

CPCCBC4008B

CONDUCT ON-SITE SUPERVISION OF BUILDING AND CONSTRUCTION PROJECT

ASSESSMENT SUMMARY

The assessment activities for *CPCCBC4008B Conduct on-site supervision of building and construction project* cover all aspects of the unit of competency required. To demonstrate competence in this unit, a participant must undertake all tasks and complete them satisfactorily and consistently. For Apprentices and Trainees, this includes employer completion of the Employer Record Book (ERB).

Participants must read all the information given before starting any assessment task. The assessment tasks are intended to be equitable, fair and flexible. If a participant has any questions or requires alternative arrangements to be made such requests should be directed to their Trainer/Assessor, who should note such arrangements in the 'Assessor Comments' on the affected assessment. If a participant feels they are not yet ready to be assessed, they should discuss their options with their Trainer/Assessor.

To satisfactorily complete the assessment, the participant is required to answer all questions correctly and demonstrate their skills to industry standards. If a participant does not answer some questions or perform some tasks, they will be deemed 'Not Satisfactory' for the task and 'Not Yet Competent' for the unit of competency. The Trainer/Assessor is able to provide the participant with additional information on interpreting the assessment outcomes and provide guidance on the participant's options. Should a participant still be deemed 'Not Satisfactory' they will have the opportunity to undertake a supplementary assessment or appeal the result.

By signing the cover page for each assessment item, the participant acknowledges they understand the assessment instructions and requirements and consent to being assessed. The participant also verifies and assures the RTO that the work submitted is their own work.

Participant Name	Tess Veldink
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Task	Assessment Results	
Theory Exam	☐ Satisfactory	☐ Not Yet Satisfactory
Practical Assessment	☐ Satisfactory	☐ Not Yet Satisfactory
Outcome for Unit of Competency	☐ Competent	☐ Not Yet Competent

Assessor Name	
Assessor Signature	
Unit Competence Determination Date	Click here to enter a date.

CPCCBC4008B

CONDUCT ON-SITE SUPERVISION OF BUILDING AND CONSTRUCTION PROJECT

THEORY EXAM INSTRUCTIONS

This exam will occur under standard assessment conditions.
An oral examination may be allowed under certain circumstances, whereby the Participant's answers will be documented by a party other than the Participant. This must be acknowledged in writing (e.g. FT001 and Assessor Comments)
Participants must provide enough detail in their responses to demonstrate their knowledge and skills.
Please fill in the details below, providing your name, signature and date of assessment.
Your signature acknowledges that this is your own work.
Assessors are to complete marking in pen of a different colour to the Participant.
If a Participant initially answers a question incorrectly but modifies their response, they must follow the instructions below:
If a Participant changes their response in writing, they must put their initials next to the written change.
If a Participant changes their response verbally, this must be noted on the exam paper by the assessor.

Participant name Tess Veldink

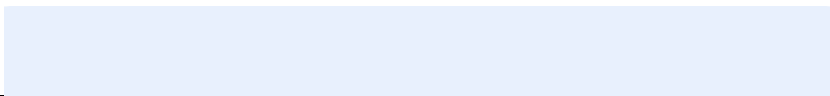
Participant signature



Date 15/06/2021

Assessor name

Assessor signature



Date [Click here to enter a date.](#)

Number of questions	Number of questions answered correctly	Task outcome (Tick)	
46		Satisfactory	Not Yet Satisfactory
		☐	☐

Q1. Name the Act and identify the section that addresses the amount of progress payments. Briefly describe the requirements.

Answer

Section of Act	Requirements
Building and construction industry payments act 2004 – part 3 div 1	A person mentioned in section 12 who is or who claims to be entitled to a progress payment (the <i>claimant</i>) may serve a payment claim on the person who, under the construction contract concerned, is or may be liable to make the payment (the <i>respondent</i>). must identify the construction work or related goods and services to which the progress payment relates; and must state the amount of the progress payment that the claimant claims to be payable (the <i>claimed amount</i>); and must state that it is made under this Act. The claimed amount may include any amount— that the respondent is liable to pay the claimant under section 33(3); or (b) that is held under the construction contract by the respondent and that the claimant claims is due for release. (4) A claimant can not serve more than 1 payment claim for each reference date under the construction contract, but may include in any payment claim an amount that has been the subject of a previous payment claim.

☐

Q2. Name the Regulation and identify the section that identifies the types of dispute resolution processes for progress payments. Briefly describe the requirements.

Answer

Section of Regulation	Requirements
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☐

Building and construction industry payments act 2004 – part 3 div 2 Adjudication of disputes	(1) Subject to the time requirements under section 25A, an adjudicator must decide the following as quickly as possible— (a) an adjudication application; (b) applications for extensions of time under this part. 2) An adjudicator must not consider an adjudication response or a claimant's reply unless it was given to the adjudicator within the time that the respondent or claimant may give it to the adjudicator. (3) For a proceeding conducted to decide an adjudication application, an adjudicator— (a) must decide whether he or she has jurisdiction to adjudicate the application; and (b) may ask for further written submissions from either party and must give the other party an opportunity to comment on the submissions; and (c) may set deadlines for further submissions and comments by the parties; and (d) may call a conference of the parties; and (e) may carry out an inspection of any matter to which the claim relates. (4) If a conference is called, it must be conducted informally and the parties are not entitled to any legal representation. (5) The adjudicator's power to decide an adjudication application is not affected by the failure of either or both of the parties to make a submission or comment within time or to comply with the adjudicator's call for a conference of the parties.
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Q3. List three (3) different documents you might refer to when making contract payments.

Answer Invoices, contract allowance & material supply PO for the job

☐

Q4. Identify two (2) types of construction allowances, using examples.

Answer

- Materials allowance amounts – Builders should provide a work order for the allowance immediately upon completion of the work or purchase of material. Customers should insist on seeing work orders for every project when allowances come into play.

☐

Installed allowance amounts -

- Builders should insist that changes, as pertaining to cost allowances, are approved by the client before they lay out any money for the new materials or labour. Customers should request that the builder secure approval before spending additional funds for materials or labour costs.

Q5. To avoid misunderstanding between the builder and client regarding construction allowances, describe one (1) organisational policy/procedure that might be implemented.

Answer

- Builders should provide a work order for the allowance immediately upon completion of the work or purchase of material. Customers should insist on seeing work orders for every project when allowances come into play.

☐

Q6. True or False (Tick your response): Any changes to the original contract (time and/or work) must be in writing.

Answer

☒	True
☐	False

☐

**Q7. Who must sign a contract variation (time and/or work)?
Tick all that apply.**

Answer

Choice	Possible Answers
☒	All subcontractors

☐

☐	All suppliers
☒	Builder
☐	Client

Q8. Fill in the blanks: Once a variation is signed, the builder must provide a copy to the client within 5 days.

Answer

☐

Q9. True or False (Tick your response): Subcontractors should be given time to rectify issues before a back-charge is incurred.

Answer

☒	True
☐	False

☐

Q10. Identify one (1) document you might supply to a subcontractor to justify a back-charge.

Answer

Timesheets

☐

Q11. True or False (Tick your response): Invoices should correspond with delivery notes.

Answer

☒	True
☐	False

☐

Q12. Identify two (2) controls for ensuring that invoice payments are appropriately authorised.

Answer

1 - you must be satisfied that goods delivered
2 - items hired are to your satisfaction

☐

Q13. What type of insurance should you take out for site loss or damage?

Answer Contract Works Insurance

☐

Q14. Identify three (3) written records you might supply to support an insurance claim.

Answer Receipts, Police Reports & Photographs

☐

Q15. Name the document that outlines the timeframes for processing insurance claims.

Answer General insurance code of practise

☐

Q16. You should record communications with which of the following parties? Tick all that apply.

Answer

Choice	Possible Answers
☒	Clients
☒	Contractors
☒	Inspectors
☒	Suppliers
☒	Unions

☐

Q17. You have participated in on-site communication for the following matters. Which of the listed communications should you record in your site diary? Tick all that apply.

Answer

Choice	Possible Answers
☐	Allocating and managing human resources
☒	Communicating with regulatory authorities to ensure compliance
☐	Facilitating dispute prevention and resolution
☐	Maintaining environmental controls and obligations

☐

☐	Managing expenditure
☒	Participation in on-site meetings
☐	Placing orders for supplies or equipment
☐	Scheduling of plant and equipment

Q18. True or False (Tick your response): A file note should be used to document important interactions between the builder and client.

Answer

☒	True
☐	False

☐

Q19. True or False (Tick your response): File notes are regularly referred to.

Answer

☐	True
☒	False

☐

**Q20. Which of the following details should be on a site report?
Tick all that apply.**

Answer

Choice	Possible Answers
☒	Conditions (e.g. weather)
☒	Observation date and time
☒	Project details
☒	Safety observations
☒	Sign-off by observer
☒	Site activities

☐

Q21. Briefly describe the purpose of a site report.

Answer

A site report is a report which documents general and detailed observations a supervisor makes on site – on a particular day and at a particular time. The idea behind conducting observations and creating observation reports is to step back and make a conscious and objective assessment of project progress

☐

Q22. When can a notice for unsatisfactory work be issued by the client?
Tick all that apply.

Answer

Choice	Possible Answers
☒	Before work commences
☒	Before work completes
☒	Upon completion of work

☐

Q23. True or False (Tick your response): A notice of unsatisfactory work should be communicated in writing.

Answer

☒	True
☐	False

☐

Q24. Identify three (3) quality control procedures that may be implemented.

Answer

- Checking materials supplied to site
- Comparing materials against specifications
- Quality/Site Checklists

☐

Q25. True or False (Tick your response): Site checklists should be maintained for all stages of the building project.

Answer

☐	True
☐	False

☐

Q26. True or False (Tick your response): Site checklists may be used as a reminder for workers and during inspections.

Answer

☒	True
☐	False

☐

Q27. What is the purpose of an organisational quality manual and who might refer to this document?

Answer

Once you have identified the types of procedures that will assist you in managing your building project quality (such as checklists, quality checks and on-site reviews) you can then transfer these procedures into written form within a Quality Manual.
This practice ensures your business maintains its quality systems and continuously improves those systems.

☐

Q28. Identify the Volume and Parts of the NCC that relate to the quality requirements for garage doors for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2 – Part 3 Structural Provisions - 3.0.4 Determination of structural resistance of materials and forms of construction	Volume 1 – Part B1 – Structural provisions - B1.4 Determination of structural resistance of materials and forms of construction

☐

Q29. Which Australian Standard is referenced in the NCC with regards to the quality requirements for garage doors?

Answer AS 4505:1998 Domestic garage door

☐

Q30. True or False (Tick your response): Building approvals/inspections must be carried out by Council building certifiers.

Answer

☒	True
☐	False

☐

Q31. Name the Regulation and identify the section that identifies the mandatory stages requiring inspection for a single detached Class 1a building. Briefly describe the requirements.

Answer

Section of Act	Requirements
Building Regulations 2006 – div 2 Restrictions on functions competent persons may perform	Restriction on signing inspection certificate for single detached class 1a or a class 10 building (1) This section applies for assessable building work for a single detached class 1a building or a class 10 building or structure. (2) Unless a competent person is a building certifier, the person can not sign a certificate of inspection for — (a) the stage of the work that is after excavation of foundation material and before any footings for the building or structure are laid; or (b) the final stage of the work. (3) Subsection (2) does not stop a competent person (inspections) who is not a building certifier from giving other inspection help for a stage mentioned in subsection (2) if the building certifier has, under section 17, decided the person can give the help.

☐

Q32. True or False (Tick your response): A supervisor must watch over the work as it is happening.

Answer

☐	True
☒	False

☐

Q33. Identify three (3) checks that may occur to verify painting work meets the required standard.

Answer

Selected finish accords with contract documents, correct paint type used for internal and external environments & Pre-paint inspection carried out to ensure adequate surface

☐

Q34. True or False (Tick your response): Specific requirements for quality and finish should be included in the contract, so the builder knows the standard required to be met.

Answer

☒	True
☐	False

☐

Q35. List three (3) implied standards for building work, as per the Australian Consumer Law.

Answer

- The builder will carry out the work in a proper and workmanlike manner and in accordance with the plans and specifications set out in the contract
- The materials to be supplied by the builder will be good and suitable for the purpose for which they are used and, unless otherwise stated, those materials will be new
- The work will be carried out in accordance with, and will comply with, all laws and legal requirements

☐

Q36. For each of the following topics, identify an organisational policy that may be in place.

Answer	Topic	Policy	☐
	Pre-handover inspection	Arrange an on-site inspection with the client perhaps a week before the date nominated for handover. This gives you a final opportunity to address any remaining issues prior to handover	
	Final payment	Let the owner know at least 2, 3 weeks before PC Provide clients with all certificates of inspection Request final payment in accordance with the contract at PC not at hand over	

Q37. True or False (Tick your response): Final payment is to be made prior to practical completion.

Answer	☐	True	☐
	☒	False	

Q38. True or False (Tick your response): The contract may specify that certificates of inspection are required prior to receiving final payment.

Answer	☒	True	☐
	☐	False	

Q39. List five (5) aspects that may be checked as part of the final inspection.

Answer

- The control and discharge of stormwater
- The height of the floor above ground
- Support of any earthworks necessary to protect the building and other property
- Protection against water penetration
- Fire safety issues such as smoke alarms

☐

Q40. True or False (Tick your response): The building certifier's certificate indicates that all inspections and approvals required by the legislation have been satisfactorily completed.

Answer

☒	True
☐	False

☐

Q41. What documents should be provided to the client on handover day?

Answer

Certificates of inspection
Product warranties for appliances installed
Reports, notices or other documentation issued by service providers (e.g. electricity, gas, telephone, water or sewerage)

☐

Q42. Identify two (2) items that might be found on a defects item document.

Answer

1.minor defects
2.minor omissions

☐

Q43. True or False (Tick your response): The builder and client must agree to all items listed on a defects document.

Answer

☒	True
☐	False

☐

Q44. Fill in the blanks: Defects noted at handover should be rectified within 6 months after completion of the work.

Answer

☐

Q45. True or False (Tick your response): The client must sign-off once defects have been rectified.

Answer

☒	True
☐	False

☐

Q46. Identify two (2) reasons why you should implement a site safety policy.

Answer

By implementing a site safety policy you are looking after everyone's physical safety and mental health

☐

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CONDUCT ON-SITE SUPERVISION OF BUILDING AND CONSTRUCTION PROJECT

PRACTICAL ASSESSMENT INSTRUCTIONS

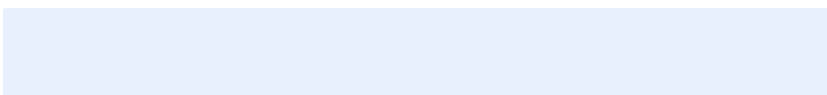
The following practical assessment will require the Participant to complete work related activities.
 The Assessor will conduct observations of the Participant's work to determine whether they display sufficient practical skills and knowledge.
 Please fill in the details below – providing your name, signature and date of assessment.
 The Participant's signature acknowledges that the Assessor provided clear instructions and the Participant understood what was required to complete this assessment.
 The Assessor may substitute a Practical Task with an alternate task of equal value.
 Alternate tasks must be fully documented by the assessor in the Assessor Comments area.

Participant name Tess Veldink

Participant signature 

Date 28/06/2021

Assessor name _____

Assessor signature 

Date [Click here to enter a date.](#)

Task	Task outcome (Tick)	
	Satisfactory	Not Yet Satisfactory
Task 1 (Occasion 1)	☐	☐
Task 1 (Occasion 2)	☐	☐

ASSESSOR COMMENTS

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CONDUCT ON-SITE SUPERVISION OF BUILDING AND CONSTRUCTION PROJECT

Practical Task 1 (2X)		
Description of task: On two (2) occasions, a suitable observer is to verify the participant's ability to supervise implementation of administration processes relating to construction projects: Occasion 1: Residential construction projects Occasion 2: Commercial construction projects The participant is to gather evidence of how they have completed each component of the Practical Task, which is to be submitted with this Practical Assessment sheet. Evidence to be submitted may include: Site diaries and safety plans Extension of time notices Requests for information Site instructions issued Quality control checklists Material delivery registers Other emails, letters or correspondence Invoice authorisation forms or registers Project handover procedures Project handover checklists Defect inspection checklists The observer is to provide detailed comments on the tasks completed by the participant. The assessor is to verify the observer's comments in the Assessor Comments section, and provide the Practical Assessment outcome on the front cover of this document.		
Resources required: Contract, Computer, Site diary, Site checklist, Organisational quality manual.		
Assessment of task		
Name of participant:	Tess Veldink	
Name of observer:	Mark Hickling	
Role of observer (Confirm suitability to sign)	Project Manager	
Email address of observer	tess.veldink@powerintegration.om.au	
Signature of observer:		
Date:	6/07/2021	
When completing the task, did the participant:	Tick if satisfactorily completed. Provide comments if left unticked.	
	1 st Occasion	2 nd Occasion
1 Administration of claims and payment processes		
Make contract payments in accordance with contract allowance or orders.	☒	☒

Carry out drawings against allowances in accordance with organisation policy and procedures.	☒	☒
Authorise variations to contracts, taking corrective action as necessary.	☒	☒
Apply back-charges in accordance with policy guidelines.	☒	☒
Authorise payment of invoices for material supply.	☒	☒
Complete and process insurance claims for site loss or damage.	☒	☒
Conduct and supervise administrative processes with reference to relevant regulatory and organisational requirements.	☒	☒
2 On-site communications		
1.3A. Maintain a diary of on-site communication and events, including communications with clients, contractors, inspections, union matters and suppliers.	☒	☒
1.3B. Prepare and issue file notes detailing specific instructions.	☒	☒
1.3C. Prepare and keep site reports detailing specific supervisory inspections.	☒	☒
1.3D. Communicate variation requests or requirements to the appropriate person.	☒	☒
1.3E. Communicate requests for extensions of time to the appropriate person.	☒	☒
1.3F. Communicate notice of unsatisfactory work in writing to the appropriate individual.	☒	☒
1.3G. Conduct and supervise administrative processes with reference to relevant regulatory and organisational requirements.	☒	☒
1.3H. Effectively communicate using the following methods: Verbally using language/concepts appropriate to cultural differences Non-verbal communication	☒	☒
3 Quality control procedures		
• Identify relevant quality control procedures.	☒	☒
• Use and complete site checklists detailing specific items to be inspected and appropriate stages.	☒	☒
• Use industry and organisational quality manuals and procedures in managing the quality process.	☒	☒
• Implement a site safety policy.	☒	☒
• Arrange local authority inspections.	☒	☒
• Communicate quality requirements to on-site personnel and assess building work against construction standards.	☒	☒
• Put processes in place to supervise on-site work to ensure the performance of work to industry, regulatory and contractual standards.	☒	☒
4 Project administration		
Carry out project administration processes and preparation for practical completion in accordance with contract obligations and company policy.	☒	☒
Identify and apply practical completion inspection procedure, and communicate this to the client.	☒	☒
Identify and carry out handover procedures in accordance with organisational policy, including providing certificates and	☒	☒

appropriate client information (including termite protection and appliance warranties).		
Obtain defects liability items from clients, rectify defects and obtain client sign-off.	☒	☒
Conduct and supervise administrative processes with reference to regulatory and organisational requirements.	☒	☒
The Participant's performance was: ☒ Satisfactory ☐ Not Satisfactory		

OBSERVER COMMENTS

The first occasion was for a commercial construction project - The Oxlade and the second was for a residential construction project – House at Surf Street. Each occasion submitted various types of documents as evidence. Documents included – purchases orders, variations request, submission and approvals, job/project books template, ITP's, safe electrical work plan, QA plan, joinery schedule and delivery dockets and invoices in Simpro. All work used effectively communication throughout using the appropriate language and non-verbal communication.

Administration of claims and payment process

The first thing discussed was the construction claim and payment process as per the contract, then the allowances within a contract was lighted touched on. From there the variation submission procedure was discussed in detail with examples after that, back charging and the invoicing/receipts process was explained in detail. Creating an insurance claim was discussed thoroughly as that's an important procedure to understand.

Onsite Communication

The importance of having a site diary and keeping file/client notes was highlighted and an example template was submitted which Power Integration use on site. Communication with variation requests and extension of time request were next discussed and explained in detail with an example of a variation request submitted. The procedure of unsatisfactory work was touched on lightly at the end.

Quality Control Procedures

A site QA and safe electrical plans were submitted as evidence to support the quality control section. Onsite checklists and different procedures were lightly discussed. Communicating the importance of following standards and rules on site was discussed and the process of having an on site inspection by the client was mentioned at the end of the section.

Project Administration

The definition of PC was explained at the start of this section, followed by what's involved. The companies PC obligations was discussed (pre handover inspection, final payment, handover, defects) which showed what the PC policy should look like internally. A step by step guide on what to do with defects was specified after that, continued by an explanation that subcontractors need to help their client as much as possible and to understand the electrical standards 100%.

Conduct on site supervision of building and construction project Commercial Construction projects – The Oxlade, New Farm.

Administration of claim and payment process

To: dion@powerintegration.com.au

From: tess@powerintegration.com.au

Subject: The Oxlade – electrical contract

Hi Dion,

Welcome to Power Integration, thanks for helping me out with this project. Having you help me with onsite supervisor and project admin, helping the project run a lot smoother. Over the next few emails, I will be explaining the procedures with tasks I need you to assist with. As discussed, you know this project is high profile and everything needs to be accurate to our clients Watpac.

In the construction industry it's important to supervise site regularly and also understand all administration processes. These practises need to become day-to-day activities otherwise payments wouldn't be made, variation would be unapproved and site work wouldn't be completed. There are two acts in Queensland which help builders establish a procedure for payments with their clients and subcontractors – Security of Payment act 2017 and Security of Payment Regulation 2018. As a subcontractor these procedures and regulation will be set out by the builder (client) and we are to adhere to them when making claims each month.

Building contracts normally provide for payments to be made to the builder at various stages of the work. For electrical contractors it's a similar process when claiming. In order to get paid we also have to claim a percentage of the claim sum which also includes materials purchased, variations etc, the claim is then verified by builder. Contractors also have to abide by the deposit rule of 5% of the contract sum.

There are two types of allowances:

- **Material allowance amounts:** The amount of money allocated to cover the cost of material(s) and any applicable taxes only, excluding the labour to install the specified material(s), overhead and profit not included.
- **Installed allowance amounts:** The amount of money allocated to cover the cost of both material and labour to install the specified material(s) and any applicable taxes, overhead and profit not included.

The client understands and agrees that the final billing may be more or less than the figure specified in this contract, and that any adjustments will be made on the final billing.

The more things added to the project means there is more opportunity for misunderstandings and miscommunication so it's essential that Power Integration have the correct policies and procedures to avoid these things from happening during the projects.

Watpac or Power Integration may have to change some of the details during the life of the project. Unexpected circumstances may mean adjusting the details in the contract. It's important that the changes are recorded. Not putting them in writing is one of the main causes of building disputes. Any changes to the original contract must be done in writing and signed by both the client and the builder before work start. See attached a Purchaser Variation for CCTV and the approval by the client meaning the additional funds will be added to the contract value. Once this variation is complete, we can claim against it.

Back charging is billing for work performed or costs incurred by one trade that is in accordance with the contract. For example, if plumbers were to damage cable through the rough in stage and it needs replacing, Power integration can back charge the client and the client passes the bill to the plumbers to pay. It can also work both ways, so it's important to work effectively and sound with other trades while getting the right documentation in case it was to happen.

Suppliers that provide contractors with materials will usually invoice after the goods have been delivered or collected. It's the contractor's responsibility to look after payment of materials and services based upon

purchase orders or invoices for goods supplied. See attached an example PO from Power Integration's project accounting software – Simpro. Once the goods have been delivered and we have received the invoice and delivery docket, the goods are receipted. See attached the delivery dockets, Purchase Orders and Invoices saved under the order.

As a contractor it's important that our clients have our insurances including, WorkCover, Contract Works, Public Liability & Professional Indemnity and it's equally important for Power Integration to have our subcontractors and supplier insurances. There are a few things to remember when making a claim.

- When you make a claim, you are formally notifying the insurance company that you have suffered a loss or damage that you believe is covered by the policy and you are requesting action.
- Provide proof it is a genuine claim, and the insurer will need to be certain the claim satisfies the terms and conditions of the policy.
- If your claim is accepted, the replacement or repair of your property or any payment by the insurer is called the benefit or payout. The insurer will work out the value of the claim and provide the appropriate benefit specified in your insurance contract.

It is essential to ensure that the administration of claims and payment processes comply with both regulatory and organisational requirements.

Onsite communications

Having good communication skills is one of the most important elements to achieving a successful build where the client, yourself and other stakeholders are happy with the building process and outcome. Communication is the key to avoiding, minimising and managing disputes. Many disputes arise because of poor communication.

Misunderstandings and unrealistic expectations are a regular occurrence on a building site – and instead of being resolved via open and honest communication, a lack of communication can cause both parties to become emotional, which means you can (perhaps unnecessarily) end up in a dispute situation.

Ensure that there is also a record of new project information and the correct procedure is carried out whether that's on site or project administration. Site diaries are proven suitable for both commercial and residential projects they allow you to record

- Key project details
- A project checklist
- Templates to record daily activities on site
- Summaries of any notices required
- Records of incidents that occur

You should prepare File Notes to document important events that occur between us and Watpac. File or Client Notes help fill in the gaps and allow the reader to understand what may have occurred. Much information is missed out such as interaction and decisions based on current and changing situations. File notes aim to provide explanation for such changes. At Power Integration these are recorded in the project book – see attached an example of the book page.

A site observation report is the report which documents the general and detailed observations a supervisor makes on site - on a particular day and at a particular time. The idea behind conducting observations and creating observation reports is to step back and make a conscious and objective assessment of project progress, as well as general site activity, safety or environmental findings and evidence of anything out of the ordinary. The point of reporting being that the findings will be made actionable, either by the observing party or other workers and teams. This type of work is usually done by our clients as it's a formal document they need to complete. If something is noticed by the builder that isn't correct, they will then come to Power Integration and discuss.

As discussed above any changes to the contract sum will need to be signed by the client and the contractor before works can begin. Once the variation is approved by the builder, they then need to pass it onto their client which is the developer within 5 business days. Please see attached the request that came from the developer and our client Watpac. It is rare that variation needs an extension of time – this only happens when the purchaser of the apartment has changed their mind last minute or when that stage is completed. When

this happens it's important to have clear communication to all parties, give the request in writing and get approval in writing.

Work that is deemed unsatisfactory means work that doesn't comply with the building act 1975, the NCC, applicable Australian Standards or has damaged products that have been used in the building process. Complaints can be made by clients to the builder, or the principal contractor to their subcontractors. Complaints should be made in writing either before the contract has been completed or at the completion of the work. If we find ourselves in a dispute situation with the client, ensure that the work is

- Discussed upfront
- Spoken about calmly and patiently
- Followed up with in writing
- Given directly to yourself (as the primary contractor)
- Clarified with your client – to avoid any misunderstanding

It is essential to ensure that the administration and supervision of on-site communications comply with both regulatory and organisational requirements.

Quality control procedures

Understanding project quality is vital to managing a successful project. Project quality management is important to determine during the initial project scope as it provides you with a framework to ensure the project is on track. Types of procedures include:

- Checking materials supplied to site
- Comparing materials against specifications
- Quality/Site Checklists
- Regular on-site progress and quality checks
- Reviews of building work against the plans and specifications with clients

If clients have specific requirements with regard to quality and finish, these details should be discussed and written into the contract. For example, the Oxlade apartments can be changed to suit the buyer, therefore there have been many changes. See attached a joinery schedule for the specific requirements for each apartment. Once the above procedures have been finalised, we turn this into a quality manual which is given to the client. Please see attached the QA Plan and a safe electrical works procedure for Oxlade - This practice ensures that Power Integration maintains its quality systems and continuously improves those systems.

