly explain how to perform the task, identify any potential hazards and include control measures to manage the risk.

Any subcontractor involved in high risk construction work will provide a SWMS to the BESIX Watpac Project representative prior to commencement on site.

Subcontractors will prepare a SWMS using the subcontractor's SWMS template. If the subcontractor does not have a template for a SWMS, the subcontractor may use S05-03-01a Safe Work Method Statement – Subcontractor, provided by BESIX Watpac.

BESIX Watpac project team will prepare SWMS for high risk construction work where its own employees are involved, using S05-03-01b Safe Work Method Statement – BESIX Watpac.

All SWMS used on a BESIX Watpac site must as a minimum include:

- Subcontractor's name, address and ABN
- The name of the Principal Contractor (i.e. BESIX Watpac), and project
- The address where the high-risk construction work will be carried out
- The date the SWMS was prepared and provided to the Principal Contractor
- The review dates
- Identify the work that is high risk construction work
- Specify hazards relating to the high-risk construction work and risks to health and safety associated with those hazards
- Describe the measures to be implemented to control the risks
- Describe how the control measures are to be implemented, monitored and reviewed
- Details of the person(s) responsible for ensuring implementation, monitoring and compliance with the SWMS
- The names of workers that have been consulted on the content of the SWMS
- Be prepared taking into account all relevant matters including (but not limited to):
 - » Site specific hazards and risks; and
 - » The Project Safety Management Plan for the project.

BESIX Watpac work procedures for all non-high risk construction work activities will be prepared using **S05-03-01c Non-High Risk Work Procedure – BESIX Watpac.**

A Work procedure used on a BESIX Watpac site must as a minimum include:

- Subcontractor's name.
- The task/activity being performed and the step-by-step process identifying how the task/activity will be carried out.
- Specify hazards and risks to health and safety associated with those hazards.
- Describe the measures to be implemented to control the risks.
- Emergency procedures, including rescue requirements (training, equipment, etc.) where relevant.

- Specific licensing, trade certificates, qualifications, training or competencies required by workers for specific tasks.
- Describe how the control measures are to be implemented, monitored and reviewed.
- Details of the person(s) responsible for ensuring implementation, monitoring and compliance with the SWMS.
- The names of workers that have been consulted on the content of the SWMS.
- Be prepared taking into account all relevant matters including (but not limited to):
 - » Site specific hazards and risks; and
 - » The Project Safety Management Plan/ Project Risk Register for the project

SWMS and work procedures shall be developed through consultation with workers involved in the activity, not just the Principal Contractor or supervisor and provide clear direction on the control measures to be implemented. There should be no statement that requires a decision to be made by a supervisor or worker, for example the statement 'use appropriate PPE' does not detail the control measures. The control measures should be clearly specified.

All SWMS and work procedures will be reviewed by a BESIX Watpac representative to ensure that the document complies with BESIX Watpac and legislative requirements.

Refer to internal procedure **S05-03 Safe Work Method Statements & Work Procedures**.

14 Quality Assurances

14.1 Quality Management System

BESIX Watpac is committed to construct the project on time and on budget to a high quality and without harm to people or the environment. In particular BESIX Watpac will:

- Comply with the quality requirements of the Contract and Contract Specifications
- Comply with all relevant statutory regulations governing construction
- Act to as prescribed by the Australian Standards and as developed through experience and expertise
- Deliver the work under the Contract on time, within budget and to a quality standard which meets the requirements of the Contract
- Achieve project outcomes consistent with the Principal's Project Requirements
- Minimise the number of defects remaining in the Works at Practical Completion (or Practical Completion of each Separable Portion, if any) and to rectify defects as soon as reasonably practicable.

BESIX Watpac also commits to managing the construction of the project in conformance with the Company's broader quality vision, goals and objectives as documented in the BESIX Watpac Quality Policy.

BESIX Watpac's quality management system has maintained third party Certification status for over 20 years, embracing the current Quality Standard AS/NZS ISO 9001 without exception. The system has successfully been applied across a variety of projects with no limit as to the value and variability of the project. Our QMS has delivered high quality projects across diverse ranges of work including: multi-residential, commercial, industrial, infrastructure, medical, Defence and refurbishment projects. Significant aspects embraced within BESIX Watpac's Quality System include:

- Quality Planning (Project Quality Plan)
- Inspections and Testing
- Quality checklists

- Control of documents and data
- Quality selection and procurement principles
- Control of non-conforming product
- Reporting and communication
- Integrated safety expectations
- Integrated environmental management
- Principal feedback and continual improvement.

14.2 Quality Planning

Quality Planning will include:

- Assignment of roles and responsibilities to implement the quality system on the project
- A description of the internal quality procedures and how they are applied to the project
- A description of the subcontractor's obligations under our Quality Management Plan
- Internal auditing requirements and expectations
- Measurable objectives and targets to monitor quality performance

The planning phase will also involve detailed review of the Principal expectations as documented. A "QA Control Summary of Specifications" will be produced to extract all requirements for samples, prototypes, witness points, hold points etc required.

Within the first few months of establishing on-site, the Quality and Environment Manager will undertake a thorough "Quality Establishment Audit" with a detailed report reviewing the project's implementation as per BESIX Watpac's quality procedures and Principal requirements. The project will be consistently monitored after this review.