Once the electrical work is complete approvals must be obtained from a builder certifier who can be from the government or private certifier. Building certifiers can:

- Assess and approve plans relating to new or altered buildings
- Inspect construction work at mandatory stages
- Provide certificates of inspection to the homeowner, builder and local authority
- Issue enforcement notices where required
- Give final approval for a building to be occupied

As electrical contractors it's vital that all project managers and electricians understand and know the Australian Standard 3000 known as the Wiring Rules, are the technical rules that help electricians design, construct and verify electrical installations.

Power Integration will carry out regular on-site inspections with your client to ensure work meets acceptable standards. If the client would like a more technical person to inspect the work, it may be worthwhile for them to use a private Building Consultant to monitor the job on their behalf and to raise any issues. It's vital to also meeting the contract requirements requested by the client, an example includes an extra LED for all pendants.

Project administration

Practical completion occurs when works are complete in accordance with the contract and all relevant statutory requirements – and the structure is ready for habitation. Every construction contract sets out the administrative process for the client and builder to complete and agree to, such as all contractual paper work and handover documentation. The project administrative process includes inspections, defects, certifications, manuals and final claims as per the contract terms.

Once the electricians have reached PC the project team is obligated to; inform the client, check work against the contract, carry out inspection before handover, check with the bank as they might want to inspect.

Make sure to always consult your company policy when carrying out handover procedures. Generally, your procedures for handover include:

1. Pre-handover inspection – Arrange an on-site inspection with the client perhaps a week before the date nominated for handover. This gives you a final opportunity to address any remaining issues prior to handover
2. Final Payment – Organise final payment of the project at practical completion and not at handover
3. Handover – during handover give the client/s:
 - Certificates of inspection
 - Product warranties for appliances installed
 - reports, notices or other documentation issued by service providers (e.g. electricity, gas, telephone, water or sewerage)
4. Defects – Complete defects report during handover inspection

On the actual day of handover, you should provide copies of all documents – certificates, warranties, reports, PC certificate. Defects also need to be completed by the electricians which should be fixed within 6 months after signed the completion of the project. Complete a defects document with the owner during handover inspection. It must:

- List the minor defects and minor omissions that both you, builder and owner agree to
- State when you'll attend to the matters
- Separately list minor defects or minor omissions that only the owner believes exist, and
- Be signed by the owner and the builder
-

As the subcontractor we aren't in charge of all of the building project responsibilities and administration, however it's important that we do our part for the project and help out our clients as best as we can. Everything we do needs to align with our industry standards, manuals, AS 3000 and communication procedures.

Residential Construction projects – Surf Street, Gold Coast

Administration of claim and payment process

To: dion@powerintegration.com.au

From: tess@powerintegration.com.au

Subject: Surf Street, Residential project.

Hi Dion,

Welcome to Power Integration, thanks for helping me out with this project. Having you help me with onsite supervisor and project admin, helping the project run a lot smoother. Over the next few emails, I will be explaining the procedures with tasks I need you to assist with. As discussed, you know this project is high profile and everything needs to be accurate to our clients Tidal Constructions.

In the construction industry it's important to supervise site regularly and also understand all administration processes. These practises need to become day-to-day activities otherwise payments wouldn't be made, variation would be unapproved and site work wouldn't be completed. There are two acts in Queensland which help builders establish a procedure for payments with their clients and subcontractors – Security of Payment act 2017 and Security of Payment Regulation 2018. As a subcontractor these procedures and regulation will be set out by the builder (client) and we are to adhere to them when making claims each month.

Building contracts normally provide for payments to be made to the builder at various stages of the work. For electrical contractors it's a similar process when claiming. In order to get paid we also have to claim a percentage of the claim sum which also includes materials purchased, variations etc, the claim is then verified by builder. Contractors also have to abide by the deposit rule of 5% of the contract sum.

There are two types of allowances:

- **Material allowance amounts:** The amount of money allocated to cover the cost of material(s) and any applicable taxes only, excluding the labour to install the specified material(s), overhead and profit not included.
- **Installed allowance amounts:** The amount of money allocated to cover the cost of both material and labour to install the specified material(s) and any applicable taxes, overhead and profit not included.

The client understands and agrees that the final billing may be more or less than the figure specified in this contract, and that any adjustments will be made on the final billing.

The more things added to the project means there is more opportunity for misunderstandings and miscommunication so it's essential that Power Integration have the correct policies and procedures to avoid these things from happening during the projects.

Tidal Constructions or Power Integration may have to change some of the details during the life of the project. Unexpected circumstances may mean adjusting the details in the contract. It's important that the changes are recorded. Not putting them in writing is one of the main causes of building disputes. Any changes to the original contract must be done in writing and signed by both the client and the builder before work start. Once the variation is approved the additional funds will be added to the contract value. Once this variation is complete, we can claim against it.

Back charging is billing for work performed or costs incurred by one trade that is in accordance with the contract. For example, if plumbers were to damage cable through the rough in stage and it needs replacing, Power integration can back charge the client and the client passes the bill to the plumbers to pay. It can also work both ways, so it's important to work effectively and sound with other trades while getting the right documentation in case it was to happen.

Suppliers that provide contractors with materials will usually invoice after the goods have been delivered or collected. It's the contractor's responsibility to look after payment of materials and services based upon purchase orders or invoices for good supplied. See attached an example PO from Power integration's project accounting software – Simpro. Once the good have been delivered and we have received the invoice and

delivery docket, the goods are receipted. See attached the delivery dockets, Purchase Orders and Invoices saved under the order.

As a contractor it's important that our client have our insurances including, WorkCover, Contract Works, Public Liability & Professional Indemnity and it's equally important for Power Integration to have our subcontractors and supplier insurances. There are a few things to remember when making a claim.

- When you make a claim, you are formally notifying the insurance company that you have suffered a loss or damage that you believe is covered by the policy and you are requesting action.
- Provide proof it is a genuine claim, and the insurer will need to be certain the claim satisfies the terms and conditions of the policy.
- If your claim is accepted, the replacement or repair of your property or any payment by the insurer is called the benefit or payout. The insurer will work out the value of the claim and provide the appropriate benefit specified in your insurance contract.

It is essential to ensure that the administration of claims and payment processes comply with both regulatory and organisational requirements.

Onsite communications

Having good communication skills is one of the most important elements to achieving a successful build where the client, yourself and other stakeholders are happy with the building process and outcome. Communication is the key to avoiding, minimising and managing disputes. Many disputes arise because of poor communication.

Misunderstandings and unrealistic expectations are a regular occurrence on a building site – and instead of being resolved via open and honest communication, a lack of communication can cause both parties to become emotional, which means you can (perhaps unnecessarily) end up in a dispute situation.

Ensure that there is also a record of new project information and the correct procedure is carried out whether that's on site or project administration. Site diaries are proven suitable for both commercial and residential projects they allow you to record

- Key project details
- A project checklist
- Templates to record daily activities on site
- Summaries of any notices required
- Records of incidents that occur

You should prepare File Notes to document important events that occur between us and Tidal Constructions. File or Client Notes help fill in the gaps and allow the reader to understand what may have occurred. Much information is missed out such as interaction and decisions based on current and changing situations. File notes aim to provide explanation for such changes. At Power Integration these are recorded in the project book – see attached an example of the book page.

A site observation report is the report which documents the general and detailed observations a supervisor makes on site - on a particular day and at a particular time. The idea behind conducting observations and creating observation reports is to step back and make a conscious and objective assessment of project progress, as well as general site activity, safety or environmental findings and evidence of anything out of the ordinary. The point of reporting being that the findings will be made actionable, either by the observing party or other workers and teams. This type of work is usually done by our clients as it's a formal document they need to complete. If something is noticed by the builder that isn't correct, they will then come to Power Integration and discuss.

As discussed above any changes to the contract sum will need to be signed by the client and the contractor before works can begin. Once the variation is approved by the builder, they then need to pass it onto their client which is the developer within 5 business days. It is rare that variation need an extension of time – this only happens when the purchaser of the apartment has changed their mind last minute or when that stage is completed. When this happens it's important to have clear communication to all parties, give the request in writing and get approval in writing.

Work that is deemed unsatisfactory means work that doesn't comply with the Building Act 1975, the NCC, applicable Australian Standards or has damaged products that have been used in the building process. Complaints can be made by clients to the builder, or the principal contractor to their subcontractors. Complaints should be made in writing either before the contract has been completed or at the completion of the work. If we find ourselves in a dispute situation with the client, ensure that the work is

- Discussed upfront
- Spoken about calmly and patiently
- Followed up with in writing
- Given directly to yourself (as the primary contractor)
- Clarified with your client – to avoid any misunderstanding

It is essential to ensure that the administration and supervision of on-site communications comply with both regulatory and organisational requirements.

Quality control procedures

Understanding project quality is vital to managing a successful project. Project quality management is important to determine during the initial project scope as it provides you with a framework to ensure the project is on track. Types of procedures include:

- Checking materials supplied to site
- Comparing materials against specifications
- Quality/Site Checklists
- Regular on-site progress and quality checks
- Reviews of building work against the plans and specifications with clients

If clients have specific requirements with regard to quality and finish, these details should be discussed and written into the contract. Once the above procedures have been finalised, we turn this into a quality manual which is given to the client. Please see attached the safe electrical works procedure and ITP's for Surf Street. This practice ensures that Power Integration maintains its quality systems and continuously improves those systems.

Once the electrical work is complete, approvals must be obtained from a builder certifier who can be from the government or private certifier. Building certifiers can:

- Assess and approve plans relating to new or altered buildings
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Power Integration will carry out regular on-site inspections with your client to ensure work meets acceptable standards. If the client would like a more technical person to inspect the work, it may be worthwhile for them to use a private Building Consultant to monitor the job on their behalf and to raise any issues. It's vital to also meeting the contract requirements requested by the client, an example includes an extra LED for all pendants.

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- State when you'll attend to the matters
- Separately list minor defects or minor omissions that only the owner believes exist, and
- Be signed by the owner and the builder
-

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Wednesday, 16th June 2021

Matthew Carter
Watpac
Level 3, 12 Commercial Road
BRISBANE 4006 QLD

Dear Matthew,

Variation Submission V031 -

As directed and/or requested by Matthew Carter in email correspondence dated 15/06/2021 please see below details of our variation submission for Purchaser Variation – Residence 31 CCTV.

Please note that this is a quote only and PI will not proceed with any works until confirmed in writing by the Watpac team at The Oxlade project.

Scope of Works:

- Hikivision 4 channel NVR (1 of)
- 6MP mini dome cameras (4 of)
- Cabling & fixings etc
- Testing, programming & commissioning

Total Price:

\$2,258.00 ex GST

[two thousand two hundred fifty-eight dollars]

Supporting Documentation:

- PIC Estimation Sheet
- Email correspondence from Watpac dated 15/06/2021

Qualifications, Conditions, Notes:

- n/a

Exclusions:

- Any works outside the above scope
- Costs associated with out of hours work
- Costs attributable to out of sequence work
- Costs or delays associated with late order to proceed or accelerated work
- Delays caused by long lead times and late order to proceed

1300 797 468

info@powerintegration.com.au

1/36 Hampton St East Brisbane, Qld 4169

powerintegration.com.au

Electrical | Air | Solar | Security | Buildings | Technology

ABN 27 608 936 492



Terms of Business:

- Quote valid for 30 days
- Payment terms are net 30 days
- General conditions are as per this letter including the above and any attachments
- All work is to be carried out as required Monday – Friday 6:30am to 2:30pm

Authority to Proceed:

Name: Signed: Date:
.....

We trust the attached meets with your approval, and we await your issue of a variation order.

Kind Regards

Dean Williams
General Manager

 Power Integration™ ENERGY IN ACTION	VARIATION No. V011				SHEET No. 1		
	PROJECT: The Oxlade				SHEET TITLE: PV RES 31 CCTV		
SCOPE/MATERIAL	QTY	UNIT	TOTAL	MATERIAL P/UNIT (\$)	MATERIAL TOTAL (\$)	LABOUR P/UNIT (HOURS)	LABOUR TOTAL (HOURS)
0	0	0	0	\$ -	\$ -	0	0
6MP mini dome cameras	4	ea	4	\$ 180.00	\$ 720.00	0.75	3
4 channel NVR	1	ea	1	\$ 370.00	\$ 370.00	0.5	0.5
Cat 6 data cable	60	m	60	\$ 0.56	\$ 33.75	0.05	3
Testing, programmimng & commissioning	1	0	1	\$ -	\$ -	1	1
0	0	0	0	\$ -	\$ -	0	0
0	0	0	0	\$ -	\$ -	0	0
0	0	0	0	\$ -	\$ -	0	0
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Assessment, Procurement and Submission	0	ea	0	\$ -	\$ -	0	0
Management, Co-ordination, Health & Safety, QA	0	ea	0	\$ -	\$ -	0	0
Engineering, Calculations and Drawing Changes	0	ea	0	\$ -	\$ -	0	0
Sundries, Screws, Fixings ETC	1	ea	1	\$ 25.00	\$ 25.00	0	0
NOTES : 1. THIS PRICING IS NOT INCLUSIVE OF G.S.T.				Total Hours		7.5	
				Subtotal Labour		\$ 937.50	
NOTES : 2. THE ABOVE ITEMS FORM THE TOTAL SCOPE. ADDITIONAL ITEMS REQUIRED WILL REQUIRE RESUBMISSION OF THIS VARIATION				Subtotal Materials		\$ 1,148.75	
				Project Mark-up		\$ 172.31	
				TOTAL		\$ 2,258.56	

Subject: Re: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)
Date: Tuesday, 15 June 2021 at 3:14:38 pm Australian Eastern Standard Time
From: Matthew Carter
To: Tess Veldink
CC: Dean Williams, Owen Burford
Attachments: image001.png, image002.png, image003.png, image004.png, image005.png, image006.png, image007.png, image008.png, image009.jpg, image010.png, image011.png, image012.jpg

Thanks Tess,

Can I get a letter for just the cameras please the remainder can follow in separate letter

Cheers

Matt

Get [Outlook for iOS](#)

From: Tess Veldink <tess.veldink@powerintegration.com.au>
Sent: Tuesday, June 15, 2021 2:03:56 PM
To: Matthew Carter <mcarter@watpac.com.au>
Cc: Dean Williams <dean.williams@powerintegration.com.au>; Owen Burford <oburford@watpac.com.au>
Subject: Re: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Matt,

For the Hikvision cameras it will be \$2250.00. Did you want this in a formal variation with the other changes to PV RES 31?

Let me know – thanks,

Tess Veldink

Construction Administrator | 0430 788 770



Electrical | Air | Solar | Security | Buildings | Technology | PI X

1300 797 468

8/53 Metroplex Avenue, Murarrie QLD 4172

tess.veldink@powerintegration.com.au

powerintegration.com.au

[Facebook](#) | [Instagram](#) | [LinkedIn](#)

From: Matthew Carter <mcarter@watpac.com.au>

Date: Tuesday, 15 June 2021 at 12:41 pm

To: tess.veldink@powerintegration.com.au <tess.veldink@powerintegration.com.au>

Cc: Dean Williams <dean.williams@powerintegration.com.au>, Owen Burford <oburford@watpac.com.au>

Subject: FW: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Tess,

Forgot to include you on the below urgent request to Dean, can you send a quote for the security works per the below by this afternoon?;

Client requires this price to close out a sale.

Hikvision 4 channel NVR and 4 x 6MP mini dome cameras. Please refer to the PV-RES31 Hikvision Camera Location Plan attached for scope. Please provide this as a separate variation cost item for presentation to the buyer for approval prior to proceeding.



Matthew Carter

Senior Contracts Administrator

M [0403 882 305](tel:0403882305)

70 Oxlade Drive
New Farm QLD 4005



From: Matthew Carter

Sent: Tuesday, 15 June 2021 10:45 AM

To: Dean Williams <dean.williams@powerintegration.com.au>

Subject: FW: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Dean,

We have received this as an urgent request from the client to close a sale, are you able to provide today?



Matthew Carter

Senior Contracts Administrator

M [0403 882 305](tel:0403882305)

70 Oxlade Drive
New Farm QLD 4005



From: Belinda Amble <belindaamble@seymourgroup.com.au>
Sent: Tuesday, 15 June 2021 10:40 AM
To: Matthew Carter <mcarter@watpac.com.au>
Cc: Owen Burford <oburford@watpac.com.au>; Dane Murdoch <Dane.Murdoch@au.rlb.com>
Subject: RE: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Matthew,

This buyer has asked overnight for me to provide him with the price for his security camera PV.

Is there any chance you can send this PV request to Power Integration and ask them for a PC Sum that I can provide to the buyer?

We had agreed to provide this figure to him post sale contract signing and now he wants this pre sale contract signing.

Hikvision 4 channel NVR and 4 x 6MP mini dome cameras. Please refer to the PV-RES31 Hikvision Camera Location Plan attached for scope. Please provide this as a separate variation cost item for presentation to the buyer for approval prior to proceeding.

Thanks,

Belinda Amble
Development Manager



M 0437 721 634
T 07 3226 8799
F 07 3221 6248

E belindaamble@seymourgroup.com.au

Level 24, HSBC Building
300 Queen Street
Brisbane QLD 4000

GPO Box 2487
Brisbane QLD 4001

seymourgroup.com.au

Fine Print

This email and any attachment(s) is intended only for use by the addressee(s) and may contain information which is confidential, copyright and/or the subject of legal privilege. If you are not the intended recipient of this communication, any disclosure, distribution or use of the information is prohibited and may be unlawful. Please delete and destroy all copies and contact the sender immediately. We do not represent, warrant and/or guarantee, except as required at law, that the integrity of this communication has been maintained nor that the communication is free of errors, viruses, interception or interference.

From: Belinda Amble
Sent: Thursday, 10 June 2021 7:29 PM
To: Dane Murdoch <Dane.Murdoch@au.rlb.com>
Cc: Owen Burford <oburford@watpac.com.au>; Mark Michaelis <mmichaelis@watpac.com.au>; Matthew Carter <mcarter@watpac.com.au>; Fiona Sheils <FionaS@bureauproberts.com.au>; KellyG@bureauproberts.com.au; SaskiaR@bureauproberts.com.au; Katie Newall <katien@bureauproberts.com.au>
Subject: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Dane,

Can you please issue BESIX Watpac with a site instruction to proceed with this variation.

Apartment PV-RES31 Purchaser Variation – PV-RES31 (Residence 31)

Colour Scheme Selection: **Light (Elegance) with brushed nickel tapware and accessories, sanitaryware and patch fittings and brushed gold kitchen and butler pantry tap and ZIP tap.**

Summary of Purchaser Variations:

1. **Home Automation Package Added** – Refer to the below extract from the Sale Contract Finishes Schedule for the required scope:

HOME AUTOMATION	C-Bus or equivalent brand control system for lighting (on/off and dimming) blinds/curtains (open/close). Home automation platform integration with C-Bus (Push Controls or equivalent) of air conditioning (on/off and temperature control), integration of blinds and motors not included), integration of lighting control (scene setting), cameras not included) and integration of wireless music system (application based)
MUSIC SYSTEM	5 x Sonos "One" wireless speakers or equivalent wireless speakers provided

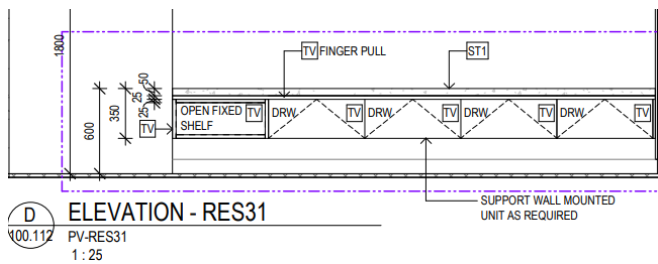
2. **KIT-RES31 Wine Fridge Appliance Change – WF3 to WF8**

- a. Vintec 50 bottle wine fridge (WF3) changed to Vintec 100 bottle Beverage Centre VBS050sbb (**WF8**).

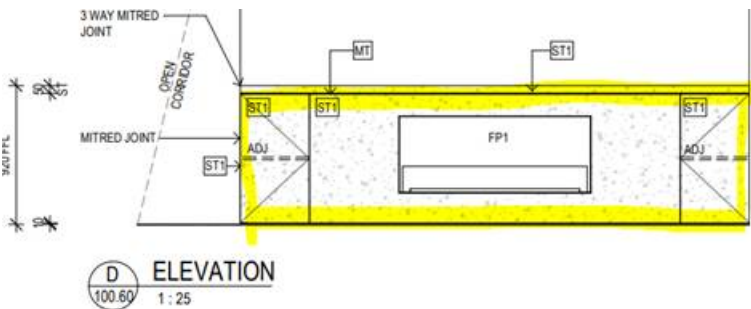
3. **Dining Room Wall Joinery Detail Change**

Refer to KIT-RES31 Elevation D AR-100.113

Wall hung joinery unit with select coloured stone top (ST01) and a series of select coloured timber veneer (TV1) under bench drawers with open select colour timber veneer (TV1) shelf to left hand side. Joinery unit depth to be approximately 450 mm. Melamine internal drawer fitout.



Current D&C Contract Dining Room Wall Joinery Detail DELETED – Refer to extract below of Elevation D on AR-100.61 KIT-RES31 & KIT-RES35:



4. Living Room Wall Joinery Addition J31.01

Refer to PV-RES31 Misc. Joinery AR-140.112 Rev A

Wall hung joinery unit with select coloured stone top (ST01) and a series of select coloured timber veneer (TV1) under bench drawers with open select colour timber veneer shelf to left hand side. Joinery unit depth to be approximately 450 mm. Melamine internal drawer fitout.

5. Media Room Joinery Changed to J31.01 and J31.02

Refer to PV-RES31 Misc. Joinery AR-140.112 Rev A

J31.02 layout of end wall to comprise:

Select colour timber veneer (TV1) desk with a series of under desk drawers positioned to one side. Drawers to have select colour timber veneer (TV1) drawer fronts with melamine internal fitout. Double power point to be located under the desk at each end with grommet holes in desk.

Series of wall mounted overhead cupboards above desk. Cupboards to have select colour timber veneer (TV1) door fronts with melamine internal fitout.

J31.01 layout of side wall to comprise:

Wall hung joinery unit with select coloured timber veneer (TV1) top with two under bench drawers with select colour timber veneer (TV1) fronts and melamine internal fitout. One floating wall mounted select coloured timber veneer (TV1) shelf above joinery unit. Provision for wall mounted TV. TV point, data point and double power point to be centered horizontally and vertically above bench top.

Beside wall hung joinery unit is a tall storage cupboard with select colour 2 pac door with a melamine internal fitout with adjustable shelves.

PV-RES31 & PV-RES35 Misc. Joinery DELETED J31.02 and J31.01 refer to AR-140.50 Rev B

6. Master Ensuite ENS09B – W/C door change and fitting change:

- W/c door changed from frosted glass to painted timber which has reduced the shower size.
- Hand Shower on Rail changed from SHR1 to **SHR8**.
SHR8 Hand Shower on Rail: Gessi Rilievo Hand Shower on Rail. Model Number: 59242
- Over head Shower on post changed from SHR2 to SHR9.
SHR9 Overhead Shower: Gessi Rilievo Round 250mm Diameter Shower Head on Arm. Model Number: 59152

7. Ensuite ENS05B and ENS16 – Fitting changes:

- Hand Shower on Rail changed from SHR1 to **SHR8**.
SHR8 Hand Shower on Rail: Gessi Rilievo Hand Shower on Rail. Model Number: 59242

8. Laundry Design Change to LDY16 (Previous PV-RES31 laundry was LDY08):

Layout below bench to comprise:

- a series of under bench cupboards with select colour 2 pac doors and a melamine internal fitout with adjustable shelf.
- two stacked select colour 2 pac open shelves.
- Select colour 2 pac kick.

Layout above bench to comprise:

- a series of overhead cupboards with select colour 2 pac doors and a melamine internal fitout with an adjustable shelf.
- hanging rail to be installed to the underside of the overhead cupboards.

Washing machine and dryer to be stacked and positioned at the right-hand end of the bench. Above the washer and dryer stack is an overhead cupboard with select colour 2 pac doors and a melamine internal fitout with an adjustable shelf.

9. Bedroom 2 Robe Design Change to RB17 from RB14:

Select colour timber veneer (TV1) doors with laminate internal fitout. Hanging rails with LED strips and open shelves.

Bedroom 2 robe layout:

- One section of fixed shelving with a series of drawers below, all behind a door.
- One section of double height hanging behind door.
- One section of full height hanging behind door.

10. Bedroom 3 Robe Design Change to RB22 from RB04:

Select colour timber veneer doors (TV1) with laminate internal fitout. Hanging rails with LED strips and open shelves.

Bedroom 3 robe layout:

- One section of fixed shelves behind door.
- One section of drawers with one open fixed shelf and overhead cupboard above with adjustable shelf internal fitout.
- One section of double height hanging behind door.
- One section of full height hanging behind door.

11. Study Deleted (ST04) and replaced with Linen (LIN11).

Select colour 2 pac door with a melamine internal fitout with adjustable shelves.

12. Buyer Variation Price Request:

- a. Hikvision 4 channel NVR and 4 x 6MP mini dome cameras. Please refer to the PV-RES31 Hikvision Camera Location Plan attached for scope. Please provide this as a separate variation cost item for presentation to the buyer for approval prior to proceeding.

Electrical Drawing Update:

Floth has not been engaged to update the any electrical drawings for this PV-RES31.

The following post D&C Contract amended **Annexure 4 Design Documents** are attached:

1. AR-70.23 Rev C (**PV-RES31 Floor Plan** identifying changed areas)
2. AR-70.24 Rev C (**PV-RES31 RCP** identifying changed areas)
3. AR-90.09 Rev D (**Door Schedule Level 4** showing w/c door change to painted timber)
4. AR-100.112 Rev B (**KIT- RES31** showing dining room joinery change and appliance code changes)
5. AR-100.113 Rev B (**KIT- RES31** showing dining room joinery change and appliance code changes)
6. AR-100.05 Rev E (**Ensuite – ENS05B** hand shower on rail specification changed to SHR8)
7. AR-110.10 Rev D (**Ensuite – ENS09B** showing painted timber w/c door and reduced shower size, hand shower on rail specification changed to SHR8 and overhead shower changed to SHR9)
8. AR-110.16 Rev C (**Ensuite – ENS16** note added hand shower on rail specification changed to SHR8)
9. AR-120.08 Rev B (**Laundry – LDY16** new design)
10. AR-130.23 Rev E (**RB17** no design changes)
11. AR-130.25 Rev D (**RB22** specific PV-RES31 robe design)
12. AR-130.31 Rev E (**LIN11** added to replace ST04)
13. AR-140.112 Rev A (**PV-RES31 Misc. Joinery J31.01, J31.02 and J31.03**)
14. AR-150.02 Rev D (**Lobby 2 – 6** refer to **Lobby 4** wall light positions shown in plan)
15. PV-RES31 Variation Price Request Hikvision Camera Location Plan (Buyer Mark Up)

The following post D&C Contract amended **Annexure 4 Design Documents** will follow:

1. Schedule 200.01 Apartment Fixtures, Fittings & Appliances Schedule

The following post D&C Contract **Amended PPR Annexure 14 Sale Contract Documents** will follow:

1. The Oxlade Residence 21 Sale Contract Marketing Plan (Rev 2 dated 15 May 2021)

The following post D&C Contract **Amended PPR Annexure 17 Disclosure Documents** are attached:

1. The Oxlade PV-RES31 Sale Contract Finishes Schedule Rev G dated 8 June 2021 (PV's highlighted in yellow)

130 Series Drawing Notes - the following **Client Supplied Hanging Rail Schedule** is attached:

1. The Oxlade 130 Series Drawings Client Supplied Schedule – Hanging Rail Audit 08_03_2021

General

SHR8 and SHR9 data sheets attached.

Kind regards,

Belinda Amble
Development Manager



M 0437 721 634
T 07 3226 8799
F 07 3221 6248

E belindaamble@seymourgroup.com.au

Level 24, HSBC Building
300 Queen Street
Brisbane QLD 4000

GPO Box 2487
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The Oxlade Apartments

80-86 Oxlade Drive
New Farm
QLD 4005 Australia



MAIL TYPE
Variation

MAIL NUMBER
WTPC-VAR-000009

REFERENCE NUMBER
WTPC-VAR-000009

Variation Direction: PV Res 31 CCTV - approved

From Mr Matthew Carter - Watpac Construction Pty Ltd

To (2) Mr Dean Williams - Power Integration (+1 more...)

Cc (3) Mr Owen Burford - Watpac Construction Pty Ltd (+2 more...)

Sent Thursday, 17 June 2021 4:30:26 AM AEST (GMT +10:00)

Status N/A

FILE ATTACHMENTS (2)

File Name
 PV RES 31 CCTV submission .pdf
 Re_ The Oxlade_ Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31).msg

MESSAGE

Dean / Tess,

The client has approved the CCTV works for Residence 31, agreed adjustment to your subcontract sum of \$2,258.00 ex GST In accordance with clause 28.1, proceed with these works.

Regards,



Matthew Carter
Senior Contracts Administrator
M 0403 882 305
70 Oxlade Drive
New Farm QLD 4005



Reference

6605 - Cable - L&H

Order No.

10990

Date Issued

04/11/2020

Date Due

Quote No.

0053247104

Order Items

Assigned to: 6605-1643 Material Costs - Cable Storage Device: Warehouse						
Part No. ▾	Name ▾	Received ▾	Quantity ▾	Price ex GST ▾	Total ex GST ▾	
CBLFL1.5-2ERB1	Cable Flat 2C+E 1.5mm2 PVC RB&E WHT	5200.00	5200.00	\$0.634	\$3,296.80	Options ▾
CBLFL2.5-2ERB1	CABLE FLAT 2C+E 2.5MM2 PVC RB&E WHT L100M	2700.00	2700.00	\$1.05	\$2,835.00	Options ▾
CBLFL4.0-2ERB1	CABLE FLAT 2C+E 4MM2 PVC RB&E WHT L100M	200.00	200.00	\$1.6323	\$326.46	Options ▾
CBLOC6.0-4ECA5	CABLE CIRC 4C+E 6MM2 PVC/PVC 450/750V ORG-SHTH L500M	200.00	200.00	\$4.5063	\$901.26	Options ▾
CBLOC16.0-4ECA5	CABLE CIRC 4C+E 16MM2 PVC/PVC 0.6-1KV ORG-SHTH L10	800.00	800.00	\$11.0136	\$8,810.88	Options ▾
OLXJCAT5E	CABLE DATA CAT5E UTP 4PR H/FREE BLU 300M BX JCAT5E	4.00	4.00	\$45.02	\$180.08	Options ▾
OLX7/050-3E	CABLE 3C+E 1.5MM2 PVC PVC FLAT WHT-SHTH L100M ENCP05A1003WV	200.00	200.00	\$1.0468	\$209.36	Options ▾
OLXJSF75GY1	CABLE FIG8 SPEAKER 0.75MM2 24/0.20MM GRY L100M JSF.75	400.00	400.00	\$0.3753	\$150.12	Options ▾
E-CF4075-100-GRY-BU	0.75MM 4C FLEX GREY	900.00	900.00	\$0.87	\$783.00	Options ▾
MAT06MM-E6Q	CABLE COAX RG6U QUAD SHLD L305M DIGIMATCH	5.00	5.00	\$100.59	\$502.95	Options ▾
CBLEW4.0-5	CABLE E/WIRE 1C 4MM2 PVC 90DEGC GRN/YLW L500M	200.00	200.00	\$0.5415	\$108.30	Options ▾
OLXJCAT5E	CABLE DATA CAT5E UTP 4PR H/FREE BLU 300M BX JCAT5E	1.00	2.00	\$135.06	\$270.12	Options ▾
BELBEL601006U305M	CABLE CAT6 UTP PVC BLUE 305M 4PR #24AWG DATACONNECT	2.00	4.00	\$115.90	\$463.60	Options ▾
CBLOC1.5-4ECA1	CABLE CIRC 4C+E 1.5MM2 PVC/PVC 450/750V ORG-SHTH L100M	100.00	100.00	\$1.27	\$127.00	Options ▾

Supplier Notes

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Private Notes

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Sub Total :	\$18,964.93
GST :	\$1,896.49
Total :	\$20,861.42

Name ▾		Added By ▾	Date ▾	Size ▾	Email
☐	🔗 DD 6605 10990 210112 75573665.pdf	Mark Hickling	12/01/2021 14:12	167.51 KB	☐
☐	🔗 DD 6605 10990 210223 75826023.pdf	Mark Hickling	24/03/2021 12:51	35.29 KB	☐
☐	🔗 DN 6605 10990 201109 75049648.pdf	Dean Williams	16/11/2020 08:53	114.36 KB	☐
☐	🔗 DN 6605 10990 201120 75167540.pdf	Dean Williams	04/12/2020 07:13	27.85 KB	☐
☐	🔗 DN 6605 10990 201207 75317408.pdf	Mark Hickling	07/01/2021 09:52	34.04 KB	☐
☐	🔗 DN 6605 10990 201214 75423234.pdf	Mark Hickling	07/01/2021 09:52	25.67 KB	☐
☐	🔗 DN 6605 10990 2101019 75600153.pdf	Dean Williams	11/06/2021 09:08	27.13 KB	☐
☐	🔗 DN 6605 10990 210106 75042133.pdf	Mark Hickling	14/01/2021 14:06	71.03 KB	☐
☐	🔗 DN 6605 10990 210106 75537735.pdf	Mark Hickling	14/01/2021 14:06	70.72 KB	☐
☐	🔗 DN 6605 10990 210106 75537771.pdf	Mark Hickling	14/01/2021 14:06	26.67 KB	☐
☐	🔗 DN 6605 10990 210107 75538587.pdf	Mark Hickling	14/01/2021 14:06	27.29 KB	☐
☐	🔗 Order Confirmation 0053734570.pdf	Mark Hickling	06/01/2021 10:36	166.00 KB	☐
☐	🔗 Purchase_Order_No_10990_04-11-2020_1334.pdf	Dean Williams	04/11/2020 13:34	324.87 KB	☐
☐	🔗 Purchase_Order_No_10990_04-11-2020_1342.pdf	Dean Williams	04/11/2020 13:42	324.85 KB	☐
☐	🔗 Purchase_Order_No_10990_04-11-2020_1354.pdf	Dean Williams	04/11/2020 13:54	325.06 KB	☐
☐	🔗 Purchase_Order_No_10990_06-01-2021_1010.pdf	Mark Hickling	06/01/2021 10:10	325.25 KB	☐
☐	🔗 TI 6605 10990 201109 001650803.pdf	Dean Williams	16/11/2020 08:53	174.61 KB	☐
☐	🔗 TI 6605 10990 201118 001699570.pdf	Mark Hickling	03/12/2020 11:03	168.17 KB	☐
☐	🔗 TI 6605 10990 201207 001804353.pdf	Mark Hickling	14/12/2020 14:58	169.06 KB	☐
☐	🔗 TI 6605 10990 201214 001853559.pdf	Mark Hickling	18/12/2020 06:27	167.97 KB	☐
☐	🔗 TI 6605 10990 210106 001927729.pdf	Mark Hickling	22/01/2021 09:26	167.98 KB	☐
☐	🔗 TI 6605 10990 210106 001928280.pdf	Mark Hickling	22/01/2021 09:26	174.32 KB	☐
☐	🔗 TI 6605 10990 210106 001928260.pdf	Mark Hickling	22/01/2021 09:26	179.37 KB	☐
☐	🔗 TI 6605 10990 210106 001928260 - 21	Mark Hickling	22/01/2021 09:26	179.37 KB	☐

☐ Other

Site Instruction

No: 0001

JOB DETAILS

Job No: _____

Job Name:_____

VO/SI: _____

[illegible]

I certify that the electrical installation, to the extent it is affected by the electrical work, has been tested to ensure that it is electrically safe and is in accordance with the requirements of the wiring rules and any other standard applying to the installation under state legislation and is ready for connection/has been connected to the source of the supply. For electrical equipment, this certifies that the electrical equipment, to the extent it is affected by the electrical work, is electrically safe. POWER INTEGRATION does not accept responsibility for any other works, alterations or additions that are carried out by others after this testing and commissioning has been completed.

Initial

Licence No.

Subject: Re: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)
Date: Tuesday, 15 June 2021 at 3:14:38 pm Australian Eastern Standard Time
From: Matthew Carter
To: Tess Veldink
CC: Dean Williams, Owen Burford
Attachments: image001.png, image002.png, image003.png, image004.png, image005.png, image006.png, image007.png, image008.png, image009.jpg, image010.png, image011.png, image012.jpg

Thanks Tess,

Can I get a letter for just the cameras please the remainder can follow in separate letter

Cheers

Matt

Get [Outlook for iOS](#)

From: Tess Veldink <tess.veldink@powerintegration.com.au>
Sent: Tuesday, June 15, 2021 2:03:56 PM
To: Matthew Carter <mcarter@watpac.com.au>
Cc: Dean Williams <dean.williams@powerintegration.com.au>; Owen Burford <oburford@watpac.com.au>
Subject: Re: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Matt,

For the Hikvision cameras it will be \$2250.00. Did you want this in a formal variation with the other changes to PV RES 31?

Let me know – thanks,

Tess Veldink

Construction Administrator | 0430 788 770



Electrical | Air | Solar | Security | Buildings | Technology | PI X

1300 797 468

8/53 Metroplex Avenue, Murarrie QLD 4172

tess.veldink@powerintegration.com.au

powerintegration.com.au

[Facebook](#) | [Instagram](#) | [LinkedIn](#)

From: Matthew Carter <mcarter@watpac.com.au>

Date: Tuesday, 15 June 2021 at 12:41 pm

To: tess.veldink@powerintegration.com.au <tess.veldink@powerintegration.com.au>

Cc: Dean Williams <dean.williams@powerintegration.com.au>, Owen Burford <oburford@watpac.com.au>

Subject: FW: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Tess,

Forgot to include you on the below urgent request to Dean, can you send a quote for the security works per the below by this afternoon?;

Client requires this price to close out a sale.

Hikvision 4 channel NVR and 4 x 6MP mini dome cameras. Please refer to the PV-RES31 Hikvision Camera Location Plan attached for scope. Please provide this as a separate variation cost item for presentation to the buyer for approval prior to proceeding.



Matthew Carter

Senior Contracts Administrator

M [0403 882 305](tel:0403882305)

70 Oxlade Drive
New Farm QLD 4005



From: Matthew Carter

Sent: Tuesday, 15 June 2021 10:45 AM

To: Dean Williams <dean.williams@powerintegration.com.au>

Subject: FW: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Dean,

We have received this as an urgent request from the client to close a sale, are you able to provide today?



Matthew Carter

Senior Contracts Administrator

M [0403 882 305](tel:0403882305)

70 Oxlade Drive
New Farm QLD 4005



From: Belinda Amble <belindaamble@seymourgroup.com.au>
Sent: Tuesday, 15 June 2021 10:40 AM
To: Matthew Carter <mcarter@watpac.com.au>
Cc: Owen Burford <oburford@watpac.com.au>; Dane Murdoch <Dane.Murdoch@au.rlb.com>
Subject: RE: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Matthew,

This buyer has asked overnight for me to provide him with the price for his security camera PV.

Is there any chance you can send this PV request to Power Integration and ask them for a PC Sum that I can provide to the buyer?

We had agreed to provide this figure to him post sale contract signing and now he wants this pre sale contract signing.

Hikvision 4 channel NVR and 4 x 6MP mini dome cameras. Please refer to the PV-RES31 Hikvision Camera Location Plan attached for scope. Please provide this as a separate variation cost item for presentation to the buyer for approval prior to proceeding.

Thanks,

Belinda Amble
Development Manager



M 0437 721 634
T 07 3226 8799
F 07 3221 6248

E belindaamble@seymourgroup.com.au

Level 24, HSBC Building
300 Queen Street
Brisbane QLD 4000

GPO Box 2487
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seymourgroup.com.au

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From: Belinda Amble
Sent: Thursday, 10 June 2021 7:29 PM
To: Dane Murdoch <Dane.Murdoch@au.rlb.com>
Cc: Owen Burford <oburford@watpac.com.au>; Mark Michaelis <mmichaelis@watpac.com.au>; Matthew Carter <mcarter@watpac.com.au>; Fiona Sheils <FionaS@bureauproberts.com.au>; KellyG@bureauproberts.com.au; SaskiaR@bureauproberts.com.au; Katie Newall <katien@bureauproberts.com.au>
Subject: The Oxlade: Post D&C Contract PPR - Purchaser Variation PV-RES31 (Residence 31)

Hi Dane,

Can you please issue BESIX Watpac with a site instruction to proceed with this variation.

Apartment PV-RES31 Purchaser Variation – PV-RES31 (Residence 31)

Colour Scheme Selection: **Light (Elegance) with brushed nickel tapware and accessories, sanitaryware and patch fittings and brushed gold kitchen and butler pantry tap and ZIP tap.**

Summary of Purchaser Variations:

1. **Home Automation Package Added** – Refer to the below extract from the Sale Contract Finishes Schedule for the required scope:

HOME AUTOMATION	C-Bus or equivalent brand control system for lighting (on/off and dimming) blinds/curtains (open/close). Home automation platform integration with C-Bus (Push Controls or equivalent) of air conditioning (on/off and temperature control), integration of blinds and motors not included), integration of lighting control (scene setting), cameras not included) and integration of wireless music system (application based)
MUSIC SYSTEM	5 x Sonos "One" wireless speakers or equivalent wireless speakers provided

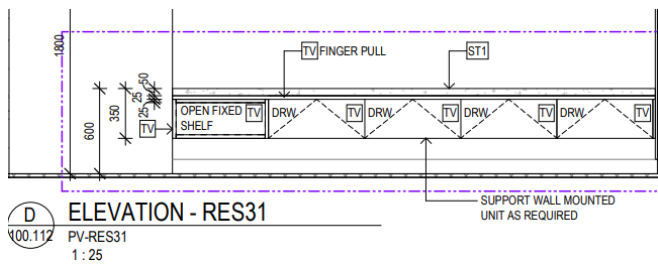
2. **KIT-RES31 Wine Fridge Appliance Change – WF3 to WF8**

- a. Vintec 50 bottle wine fridge (WF3) changed to Vintec 100 bottle Beverage Centre VBS050sbb (**WF8**).

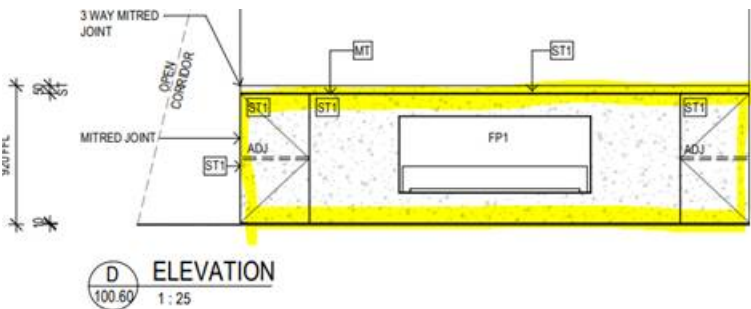
3. **Dining Room Wall Joinery Detail Change**

Refer to KIT-RES31 Elevation D AR-100.113

Wall hung joinery unit with select coloured stone top (ST01) and a series of select coloured timber veneer (TV1) under bench drawers with open select colour timber veneer (TV1) shelf to left hand side. Joinery unit depth to be approximately 450 mm. Melamine internal drawer fitout.



Current D&C Contract Dining Room Wall Joinery Detail DELETED – Refer to extract below of Elevation D on AR-100.61 KIT-RES31 & KIT-RES35:



4. Living Room Wall Joinery Addition J31.01

Refer to PV-RES31 Misc. Joinery AR-140.112 Rev A

Wall hung joinery unit with select coloured stone top (ST01) and a series of select coloured timber veneer (TV1) under bench drawers with open select colour timber veneer shelf to left hand side. Joinery unit depth to be approximately 450 mm. Melamine internal drawer fitout.

5. Media Room Joinery Changed to J31.01 and J31.02

Refer to PV-RES31 Misc. Joinery AR-140.112 Rev A

J31.02 layout of end wall to comprise:

Select colour timber veneer (TV1) desk with a series of under desk drawers positioned to one side. Drawers to have select colour timber veneer (TV1) drawer fronts with melamine internal fitout. Double power point to be located under the desk at each end with grommet holes in desk.

Series of wall mounted overhead cupboards above desk. Cupboards to have select colour timber veneer (TV1) door fronts with melamine internal fitout.

J31.01 layout of side wall to comprise:

Wall hung joinery unit with select coloured timber veneer (TV1) top with two under bench drawers with select colour timber veneer (TV1) fronts and melamine internal fitout. One floating wall mounted select coloured timber veneer (TV1) shelf above joinery unit. Provision for wall mounted TV. TV point, data point and double power point to be centered horizontally and vertically above bench top.

Beside wall hung joinery unit is a tall storage cupboard with select colour 2 pac door with a melamine internal fitout with adjustable shelves.

PV-RES31 & PV-RES35 Misc. Joinery DELETED J31.02 and J31.01 refer to AR-140.50 Rev B

6. Master Ensuite ENS09B – W/C door change and fitting change:

- W/c door changed from frosted glass to painted timber which has reduced the shower size.
- Hand Shower on Rail changed from SHR1 to **SHR8**.
SHR8 Hand Shower on Rail: Gessi Rilievo Hand Shower on Rail. Model Number: 59242
- Over head Shower on post changed from SHR2 to SHR9.
SHR9 Overhead Shower: Gessi Rilievo Round 250mm Diameter Shower Head on Arm. Model Number: 59152

7. Ensuite ENS05B and ENS16 – Fitting changes:

- Hand Shower on Rail changed from SHR1 to **SHR8**.
SHR8 Hand Shower on Rail: Gessi Rilievo Hand Shower on Rail. Model Number: 59242

8. Laundry Design Change to LDY16 (Previous PV-RES31 laundry was LDY08):

Layout below bench to comprise:

- a series of under bench cupboards with select colour 2 pac doors and a melamine internal fitout with adjustable shelf.
- two stacked select colour 2 pac open shelves.
- Select colour 2 pac kick.

Layout above bench to comprise:

- a series of overhead cupboards with select colour 2 pac doors and a melamine internal fitout with an adjustable shelf.
- hanging rail to be installed to the underside of the overhead cupboards.

Washing machine and dryer to be stacked and positioned at the right-hand end of the bench. Above the washer and dryer stack is an overhead cupboard with select colour 2 pac doors and a melamine internal fitout with an adjustable shelf.

9. Bedroom 2 Robe Design Change to RB17 from RB14:

Select colour timber veneer (TV1) doors with laminate internal fitout. Hanging rails with LED strips and open shelves.

Bedroom 2 robe layout:

- One section of fixed shelving with a series of drawers below, all behind a door.
- One section of double height hanging behind door.
- One section of full height hanging behind door.

10. Bedroom 3 Robe Design Change to RB22 from RB04:

Select colour timber veneer doors (TV1) with laminate internal fitout. Hanging rails with LED strips and open shelves.

Bedroom 3 robe layout:

- One section of fixed shelves behind door.
- One section of drawers with one open fixed shelf and overhead cupboard above with adjustable shelf internal fitout.
- One section of double height hanging behind door.
- One section of full height hanging behind door.

11. Study Deleted (ST04) and replaced with Linen (LIN11).

Select colour 2 pac door with a melamine internal fitout with adjustable shelves.

12. Buyer Variation Price Request:

- a. Hikvision 4 channel NVR and 4 x 6MP mini dome cameras. Please refer to the PV-RES31 Hikvision Camera Location Plan attached for scope. Please provide this as a separate variation cost item for presentation to the buyer for approval prior to proceeding.

Electrical Drawing Update:

Floth has not been engaged to update the any electrical drawings for this PV-RES31.

The following post D&C Contract amended **Annexure 4 Design Documents** are attached:

1. AR-70.23 Rev C (**PV-RES31 Floor Plan** identifying changed areas)
2. AR-70.24 Rev C (**PV-RES31 RCP** identifying changed areas)
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130 Series Drawing Notes - the following **Client Supplied Hanging Rail Schedule** is attached:

1. The Oxlade 130 Series Drawings Client Supplied Schedule – Hanging Rail Audit 08_03_2021

General

SHR8 and SHR9 data sheets attached.

Kind regards,

Belinda Amble
Development Manager



M 0437 721 634
T 07 3226 8799
F 07 3221 6248

E belindaamble@seymourgroup.com.au

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seymourgroup.com.au

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THE OXLADE NEW FARM

200.05 - APARTMENT JOINERY TYPE SCHEDULE

ISSUE				
Revision	Issue / Ammendments	Date	Issued By	Checked By
A	*NOTE THIS IS A PRELIMINARY CD ISSUE - NOT TO BE USED FOR PRICING/CONSTRUCTION	2.03.20	NL	SR
1	TENDER ISSUE	27.07.20	FS	SR
2	TENDER ADDENDUM	18.08.20	SR	SR
3	TENDER ADDENDUM	25.08.20	SR	SR
4	CONTRACT ISSUE	23.10.20	SR	SR
A	85% CONTRACT DOCUMENTATION	10.11.20	SR	SR
B	85% CONSTRUCTION DOCUMENTATION	11.12.20	SR	SR

TYPE	LOT (UNIT) NUMBERS
TYPE 1	6, 10, 14, 26, 34
TYPE 2	7, 11, 15, 25, 29, 33 & 37
TYPE 3	4
TYPE 4	5
TYPE 6	18
TYPE 7	8, 12
TYPE 8	1

GENERAL NOTES:

1. TO BE READ IN CONJUNCTION WITH 100-130 SERIES DRAWINGS.
2. REFER TO GA PLANS AND APARTMENT PLANS TO IDENTIFY MIRRORED ARRANGEMENTS OF WET AREAS AND JOINERY. TO BE READ IN CONJUNCTION WITH 23 SERIES.
3. TO BE READ IN CONJUNCTION WITH FIXTURES AND FITTINGS SCHEDULE AND FINISHES SCHEDULE.

RESIDENCE	TOWER	UNIT TYPE	KITCHEN/PANTRY	LAUNDRY	POWDER	ENS/BATH	MASTER ENSUITE	MASTER WIR	ROBE	LINEN	ENTRY	STUDY	MISC. JOINERY ITEMS
1	T2	TYPE 8	KIT03(M)	LDY02	NA	BTH04	ENS04B	WIR02B	RB04	LIN03	ENT01	NA	J1.01
2 (2+3)	T2	PV-RES 2	KIT-RES2	LDY04	PDR04	ENS12, ENS12, ENS12	ENS06	WIR04	WIR05, RB06, RB12	LIN05, LIN02	ENT01	ST01	J2.01, J2.02, J2.03, J2.04, J2.05, J2.06, J2.07, J2.08, J2.09, J2.10, J2.11
4	T2	TYPE 3	KIT03	LDY02	NA	BTH04	ENS04	WIR02	RB04	LIN04	ENT01	NA	
5	T2	TYPE 4	KIT03(M)	LDY02	NA	BTH04	ENS04	WIR02	RB04	LIN03	ENT01	NA	
6	T2	TYPE 1	KIT01	LDY01	PDR01	ENS01, ENS01	ENS03	WIR01	RB01, RB02	LIN01, LIN02, LIN05	ENT01	NA	
7	T2	TYPE 2	KIT02	LDY01	PDR01	BTH02	ENS03	WIR01	RB03, RB04	LIN01, LIN02, LIN05, LIN11	NA	NA	J7.01
8 (8+9)	T2	TYPE 7	KIT04	LDY03	PDR02	ENS05, ENS02	ENS03	WIR03	RB17, RB04, RB04	LIN06, LIN08	ENT01	ST04	
10	T2	TYPE 1	KIT01	LDY01	PDR01	ENS01, ENS01	ENS03	WIR01	RB01, RB02	LIN01, LIN02, LIN05	ENT01	NA	
11	T2	TYPE 2	KIT02	LDY01	PDR01	BTH02	ENS03	WIR01	RB03, RB04	LIN01, LIN02, LIN05, LIN11	NA	NA	J11.01
12 (12+13)	T2	TYPE 7	KIT04	LDY03	PDR02	ENS05, ENS02	ENS03	WIR03	RB17, RB04, RB04	LIN06, LIN08	ENT01	ST04	
14	T2	TYPE 1	KIT01	LDY01	PDR01	ENS01, ENS01	ENS03	WIR01	RB01, RB06	LIN01, LIN02, LIN05	ENT01	NA	
15	T2	TYPE 2	KIT02	LDY01	PDR01	BTH02	ENS03	WIR01	RB03, RB04	LIN01, LIN02, LIN05, LIN11	NA	NA	
16 (16+17)	T2	PV-RES 16	KIT-RES16	LDY14	PDR07	ENS17	ENS18	WIR16	RB21, RB21B	LIN14	ENT04	ST07	J16.01, J16.02
18 (18+19)	T2	TYPE 6	KIT-RES18	LDY12	PDR01C	ENS02, BTH03	ENS06B	WIR13, WIR14	RB20, RB09	LIN05, LIN10	ENT01	ST05	J18.01, J18.02, J18.03, J18.04, J18.05
20 PH	T2	PV-RES 20	KIT-RES20	LDY05	PDR05	ENS13, ENS14, ENS15	ENS07	WIR07	RB04, RB13, RB18 & R19(x2)	LIN09	ENT02	ST02	J20.01, J20.02, J20.03, J20.04, J20.05, J20.06, J20.07, J20.08, J20.09
21	T1	PV-RES 21	KIT-RES21	LDY13	PDR01	BTH01	ENS19	WIR15	RB03B, RB05	LIN13, DB01	NA	NA	J21.01, J21.02, J21.03

RESIDENCE	TOWER	UNIT TYPE	KITCHEN/PANTRY	LAUNDRY	POWDER	ENS/BATH	MASTER ENSUITE	MASTER WIR	ROBE	LINEN	ENTRY	STUDY	MISC. JOINERY ITEMS
22	T1	PV-RES 22	KIT-RES22	LDY09	PDR01	ENS12, ENS12	ENS03	WIR01	RB07, RB09	LIN02, LIN12	ENT01	NA	J22.01, J22.02, J22.03, J22.04
24 (23+24)	T1	PV-RES24	KIT-RES24	LDY11	PDR06	ENS02, ENS05	ENS03	WIR12	RB16, RB16, RB17	LIN06, LIN08	ENT01	ST04, ST06	
25	T1	TYPE 2(M)	KIT02(M)	LDY01	PDR01	BTH02	ENS03	WIR01	RB03, RB04	LIN01, LIN02, LIN05, LIN11	NA	NA	J25.01
26	T1	TYPE 1(M)	KIT01(M)	LDY01	PDR01	ENS01, ENS01	ENS03	WIR01	RB01, RB02	LIN01, LIN02, LIN05	ENT01	NA	
28 (27+28)	T1	PV-RES 28	KIT-RES28	LDY06	PDR03	ENS11	ENS08	WIR08	RB17	LIN01	ENT03	ST03	J28.01, J28.02, J28.03, J28.04, J28.05
29	T1	TYPE 2(M)	KIT02(M)	LDY01	PDR01	BTH02	ENS03	WIR01	RB03, RB04	LIN01, LIN02, LIN05, LIN11	NA	NA	
30	T1	PV-RES 30	KIT-RES30	LDY10	PDR01B	ENS12B, ENS12B	ENS03B	WIR01B	RB11, RB10	LIN02, LIN05	ENT01	NA	
31 (31+32)	T1	PV-RES 31	KIT-RES35	LDY08	PDR02B	ENS05, ENS16	ENS09	WIR09	RB17, RB04, RB14	LIN02, LIN07	ENT01	ST04	J31.01, J31.02
33	T1	PV-RES 33	KIT-RES33	LDY01	PDR01	BTH02B	ENS03C	WIR01	RB03	LIN02, LIN05	ENT01	NA	J33.01, J33.02, J33.03
34	T1	TYPE 1(M)	KIT01(M)	LDY01	PDR01	ENS01, ENS01	ENS03	WIR01	RB01, RB06	LIN01, LIN02, LIN05	ENT01	NA	
35 (35+36)	T1	PV-RES 35	KIT-RES35	LDY08	PDR02B	ENS05, ENS16	ENS09	WIR09	RB04, RB17, RB14	LIN02, LIN07	ENT01	ST04	J35.01, J35.02, J35.03, J35.04 & J35.05
37	T1	TYPE 2(M)	KIT02(M)	LDY01	PDR01	BTH02	ENS03	WIR01	RB03, RB04	LIN01, LIN02, LIN05, LIN11	NA	NA	
38	T1	PV-RES 38	KIT-RES38	LDY01	PDR01	ENS12, ENS12	ENS03	WIR10	RB01, RB06	LIN01, LIN02, LIN05	ENT01	NA	1. DOOR TO WIR
39 PH	T1	PV-RES 39	KIT-RES39	LDY07	PDR04	ENS13, ENS13, ENS13A	ENS10	WIR11	RB04A, RB04A, RB08	LIN01A, LIN05A	ENT02	ST02B	J39.01, J39.02, J39.04, J39.05, J39.06, J39.07, J39.08, J39.09

Confirmed Purchaser Variations



POWER INTEGRATION

PROJECT QUALITY MANAGEMENT PLAN

Approved for use:	Date: 02/07/2021	Revision: 01
Construction Manager	Dean Williams	
Project Manager	TBA	
Project Supervisor	TBA	

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1. OVERVIEW

The purpose of this plan is to identify the quality management methods being applied to the contract between Power Integration Construction (Power Integration) and Condev Construction on the Allure on Chevron project.

The content of this Quality Management Plan (the Plan) is compliant to AS/NZS 9001 and reflects management's commitment to provide a quality product.

Power Integration will strive to ensure that customer requirements are determined and met with the objective of satisfying the Customer's needs, preferences and expectations and aiming towards enhancing or exceeding the Customer's expectation and maximise satisfaction.

2. OBJECTIVES

The overall objective of this Plan is to overview the mechanisms that are in place which define how we operate and control the Project, thus ensuring the necessary systems are in place to make certain that the requirements of Power Integration, the specification and the customer are met.

The detail within this Plan is to ensure that any anomalies in the specification are resolved prior to the purchase and/or installation of any plant or equipment. This will ultimately reduce rework through defects and therefore maximise customer satisfaction and the return on investment for the customer and Power Integration.

Informal or uncontrolled copies of this Plan shall include identification as such and as this type of issue is for the purpose of information only shall not be subject to amendments as they occur.

Uncontrolled copies of policies and procedures are available for viewing upon request.

Controlled copies of the policies and procedures and this plan shall be always available to all Power Integration personnel.

3. SCOPE

The scope of works on this project is – **Electrical Services for Allure on Chevron**

The extent of works involved includes the supply and installation of:

- Temporary Construction Power
- New Consumer Mains
- New Submains
- Underground Conduits
- Cable Support
- Carpark Lighting
- New Main Switchboard

- New Distribution Switchboards
- Internal Lighting
- External Lighting
- Lighting Control System
- Power Outlets
- Telecommunications Cabling
- MATV Cabling
- Security Alarm System
- CCTV System
- Access Control System
- Intercom System
- Commissioning, Programming & Testing
- Warranty and Maintenance
- Shop Drawings

Project commencement date is March 2021 with expected completion August 2022.

The scope of this Plan includes all areas of the Project that involve Power Integration, its subcontractors and their employees and any other person that may be affected by the Project.

This Plan will be the basic model used by Power Integration and states policies and practices which are within the Management System. This documentation may be reviewed for more detail for compliance as required.

This Plan shall be developed and revised as required over the duration of the Project. Any additions or revisions to “controlled copies” of this Plan will be reissued under cover of the Document Control form. It will be the responsibility of the custodian of any “controlled copy” of the Quality Management Plan to update the document accordingly.

Inspection and Test Plans shall be prepared covering each task or groups of tasks to ensure the Scope of Work is installed as specified.

The works to be carried out under this Plan will vary for each Project, but can include the provision of electrical, voice and data communications services and relevant testing and commissioning.

Works will be carried out in a workmanship like manner and comply with statutory rules and regulations such as –

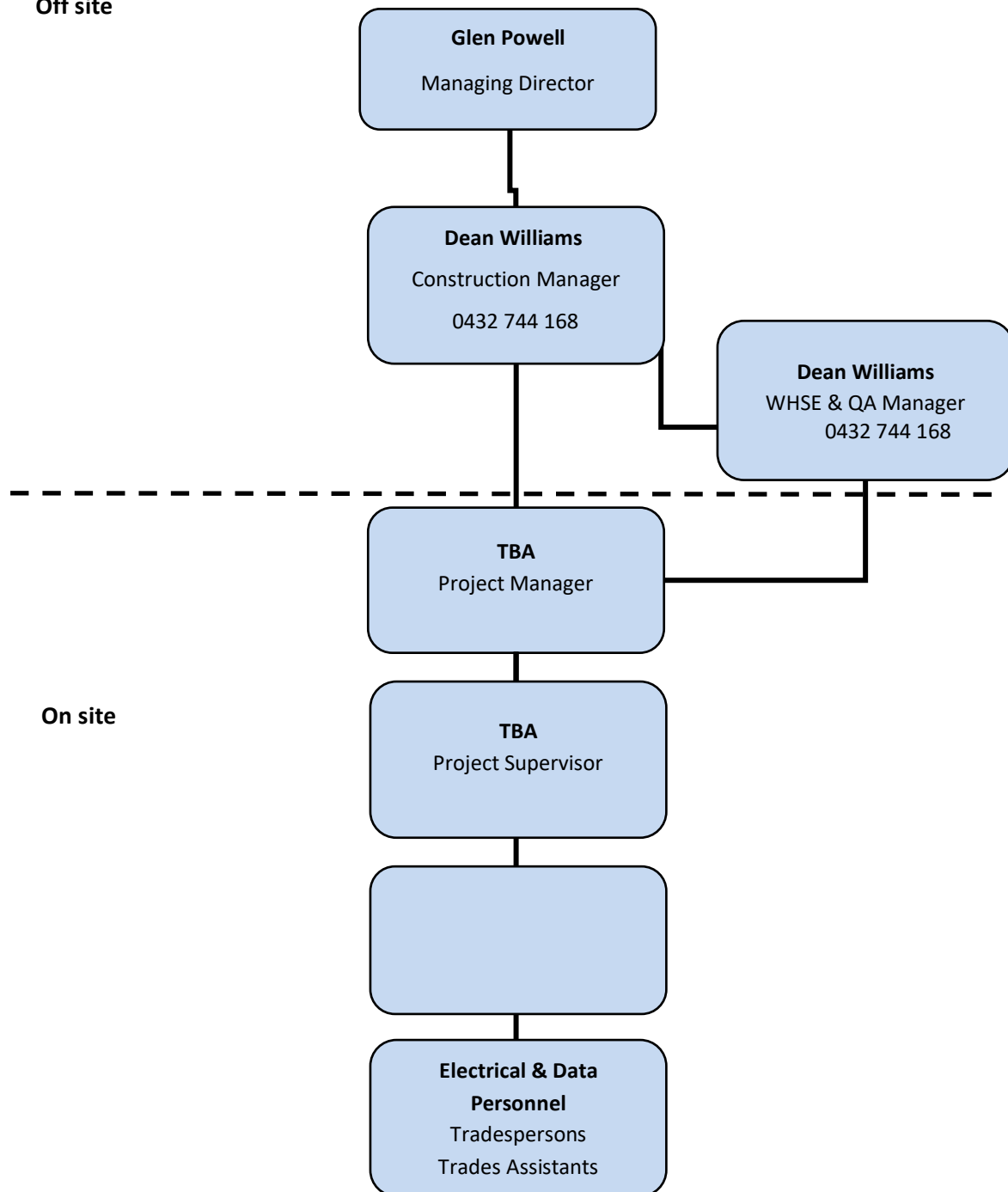
- AS/NZS 3000 – Wiring Rules (current edition)
- AS/CA S009 – Communications Wiring Rules (current edition)
- Relevant Codes of Practice

4. RESPONSIBILITIES

Key Project Personnel

Displayed in offices and other common areas is the **Project Organisation Chart** that identifies key Project personnel. The Organisation Chart is a live document and will be revised as required throughout the Project.

Off site



4.1 CONSTRUCTION MANAGER

The Construction Manager is responsible and accountable for the implementation and application of the Workplace Health and Safety (WHS) and Environmental Management Policy. The promotion and maintenance of WHS is primarily the responsibility of management and all managers will be held accountable for the health and safety performance within their area of responsibility.

4.2 OPERATIONS WHSE & QA MANAGER

The Operations WHSE & QA Manager manages the safety, quality, environmental and procedural requirements of Power Integration including ensuring compliance with all relevant legislation and Australian Standards applicable to Power Integration's work.

4.3 PROJECT MANAGERS AND SUPERVISORS

The Project Manager/Project Supervisor hold the authority on all construction activities on this Project within the set guidelines of Power Integration policies and procedures.

The Project Manager/Project Supervisor will be responsible for –

- Implementing Power Integration policies and procedures as applicable to this Project
- Review and execution of the Contract in accordance with the requirements of the specification, this Plan and its referenced documentation
- Providing an atmosphere conducive to a safe working environment and harmonious industrial relations
- Ensuring that work instructions are sufficiently detailed, comprehensible and made available to implementing personnel
- Ensuring this Plan is reviewed, updated and reissued when appropriate
- Planning and scheduling of works and the allocation of suitable, qualified personnel
- Ensuring the work method and tasks on the Project Schedule are associated with a corresponding Inspection and Test Plans (ITPs) for ease of reporting
- Assigning the Foreperson, or nominated person, to prepare ITPs as required for the Project
- Reviewing signed off ITPs for completeness and accuracy
- Updating ITPs to reflect completed works
- Ensuring the client is notified of any pending witness or hold points nominated on the ITP, where applicable
- Conducting random quality audits of completed works
- Submitting completed ITPs to the client in a timely manner

4.4 FOREPERSONS AND LEADING HANDS

Forepersons and Leading Hands are responsible for the day-to-day operations on the Project and hold a key role in the planning for, and delivery of, a quality product.

The Forepersons and Leading Hands will be responsible for –

- Preparing ITPs for each logical group of tasks ready for site installation teams under their control
- Allocation of personnel and materials for each work team and the direct supervision of the personnel under their control
- Ensuring that all relevant personnel under their control have the skills and/or training required to complete their assigned tasks
- Ensuring that all personnel under their control install the works in accordance with the Specifications
- Ensuring that any time sheets, site diaries and progress reports are completed and submitted to the Project Manager/Project Supervisor at the end of each working day or as required
- Advising the Project Manager/Project Supervisor of any deviations to, or any possible problems in carrying out, the works as planned
- Maintaining calibration records and schedules of Measuring and Test Equipment applicable to the site
- Ensuring all scheduling information is provided to the Project Manager/Project Supervisor in a timely manner

4.5 EMPLOYEES

All Power Integration employees will be responsible for –

- Complying at all times with the requirements of AS3000 - Wiring Rules (Current Edition)
- Ensure that requirements and work instructions are fully understood before work is undertaken
- Plan each work task with a view to eliminating incidences of non-compliance with requirements and reworks
- Comply at all times with Power Integration's Quality Management processes and procedures, document their compliance and participate in the improvement process
- In particular, fill out documentation, checklists and ITPs daily and reliably to signify that work has been carried out in accordance with Power Integration's requirements
- Provide maximum contribution, through sound workmanship skills, satisfying customer requirements and expectations to further enhance Power Integration's ability to gain repeat or referred business
- Maintain and develop individual skills and technical knowledge

4.6 MAJOR SUBCONTRACTORS AND SUPPLIERS

The major Subcontractors and Suppliers engaged by Power Integration on this Project shall be solely responsible for the Quality management of their own works and/or products. However, all Power Integration subcontractors and suppliers are contractually obliged to participate in this Quality Management Plan.

As a minimum, the subcontractors and suppliers are responsible for:

- Reporting to the Power Integration Project Manager/Project Supervisor on all matters relating to Quality

- Ensuring the project quality requirements are adhered to
- Ensuring prepared ITPs are submitted to Power Integration for review (not approval) prior to works commencing, in an appropriate timely manner
- Submitting completed ITPs and/or other required documentation associated with the Project to the Project Manager/Project Supervisor in a timely manner

5. PROCEDURES FOR QUALITY SYSTEM & PLANNING

Power Integration will document how the customer's requirements shall be achieved. In planning the fulfilment of the quality requirements, the needs of all other Management System elements shall be achieved.

Power Integrations mode of operation shall determine the format in which planning is documented specific to the project. When meeting the customer's requirements Power Integration shall give consideration to the following aspects:

- The preparation of Project specific plans (when a Project specific plan is to be prepared, the nominated representative shall develop the plan after consulting with the Project Manager/Project Supervisor to determine the Project specific requirements)
- Revise Power Integration's operation and management techniques, as necessary, following changes in technology and/or company operating methods
- Ensure the cohesion between the Management System procedures and applicable documentation
- Identify any measurement requirements, which exceed the present technology in sufficient time for the requirements to be addressed
- The identification of appropriate checks at pertinent times during the development of the Power Integrations product
- The definition of acceptable levels of quality for all details through the supply and installation of the customer's product
- Recognition for the need for records and the preparation of same, as appropriate

The Power Integration Management System is designed to give effect to its policies on management, as they apply to the various products of Power Integration provided for the Project. These policies affect customer satisfaction, compliance with customer specifications, relevant Regulations, Code and Standards and ultimately the performance of the Power Integration product.

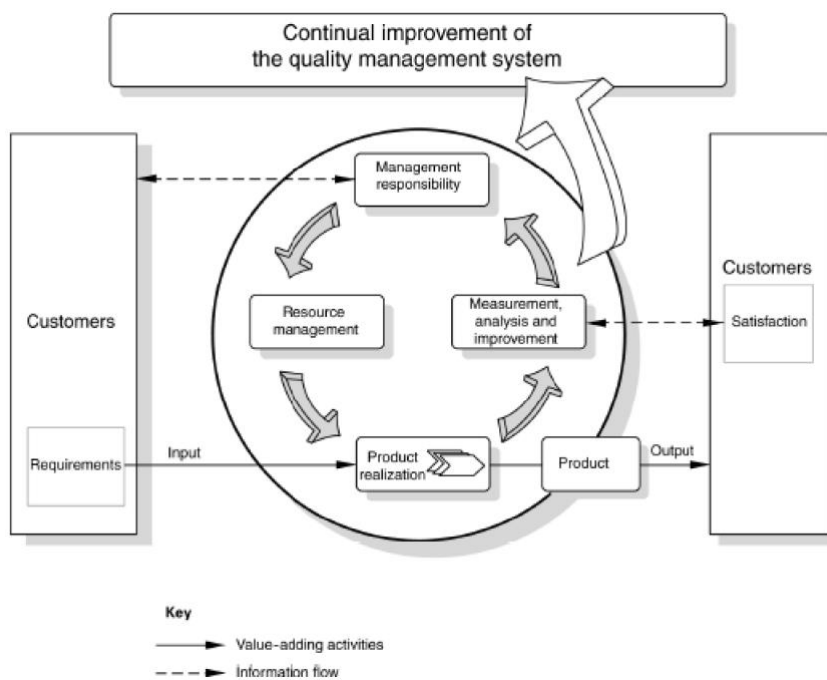
6. POLICIES AND PROCEDURES

The policies and procedures applicable for this Project shall be selected as appropriate from the Management System as shown below:

- Organisation chart
- Limits of Authority
- Management Review
- Estimating
- Contract Review

- Business Documents & Forms
- Project Correspondence
- Purchasing
- Performing Works
- Calibration of Test Equipment
- Storage of Equipment
- Employee Training
- Drawings, Sketches, Specifications & As BUILTs
- Design Control
- Project Completion
- Records & Storage
- Statistical Analysis

Model of Power Integration process based quality management system



6.1 PURCHASING

Principles

To ensure the management of supplier purchases (supplier can also mean subcontractor) is done in the best interest of the customer and Power Integration.

To ensure that all negotiations related to supplier purchases are done in a fair, consistent and equitable manner.

- Approved personnel shall raise a Purchase Order as per the Limits of Authority Chart clearly describing the goods and services required and include any specific requirements, e.g. inspection requirements, specification requirements or drawing requirements.
- Should there be any changes (e.g. order change, returned goods, invoice problem) to the Purchase Order an Amendment Advice will be completed and forwarded to the Supplier and administration for processing.
- Deliveries will be controlled by retention of the delivery docket and verification of goods/equipment receipt (quantities received and inspection results) recorded on the receiving inspection copy of the Purchase Order. Received goods/equipment shall be identified by job name/number if not used immediately.
- If goods/equipment are placed into storage, suitable product storage facilities shall be provided to ensure the product is suitably protected from damage, not subject to deterioration and if required, segregated, whilst the product is controlled by Power Integration. Signs will identify segregated areas as appropriate e.g. "goods receiving area".
- When samples or prototypes are submitted to the Customer for approval, they are accompanied by an Action/Advice Correspondence form for record purposes. This form is a multipurpose form for use as a Transmittal, Request for Information (RFI), Site Instruction, etc to be sent to the Customer or Supplier. Where there are considerable amounts of samples they are to be recorded on the Sample Register form.
- Where specified by Contract, the customer is afforded the right of access at the supplier's premises to verify that the sample or prototype conforms to their specified requirements.

6.2 DOCUMENT CONTROL

Principles

To define the control required to review, update and approve documents for adequacy prior to issue and ensure that the current revision status and relevant versions applicable are utilised.

To ensure that documents of external origin are identified and their distribution controlled to prevent the unintended use of obsolete documents.

- Any external business documents that do not directly relate to a particular Project, have been formally issued and are subject to change, e.g. Standards, Awards, Supply Authority Rules, etc. are to be controlled by identifying the holder/location, superseding the documents with the word "superseded" or destroyed. Details are to be recorded on a register such as the Drawing/Document Register or a register that records similar information.
- Any internal documents, e.g. forms or Guides shall be controlled by using its computer location. The revision date or issue date shall be updated in the computer location and identified on the form or Guide to identify the change. Each form or Guide shall be identified in the computer

location identified by its title or from an identification number and its revision or issue date. Existing hard copies of superseded forms may be used until all hard copies have been used.

- Drawings or specifications received from the customer or a supplier shall be controlled by recording the document identification and revision on a Drawing/Document Register or register that records similar information.
- As-Built drawings produced *by Power Integration* shall be “marked up” on existing “As for Construction” drawings to record installed equipment e.g. light fittings, power outlets, switchboards, etc. The marked-up drawings shall be reproduced by CAD or similar and identified by the drawing title and/or drawing number. The issue status of the drawings shall be identified by the words “As Built” or “As Installed”
- Documents provided by a customer or supplier as “Information Only” do not need to be controlled, but are to be identified as being “uncontrolled”

6.3 CONTROL OF RECORDS

Principles

To provide objective evidence of conformity to Customer requirements, Government regulations and the effective operation of the quality management system.

To define the controls required for the identification, storage, protection, retrieval, retention time and disposition of records.

Records are made available to the Customer or third-party organisation in accordance with the contract requirements or under special circumstances upon request.

- All hard copy Project correspondence shall be filed in accordance with the Power Integration Project Filing Index form. Electronic correspondence shall be filed on the Z drive in accordance with the Project Filing Index.
- All Project records shall be archived using the Document Archive Record form and controlled as per the Records and Storage Procedure.

6.4 MANAGING DESIGN

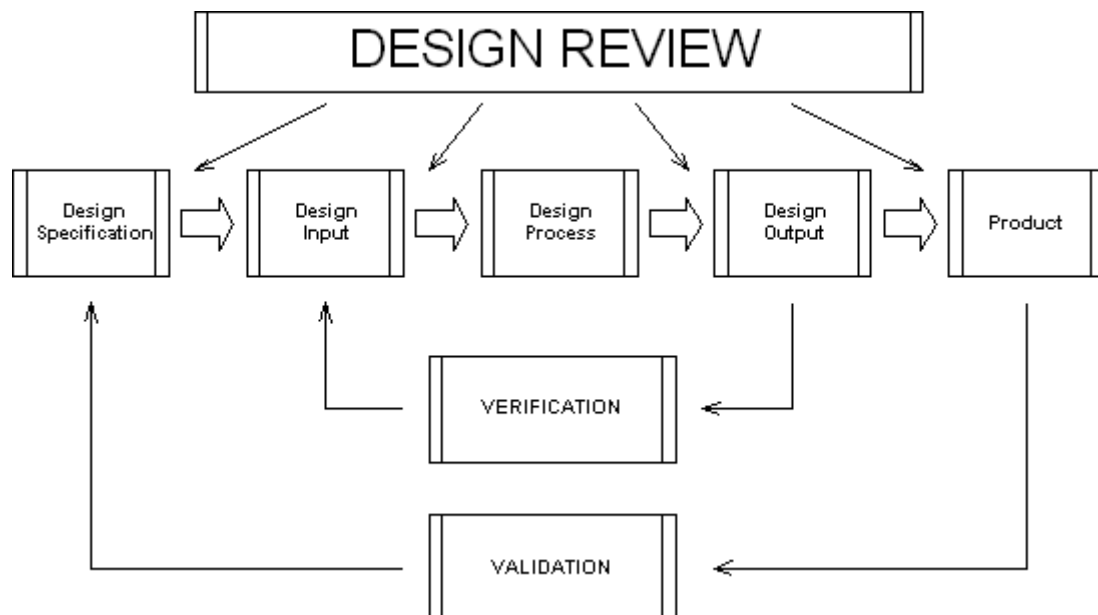
Principles

To define the processes required for Design and Construct style projects undertaken by Power Integration so that the design inputs and outputs are verified and validated and ensure that the designs are safe, fit for purpose and financially beneficial to Power Integration and the customer.

- The Project Manager is responsible for the development of a Project Design Plan whenever Power Integration has a full design and construct component in their scope of work. All designs prepared

by Power Integration will suitably embrace any WHS&E and electrical safety issues that could directly impact on employees during the installation phase, as well as the customers end needs

- When appropriate, the Project Manager shall arrange for an explanation of elements of the design to employees at toolbox & pre-start meetings, particularly when it is directly related to the on-site installation, WHS&E and/or electrical safety matters
- Regular Design Reviews will be made by the responsible person/s with other specialised personnel (if required) during the design process
- All equipment to be incorporated into the works must comply with relevant codes and regulations
- Design alterations will be verified and validated by being taken through appropriate consultant channels documented in the Project Design Plan to ensure there is no increased safety risk to on site personnel.



This includes any "In House" design works undertaken by Power Integration, either when stipulated within the scope of the contract and/or as required to simply execute the works.

6.5 AUDITING & REVIEW

Principles

The senior management of Power Integration shall continually examine the effectiveness and suitability of Power Integration's current performance, problems or major changes.

Internal audits will be undertaken by the Power Integration nominated representative at planned intervals to determine whether the quality management system conforms to AS/NZS ISO 9001:2000, the Power Integration management system requirements and customer requirements. This

information shall be utilised as a basis for the review and continual improvement of the Management System.

The Project Team responsible for the area being audited are accountable to ensure that actions are taken to eliminate detected nonconformities and their causes. Follow up audits will also be undertaken to verify the actions taken and the reporting of verification results.

6.6 CONTROL OF NON-CONFORMING PRODUCT

Principles

To ensure that any product or service provided by Power Integration which does not conform to requirements is identified and controlled to prevent its unintended use or delivery.

Should a nonconforming product or service be identified, the nonconforming product is corrected and re-verified to demonstrate conformity.

Corrective action will be taken to determine and eliminate the cause of the nonconformity in order to prevent reoccurrence and preventive action will be taken to identify and eliminate the cause of potential nonconformities in order to prevent their occurrence.

- The Project Manager is responsible for the control of deficient products on site. The Project Manager will, upon receipt, during production or prior to dispatch ensure the identification, segregation and disposition of any product that does not conform to the specified customer requirements occurs
- Deficient items will remain segregated or quarantined in areas identified by signs e.g. “Goods Receiving Area”, “Hold Do No Use”, “Excessive Stock” and “Scrap Cable – Do Not Use” or otherwise as required until disposition is agreed
- The deficient product, the proposed action and where required, approvals agreed with the supplier or customer, is noted on the Action Report form or minuted at a meeting. All replacement products or repaired and reworked products are re-inspected before the product is released on the Action Report form.

6.7 CONTROL OF MONITORING AND MEASURING DEVICES

Principles

To define the monitoring and measuring necessary to be undertaken and devices required to provide evidence of conformity of product to determined requirements.

Where necessary, to ensure valid results, measuring equipment will be calibrated or verified at specified intervals, or prior to use, against traceable measurements and adjustments or re-adjustments will be carried out as required.

Equipment shall be identified to enable the calibration status to be determined and protected from damage and deterioration during handling, maintenance and storage.

- The Foreperson shall ensure that all monitoring and measuring equipment is recorded on an Equipment Register form
- All monitoring and measuring equipment shall be calibrated in accordance with the Power Integration Calibration Procedure with test results recorded on an Equipment Calibration Record form
- All monitoring and measuring equipment shall have a visual indicator to identify its calibration status which identifies as a minimum its next due calibration date
- Other equipment utilised for “indication only” purposes do not require a calibration sticker
- New or repaired equipment will only require checking if NOT supplied with a Calibration Certificate.

6.8 TRAINING AND COMPETENCY

Principles

To ensure personnel performing work affecting product quality shall be competent on the basis of appropriate education, training, skills and experience.

To provide personnel who are deemed competent to perform works that affect the product quality Power Integration will provide training or take the appropriate actions to satisfy these requirements.

Power Integration will evaluate the effectiveness of actions taken and ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives.

Records of education, training, skills and experience will be appropriately maintained on the Power Integration Training Matrix.

- All Power Integration employees, when joining Power Integration, undergo a General Induction, which incorporates all disciplines of the Power Integration business. Prior to commencing work at the Project site all employees will also be required to attend a Customer Project site induction, where applicable and a Power Integration Site Specific Induction.
- When a new contract is awarded to Power Integration training needs analysis shall be carried out and recorded on the Contract Review and Training Request Documents prior to the Project works commencing. Power Integration and customer specific requirements shall be addressed at this time.

6.9 CUSTOMER COMMUNICATIONS

Any queries with regards to the specification/contract are to be raised with the customer through the Project Manager via direct communication, Project coordination meetings, or via web-based project correspondence or RFIs. Where appropriate, minutes of meetings will be prepared and communications from the customer (queries, complaints, compliments) should be routed through the Project Manager.

7. REVIEW OF THIS QUALITY MANAGEMENT PLAN

Power Integration shall continually strive to improve the effectiveness of the Quality Management System through the use of the Quality Policy, quality objectives, audit results, analysis of data, corrective and preventive action and Management Review

Any changes to this Project Quality Management Plan resulting from review will be explained to Employees by the Project Manager/Project Supervisor in a timely manner via Toolbox Meetings or other appropriate means.

8. QUALITY MANAGEMENT PLAN DISTRIBUTION

The original controlled copy of this Quality Management Plan will be retained by the Project Manager and a copy issued to the Customer. Uncontrolled copies may be distributed to site personnel or posted in Power Integration crib rooms, or as required.

9. ATTACHMENTS

n/a

PROJECT QUALITY MANAGEMENT PLAN

Employee Quality Plan Acknowledgment Register

Project: The Oxlade

[illegible]

Employee – you must sign this acknowledgment only when you are satisfied that you understand the content of this Quality Management Plan and that you will comply with these requirements.



Power
Integration™

ENERGY IN ACTION

POWER INTEGRATION

SAFE ELECTRICAL WORKS PROCEDURE

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1. FOREWORD

The purpose of these Procedures is to provide a safe system of work to prevent the risk of death, shock or injury to persons and the risk of loss or damage to property caused directly by electricity or originating from electricity.

The aim of these Procedures is to ensure that any electrical work carried out by Power Integration is conducted in a way that is electrically safe for all Company Personnel, Customers, Members of the Public and Others.

All Power Integration personnel who perform electrical work must adhere to these procedures.

2. DEFINITIONS

Authorised Person means a Power Integration Electrical Worker that has been appointed by a Project Manager or above to perform isolating and energising on a specific project under the control of that Project Manager. Project Managers may appoint more than one Authorised Person per site or project as required. To be eligible to be appointed as an Authorised Person by a Project Manager, the Power Integration Electrical Worker must have successfully undertaken in the previous 1 years, the Power Integration internal training to verify their ongoing competency to carry out relevant testing and isolating procedures.

Commissioning Team means the Power Integration Authorised Persons appointed by the relevant Project Manager to perform the energising of new permanent electrical installations.

De-energise means the process of disconnecting lines or apparatus from all sources of electrical energy.

De-energised does not mean isolated or discharged, or both

Discharge means connected to the general mass of earth in such a manner as to remove any residual electrical energy. It also means stored energy has been released.

Disconnected means that the parts are not connected to an electrical source.

Earthed means electrically connected to the general mass of earth.

Electrical equipment means any apparatus, appliance, cable, conductor, fitting, insulator, material, meter or wire that

- is used for controlling, generating, supplying, transforming or transmitting electricity at a voltage greater than extra low voltage; or
- is operated by electricity at a voltage greater than extra low voltage; or
- is part of an electrical installation located in an area in which the atmosphere presents a risk to health and safety from fire or explosion; or
- Is, or is part of, a cathodic protection system.

Electrical installation is a group of items of electrical equipment that-

- are permanently electrically connected together; and
- can be supplied with electricity from the works of an electricity entity or from a generating source; and
- do not include items that are works of an electricity entity.

Electrical place means a location where an electrical installation, electrical equipment, works of an electrical entity or a cathodic protection system is located, including a premises, place, land or water.

Electrical risk means:

- in relation to a person, the risk to the person of death, shock or injury caused directly by electricity or originating from electricity; or
- in relation to property, the risk to the property of
 - (i) Damage caused by a cathodic protection system; or
 - (ii) Loss or damage caused directly by electricity or originating from electricity.

Electrically safe means-

- for a person or property, that the person or property is free from electrical risk; and
- for electrical equipment or an electrical installation, that all persons and property are free from electrical risk from the equipment or installation; and
- for the way electrical equipment, an electrical installation or the works of an electrical entity are operated or used, that all persons and property are free from electrical risk from the operation or use of the equipment, installation or works; and
- for the way the electrical work is performed, that all persons are free from electrical risk from the performance of the work; and
- for the way a business or undertaking is conducted, that all persons are free from electrical risk from the conduct of the business or undertaking; and
- for the way electrical equipment or an electrical installation is installed or repaired, that all persons are free from electrical risk from the installing or repairing of the equipment or installation.

Electrical safety for a person or property, means the person or property is electrically safe.

Electrical work means –

- (a) Connecting electricity supply wiring to electrical equipment or disconnecting electricity supply wiring from electrical equipment; or
- (b) Manufacturing, constructing, installing, removing, adding, testing, replacing, repairing, altering or maintaining electrical equipment or an electrical installation.

Energise means energise by electricity.

Free from electrical risk for a person or property, means –

- (a) Electrical risk to the person or property has been eliminated, so far as is reasonably practicable; or
- (b) If it is not reasonably practicable to eliminate electrical risk to the person or property, the risk has been minimised so far as is reasonably practicable.

Isolated means disconnected from all possible sources of supply and rendered incapable of being made live without premeditated and deliberate operation.

Isolation point means the point, or one of many points, used to isolate electrical parts.

Isolation and Lock Out Register means the Power Integration Documented process for recording when electrical equipment and circuits etc. are isolated for the purpose of work to be carried out safely on or around this equipment. Contact the Project Manager to obtain this document.

Live (alive or energised) means connected to a source of electrical supply or subject to hazardous induced or capacitive voltages. Generally, “live” refers to a conductor or conductive part intended to be energised in normal use, including a neutral conductor and conductive parts connected to a neutral conductor

3. SAFE SITE PRACTICES FOR ELECTRICAL WORKERS

3.1 GENERAL

3.1.1 **IF YOU ARE NOT SURE ABOUT ANY POWER INTEGRATION PROCESS OR PROCEDURE OR THE TASKS YOU ARE TO PERFORM – ASK YOUR SUPERVISOR.**

3.1.2 **NEVER WORK ON A LIVE CIRCUIT – GET IT ISOLATED FIRST.** Never work on a circuit or equipment that forms part of an installation unless it is Isolated from supply in accordance with Part 6 of this Procedure.

3.1.3 **NO LIVE WORK** on any site. ONLY Power Integration General Managers in consultation with the Operations WHSE & QA Manager or above may approve live works.

3.1.4 **TEST FOR DEAD BEFORE YOU TOUCH TO ENSURE DE-ENERGISATION. VOLTSTICKS** or any other non-compliant test equipment (**i.e. PROXIMITY METERS**), **MUST NOT BE USED TO TEST FOR DEAD.** Tests for dead must only be done using approved test lamps or voltmeter/multimeter.



3.1.5 Never perform electrical work on **PORTABLE** or **PLUG-IN EQUIPMENT** unless you ensure:

- The equipment is unplugged from supply and;
- Steps are taken to manage the possibility of others re-plugging this equipment into supply
(e.g.: You can see the plug top; you lock the plug top or prevent it from being inserted into a socket outlet) and;
- if the plug-in equipment remains unsafe for use, it is tagged “Out of Service” and/or rendered incapable of being plugged in to a socket outlet

3.1.6 **Ensure all VISUAL CHECKS are performed before commencement of ANY works.**

VISUAL CHECKS WILL IDENTIFY MORE ELECTRICAL SAFETY ISSUES THAN WHAT TESTS ALONE CAN IDENTIFY.

3.1.7 **LEAVE IT SAFE:** If you are performing electrical work on any part of an installation and you need to leave that area for any reason, you must take all necessary steps to ensure you leave that part safe from others inadvertently touching any potentially live parts. This may include locking a switchboard door, room, or an area, posting another Power Integration Worker as a

guard, barricading, locking out and tagging, notifying relevant persons, etc. Refer to Part 6 of this procedure.

- 3.1.8 If any unterminated roughed-in cable ends exist in the field, under NO circumstances are the feed end of the cables to be connected into circuit breakers. This is not a requirement for existing circuits that are being altered. Refer to Part 6 of this procedure.

3.2 DURING PRE-WIRE STAGE (ROUGH-IN) OF INSTALLATIONS

- 3.2.1 Any exposed electrical cable ends of sub-circuits must be taped individually or as a group:
- To cover any exposed wire ends; and
 - To communicate multiple cables will be commonly terminated at fit off (even if looped at rough-in but not yet cut); and
 - To communicate multiple cables will exit the same penetration when sheeted (wall, ceiling etc.)
 - Separate cables that are not to be commonly terminated but will exit through the same penetration (e.g. Switch gangs) must be tapped separately at the ends but then finally group taped.
- 3.2.2 Roughed-in permanent cables must be **MARKED** at the ends in a manor determined by the Project Supervisor/Foreman. This is to communicate to Power Integration fit-off workers the purpose of the cable (e.g.: In permanent marker pen - ANE, fan, light, strappers, sensor, oven etc.).
- 3.2.3 **ITP's (INSTALLATION TEST PLANS) MUST BE COMPLETED AND CONTAIN ALL NECESSARY INFORMATION FOR THAT STAGE OF INSTALL. ASK YOUR SUPERVISOR ABOUT ITP PROCESSES AND THEIR IMPORTANCE.**

4. WORKING LIVE POLICY

4.1 GENERAL

- 4.1.1 It is the policy of Power Integration that **LIVE ELECTRICAL WORK IS NOT PERMITTED** on any of its sites/premises unless the **Live Electrical Work Procedure** is strictly adhered to. This includes all works on or near live exposed electrical parts.
- 4.1.2 Only appropriately qualified and authorised personnel may undertake electrical work and they must ensure they only carry out work on de-energised plant or circuits, ensuring that all apparatus and equipment is isolated and tagged prior to working on that piece of equipment and / or circuitry (See Part 6 of this procedure for further information).
- 4.1.3 Testing and fault finding is also considered live work. However live testing/fault finding activities are permissible only if carried out in strict accordance with the appropriate procedures and practices.
- 4.1.4 Where current knowledge is inadequate for the task, further guidance and information can be sourced from the following:
- Code of Practice for “**Electrical Work**” and **Electrical Safety Act 2002**; and
 - Australian Standard **AS/NZS 4836:2011 – Safe Working on Low-Voltage Electrical Installations** (describes the minimum recommended procedural and safety requirements for safe working for all electrical workers).

5. LIVE ELECTRICAL WORK PROCEDURE

5.1 GENERAL

- 5.1.1 This procedure applies to any work on low voltage electrical equipment on any site where Power Integration employees perform electrical processes as part of their normal duties. It is the policy of Power Integration that live electrical work or working near live exposed parts will not be performed except in the circumstances listed in section 5.2.
- 5.1.2 It is a requirement that all electrical workers treat each exposed electrical part as if it is energised until it is isolated and proved not to be energised.
- 5.1.3 No live work is permitted on medium / high voltage equipment. This work is generally contracted to dedicated experts / contractors.

5.2 REQUIREMENTS FOR THE PERFORMANCE OF LIVE WORK

- 5.2.1 **The following circumstances are required for the performance of live work: -**

“It is not practicable to perform the electrical works other than by live work because of one or more of the following: -

- (i) It is necessary in the interests of safety, whether or not electrical safety, for the works to be performed while the electrical equipment the subject of the electrical work is energised;**
- (ii) A supply of electricity is necessary for the proper performance of the electrical work;**
- (iii) There is no reasonable alternative to performing the electrical work by live work.”**

5.3 RISK ASSESSMENT

- 5.3.1 A written risk assessment must be provided by a Manager of Power Integration. If the risk assessment has indicated that the risks cannot be sufficiently controlled or eliminated to enable the work to be performed safely on or near energised electrical equipment, then work must not proceed.

5.4 AUTHORISATION

- 5.4.1 A Power Integration General Manager in consultation with the Operations WHSE & QA Manager or above must authorise the performance of all live work after consultation with the person in control of the electrical equipment.

5.4.2 The person in control, together with a General Manager in consultation with the Operations WHSE & QA Manager must confirm authorisation of live works by completing the **Live Works Permit**.

5.4.3 The General Manager in consultation with the Operations WHSE & QA Manager must also issue and authorise a **Working on Live Electrical Equipment Access Permit**. All employees involved in the work task are required to sign on to the Permit, ensuring all requirements are in place and that they understand the contents of the permit prior to commencing the task.

5.5 COMPETENCY

5.5.1 The person who performs the live work has the appropriate qualifications and training for the performance of the work and must be a Power Integration Authorised Person.

5.5.2 Under no circumstances is an apprentice electrical worker permitted to perform any work on live electrical equipment.

5.6 TEST EQUIPMENT

5.6.1 All safety and testing equipment appropriate to the performance of the live works has been properly maintained/calibrated and the person performing the work makes proper use of the testing equipment when performing the work.

5.7 PERSONAL PROTECTIVE EQUIPMENT

5.7.1 Clothing and personal protective equipment appropriate to the performance of the live works has been given to the person performing the electrical works and the person makes proper use of such clothing and equipment. As a minimum, the following shall apply:

- Cotton protective clothing which covers the arms, legs and body and contain no metallic threads or exposed conductive zips or rivets;
- Non-conductive safety footwear;
- Insulating gloves (500v or 1000v);
- Face shield.

5.8 JEWELLERY

5.8.1 All jewellery must be removed prior to commencing works, including neck chains, rings, bracelets, earrings, body piercings, metallic spectacle frames and watches.

5.9 INSULATING MATS/BARRIERS AND LV RESCUE KIT

- 5.9.1 When working on or near live exposed conductors, an insulating mat should be used by placing it under the workers' feet. Insulating rubber barriers should be installed or placed over exposed live terminals. Whilst undertaking live work a qualified and trained safety observer shall be utilised, along with a calibrated LV rescue kit.

5.10 ISOLATION

- 5.10.1 The isolation point of the electricity supply for the electrical equipment has been clearly identified and is able to be reached quickly without the need to climb over or shift obstructions. Where possible, isolation must be from the point of supply of the sub-main. If this is not possible, it is preferred that the main switch is opened and an insulating barrier be placed over the terminals on the line side of the switchboard main switch.

5.11 OBSTRUCTIONS

- 5.11.1 The areas where the electrical work is performed is clear of obstructions to the extent necessary for easy access to and from the area.

5.12 SAFETY OBSERVER

- 5.12.1 There is a safety observer (who has been assessed as competent in rescue and resuscitation in the previous twelve months) observing the performance of the electrical work.
- 5.12.2 Under no circumstances is an apprentice electrical worker permitted to perform the role of safety observer at Power Integration.
- 5.12.3 Note: a safety observer is not required if the work involves testing of electrical equipment only, unless so determined by a risk assessment.

5.13 SAFE SYSTEMS OF WORK

- 5.13.1 The performance of the electrical work is in accordance with a safe system of work and complies with **AS/NZS 4836:2011 – Safe Working on Low-Voltage Electrical Installations**.

5.14 TOOLS AND ACCESSORIES

- 5.14.1 All tools and accessories are to be insulated and inspected prior to commencing work to ensure they are fit for purpose.

5.15 SAFETY BARRIERS AND SIGNS

5.15.1 Safety barriers and signs can be used to control risks to: -

- Protect the electrical worker from making contact with live parts
- Ensure that access to and egress from the work location of live works allows for clear, unobstructed passage
- Warn others and direct them away from live parts
- Clearly designate the safe work area by defining the approach path to a piece of equipment

5.16 WORK POSITION

5.16.1 All workers must ensure that they are positioned in such a manner that contact with electricity would require a deliberate movement to touch energised parts or create a current path. Adequate working clearance to allow safe access and egress from the work position, in the case of an emergency, should be maintained.

5.17 PRECAUTIONS

5.17.1 **Neutral connections** – particular care should be taken when removing neutral connections as tests may have indicated a de-energised situation. However, when these connections are removed a voltage may be present between conductors or between conductors and earth.

5.17.2 **Earthing** – when working on live electrical equipment having earthed conductive parts, precautions must be taken to ensure earthing continuity is maintained to any component part of the equipment at all times. Bonding conductors may be required to be installed when removing electrical equipment from earthed conductive parts, e.g. live component part separated from its connected earthing medium. Bonding conductors must be rated to withstand the “let through” energy of the primary protection without failing.

5.17.3 **Barriers and insulation mediums** – only conductors at one potential should be worked on at any one time and insulated barriers should be utilised in the work area between conductors of different phases or voltage potentials. Insulating mats or barriers should be used between electrical workers and earth including building structures such as concrete and steel which may be earthed

6. LOW VOLTAGE ISOLATION PROCEDURE

6.1 GENERAL

6.1.1 THIS PROCEDURE MUST BE FOLLOWED WHEN ELECTRICAL CIRCUITS OR EQUIPMENT OF AN INSTALLATION NEEDS:

- Repair
- Modification (e.g. circuit, distribution board, or equipment, etc. added, or existing equipment moved or removed)
- Commissioning or Energising
- Demolishing, or
- Work carried out safely adjacent to such equipment.

6.1.2 THE RELEVANT CIRCUIT OR EQUIPMENT MUST BE ISOLATED FROM SUPPLY. ONLY A POWER INTEGRATION AUTHORISED PERSON FOR ISOLATING/ENERGISING IS TO PERFORM THIS PROCEDURE.

6.1.3 THIS PROCEDURE DOES NOT PROHIBIT ANY POWER INTEGRATION WORKER ISOLATING SUPPLY FOR EMERGENCY SAFETY REASONS SUCH AS ELECTRICAL SHOCK, EXPLOSION OR FIRE.

IN THESE INSTANCES, ASSESS THE SITUATION AND TAKE APPROPRIATE ACTIONS TO ENSURE SAFETY WITH THE FULL SUPPORT OF POWER INTEGRATION MANAGEMENT.

6.1.4 The steps below are the **MINIMUM REQUIREMENTS** for Power Integration workers to **ISOLATE** hard wired equipment, **WORK SAFELY**, and then **RE-ENERGISE**. Project Managers may initiate additional requirements on a project above these minimum Power Integration requirements.

6.1.5 Also, an assessment of the risks involved at any stage of work by the AUTHORISED PERSON, site rules, and circumstances may require additional requirements to the minimum Power Integration standards listed below (e.g. weather conditions, site isolation permits & registers, bonding etc.). Refer to Additional Requirements section at the end of this procedure for further information.

6.2 CONSULTATION WITH RELEVANT PERSONS:

6.2.1 Prior to the Commencement of Work the AUTHORISED PERSON must ensure that all relevant persons are notified that power is about to be isolated (e.g. Builder, other Power Integration Workers, other trades etc.)

6.3 IDENTIFICATION OF CIRCUITS AND ISOLATION POINTS:

- 6.3.1 The AUTHORISED PERSON must ensure that the correct circuit(s) and Isolation points are identified. NOTE: Multiple sources of supply may exist from stand-by systems, generators, control circuits, thermostats, float switches, PLCs, photovoltaic systems and other interface devices. Also, specific areas of an installation or items of equipment may remain energised.

6.4 ISOLATION FROM SUPPLY:

- 6.4.1 The AUTHORISED PERSON must ensure the electrical equipment to be worked on is isolated at all sources of supply. This may be achieved by opening switches, removing fuses, and/or switching circuit breakers. If Isolation is by rack out circuit breaker or combined fuse/switch, these should be racked out or removed if reasonably practicable.

6.5 SECURING ISOLATION - LOCK OUT AND DANGER TAG:

- 6.5.1 The AUTHORISED PERSON must ensure they securely attach a personal isolation lock and danger tag clearly bearing the AUTHORISED PERSON'S name, signature, and date at the isolation point after the circuit/equipment is isolated. Tags should also include any relevant warnings and information such as multiple sources of supply.
- 6.5.2 If the circuit, equipment, or switchboard door etc. does not enable the use of a personal lock, then the AUTHORISED PERSON must disconnect and safely secure ALL conductors at supply end and tag/label these to identify breaker numbers etc.
- 6.5.3 If other workers are to work on the same circuit or equipment that is isolated, the AUTHORISED PERSON must ensure each person to work on the circuit/equipment attaches their own personal lock and completed Danger Tag prior to the commencement of work. If possible, hasp/lanyard devices and/or lock boxes should be used for multiple workers at the isolation point with relevant and agreed additional procedures including controls for securing keys.
- 6.5.4 The AUTHORISED PERSON must ensure that each worker and the AUTHORISED PERSON record the above isolations in the ISOLATION & LOCK OUT REGISTER prior to work commencing. This is NOT REQUIRED if it is only the authorised person performing the work and the work is to be completed by the end of shift.
- 6.5.5 NO PERSON IS TO OPERATE A SWITCH WITH A LOCK OR DANGER TAG ATTACHED – EVER.**

6.5.6 AN ISOLATION LOCK OR DANGER TAG MUST ONLY BE REMOVED BY THE PERSON WHOSE NAME APPEARS ON IT. Where the person is unavailable due to absence, illness or other causes, the Power Integration Project Manager, and an AUTHORISED PERSON may remove the lock or tag only after:

- They ensure all reasonable measures have been made to contact the person whose name is on the lock/tag;
- They fully acquaint themselves with the reasons for the tag being attached;
- They carry out all necessary visual inspections and tests on the circuit/equipment to ensure it may be operated without danger to persons/equipment/or installation;
- They ensure all relevant persons are informed of their actions;
- They ensure the person whose lock/tag was removed is fully informed of their actions at the earliest time or on their return.

6.6 TESTS FOR DEAD:

6.6.1 PRIOR TO WORKS COMMENCING ON ANY CIRCUIT OR EQUIPMENT, THE AUTHORISED PERSON MUST ENSURE IT IS DE-ENERGISED AT EACH POINT WHERE WORK IS TO TAKE PLACE BY MEANS OF APPROVED TEST LAMPS OR METER, AND THAT THIS DEVICE IS ITSELF TESTED AGAINST A KNOWN SOURCE BEFORE AND AFTER TESTING. Works can then commence.

6.6.2 ALWAYS TEST FOR DEAD PRIOR TO TOUCHING

6.6.3 RE-TEST FOR DEAD AS NECESSARY:

If Power Integration workers leave the relevant area (E.g.: for parts, equipment or overnight) or there is a change in the circumstances (E.g.: new workers in the location), the AUTHORISED PERSON must ensure that new visual checks and tests for dead are carried out to ensure isolation/de-energisation.

6.7 VISUAL INSPECTIONS, TESTS, CONFIRMATIONS:

6.7.1 At the Completion of Work the AUTHORISED PERSON must ensure all necessary visual inspections and tests are completed (no potential exposed live parts).

6.7.2 THE AUTHORISED PERSON must ensure each person who placed an isolation lock and tag is present at the same time and confirms all circuits and equipment are SAFE TO ENERGISE.

6.8 CONSULTATION WITH RELEVANT PERSONS AND ENERGISATION:

6.8.1 The AUTHORISED PERSON must ensure ALL RELEVANT PERSONS are notified that circuits/equipment are about to be energised.

- 6.8.2 The AUTHORISED PERSON must ensure that all workers involved are satisfied the circuit/equipment can be energised safely BEFORE each worker can remove their individual lock and tag (refer to 6.9.1).
- 6.8.3 The AUTHORISED PERSON must ensure each worker and the authorised person sign off the Isolation and Lock Out Register if necessary.
- 6.8.4 The AUTHORISED PERSON must then energise the circuit/equipment.

6.9 Q.A. (AUTHORISED PERSON'S EVIDENCE OF COMPLIANCE & SAFETY)

- 6.9.1 The AUTHORISED PERSON must ensure all relevant TESTS/ITPs CERTIFICATES are completed.

6.10 ADDITIONAL REQUIREMENTS

- 6.10.1 **Additional Requirements, steps, processes, information, precautions that may be used depending on the level and nature of risk, site rules by other employers, circumstances, or long term isolations or out of service equipment.**
- 6.10.2 **Bonding:** If practicable, where isolation of electrical equipment is made at a remote location, all conductors supplying the equipment should be bonded together first and then to the general mass of earth at the work site. Bonding to earth may be affected by connecting conductors, which are adequate to carry the potential short circuit currents to the electrical installation earthing system. Removal of bonding conductors must be carried out in reverse order. Suitable safety apparel should be used when attaching or removing temporary bonding conductors.
- 6.10.3 **Cutting Cables:** When carrying out work which involves cutting existing cables, the cable must be treated as live and the procedures for working on live electrical equipment must be adhered to until positive tests proving the cable is de-energised can be made. Both ends of the cable should be checked for isolation prior to cutting.

LONG TERM ISOLATIONS/OUT OF SERVICE EQUIPMENT – LEAVE IT SAFE

- 6.10.4 If a piece of electrical equipment or part of a circuit or installation requires isolation for long periods due to damage, redundant equipment, or equipment awaiting parts etc., DANGER/OUT of SERVICE tags should be used to identify that this equipment/circuit is isolated and not to be used.
- 6.10.5 The AUTHORISED PERSON must ensure this equipment or part of the installation is isolated at a point as far upstream as practicable following the above ISOLATION PROCEDURE. Safe isolation in these circumstances should include disconnecting, securing, and labelling all active and neutral wires at relevant circuit breakers, j-boxes, isolating switches etc. The DANGER/OUT of SERVICE tag(s) must be completed by the AUTHORISED PERSON and contain all necessary information regarding disconnection points. **LEAVE IT SAFE**

7. ENERGISING PROCEDURE – MECHANICAL/SERVICE BOARDS FOR OTHER CONTRACTORS

7.1 GENERAL

7.1.1 **ONLY A POWER INTEGRATION AUTHORISED PERSON IS TO PERFORM THIS PROCEDURE.**

- 7.1.2 Prior to energising for another services contractor, they must submit a Request for Connection (refer attachment Request for Connection). No electrical supply is to be provided until this form has been received and checked by the Power Integration Authorised Person and confirmed as being correct prior to commencing.

Note: It is the Mechanical or other services Contractor's responsibility to ensure that all electrical works carried out within the switchboard and from the load side and field wiring of the main switch is electrically safe.

- 7.1.3 The Power Integration Authorised Person must co-ordinate with Subcontractor responsible for controlling that board and ensure they are present when energising sub-mains etc.
- 7.1.4 Notification of intent to commence this work must be given to client / builder prior to commencing.
- 7.1.5 Sub-main identification to be confirmed and tested fully prior to being livened up. Relevant inspections and tests to be carried out as per **AS/NZS 3000 Wiring Rules and AS/NZS 3017 Electrical Installation – Testing Guidelines. This can be recorded on a Certificate of Test & Compliance.**
- 7.1.6 The immediate area around the switchboard is to be barricaded off or restricted as required to prevent ingress by other trades during the initial testing and “first time” energising of the switchboard. Where appropriate other relevant personnel working in the area to be informed beforehand.
- 7.1.7 Once energised all equipment is to have “In Service” labels / signage attached.
- 7.1.8 All circuits to be treated as live when switchboard energised.
- 7.1.9 No unauthorised personnel are permitted to energise circuits at any time.

8. COMMISSIONING NEW PERMANENT INSTALLATIONS

8.1 GENERAL REQUIREMENTS PRIOR TO ENERGISING

- 8.1.1 **ONLY THE NOMINATED COMMISSIONING TEAM/PERSON IS TO PERFORM THESE PROCEDURES. CONTACT THE RELEVANT PROJECT MANAGER FOR FURTHER INFORMATION.**
- 8.1.2 Conduct a Risk Assessment (Refer to **Onsite Risk Assessment Form/BlueStart Card**) where required or follow the appropriate SWMS.
- 8.1.3 Each person associated with energising electrical services and following these procedures must have current CPR / Switchboard Rescue Training and hold a current unrestricted Electrical Mechanic's Licence issued by the ESO Queensland or mutually recognised State Licence.
- 8.1.4 Any employee associated with the Commissioning Team to fully understand and comply with these procedures prior to any energising taking place.
- 8.1.5 Nominated Authorised Persons only to be on Commissioning Team.
- 8.1.6 The requirement for a Safety Observer is to be determined by the risk assessment. If a Safety Observer is deemed necessary, then this is the only task that they undertake.
- 8.1.7 The Commissioning Team should have direct contact with a First Aid Facility or provided with quick response mechanism to Emergency Services by means of a 2-way radio or mobile phone.
- 8.1.8 Inspection Test Plans (ITPs) for sub-circuit rough in and fit out are to be complete and referenced prior to commencing to ensure no cables are unterminated.
- 8.1.9 Before energising, ensure area is clear. No personnel are permitted to be in area unless cleared by Commissioning personnel.
- 8.1.10 Where deemed a requirement, the Rescue kit and mat to be in working area and utilised. Ensure all components are accounted for, checked prior to use and within current test dates
- 8.1.11 No jewellery to be worn (including personal piercings) or conductive items such as metal-framed glasses or watches.
- 8.1.12 All materials should be regarded as conductive unless proved otherwise, including gases and liquids.

- 8.1.13 Safety barrier and / or signs must be utilised as required to warn others or request evacuation by others of the immediate area.
- 8.1.14 Use the appropriate PPE as deemed necessary.
- 8.1.15 Use correct (insulated) tools and confirm equipment and test instruments are functioning correctly prior to and following use.
- 8.1.16 All test equipment is to be minimum Category III (or Category IV where required) and within current calibration test dates.

8.2 ENERGISING PROCEDURE FOR MAIN SWITCHBOARDS & SUB-BOARDS

- 8.2.1 ONLY THE NOMINATED COMMISSIONING TEAM/PERSON IS TO PERFORM THESE PROCEDURES. CONTACT THE RELEVANT PROJECT MANAGER FOR FURTHER INFORMATION.**
- 8.2.2 Notification of intent to commence Testing/Commissioning to be given to client / builder prior to commencing the activity.
- 8.2.3 Authorised Persons / Commissioning Team are responsible for controlling the boards in their area and be present when energising circuits.
- 8.2.4 Cable identification to be confirmed and tested fully prior to being livened up. Relevant inspections and tests must be carried out as per **AS/NZS 3000 Wiring Rules and AS/NZS 3017 Electrical Installation – Testing Guidelines**.
- 8.2.5 Circuits that are NOT terminated in the field are to be terminated into connectors and NOT terminated into a circuit Breaker. **ALL CONDUCTORS** are to be placed in connectors and labelled appropriately.
- 8.2.6 Special care to be taken in relation to control circuits i.e.: Is the control circuit contained within the board? If not, remove from circuit breaker until completed and tested.
- 8.2.7 Access to the immediate area around the switchboard is to be restricted to prevent ingress by other trades during the initial testing and “first time” energising of the switchboard. This can be achieved by locking rooms, floors, or barricading off areas. Where appropriate, other relevant personnel working in the area are to be informed beforehand.
- 8.2.8 Open main switch(s), attach padlocks and / or danger tags as applicable (Refer to Part 6).
- 8.2.9 All isolations are to be logged in the **Isolation Lock Out Register**. This is NOT REQUIRED if it is only the Authorised Person performing the work and the work is to be completed by the end of shift.

- 8.2.10 All Inspection Test Plans (ITPs) for the switchboard to be completed progressively and satisfactorily, including signatures and dates. The ITP shall be available at the time of testing and the Authorised Person in control of the area shall ensure compliance.
- 8.2.11 Once energised, all equipment is to have “in service” labels / signage attached (Refer Attachments).
- 8.2.12 Switchboard is to be locked on completion of works and all relevant keys returned to the site office.
- 8.2.13 All circuits must be treated as live when switchboard energised.
- 8.2.14 No unauthorised personnel are permitted to energise circuits at any time. The Commissioning Team or authorised personnel will be the only persons to energise power to switchboards and only after the appropriate tests and checks have been undertaken to ensure that it is electrically safe.

8.3 ENERGISING PROCEDURE FOR CIRCUITS AT SUB BOARDS

- 8.3.1 **ONLY THE NOMINATED COMMISSIONING TEAM/PERSON IS TO PERFORM THESE PROCEDURES. CONTACT THE RELEVANT PROJECT MANAGER FOR FURTHER INFORMATION.**
- 8.3.2 Authorised Person / Commissioning Team are responsible for controlling the boards in their area and the other persons present when energising circuits (exclude unwanted persons as required).
- 8.3.3 Cable identification to be confirmed and tested fully prior to being livened up. Relevant inspections and tests to be carried out as per **AS/NZS 3000 Wiring Rules and AS/NZS 3017 Electrical Installation – Testing Guidelines.**
- 8.3.4 Cable-ends of circuits are to be appropriately terminated at both ends in all areas to be commissioned. If field cabling is not terminated in a junction box or other item of electrical equipment then **ALL CONDUCTORS** are to be terminated into connectors and labelled appropriately.
- 8.3.5 Prior to reconnection of switchboard circuits, the main isolator for the relevant distribution board **MUST** be isolated.
- 8.3.6 Special care to be taken in relation to control circuits i.e.: Is the control circuit contained within the board? If not, remove from circuit breaker until completed and tested.
- 8.3.7 Other personnel working in the area where circuits are to be energised are to be informed prior to the energisation.

- 8.3.8 All Inspection Test Plans (ITPs) for the switchboard must be completed progressively and satisfactorily, including signatures and dates. The ITP shall be available at the time of testing and the Isolation Officer or nominated person in control of the area shall ensure compliance.
- 8.3.9 A current Schedule or labelling noting which circuits are alive or otherwise must be included in the switchboard.
- 8.3.10 All isolations are to be logged in the Isolation Lock Out Register. This is NOT REQUIRED if it is only the Authorised Person performing the work and the work is to be completed by the end of shift.
- 8.3.11 All circuits to be treated as live when switchboard energised.
- 8.3.12 No unauthorised personnel are permitted to energise circuits at any time.
- 8.3.13 Where practical, electrical cabling installed for future connection of equipment should not be left coiled up in ceiling spaces, but left exposed below the finished ceiling and the end of the cable terminated in a junction box and labelled according to the appropriate switchboard.
- 8.3.14 The Commissioning Team or Authorised Personnel will be the only persons to energise power to sub-boards and only after the appropriate checks have been undertaken to ensure that it is electrically safe.

9. SAFE DEMOLITION WORKS

9.1 GENERAL

- 9.1.1 All workers must work under the belief that any cable in a demolition area is “LIVE” and as such all cables are to be treated as LIVE. Any cable not required should be removed. The scenarios for building demolition can be broken down into three procedures.

9.2 THE COMPLETE DEMOLITION OF AN ENTIRE BUILDING

- 9.2.1 **NOTE: Where the complete demolition of an entire single building or a multiple of buildings is going to occur and the permanent electrical installation will be disconnected from supply for the entire worksite, but the temporary construction wiring may still be located on the demolition site, it is recommended that steel wire armoured cable (SWA) is used for temporary wiring.**
- 9.2.2 The following is a recommended procedure to control the de-energisation of this scenario. Other measures may be incorporated to ensure safety depending on circumstances and assessments of risk:
- 9.2.3 The area of demolition must be defined & established with the Head Contractor in conjunction with the Demolition Contractor and Electrical Contractor(s).
- 9.2.4 An investigation must be conducted to identify any overhead and underground services that may be impacted upon by the demolition and associated activities (call 1100 “Dial before you dig” and co-ordinate with Head Contractor).
- 9.2.5 All electrical circuits within the demolition area to be identified as far as possible and checked with existing drawings.
- 9.2.6 When the Supply Authority has isolated the main incoming supply to the Main Switchboard from the street connection (point of supply), the incoming mains must be positively tested by an electrician (not using a volt stick) and disconnected from the Main Switchboard. This cable must be completely removed or appropriately terminated in a junction box. (If so required, green paint will be sprayed onto the Main Switchboard and an entry detailing the disconnection will be recorded in a switchboard isolation logbook if available).
- 9.2.7 All Distribution Boards including all Mechanical, Lift, Fire Switchboards within the demolition area are to be tested to confirm de-energisation status.
- 9.2.8 When the demolition area has been completely isolated and tested, a clearance shall be provided to the Demolition Contractor or the Head Contractor.

- 9.2.9 **No demolition works affecting any part of the electrical installation must commence until a clearance has been received from all electrical contractors involved in the testing and isolation of the demolition area.**

9.2.10 VOLT STICKS MUST NOT BE USED TO TEST A CIRCUIT FOR DE-ENERGISATION

9.3 THE COMPLETE DEMOLITION OF A STAND-ALONE BUILDING OR STRUCTURE

- 9.3.1 **Where the complete demolition of a stand-alone building or structure, which is a part of a multiple building complex (e.g. schools, hospitals) is going to occur and the temporary construction wiring may be located on the demolition site, it is recommended that steel wire armoured cable (SWA) is used for temporary wiring.**
- 9.3.2 The following is a recommended procedure to control the de-energisation of this scenario:
- 9.3.3 The area of demolition must be defined & established with the Head Contractor in conjunction with the Demolition Contractor and Electrical Contractor(s).
- 9.3.4 An investigation must be conducted to identify any overhead or underground services that may be impacted upon by the demolition and associated activities (Call 1100 “Dial before you dig” and co-ordinate with Head Contractor).
- 9.3.5 All electrical circuits within the demolition area to be identified as far as possible and checked with existing drawings.
- 9.3.6 All cables (mains, sub mains and final sub-circuits) providing power to the demolition area are to be disconnected and removed from the supplying switchboard and from the load or distribution board. The mains or sub-mains are to be removed or appropriately terminated at both ends. (If so required, green paint will be sprayed onto the Main Switchboard and an entry detailing the disconnection will be recorded in a switchboard isolation logbook if available).
- 9.3.7 All Distribution Boards, mechanical, lift, fire switchboards, etc. within the demolition area are to be disconnected and tested.
- 9.3.8 All electrical take off boxes and major electrical equipment is to be tested to prove isolation, cables are to be disconnected and removed from the equipment and, if so required, green paint will be sprayed onto the equipment.
- 9.3.9 When the demolition area has been completely isolated and tested, clearance shall be provided to the Demolition Contractor or the Head Contractor.
- 9.3.10 **No demolition works affecting any part of the electrical installation must commence until a clearance has been received from all electrical contractors involved in the testing and isolation of the demolition area.**

9.3.11 VOLT STICKS MUST NOT BE USED TO TEST A CIRCUIT FOR DE-ENERGISATION

9.4 THE PARTIAL DEMOLITION OF AN AREA WITHIN A BUILDING

- 9.4.1 Where the partial demolition of a building and/or possibly as part of refurbishment of an area within a building (e.g. shopping centres, multistorey buildings) is required and where the other parts of the building are still occupied and the energised permanent wiring could still run through the demolition area, a separate on-site procedure is required to be developed and a staged demolition may be necessary before a letter of clearance can be provided.**
- 9.4.2 The following is a recommended procedure to control the de-energisation of this scenario:
- 9.4.3 The area of demolition is to be defined & established with the Head Contractor, Demolition Contractor and Electrical Contractor(s).
 - 9.4.4 An investigation is required to be conducted to identify any overhead or underground services that may be impacted upon by the demolition and associated activities (co-ordinate with Head Contractor).
 - 9.4.5 All electrical circuits within the demolition area to be identified as far as possible and checked with existing drawings.
 - 9.4.6 Equipment and switchboards that are outside the demolition area but are supplied from within the demolition area are to be re-supplied from an alternative power supply before demolition works commence. Where this is not possible, the cabling is required to be suitably mechanically protected against any construction activity that may damage the cable and signposted as "LIVE".
 - 9.4.7 Cabling supplying power to the demolition area are to be disconnected and removed from the supply switchboard or if unable to be disconnected or removed the cable must be appropriately terminated, provided with suitable mechanical protection and labelled along its length at intervals not exceeding 5 metres.
 - 9.4.8 All cables, which includes data, phone and fire alarm cables, cable ducts, cable trays and conduits traversing the demolition area which cannot be disconnected and removed are to be provided with suitable mechanical protection and sign posted as "LIVE". If the installation's main earth wire passes through the demolition area suitable mechanical protection is to be provided to ensure that the cable is not damaged or removed during the demolition process.
 - 9.4.9 At the edge of the demolition area all cables, which includes data, phone and fire alarm cables, cable ducts, cable trays and conduits are to be terminated and have a physical separation of at least 300mm to enable visual identification of isolation.
 - 9.4.10 All cut off electrical cables crossing into the demolition area are to be terminated in a junction box at least 300mm outside of the demolition area. All cabling irrespective

of whether it is phone, fire alarm or power is to be considered “live” and appropriately terminated.

- 9.4.11 Where applicable, when the Supply Authority has isolated the main incoming supply to the Main Switchboard from the point of supply, the incoming mains are to be positively tested to prove isolation by a licensed electrician (not using a volt stick) and cut off above the Main Switchboard. This cable will be removed or appropriately terminated and labelled, in a junction box. (If so required, green paint will be sprayed onto the Main Switchboard and an entry detailing the disconnection will be recorded in a switchboard isolation logbook if available).
- 9.4.12 Distribution Boards within the demolition area are to be tested to prove isolation. Incoming Sub Mains and outgoing circuits are to be terminated when complete, if so required, green paint will be sprayed onto the boards and the isolations logged.
- 9.4.13 Mechanical, Lift, Fire Switchboards etc. within the demolition area, are to be tested to prove isolation before incoming Sub Mains cables are to be cut off. (These isolations are to be performed and logged by the relevant electrical subcontractor).
- 9.4.14 All electrical take off boxes and major electrical equipment are to be tested to prove isolation, cables terminated and, if so required, green paint will be sprayed onto the equipment. Other electrical equipment including power outlets and light fittings are to be tested to prove isolation and, if so required, have green paint sprayed onto each item.
- 9.4.15 Any electrical equipment/cable that is identified as still being energised are to be traced back to the source of supply outside of the demolition area, isolated and terminated in a junction box outside of the demolition area. All conductors, including Neutrals and Earth wires are to be tested and terminated.
- 9.4.16 There is no such thing as a “DEAD” cable. It is either “live” (with suitable mechanical protection and identified), or it’s removed.
- 9.4.17 Non-electrical trades shall not cut electrical cables. A licenced electrician is to be contactable at all times to consult with the Demolition Contractor whenever cables are encountered. If cables are found, they shall be disconnected as per Isolation Procedure and then terminated and isolated from supply as detailed above.
- 9.4.18 When the demolition area has been completely isolated and tested, clearance shall be provided to the Demolition Contractor or the Head Contractor.
- 9.4.19 This section will not apply in unsafe areas of the site where demolition is being performed by powered plant such as demolition hammers, excavators or similar.

- 9.4.20 No demolition works affecting any part of the electrical installation shall commence until a clearance has been received from all electrical contractors involved in the testing and isolation of the demolition area.
- 9.4.21 **VOLT STICKS MUST NOT BE USED TO TEST A CIRCUIT FOR DE-ENERGISATION**

10. WORKING IN A CEILING SPACE

10.1 GENERAL

- 10.1.1 **Power Integration Personnel are prohibited from entering ceiling spaces that have conductive foil type insulation (e.g. foil backed insulation sheets/bats). Contact your Project Manager or Power Integration management for further risk assessments and procedures.**
- 10.1.2 All Power Integration personnel shall deenergise and make safe all wiring and electrical equipment before entering an unfamiliar ceiling space.
- 10.1.3 The following requirements are for works that are to be undertaken in ceiling spaces that have energised circuits or equipment:
 - 10.1.4 A Subcontractor wanting to work in an energised ceiling space should submit a SWMS detailing the works to be performed. The SWMS is to be submitted to the Power Integration nominated Foreman or Leading Hand. Should the SWMS identify that there is a risk of electrical hazard then the area is to be de-energized.
 - 10.1.5 The area de-energised will be such that it ensures the electrical risk is eliminated. If it is not possible to eliminate the risk, the risk is to be mitigated as far as practicable utilizing the steps detailed in Section 6.
 - 10.1.6 The immediate areas around the work area that cannot be de-energised shall be labelled utilizing a Ceiling Space Warning Sign as required.
 - 10.1.7 Prior to commencing any works all associated personnel should carry out a visual inspection to make themselves aware of the (ceiling) environment and where required, additional precautionary measures taken, such as the wearing of gloves, keeping bare skin covered by wearing long pants and long sleeve shirt and using appropriate task lighting.

11. REVIEW OF THIS OFFICE WHS INFORMATION BOOKLET

11.1.1 The Power Integration Operations & WHSE team will conduct a review of this SEWP at least every 12 months. The purpose of the review is to evaluate its effectiveness and to ensure the evolution of office environment is embraced within this booklet.

11.1.2 The WHSE & QA Compliance Officer shall ensure any changes to this SEWP will be explained to employees in a timely manner via Toolbox Meetings or other appropriate means.



12. POWER INTEGRATION EMPLOYEE REGISTER

SAFE ELECTRICAL WORKS PROCEDURE ACKNOWLEDGMENT

Employee - you must sign this acknowledgment only when you are satisfied that you understand the content of this **SAFE ELECTRICAL WORKS PROCEDURE** and that you will comply with these requirements and procedures.

PROJECT.....

NAME	SIGNATURE	INDUCTED BY	DATE

Reference

6605 - Cable - L&H

Order No.

10990

Date Issued

04/11/2020

Date Due

Quote No.

0053247104

Order Items

Assigned to: 6605-1643 Material Costs - Cable Storage Device: Warehouse						
Part No. ▾	Name ▾	Received ▾	Quantity ▾	Price ex GST ▾	Total ex GST ▾	
CBLFL1.5-2ERB1	Cable Flat 2C+E 1.5mm2 PVC RB&E WHT	5200.00	5200.00	\$0.634	\$3,296.80	Options ▾
CBLFL2.5-2ERB1	CABLE FLAT 2C+E 2.5MM2 PVC RB&E WHT L100M	2700.00	2700.00	\$1.05	\$2,835.00	Options ▾
CBLFL4.0-2ERB1	CABLE FLAT 2C+E 4MM2 PVC RB&E WHT L100M	200.00	200.00	\$1.6323	\$326.46	Options ▾
CBLOC6.0-4ECA5	CABLE CIRC 4C+E 6MM2 PVC/PVC 450/750V ORG-SHTH L500M	200.00	200.00	\$4.5063	\$901.26	Options ▾
CBLOC16.0-4ECA5	CABLE CIRC 4C+E 16MM2 PVC/PVC 0.6-1KV ORG-SHTH L10	800.00	800.00	\$11.0136	\$8,810.88	Options ▾
OLXJCAT5E	CABLE DATA CAT5E UTP 4PR H/FREE BLU 300M BX JCAT5E	4.00	4.00	\$45.02	\$180.08	Options ▾
OLX7/050-3E	CABLE 3C+E 1.5MM2 PVC PVC FLAT WHT-SHTH L100M ENCP05A1003WV	200.00	200.00	\$1.0468	\$209.36	Options ▾
OLXJSF75GY1	CABLE FIG8 SPEAKER 0.75MM2 24/0.20MM GRY L100M JSF.75	400.00	400.00	\$0.3753	\$150.12	Options ▾
E-CF4075-100-GRY-BU	0.75MM 4C FLEX GREY	900.00	900.00	\$0.87	\$783.00	Options ▾
MAT06MM-E6Q	CABLE COAX RG6U QUAD SHLD L305M DIGIMATCH	5.00	5.00	\$100.59	\$502.95	Options ▾
CBLEW4.0-5	CABLE E/WIRE 1C 4MM2 PVC 90DEGC GRN/YLW L500M	200.00	200.00	\$0.5415	\$108.30	Options ▾
OLXJCAT5E	CABLE DATA CAT5E UTP 4PR H/FREE BLU 300M BX JCAT5E	1.00	2.00	\$135.06	\$270.12	Options ▾
BELBEL601006U305M	CABLE CAT6 UTP PVC BLUE 305M 4PR #24AWG DATACONNECT	2.00	4.00	\$115.90	\$463.60	Options ▾
CBLOC1.5-4ECA1	CABLE CIRC 4C+E 1.5MM2 PVC/PVC 450/750V ORG-SHTH L100M	100.00	100.00	\$1.27	\$127.00	Options ▾

Supplier Notes

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Private Notes

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10pt ▾

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A ▾

10pt ▾

A ▾

A ▾

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Sub Total :

\$18,964.93

GST :

\$1,896.49

Total :

\$20,861.42

Name ▾		Added By ▾	Date ▾	Size ▾	Email
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☐	🔗 DD 6605 10990 210223 75826023.pdf	Mark Hickling	24/03/2021 12:51	35.29 KB	☐
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☐	🔗 DN 6605 10990 201120 75167540.pdf	Dean Williams	04/12/2020 07:13	27.85 KB	☐
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☐	🔗 Order Confirmation 0053734570.pdf	Mark Hickling	06/01/2021 10:36	166.00 KB	☐
☐	🔗 Purchase_Order_No_10990_04-11-2020_1334.pdf	Dean Williams	04/11/2020 13:34	324.87 KB	☐
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Date: _____

Licence No.



Power
Integration™

ENERGY IN ACTION

POWER INTEGRATION

SAFE ELECTRICAL WORKS PROCEDURE

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1. FOREWORD

The purpose of these Procedures is to provide a safe system of work to prevent the risk of death, shock or injury to persons and the risk of loss or damage to property caused directly by electricity or originating from electricity.

The aim of these Procedures is to ensure that any electrical work carried out by Power Integration is conducted in a way that is electrically safe for all Company Personnel, Customers, Members of the Public and Others.

All Power Integration personnel who perform electrical work must adhere to these procedures.

2. DEFINITIONS

Authorised Person means a Power Integration Electrical Worker that has been appointed by a Project Manager or above to perform isolating and energising on a specific project under the control of that Project Manager. Project Managers may appoint more than one Authorised Person per site or project as required. To be eligible to be appointed as an Authorised Person by a Project Manager, the Power Integration Electrical Worker must have successfully undertaken in the previous 1 years, the Power Integration internal training to verify their ongoing competency to carry out relevant testing and isolating procedures.

Commissioning Team means the Power Integration Authorised Persons appointed by the relevant Project Manager to perform the energising of new permanent electrical installations.

De-energise means the process of disconnecting lines or apparatus from all sources of electrical energy.

De-energised does not mean isolated or discharged, or both

Discharge means connected to the general mass of earth in such a manner as to remove any residual electrical energy. It also means stored energy has been released.

Disconnected means that the parts are not connected to an electrical source.

Earthed means electrically connected to the general mass of earth.

Electrical equipment means any apparatus, appliance, cable, conductor, fitting, insulator, material, meter or wire that

- is used for controlling, generating, supplying, transforming or transmitting electricity at a voltage greater than extra low voltage; or
- is operated by electricity at a voltage greater than extra low voltage; or
- is part of an electrical installation located in an area in which the atmosphere presents a risk to health and safety from fire or explosion; or
- Is, or is part of, a cathodic protection system.

Electrical installation is a group of items of electrical equipment that-

- are permanently electrically connected together; and
- can be supplied with electricity from the works of an electricity entity or from a generating source; and
- do not include items that are works of an electricity entity.

Electrical place means a location where an electrical installation, electrical equipment, works of an electrical entity or a cathodic protection system is located, including a premises, place, land or water.

Electrical risk means:

- in relation to a person, the risk to the person of death, shock or injury caused directly by electricity or originating from electricity; or
- in relation to property, the risk to the property of
 - (i) Damage caused by a cathodic protection system; or
 - (ii) Loss or damage caused directly by electricity or originating from electricity.

Electrically safe means-

- for a person or property, that the person or property is free from electrical risk; and
- for electrical equipment or an electrical installation, that all persons and property are free from electrical risk from the equipment or installation; and
- for the way electrical equipment, an electrical installation or the works of an electrical entity are operated or used, that all persons and property are free from electrical risk from the operation or use of the equipment, installation or works; and
- for the way the electrical work is performed, that all persons are free from electrical risk from the performance of the work; and
- for the way a business or undertaking is conducted, that all persons are free from electrical risk from the conduct of the business or undertaking; and
- for the way electrical equipment or an electrical installation is installed or repaired, that all persons are free from electrical risk from the installing or repairing of the equipment or installation.

Electrical safety for a person or property, means the person or property is electrically safe.

Electrical work means –

- (a) Connecting electricity supply wiring to electrical equipment or disconnecting electricity supply wiring from electrical equipment; or
- (b) Manufacturing, constructing, installing, removing, adding, testing, replacing, repairing, altering or maintaining electrical equipment or an electrical installation.

Energise means energise by electricity.

Free from electrical risk for a person or property, means –

- (a) Electrical risk to the person or property has been eliminated, so far as is reasonably practicable; or
- (b) If it is not reasonably practicable to eliminate electrical risk to the person or property, the risk has been minimised so far as is reasonably practicable.

Isolated means disconnected from all possible sources of supply and rendered incapable of being made live without premeditated and deliberate operation.

Isolation point means the point, or one of many points, used to isolate electrical parts.

Isolation and Lock Out Register means the Power Integration Documented process for recording when electrical equipment and circuits etc. are isolated for the purpose of work to be carried out safely on or around this equipment. Contact the Project Manager to obtain this document.

Live (alive or energised) means connected to a source of electrical supply or subject to hazardous induced or capacitive voltages. Generally, “live” refers to a conductor or conductive part intended to be energised in normal use, including a neutral conductor and conductive parts connected to a neutral conductor

3. SAFE SITE PRACTICES FOR ELECTRICAL WORKERS

3.1 GENERAL

3.1.1 **IF YOU ARE NOT SURE ABOUT ANY POWER INTEGRATION PROCESS OR PROCEDURE OR THE TASKS YOU ARE TO PERFORM – ASK YOUR SUPERVISOR.**

3.1.2 **NEVER WORK ON A LIVE CIRCUIT – GET IT ISOLATED FIRST.** Never work on a circuit or equipment that forms part of an installation unless it is Isolated from supply in accordance with Part 6 of this Procedure.

3.1.3 **NO LIVE WORK** on any site. ONLY Power Integration General Managers in consultation with the Operations WHSE & QA Manager or above may approve live works.

3.1.4 **TEST FOR DEAD BEFORE YOU TOUCH TO ENSURE DE-ENERGISATION. VOLTSTICKS** or any other non-compliant test equipment (**i.e. PROXIMITY METERS**), **MUST NOT BE USED TO TEST FOR DEAD.** Tests for dead must only be done using approved test lamps or voltmeter/multimeter.



3.1.5 Never perform electrical work on **PORTABLE** or **PLUG-IN EQUIPMENT** unless you ensure:

- The equipment is unplugged from supply and;
- Steps are taken to manage the possibility of others re-plugging this equipment into supply
(e.g.: You can see the plug top; you lock the plug top or prevent it from being inserted into a socket outlet) and;
- if the plug-in equipment remains unsafe for use, it is tagged “Out of Service” and/or rendered incapable of being plugged in to a socket outlet

3.1.6 **Ensure all VISUAL CHECKS are performed before commencement of ANY works.**

VISUAL CHECKS WILL IDENTIFY MORE ELECTRICAL SAFETY ISSUES THAN WHAT TESTS ALONE CAN IDENTIFY.

3.1.7 **LEAVE IT SAFE:** If you are performing electrical work on any part of an installation and you need to leave that area for any reason, you must take all necessary steps to ensure you leave that part safe from others inadvertently touching any potentially live parts. This may include locking a switchboard door, room, or an area, posting another Power Integration Worker as a

guard, barricading, locking out and tagging, notifying relevant persons, etc. Refer to Part 6 of this procedure.

- 3.1.8 If any unterminated roughed-in cable ends exist in the field, under NO circumstances are the feed end of the cables to be connected into circuit breakers. This is not a requirement for existing circuits that are being altered. Refer to Part 6 of this procedure.

3.2 DURING PRE-WIRE STAGE (ROUGH-IN) OF INSTALLATIONS

- 3.2.1 Any exposed electrical cable ends of sub-circuits must be taped individually or as a group:
- To cover any exposed wire ends; and
 - To communicate multiple cables will be commonly terminated at fit off (even if looped at rough-in but not yet cut); and
 - To communicate multiple cables will exit the same penetration when sheeted (wall, ceiling etc.)
 - Separate cables that are not to be commonly terminated but will exit through the same penetration (e.g. Switch gangs) must be tapped separately at the ends but then finally group taped.
- 3.2.2 Roughed-in permanent cables must be **MARKED** at the ends in a manor determined by the Project Supervisor/Foreman. This is to communicate to Power Integration fit-off workers the purpose of the cable (e.g.: In permanent marker pen - ANE, fan, light, strappers, sensor, oven etc.).
- 3.2.3 **ITP's (INSTALLATION TEST PLANS) MUST BE COMPLETED AND CONTAIN ALL NECESSARY INFORMATION FOR THAT STAGE OF INSTALL. ASK YOUR SUPERVISOR ABOUT ITP PROCESSES AND THEIR IMPORTANCE.**

4. WORKING LIVE POLICY

4.1 GENERAL

- 4.1.1 It is the policy of Power Integration that **LIVE ELECTRICAL WORK IS NOT PERMITTED** on any of its sites/premises unless the **Live Electrical Work Procedure** is strictly adhered to. This includes all works on or near live exposed electrical parts.
- 4.1.2 Only appropriately qualified and authorised personnel may undertake electrical work and they must ensure they only carry out work on de-energised plant or circuits, ensuring that all apparatus and equipment is isolated and tagged prior to working on that piece of equipment and / or circuitry (See Part 6 of this procedure for further information).
- 4.1.3 Testing and fault finding is also considered live work. However live testing/fault finding activities are permissible only if carried out in strict accordance with the appropriate procedures and practices.
- 4.1.4 Where current knowledge is inadequate for the task, further guidance and information can be sourced from the following:
- Code of Practice for “**Electrical Work**” and **Electrical Safety Act 2002**; and
 - Australian Standard **AS/NZS 4836:2011 – Safe Working on Low-Voltage Electrical Installations** (describes the minimum recommended procedural and safety requirements for safe working for all electrical workers).

5. LIVE ELECTRICAL WORK PROCEDURE

5.1 GENERAL

- 5.1.1 This procedure applies to any work on low voltage electrical equipment on any site where Power Integration employees perform electrical processes as part of their normal duties. It is the policy of Power Integration that live electrical work or working near live exposed parts will not be performed except in the circumstances listed in section 5.2.
- 5.1.2 It is a requirement that all electrical workers treat each exposed electrical part as if it is energised until it is isolated and proved not to be energised.
- 5.1.3 No live work is permitted on medium / high voltage equipment. This work is generally contracted to dedicated experts / contractors.

5.2 REQUIREMENTS FOR THE PERFORMANCE OF LIVE WORK

- 5.2.1 **The following circumstances are required for the performance of live work: -**

“It is not practicable to perform the electrical works other than by live work because of one or more of the following: -

- (i) It is necessary in the interests of safety, whether or not electrical safety, for the works to be performed while the electrical equipment the subject of the electrical work is energised;**
- (ii) A supply of electricity is necessary for the proper performance of the electrical work;**
- (iii) There is no reasonable alternative to performing the electrical work by live work.”**

5.3 RISK ASSESSMENT

- 5.3.1 A written risk assessment must be provided by a Manager of Power Integration. If the risk assessment has indicated that the risks cannot be sufficiently controlled or eliminated to enable the work to be performed safely on or near energised electrical equipment, then work must not proceed.

5.4 AUTHORISATION

- 5.4.1 A Power Integration General Manager in consultation with the Operations WHSE & QA Manager or above must authorise the performance of all live work after consultation with the person in control of the electrical equipment.

5.4.2 The person in control, together with a General Manager in consultation with the Operations WHSE & QA Manager must confirm authorisation of live works by completing the **Live Works Permit**.

5.4.3 The General Manager in consultation with the Operations WHSE & QA Manager must also issue and authorise a **Working on Live Electrical Equipment Access Permit**. All employees involved in the work task are required to sign on to the Permit, ensuring all requirements are in place and that they understand the contents of the permit prior to commencing the task.

5.5 COMPETENCY

5.5.1 The person who performs the live work has the appropriate qualifications and training for the performance of the work and must be a Power Integration Authorised Person.

5.5.2 Under no circumstances is an apprentice electrical worker permitted to perform any work on live electrical equipment.

5.6 TEST EQUIPMENT

5.6.1 All safety and testing equipment appropriate to the performance of the live works has been properly maintained/calibrated and the person performing the work makes proper use of the testing equipment when performing the work.

5.7 PERSONAL PROTECTIVE EQUIPMENT

5.7.1 Clothing and personal protective equipment appropriate to the performance of the live works has been given to the person performing the electrical works and the person makes proper use of such clothing and equipment. As a minimum, the following shall apply:

- Cotton protective clothing which covers the arms, legs and body and contain no metallic threads or exposed conductive zips or rivets;
- Non-conductive safety footwear;
- Insulating gloves (500v or 1000v);
- Face shield.

5.8 JEWELLERY

5.8.1 All jewellery must be removed prior to commencing works, including neck chains, rings, bracelets, earrings, body piercings, metallic spectacle frames and watches.

5.9 INSULATING MATS/BARRIERS AND LV RESCUE KIT

- 5.9.1 When working on or near live exposed conductors, an insulating mat should be used by placing it under the workers' feet. Insulating rubber barriers should be installed or placed over exposed live terminals. Whilst undertaking live work a qualified and trained safety observer shall be utilised, along with a calibrated LV rescue kit.

5.10 ISOLATION

- 5.10.1 The isolation point of the electricity supply for the electrical equipment has been clearly identified and is able to be reached quickly without the need to climb over or shift obstructions. Where possible, isolation must be from the point of supply of the sub-main. If this is not possible, it is preferred that the main switch is opened and an insulating barrier be placed over the terminals on the line side of the switchboard main switch.

5.11 OBSTRUCTIONS

- 5.11.1 The areas where the electrical work is performed is clear of obstructions to the extent necessary for easy access to and from the area.

5.12 SAFETY OBSERVER

- 5.12.1 There is a safety observer (who has been assessed as competent in rescue and resuscitation in the previous twelve months) observing the performance of the electrical work.
- 5.12.2 Under no circumstances is an apprentice electrical worker permitted to perform the role of safety observer at Power Integration.
- 5.12.3 Note: a safety observer is not required if the work involves testing of electrical equipment only, unless so determined by a risk assessment.

5.13 SAFE SYSTEMS OF WORK

- 5.13.1 The performance of the electrical work is in accordance with a safe system of work and complies with **AS/NZS 4836:2011 – Safe Working on Low-Voltage Electrical Installations**.

5.14 TOOLS AND ACCESSORIES

- 5.14.1 All tools and accessories are to be insulated and inspected prior to commencing work to ensure they are fit for purpose.

5.15 SAFETY BARRIERS AND SIGNS

5.15.1 Safety barriers and signs can be used to control risks to: -

- Protect the electrical worker from making contact with live parts
- Ensure that access to and egress from the work location of live works allows for clear, unobstructed passage
- Warn others and direct them away from live parts
- Clearly designate the safe work area by defining the approach path to a piece of equipment

5.16 WORK POSITION

5.16.1 All workers must ensure that they are positioned in such a manner that contact with electricity would require a deliberate movement to touch energised parts or create a current path. Adequate working clearance to allow safe access and egress from the work position, in the case of an emergency, should be maintained.

5.17 PRECAUTIONS

5.17.1 **Neutral connections** – particular care should be taken when removing neutral connections as tests may have indicated a de-energised situation. However, when these connections are removed a voltage may be present between conductors or between conductors and earth.

5.17.2 **Earthing** – when working on live electrical equipment having earthed conductive parts, precautions must be taken to ensure earthing continuity is maintained to any component part of the equipment at all times. Bonding conductors may be required to be installed when removing electrical equipment from earthed conductive parts, e.g. live component part separated from its connected earthing medium. Bonding conductors must be rated to withstand the “let through” energy of the primary protection without failing.

5.17.3 **Barriers and insulation mediums** – only conductors at one potential should be worked on at any one time and insulated barriers should be utilised in the work area between conductors of different phases or voltage potentials. Insulating mats or barriers should be used between electrical workers and earth including building structures such as concrete and steel which may be earthed

6. LOW VOLTAGE ISOLATION PROCEDURE

6.1 GENERAL

6.1.1 THIS PROCEDURE MUST BE FOLLOWED WHEN ELECTRICAL CIRCUITS OR EQUIPMENT OF AN INSTALLATION NEEDS:

- Repair
- Modification (e.g. circuit, distribution board, or equipment, etc. added, or existing equipment moved or removed)
- Commissioning or Energising
- Demolishing, or
- Work carried out safely adjacent to such equipment.

6.1.2 THE RELEVANT CIRCUIT OR EQUIPMENT MUST BE ISOLATED FROM SUPPLY. ONLY A POWER INTEGRATION AUTHORISED PERSON FOR ISOLATING/ENERGISING IS TO PERFORM THIS PROCEDURE.

6.1.3 THIS PROCEDURE DOES NOT PROHIBIT ANY POWER INTEGRATION WORKER ISOLATING SUPPLY FOR EMERGENCY SAFETY REASONS SUCH AS ELECTRICAL SHOCK, EXPLOSION OR FIRE.

IN THESE INSTANCES, ASSESS THE SITUATION AND TAKE APPROPRIATE ACTIONS TO ENSURE SAFETY WITH THE FULL SUPPORT OF POWER INTEGRATION MANAGEMENT.

6.1.4 The steps below are the **MINIMUM REQUIREMENTS** for Power Integration workers to **ISOLATE** hard wired equipment, **WORK SAFELY**, and then **RE-ENERGISE**. Project Managers may initiate additional requirements on a project above these minimum Power Integration requirements.

6.1.5 Also, an assessment of the risks involved at any stage of work by the AUTHORISED PERSON, site rules, and circumstances may require additional requirements to the minimum Power Integration standards listed below (e.g. weather conditions, site isolation permits & registers, bonding etc.). Refer to Additional Requirements section at the end of this procedure for further information.

6.2 CONSULTATION WITH RELEVANT PERSONS:

6.2.1 Prior to the Commencement of Work the AUTHORISED PERSON must ensure that all relevant persons are notified that power is about to be isolated (e.g. Builder, other Power Integration Workers, other trades etc.)

6.3 IDENTIFICATION OF CIRCUITS AND ISOLATION POINTS:

- 6.3.1 The AUTHORISED PERSON must ensure that the correct circuit(s) and Isolation points are identified. NOTE: Multiple sources of supply may exist from stand-by systems, generators, control circuits, thermostats, float switches, PLCs, photovoltaic systems and other interface devices. Also, specific areas of an installation or items of equipment may remain energised.

6.4 ISOLATION FROM SUPPLY:

- 6.4.1 The AUTHORISED PERSON must ensure the electrical equipment to be worked on is isolated at all sources of supply. This may be achieved by opening switches, removing fuses, and/or switching circuit breakers. If Isolation is by rack out circuit breaker or combined fuse/switch, these should be racked out or removed if reasonably practicable.

6.5 SECURING ISOLATION - LOCK OUT AND DANGER TAG:

- 6.5.1 The AUTHORISED PERSON must ensure they securely attach a personal isolation lock and danger tag clearly bearing the AUTHORISED PERSON'S name, signature, and date at the isolation point after the circuit/equipment is isolated. Tags should also include any relevant warnings and information such as multiple sources of supply.
- 6.5.2 If the circuit, equipment, or switchboard door etc. does not enable the use of a personal lock, then the AUTHORISED PERSON must disconnect and safely secure ALL conductors at supply end and tag/label these to identify breaker numbers etc.
- 6.5.3 If other workers are to work on the same circuit or equipment that is isolated, the AUTHORISED PERSON must ensure each person to work on the circuit/equipment attaches their own personal lock and completed Danger Tag prior to the commencement of work. If possible, hasp/lanyard devices and/or lock boxes should be used for multiple workers at the isolation point with relevant and agreed additional procedures including controls for securing keys.
- 6.5.4 The AUTHORISED PERSON must ensure that each worker and the AUTHORISED PERSON record the above isolations in the ISOLATION & LOCK OUT REGISTER prior to work commencing. This is NOT REQUIRED if it is only the authorised person performing the work and the work is to be completed by the end of shift.
- 6.5.5 NO PERSON IS TO OPERATE A SWITCH WITH A LOCK OR DANGER TAG ATTACHED – EVER.**

6.5.6 AN ISOLATION LOCK OR DANGER TAG MUST ONLY BE REMOVED BY THE PERSON WHOSE NAME APPEARS ON IT. Where the person is unavailable due to absence, illness or other causes, the Power Integration Project Manager, and an AUTHORISED PERSON may remove the lock or tag only after:

- They ensure all reasonable measures have been made to contact the person whose name is on the lock/tag;
- They fully acquaint themselves with the reasons for the tag being attached;
- They carry out all necessary visual inspections and tests on the circuit/equipment to ensure it may be operated without danger to persons/equipment/or installation;
- They ensure all relevant persons are informed of their actions;
- They ensure the person whose lock/tag was removed is fully informed of their actions at the earliest time or on their return.

6.6 TESTS FOR DEAD:

6.6.1 PRIOR TO WORKS COMMENCING ON ANY CIRCUIT OR EQUIPMENT, THE AUTHORISED PERSON MUST ENSURE IT IS DE-ENERGISED AT EACH POINT WHERE WORK IS TO TAKE PLACE BY MEANS OF APPROVED TEST LAMPS OR METER, AND THAT THIS DEVICE IS ITSELF TESTED AGAINST A KNOWN SOURCE BEFORE AND AFTER TESTING. Works can then commence.

6.6.2 ALWAYS TEST FOR DEAD PRIOR TO TOUCHING

6.6.3 RE-TEST FOR DEAD AS NECESSARY:

If Power Integration workers leave the relevant area (E.g.: for parts, equipment or overnight) or there is a change in the circumstances (E.g.: new workers in the location), the AUTHORISED PERSON must ensure that new visual checks and tests for dead are carried out to ensure isolation/de-energisation.

6.7 VISUAL INSPECTIONS, TESTS, CONFIRMATIONS:

6.7.1 At the Completion of Work the AUTHORISED PERSON must ensure all necessary visual inspections and tests are completed (no potential exposed live parts).

6.7.2 THE AUTHORISED PERSON must ensure each person who placed an isolation lock and tag is present at the same time and confirms all circuits and equipment are SAFE TO ENERGISE.

6.8 CONSULTATION WITH RELEVANT PERSONS AND ENERGISATION:

6.8.1 The AUTHORISED PERSON must ensure ALL RELEVANT PERSONS are notified that circuits/equipment are about to be energised.

- 6.8.2 The AUTHORISED PERSON must ensure that all workers involved are satisfied the circuit/equipment can be energised safely BEFORE each worker can remove their individual lock and tag (refer to 6.9.1).
- 6.8.3 The AUTHORISED PERSON must ensure each worker and the authorised person sign off the Isolation and Lock Out Register if necessary.
- 6.8.4 The AUTHORISED PERSON must then energise the circuit/equipment.

6.9 Q.A. (AUTHORISED PERSON'S EVIDENCE OF COMPLIANCE & SAFETY)

- 6.9.1 The AUTHORISED PERSON must ensure all relevant TESTS/ITPs CERTIFICATES are completed.

6.10 ADDITIONAL REQUIREMENTS

- 6.10.1 **Additional Requirements, steps, processes, information, precautions that may be used depending on the level and nature of risk, site rules by other employers, circumstances, or long term isolations or out of service equipment.**
- 6.10.2 **Bonding:** If practicable, where isolation of electrical equipment is made at a remote location, all conductors supplying the equipment should be bonded together first and then to the general mass of earth at the work site. Bonding to earth may be affected by connecting conductors, which are adequate to carry the potential short circuit currents to the electrical installation earthing system. Removal of bonding conductors must be carried out in reverse order. Suitable safety apparel should be used when attaching or removing temporary bonding conductors.
- 6.10.3 **Cutting Cables:** When carrying out work which involves cutting existing cables, the cable must be treated as live and the procedures for working on live electrical equipment must be adhered to until positive tests proving the cable is de-energised can be made. Both ends of the cable should be checked for isolation prior to cutting.

LONG TERM ISOLATIONS/OUT OF SERVICE EQUIPMENT – LEAVE IT SAFE

- 6.10.4 If a piece of electrical equipment or part of a circuit or installation requires isolation for long periods due to damage, redundant equipment, or equipment awaiting parts etc., DANGER/OUT of SERVICE tags should be used to identify that this equipment/circuit is isolated and not to be used.
- 6.10.5 The AUTHORISED PERSON must ensure this equipment or part of the installation is isolated at a point as far upstream as practicable following the above ISOLATION PROCEDURE. Safe isolation in these circumstances should include disconnecting, securing, and labelling all active and neutral wires at relevant circuit breakers, j-boxes, isolating switches etc. The DANGER/OUT of SERVICE tag(s) must be completed by the AUTHORISED PERSON and contain all necessary information regarding disconnection points. **LEAVE IT SAFE**

7. ENERGISING PROCEDURE – MECHANICAL/SERVICE BOARDS FOR OTHER CONTRACTORS

7.1 GENERAL

7.1.1 **ONLY A POWER INTEGRATION AUTHORISED PERSON IS TO PERFORM THIS PROCEDURE.**

- 7.1.2 Prior to energising for another services contractor, they must submit a Request for Connection (refer attachment Request for Connection). No electrical supply is to be provided until this form has been received and checked by the Power Integration Authorised Person and confirmed as being correct prior to commencing.

Note: It is the Mechanical or other services Contractor's responsibility to ensure that all electrical works carried out within the switchboard and from the load side and field wiring of the main switch is electrically safe.

- 7.1.3 The Power Integration Authorised Person must co-ordinate with Subcontractor responsible for controlling that board and ensure they are present when energising sub-mains etc.
- 7.1.4 Notification of intent to commence this work must be given to client / builder prior to commencing.
- 7.1.5 Sub-main identification to be confirmed and tested fully prior to being livened up. Relevant inspections and tests to be carried out as per **AS/NZS 3000 Wiring Rules and AS/NZS 3017 Electrical Installation – Testing Guidelines. This can be recorded on a Certificate of Test & Compliance.**
- 7.1.6 The immediate area around the switchboard is to be barricaded off or restricted as required to prevent ingress by other trades during the initial testing and “first time” energising of the switchboard. Where appropriate other relevant personnel working in the area to be informed beforehand.
- 7.1.7 Once energised all equipment is to have “In Service” labels / signage attached.
- 7.1.8 All circuits to be treated as live when switchboard energised.
- 7.1.9 No unauthorised personnel are permitted to energise circuits at any time.

8. COMMISSIONING NEW PERMANENT INSTALLATIONS

8.1 GENERAL REQUIREMENTS PRIOR TO ENERGISING

- 8.1.1 **ONLY THE NOMINATED COMMISSIONING TEAM/PERSON IS TO PERFORM THESE PROCEDURES. CONTACT THE RELEVANT PROJECT MANAGER FOR FURTHER INFORMATION.**
- 8.1.2 Conduct a Risk Assessment (Refer to **Onsite Risk Assessment Form/BlueStart Card**) where required or follow the appropriate SWMS.
- 8.1.3 Each person associated with energising electrical services and following these procedures must have current CPR / Switchboard Rescue Training and hold a current unrestricted Electrical Mechanic's Licence issued by the ESO Queensland or mutually recognised State Licence.
- 8.1.4 Any employee associated with the Commissioning Team to fully understand and comply with these procedures prior to any energising taking place.
- 8.1.5 Nominated Authorised Persons only to be on Commissioning Team.
- 8.1.6 The requirement for a Safety Observer is to be determined by the risk assessment. If a Safety Observer is deemed necessary, then this is the only task that they undertake.
- 8.1.7 The Commissioning Team should have direct contact with a First Aid Facility or provided with quick response mechanism to Emergency Services by means of a 2-way radio or mobile phone.
- 8.1.8 Inspection Test Plans (ITPs) for sub-circuit rough in and fit out are to be complete and referenced prior to commencing to ensure no cables are unterminated.
- 8.1.9 Before energising, ensure area is clear. No personnel are permitted to be in area unless cleared by Commissioning personnel.
- 8.1.10 Where deemed a requirement, the Rescue kit and mat to be in working area and utilised. Ensure all components are accounted for, checked prior to use and within current test dates
- 8.1.11 No jewellery to be worn (including personal piercings) or conductive items such as metal-framed glasses or watches.
- 8.1.12 All materials should be regarded as conductive unless proved otherwise, including gases and liquids.

- 8.1.13 Safety barrier and / or signs must be utilised as required to warn others or request evacuation by others of the immediate area.
- 8.1.14 Use the appropriate PPE as deemed necessary.
- 8.1.15 Use correct (insulated) tools and confirm equipment and test instruments are functioning correctly prior to and following use.
- 8.1.16 All test equipment is to be minimum Category III (or Category IV where required) and within current calibration test dates.

8.2 ENERGISING PROCEDURE FOR MAIN SWITCHBOARDS & SUB-BOARDS

- 8.2.1 ONLY THE NOMINATED COMMISSIONING TEAM/PERSON IS TO PERFORM THESE PROCEDURES. CONTACT THE RELEVANT PROJECT MANAGER FOR FURTHER INFORMATION.**
- 8.2.2 Notification of intent to commence Testing/Commissioning to be given to client / builder prior to commencing the activity.
- 8.2.3 Authorised Persons / Commissioning Team are responsible for controlling the boards in their area and be present when energising circuits.
- 8.2.4 Cable identification to be confirmed and tested fully prior to being livened up. Relevant inspections and tests must be carried out as per **AS/NZS 3000 Wiring Rules and AS/NZS 3017 Electrical Installation – Testing Guidelines**.
- 8.2.5 Circuits that are NOT terminated in the field are to be terminated into connectors and NOT terminated into a circuit Breaker. **ALL CONDUCTORS** are to be placed in connectors and labelled appropriately.
- 8.2.6 Special care to be taken in relation to control circuits i.e.: Is the control circuit contained within the board? If not, remove from circuit breaker until completed and tested.
- 8.2.7 Access to the immediate area around the switchboard is to be restricted to prevent ingress by other trades during the initial testing and “first time” energising of the switchboard. This can be achieved by locking rooms, floors, or barricading off areas. Where appropriate, other relevant personnel working in the area are to be informed beforehand.
- 8.2.8 Open main switch(s), attach padlocks and / or danger tags as applicable (Refer to Part 6).
- 8.2.9 All isolations are to be logged in the **Isolation Lock Out Register**. This is NOT REQUIRED if it is only the Authorised Person performing the work and the work is to be completed by the end of shift.

- 8.2.10 All Inspection Test Plans (ITPs) for the switchboard to be completed progressively and satisfactorily, including signatures and dates. The ITP shall be available at the time of testing and the Authorised Person in control of the area shall ensure compliance.
- 8.2.11 Once energised, all equipment is to have “in service” labels / signage attached (Refer Attachments).
- 8.2.12 Switchboard is to be locked on completion of works and all relevant keys returned to the site office.
- 8.2.13 All circuits must be treated as live when switchboard energised.
- 8.2.14 No unauthorised personnel are permitted to energise circuits at any time. The Commissioning Team or authorised personnel will be the only persons to energise power to switchboards and only after the appropriate tests and checks have been undertaken to ensure that it is electrically safe.

8.3 ENERGISING PROCEDURE FOR CIRCUITS AT SUB BOARDS

- 8.3.1 **ONLY THE NOMINATED COMMISSIONING TEAM/PERSON IS TO PERFORM THESE PROCEDURES. CONTACT THE RELEVANT PROJECT MANAGER FOR FURTHER INFORMATION.**
- 8.3.2 Authorised Person / Commissioning Team are responsible for controlling the boards in their area and the other persons present when energising circuits (exclude unwanted persons as required).
- 8.3.3 Cable identification to be confirmed and tested fully prior to being livened up. Relevant inspections and tests to be carried out as per **AS/NZS 3000 Wiring Rules and AS/NZS 3017 Electrical Installation – Testing Guidelines.**
- 8.3.4 Cable-ends of circuits are to be appropriately terminated at both ends in all areas to be commissioned. If field cabling is not terminated in a junction box or other item of electrical equipment then **ALL CONDUCTORS** are to be terminated into connectors and labelled appropriately.
- 8.3.5 Prior to reconnection of switchboard circuits, the main isolator for the relevant distribution board **MUST** be isolated.
- 8.3.6 Special care to be taken in relation to control circuits i.e.: Is the control circuit contained within the board? If not, remove from circuit breaker until completed and tested.
- 8.3.7 Other personnel working in the area where circuits are to be energised are to be informed prior to the energisation.

- 8.3.8 All Inspection Test Plans (ITPs) for the switchboard must be completed progressively and satisfactorily, including signatures and dates. The ITP shall be available at the time of testing and the Isolation Officer or nominated person in control of the area shall ensure compliance.
- 8.3.9 A current Schedule or labelling noting which circuits are alive or otherwise must be included in the switchboard.
- 8.3.10 All isolations are to be logged in the Isolation Lock Out Register. This is NOT REQUIRED if it is only the Authorised Person performing the work and the work is to be completed by the end of shift.
- 8.3.11 All circuits to be treated as live when switchboard energised.
- 8.3.12 No unauthorised personnel are permitted to energise circuits at any time.
- 8.3.13 Where practical, electrical cabling installed for future connection of equipment should not be left coiled up in ceiling spaces, but left exposed below the finished ceiling and the end of the cable terminated in a junction box and labelled according to the appropriate switchboard.
- 8.3.14 The Commissioning Team or Authorised Personnel will be the only persons to energise power to sub-boards and only after the appropriate checks have been undertaken to ensure that it is electrically safe.

9. SAFE DEMOLITION WORKS

9.1 GENERAL

- 9.1.1 All workers must work under the belief that any cable in a demolition area is “LIVE” and as such all cables are to be treated as LIVE. Any cable not required should be removed. The scenarios for building demolition can be broken down into three procedures.

9.2 THE COMPLETE DEMOLITION OF AN ENTIRE BUILDING

- 9.2.1 **NOTE: Where the complete demolition of an entire single building or a multiple of buildings is going to occur and the permanent electrical installation will be disconnected from supply for the entire worksite, but the temporary construction wiring may still be located on the demolition site, it is recommended that steel wire armoured cable (SWA) is used for temporary wiring.**
- 9.2.2 The following is a recommended procedure to control the de-energisation of this scenario. Other measures may be incorporated to ensure safety depending on circumstances and assessments of risk:
- 9.2.3 The area of demolition must be defined & established with the Head Contractor in conjunction with the Demolition Contractor and Electrical Contractor(s).
- 9.2.4 An investigation must be conducted to identify any overhead and underground services that may be impacted upon by the demolition and associated activities (call 1100 “Dial before you dig” and co-ordinate with Head Contractor).
- 9.2.5 All electrical circuits within the demolition area to be identified as far as possible and checked with existing drawings.
- 9.2.6 When the Supply Authority has isolated the main incoming supply to the Main Switchboard from the street connection (point of supply), the incoming mains must be positively tested by an electrician (not using a volt stick) and disconnected from the Main Switchboard. This cable must be completely removed or appropriately terminated in a junction box. (If so required, green paint will be sprayed onto the Main Switchboard and an entry detailing the disconnection will be recorded in a switchboard isolation logbook if available).
- 9.2.7 All Distribution Boards including all Mechanical, Lift, Fire Switchboards within the demolition area are to be tested to confirm de-energisation status.
- 9.2.8 When the demolition area has been completely isolated and tested, a clearance shall be provided to the Demolition Contractor or the Head Contractor.

- 9.2.9 **No demolition works affecting any part of the electrical installation must commence until a clearance has been received from all electrical contractors involved in the testing and isolation of the demolition area.**

9.2.10 VOLT STICKS MUST NOT BE USED TO TEST A CIRCUIT FOR DE-ENERGISATION

9.3 THE COMPLETE DEMOLITION OF A STAND-ALONE BUILDING OR STRUCTURE

- 9.3.1 **Where the complete demolition of a stand-alone building or structure, which is a part of a multiple building complex (e.g. schools, hospitals) is going to occur and the temporary construction wiring may be located on the demolition site, it is recommended that steel wire armoured cable (SWA) is used for temporary wiring.**
- 9.3.2 The following is a recommended procedure to control the de-energisation of this scenario:
- 9.3.3 The area of demolition must be defined & established with the Head Contractor in conjunction with the Demolition Contractor and Electrical Contractor(s).
- 9.3.4 An investigation must be conducted to identify any overhead or underground services that may be impacted upon by the demolition and associated activities (Call 1100 “Dial before you dig” and co-ordinate with Head Contractor).
- 9.3.5 All electrical circuits within the demolition area to be identified as far as possible and checked with existing drawings.
- 9.3.6 All cables (mains, sub mains and final sub-circuits) providing power to the demolition area are to be disconnected and removed from the supplying switchboard and from the load or distribution board. The mains or sub-mains are to be removed or appropriately terminated at both ends. (If so required, green paint will be sprayed onto the Main Switchboard and an entry detailing the disconnection will be recorded in a switchboard isolation logbook if available).
- 9.3.7 All Distribution Boards, mechanical, lift, fire switchboards, etc. within the demolition area are to be disconnected and tested.
- 9.3.8 All electrical take off boxes and major electrical equipment is to be tested to prove isolation, cables are to be disconnected and removed from the equipment and, if so required, green paint will be sprayed onto the equipment.
- 9.3.9 When the demolition area has been completely isolated and tested, clearance shall be provided to the Demolition Contractor or the Head Contractor.
- 9.3.10 **No demolition works affecting any part of the electrical installation must commence until a clearance has been received from all electrical contractors involved in the testing and isolation of the demolition area.**

9.3.11 VOLT STICKS MUST NOT BE USED TO TEST A CIRCUIT FOR DE-ENERGISATION

9.4 THE PARTIAL DEMOLITION OF AN AREA WITHIN A BUILDING

- 9.4.1 Where the partial demolition of a building and/or possibly as part of refurbishment of an area within a building (e.g. shopping centres, multistorey buildings) is required and where the other parts of the building are still occupied and the energised permanent wiring could still run through the demolition area, a separate on-site procedure is required to be developed and a staged demolition may be necessary before a letter of clearance can be provided.**
- 9.4.2 The following is a recommended procedure to control the de-energisation of this scenario:
- 9.4.3 The area of demolition is to be defined & established with the Head Contractor, Demolition Contractor and Electrical Contractor(s).
- 9.4.4 An investigation is required to be conducted to identify any overhead or underground services that may be impacted upon by the demolition and associated activities (co-ordinate with Head Contractor).
- 9.4.5 All electrical circuits within the demolition area to be identified as far as possible and checked with existing drawings.
- 9.4.6 Equipment and switchboards that are outside the demolition area but are supplied from within the demolition area are to be re-supplied from an alternative power supply before demolition works commence. Where this is not possible, the cabling is required to be suitably mechanically protected against any construction activity that may damage the cable and signposted as "LIVE".
- 9.4.7 Cabling supplying power to the demolition area are to be disconnected and removed from the supply switchboard or if unable to be disconnected or removed the cable must be appropriately terminated, provided with suitable mechanical protection and labelled along its length at intervals not exceeding 5 metres.
- 9.4.8 All cables, which includes data, phone and fire alarm cables, cable ducts, cable trays and conduits traversing the demolition area which cannot be disconnected and removed are to be provided with suitable mechanical protection and sign posted as "LIVE". If the installation's main earth wire passes through the demolition area suitable mechanical protection is to be provided to ensure that the cable is not damaged or removed during the demolition process.
- 9.4.9 At the edge of the demolition area all cables, which includes data, phone and fire alarm cables, cable ducts, cable trays and conduits are to be terminated and have a physical separation of at least 300mm to enable visual identification of isolation.
- 9.4.10 All cut off electrical cables crossing into the demolition area are to be terminated in a junction box at least 300mm outside of the demolition area. All cabling irrespective

of whether it is phone, fire alarm or power is to be considered “live” and appropriately terminated.

- 9.4.11 Where applicable, when the Supply Authority has isolated the main incoming supply to the Main Switchboard from the point of supply, the incoming mains are to be positively tested to prove isolation by a licensed electrician (not using a volt stick) and cut off above the Main Switchboard. This cable will be removed or appropriately terminated and labelled, in a junction box. (If so required, green paint will be sprayed onto the Main Switchboard and an entry detailing the disconnection will be recorded in a switchboard isolation logbook if available).
- 9.4.12 Distribution Boards within the demolition area are to be tested to prove isolation. Incoming Sub Mains and outgoing circuits are to be terminated when complete, if so required, green paint will be sprayed onto the boards and the isolations logged.
- 9.4.13 Mechanical, Lift, Fire Switchboards etc. within the demolition area, are to be tested to prove isolation before incoming Sub Mains cables are to be cut off. (These isolations are to be performed and logged by the relevant electrical subcontractor).
- 9.4.14 All electrical take off boxes and major electrical equipment are to be tested to prove isolation, cables terminated and, if so required, green paint will be sprayed onto the equipment. Other electrical equipment including power outlets and light fittings are to be tested to prove isolation and, if so required, have green paint sprayed onto each item.
- 9.4.15 Any electrical equipment/cable that is identified as still being energised are to be traced back to the source of supply outside of the demolition area, isolated and terminated in a junction box outside of the demolition area. All conductors, including Neutrals and Earth wires are to be tested and terminated.
- 9.4.16 There is no such thing as a “DEAD” cable. It is either “live” (with suitable mechanical protection and identified), or it’s removed.
- 9.4.17 Non-electrical trades shall not cut electrical cables. A licenced electrician is to be contactable at all times to consult with the Demolition Contractor whenever cables are encountered. If cables are found, they shall be disconnected as per Isolation Procedure and then terminated and isolated from supply as detailed above.
- 9.4.18 When the demolition area has been completely isolated and tested, clearance shall be provided to the Demolition Contractor or the Head Contractor.
- 9.4.19 This section will not apply in unsafe areas of the site where demolition is being performed by powered plant such as demolition hammers, excavators or similar.

- 9.4.20 No demolition works affecting any part of the electrical installation shall commence until a clearance has been received from all electrical contractors involved in the testing and isolation of the demolition area.
- 9.4.21 **VOLT STICKS MUST NOT BE USED TO TEST A CIRCUIT FOR DE-ENERGISATION**

10. WORKING IN A CEILING SPACE

10.1 GENERAL

- 10.1.1 **Power Integration Personnel are prohibited from entering ceiling spaces that have conductive foil type insulation (e.g. foil backed insulation sheets/bats). Contact your Project Manager or Power Integration management for further risk assessments and procedures.**
- 10.1.2 All Power Integration personnel shall deenergise and make safe all wiring and electrical equipment before entering an unfamiliar ceiling space.
- 10.1.3 The following requirements are for works that are to be undertaken in ceiling spaces that have energised circuits or equipment:
 - 10.1.4 A Subcontractor wanting to work in an energised ceiling space should submit a SWMS detailing the works to be performed. The SWMS is to be submitted to the Power Integration nominated Foreman or Leading Hand. Should the SWMS identify that there is a risk of electrical hazard then the area is to be de-energized.
 - 10.1.5 The area de-energised will be such that it ensures the electrical risk is eliminated. If it is not possible to eliminate the risk, the risk is to be mitigated as far as practicable utilizing the steps detailed in Section 6.
 - 10.1.6 The immediate areas around the work area that cannot be de-energised shall be labelled utilizing a Ceiling Space Warning Sign as required.
 - 10.1.7 Prior to commencing any works all associated personnel should carry out a visual inspection to make themselves aware of the (ceiling) environment and where required, additional precautionary measures taken, such as the wearing of gloves, keeping bare skin covered by wearing long pants and long sleeve shirt and using appropriate task lighting.

11. REVIEW OF THIS OFFICE WHS INFORMATION BOOKLET

11.1.1 The Power Integration Operations & WHSE team will conduct a review of this SEWP at least every 12 months. The purpose of the review is to evaluate its effectiveness and to ensure the evolution of office environment is embraced within this booklet.

11.1.2 The WHSE & QA Compliance Officer shall ensure any changes to this SEWP will be explained to employees in a timely manner via Toolbox Meetings or other appropriate means.



12. POWER INTEGRATION EMPLOYEE REGISTER

SAFE ELECTRICAL WORKS PROCEDURE ACKNOWLEDGMENT

Employee - you must sign this acknowledgment only when you are satisfied that you understand the content of this **SAFE ELECTRICAL WORKS PROCEDURE** and that you will comply with these requirements and procedures.

PROJECT.....

NAME	SIGNATURE	INDUCTED BY	DATE

SWMS No

Rev #: 2

WORK METHOD STATEMENT

Revision Date

4/5/22

for

010

INSTALLING TEMPORARY ELECTRICAL SERVICES

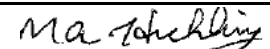
Project Name

Surf St Mermaid Beach

Project Address

Surf St, Mermaid Beach Qld 4218

Prepared Date	Project No	Project Start Date	Project Finish Date	Client Name	Client Contact
4/5/21	6898	05/05/2021	20/12/2021	Kbuild	Bill Kemp

Authorised By	Mobile #	Authorised By Signature	Project Supervisor	Project Supervisor Mobile #	Project Supervisor Signature
Mark Hickling	0411 079 750		Mark Hickling	0411 079 750	

The Project Supervisor nominated above is responsible for monitoring & reviewing the task, ensuring hazard controls are implemented and maintaining compliance.

The following SWMS has been developed by Power Integration's Safety Department with reference to the Work Health and Safety Act and Regulation, in consultation with "The Company" Project Managers, Project Supervisors, Leading Hands and employees as per the sign-on page of this SWMS.

Identification of High Risk Construction Work Associated with Task

- | | |
|---|---|
| ☐ Is carried out in an area of contaminated or flammable atmosphere
☐ Is carried out in an area adjacent to a roadway, railway or shipping lane
☐ Structural alterations which require temporary support
☐ Works carried out on a telecommunications Tower
☐ Is carried out in or near a trench deeper than 1.5m
☐ Is done near chemical, fuel or refrigerant lines
☒ Is carried out in a workplace in which there a powered mobile plant
☐ Is carried out in or near water or other liquid that involves a risk of drowning
☒ Is carried out on or near energized electrical installations or services
☐ Is carried out in area of which there are artificial extremes of temperature | ☐ Demolition of a structure that is load bearing
☐ Involves the disturbance of asbestos
☐ Is done near pressurised gas piping
☐ Involves the use of explosives
☐ Is carried out in or near a confined space
☐ Is carried out in or near a tunnel
☐ Involves diving work
☐ Involves tilt up or precast concrete
☒ Involves the risk of a person falling more than 2m |
|---|---|

 Power Integration™ ENERGY IN ACTION		ABN 51 625 284 808		SWMS No: 010		INSTALLING TEMPORARY ELECTRICAL SERVICES							
Date		Project No		Project Name				Client Name		Project Supervisor		Authorised By	
4/5/21		6898		Surf St Mermaid Beach				Kbuild		Mark Hickling		Mark Hickling	
TASK NO.	Task List the steps required to perform the activity in the sequence they are carried out.	Potential Hazard/Risk Against each step list the potential hazards or risks that could cause injury / damage when the task step is performed.	Before Control Measures			After Control Measures			References	Hazard Control For each hazard identified list the control measures required to eliminate or minimise the risk of injury / damage.	Person Responsible Who will make sure that it happens.		
			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking					
1	Entering a Client Work Environment	Various injuries due to lack of awareness of workplace, Client policies, procedures.	A	2	H	D	3	L	Kbuild Site Induction; Power Integration WHS Plan S7.4	All personnel to attend Client site induction, comply with site PPE requirements prior to commencing any works. All personnel are to continually assess the hazards in their work location - where the effectiveness of existing hazard controls is inadequate, work is to stop until additional controls are implemented and risk levels are controlled to a "Low".	Power Integration Project Supervisor; All Employees		
	Entering a Client Work Environment (cont.)	Other contractors in the area, other uncontrolled hazards	B	2	H	D	3	L	Kbuild Site Induction; Power Integration WHS Plan S7.4	All workers to complete a "PI Break" when starting work in each work area to ensure there are no uncontrolled hazards; Confirm activities by other trades in area and establish if they will be a threat to the safety of people working in the vicinity. Do not enter the area if it is unsafe to do so. Obtain Permit to Work if applicable to the task	Power Integration Project Supervisor; All Employees		
2	Receive temporary switchboards to site	Falling load or equipment.	C	3	M	D	4	L	Barricading to defer falling objects WHS plan section 27.2	All unassociated personnel must stand clear of lifting / unloading area.	Power Integration Project Supervisor; All Employees		

 Power Integration™ ENERGY IN ACTION		ABN 51 625 284 808		SWMS No: 010		INSTALLING TEMPORARY ELECTRICAL SERVICES					
Date 4/5/21		Project No 6898		Project Name Surf St Mermaid Beach		Client Name Kbuild		Project Supervisor Mark Hickling		Authorised By Mark Hickling	
TASK NO.	Task List the steps required to perform the activity in the sequence they are carried out.	Potential Hazard/Risk Against each step list the potential hazards or risks that could cause injury / damage when the task step is performed.	Before Control Measures			After Control Measures			References	Hazard Control For each hazard identified list the control measures required to eliminate or minimise the risk of injury / damage.	Person Responsible Who will make sure that it happens.
			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking			
	Receive temporary switchboards to site (cont.)	Manual handling.	C	3	M	D	3	L	Hazardous Manual Tasks Code of Practice 2011.- Refer Section 27.5 WHS Plan.	Use mechanical aids, i.e.. Trolleys. Split or share the load. Follow Power Integration Manual Handling procedures as per WHS Plan; ensuring correct lift technique.	Power Integration Project Supervisor; All Employees
	Receive temporary switchboards to site (cont.)	Sharp edges.	C	4	L	D	3	L	"The Company" Manual Handling Policy Section 27.5 WHS plan.	Wear full-fingered, cut 3 (or greater) protective gloves, whilst handling sharp materials	Power Integration Project Supervisor; All Employees
3	Confirm temporary switchboards are fit for purpose	Electric shock.	C	1	H	E	3	L	AS 3012, AS 3000 , Safe Electrical Works Procedure; Power Integration Temporary Switchboard Checklist	Visually inspect each temporary switchboard. Remove any old/unused conduits and cables from temporary switchboards before installation. Ensure Temporary Switchboard meets the requirements of the Temporary Switchboard Audit Checklist	Power Integration Project Supervisor; All Employees

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4/5/21		6898		Surf St Mermaid Beach				Kbuild			Mark Hickling		Mark Hickling	
TASK NO.	Task List the steps required to perform the activity in the sequence they are carried out.	Potential Hazard/Risk Against each step list the potential hazards or risks that could cause injury / damage when the task step is performed.	Before Control Measures			After Control Measures			References	Hazard Control For each hazard identified list the control measures required to eliminate or minimise the risk of injury / damage.	Person Responsible Who will make sure that it happens.			
			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking						
4	Using gas or charged shot fixing guns (Low Velocity)	Various injuries to operator without sufficient training or competency.	B	3	M	D	4	L	Managing the risks of Plant Code of Practice 2012. Kbuild Site Induction.	Read the manufacturer's handbook. Relevant pre start checks must be carried out. The operator must be able to demonstrate that they can operate the fixing gun competently prior to its use. Disposal of all used gas cartridges as per manufactures instructions or in the correct waste bins. All workers to be familiar with the MSDS for the gas cartridges.	Power Integration Project Supervisor; All Employees			
	Using gas or charged shot fixing guns (cont.)	Eye damage whilst using fixing guns.	B	3	M	D	4	L	How to manage Work Health and Safety Risks Code of Practice 2011, WHS regs S44-S45. Kbuild	Wear Power Integration Supplied protective safety glasses and face shield OR monogoggles whilst using the gas charged fixing guns	Power Integration Project Supervisor; All Employees			
	Using gas or charged shot fixing guns (cont.)	Hearing damage whilst using fixing guns.	B	3	M	D	4	L	Kbuild "The Company" Site Induction. How to manage Work Health and Safety Risks Code of Practice 2011, WHS regs S44-S45	Use Power Integration supplied hearing protection (ear plugs or ear muffs) while using gas charged fixing guns.	Power Integration Project Supervisor; All Employees			

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			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking				
	Using gas or charged shot fixing guns (cont.)	Body stress, strains / sprains for overreaching / awkward positioning.	C	3	M	D	4	L	Hazardous Manual Tasks Code Of Practice 2011. Refer Section 27.5 WHS Plan.	Position body appropriately in relation to task whilst carrying out work; use an extension pole if possible and ensure there are no obstacles in the area; ensure good housekeeping.	Power Integration Project Supervisor; All Employees	
	Using gas or charged shot fixing guns (cont.)	Hearing and eye damage.	B	2	H	D	4	L	Kbuild "The Company" Site Induction. How to manage Work Health and Safety Risks Code of Practice 2011, WHS regs S44-S45	Wear Power Integration supplied hearing protection - ear plugs and/or ear muffs; Erection of correct signs & exclusion zones. Read instructions for correct use and setup. Do not use fixing gun unless fully trained on correct usage.	Power Integration Project Supervisor; All Employees	
5	Install and terminate supply cables	Hand/Eye injuries.	C	4	L	D	4	L	Kbuild Site Induction, and How to manage Work Health and Safety Risks Code of Practice 2011, WHS regs S44-S45.	Wear full-fingered, cut 3 (or greater) rated protective gloves & clear/tinted safety glasses.	Power Integration Project Supervisor; All Employees	

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TASK NO.	Task List the steps required to perform the activity in the sequence they are carried out.	Potential Hazard/Risk Against each step list the potential hazards or risks that could cause injury / damage when the task step is performed.	Before Control Measures			After Control Measures			References	Hazard Control For each hazard identified list the control measures required to eliminate or minimise the risk of injury / damage.	Person Responsible Who will make sure that it happens.		
			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking					
6	Stripping cables	Hand and body cuts and injuries.	C	3	M	D	4	L	Kbuild "The Company" Site Induction. How to manage Work Health and Safety Risks Code of Practice 2011, WHS regs S44-S45	Where possible, use a cable stripping tool to strip circular cables; Where a Utility knife is required to strip cables, any person involved in the stripping procedure is to always wear cut 3 (or greater) rated protective gloves and all cable stripping actions are to be away from the body. Only sharp blades are to be used and apprentices or new workers are NOT permitted to use utility knives to strip cables.	Power Integration Project Supervisor; All Employees		

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TASK NO.	Task List the steps required to perform the activity in the sequence they are carried out.	Potential Hazard/Risk Against each step list the potential hazards or risks that could cause injury / damage when the task step is performed.	Before Control Measures			After Control Measures			References	Hazard Control For each hazard identified list the control measures required to eliminate or minimise the risk of injury / damage.	Person Responsible Who will make sure that it happens.	
			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking				
7	Isolate power from source of feed	Loss of power, equipment damage and/or personal injuries.	B	2	H	D	2	M	AS 3012, AS 3000 , Safe Electrical Works Procedure	Prior approval of Builder's Electrical Isolation permit required; once the Builder's Permit to Isolate has been approved, ensure conditions listed on the permit are correct and followed; ensure any lockout register is attached to permit; PIC Authorised Person to fit Personal Danger tag and isolation lock to circuit under isolation; complete lockout register and attach a copy to Isolation Permit; Prove de-energised using correct equipment, Check correct operation of testing equipment before and after testing to confirm correct operation.	Power Integration Project Supervisor; All Employees	

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4/5/21		6898		Surf St Mermaid Beach			Kbuild		Mark Hickling		Mark Hickling	
TASK NO.	Task List the steps required to perform the activity in the sequence they are carried out.	Potential Hazard/Risk Against each step list the potential hazards or risks that could cause injury / damage when the task step is performed.	Before Control Measures			After Control Measures			References	Hazard Control For each hazard identified list the control measures required to eliminate or minimise the risk of injury / damage.	Person Responsible Who will make sure that it happens.	
			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking				
	Isolate power from source of feed (cont.)	Electric shock.	C	1	H	D	3	L	AS 3012, AS 3000 , Safe Electrical Works Procedure	Only nominated PIC Isolation Officer/Authorised Person (including Energex Authorised Person) (to be advised on site) is permitted to isolate power; PIC Safe Electrical Works Procedure (SEWP) to be adhered to at all times - Spotter with LV Rescue kit & Rubber Mat; Insulated rubber gloves and pigskin outers (not the ones from the rescue kit) are to be used for testing of isolations as required by the PIC SEWP. No alterations or repairs are to be made unless the switchboard is isolated and the controlling switch or circuit breaker is correctly locked out and tagged. Once work is complete and isolation no longer required, the PIC Authorised Person is to sign off the permit and return the completed permit to the relevant Builder's Foreman. Ensure any barricading and signage is removed or applied as per permit requirements.	Power Integration Project Supervisor; All Employees	

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TASK NO.	Task List the steps required to perform the activity in the sequence they are carried out.	Potential Hazard/Risk Against each step list the potential hazards or risks that could cause injury / damage when the task step is performed.	Before Control Measures			After Control Measures			References	Hazard Control For each hazard identified list the control measures required to eliminate or minimise the risk of injury / damage.	Person Responsible Who will make sure that it happens.
			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking			
8	Install cable to source from temporary switchboards	Hand and eye injuries.	C	4	L	D	4	L	Kbuild Site Induction, and How to manage Work Health and Safety Risks Code of Practice 2011, WHS regs S44-S45.	Wear full-fingered, cut 3 (or greater) protective gloves and protective safety glasses.	Power Integration Project Supervisor; All Employees
9	Energise & commission temporary switchboards	Electric shock.	C	1	H	D	3	L	AS 3012, AS 3000, AS3017, Safe Electrical Works Procedure	Prior approval of Electrical Energisation Permit is required; Ensure all workers in the area have been notified of energisation; Energisation crew are to comply with all requirements of the Energisation Permit, Carry out all testing, following AS3000, AS/NZS 3017 Verification Guidelines and Power Integration Safe Electrical Works Procedure. Ensure all test results and ITP's have been completed. Complete necessary functional tests to confirm correct operation. Remove Personal Danger Tag and isolation lock, complete lockout register and sign off the Energisation Permit. Note: Only Licensed Electricians who are also "PIC Authorised Persons" are to commission switchboards.	Power Integration Project Supervisor; All Employees

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Date		Project No		Project Name			Client Name		Project Supervisor		Authorised By
4/5/21		6898		Surf St Mermaid Beach			Kbuild		Mark Hickling		Mark Hickling
TASK NO.	Task List the steps required to perform the activity in the sequence they are carried out.	Potential Hazard/Risk Against each step list the potential hazards or risks that could cause injury / damage when the task step is performed.	Before Control Measures			After Control Measures			References	Hazard Control For each hazard identified list the control measures required to eliminate or minimise the risk of injury / damage.	Person Responsible Who will make sure that it happens.
			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking			
10	Using a platform ladder.	Electric shock.	B	2	H	E	3	L	AS 3012, AS 3000 , Safe Electrical Works Procedure	Do not use metal or wire reinforced ladders near electrical wires, circuits, fixtures or power lines. Only Power Integration supplied Fibreglass Platform ladders are to be used on site.	Power Integration Project Supervisor; All Employees
	Using a platform ladder (cont.)	Fall from platform ladder	C	3	M	D	3	L	WHS regulations 306K to 306O and Australian standard 1892.5.	Check that the platform ladder is an approved industrial use ladder (check sticker); Use the correct height platform ladder for the job. Do not use any platform ladder/s to support a weight greater than what it has been designed for.	Power Integration Project Supervisor; All Employees
	Using a platform ladder (cont.)	Fall from platform ladder	C	3	M	D	3	L	WHS regulations 306K to 306O and Australian standard 1892.5.	All platform ladders must be inspected prior to use. Do not use a platform ladder that is damaged (tag it out & have it repaired or replaced); Do not attempt to increase the reach height of the platform ladder by erecting it on table, box scaffold or placing another object on the other platform.	Power Integration Project Supervisor; All Employees

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Date 4/5/21		Project No 6898		Project Name Surf St Mermaid Beach			Client Name Kbuild		Project Supervisor Mark Hickling		Authorised By Mark Hickling	
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			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking				
	Using a platform ladder (cont.)	Fall from platform ladder; fall from platform ladder over a live edge	C	3	M	D	3	L	WHS regulations 306K to 306O and Australian standard 1892.5.	The base of the ladder shall be no closer than 3 metres from an edge of a slab/floor. An additional 1 metre clearance from the live edge shall be added for each metre (or part thereof) that the user is up the platform ladder. Check that the bottom of the platform ladder is on a stable surface and that the rungs are approximately level before ascending.	Power Integration Project Supervisor; All Employees	
	Using a platform ladder (cont.)	Fall from platform ladder; Muscular strains	C	3	M	D	3	L	WHS regulations 306K to 306O and Australian standard 1892.5.	Ensure that the weight, size, shape or any equipment/materials do not restrict movement whilst ascending or descending the platform ladder or cause loss of balance whilst doing the work. Always face the platform ladder and do not work more than one arm's length from the edge of the ladder, keeping trunk centres between vertical sides. Reposition the platform ladder regularly when required to maintain good posture and prevent straining or over-reaching.	Power Integration Project Supervisor; All Employees	

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4/5/21		6898		Surf St Mermaid Beach			Kbuild			Mark Hickling		Mark Hickling	
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			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking					
11	Using a scissor lift / EWP	Faulty plant; poor maintenance history leading to leading to plant failure.	C	2	M	D	4	L	Managing the risks of Plant Code of Practice 2012. Kbuild Site Induction.	Ensure maintenance has been carried out as per manufacturer's schedule. Relevant manufacturer's pre-start checks must be carried out and recorded daily in logbook.	Power Integration Project Supervisor; All Employees		
	Using a scissor lift / EWP (cont.)	Various injuries to operator or others if plant is operated without sufficient training or competency; Unauthorised Operation	A	2	H	D	4	L	Managing the risks of Plant Code of Practice 2012. Kbuild Site Induction.	Only personnel who have previously attained a Yellow Card are to operate an EWP; Operators to read the EWP manufacturer's handbook or user operation manual prior to use; Operators are to familiarise themselves with the controls and must be able to demonstrate that they can operate the scissor lift competently prior to its use on site. Verification of Competency is to be provided to the Builder upon request, for each individual who will be using an EWP on site. EWP's are to be secured at the end of shift, by removing the key and/or preventing access to the EWP.	Power Integration Project Supervisor; All Employees		

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			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking						
	Using a scissor lift / EWP (cont.)	Overloading; falling from the EWP; use on uneven surface.	B	2	H	D	4	L	Managing the risks of Plant Code of Practice 2012. Kbuild Site Induction.	Stand on the floor of the EWP only - not on the handrails or items such as ladders, scaffolding or boxes within the EWP; Do not exceed the manufacture's load specifications and do not use the EWP as a crane to lift materials; Do not operate the EWP on uneven surfaces, as per manufacture's specifications.	Power Integration Project Supervisor; All Employees			
	Using a scissor lift / EWP (cont.)	Head and limb injuries.	C	2	M	D	3	L	Managing the risks of Plant Code of Practice 2012. Kbuild Site Induction.	Don't raise the working platform unless you can see that the area above it is clear of obstructions. If indoors, look for structural components, threaded rod, ceiling hangers, cable tray, live services etc.	Power Integration Project Supervisor; All Employees			
	Using a scissor lift / EWP (cont.)	Injury to others from falling load.	B	2	H	D	3	L	Barricading to defer falling objects WHS plan section 27.2	Isolate working area using barricades, fencing or bunting; signage to be used at all times; Use tool and equipment lanyards.	Power Integration Project Supervisor; All Employees			
	Using a scissor lift / EWP (cont.)	Collision with other plant whilst moving.	C	2	M	D	4	L	Managing the risks of Plant Code of Practice 2012. Kbuild Site Induction.	Prevent access to others to prevent conflict with movement. Adhere to site rules such as "one way traffic" "no go areas" and speed limits. In high traffic areas, utilise a spotter. Always check surroundings when moving the EWP.	Power Integration Project Supervisor; All Employees			

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	Using a scissor lift / EWP (cont.)	Driving over a working edge.	D	1	M	D	4	L	Managing the risks of Plant Code of Practice 2012. Kbuild Site Induction.	Operate machinery as close as possible to working area; be aware of changes in level and drop-offs; Always position machinery parallel to edges and use wheel chocks to prevent the EWP from driving over an edge.	Power Integration Project Supervisor; All Employees		
12	Working at heights	Falls from heights.	B	2	H	D	3	L	WHS regulations section 306B to 306J.	Edge Protection, hand rails or scaffold to be erected by licensed scaffolder and scaffolder to issue a record (Scaff tag or equivalent) to ensure scaffold safety.	Power Integration Project Supervisor; All Employees		
	Working at heights (cont.)	Slips, trips and falls.	B	2	H	D	3	L	WHS regulations section 306B to 306J.	Working decks to be kept clean; walkway to be kept free of materials - good house keeping.	Power Integration Project Supervisor; All Employees		
	Working at heights (cont.)	Falls from ladders.	B	2	H	D	3	L	WHS regulations 306K to 306O and Australian standard 1892.5.	Formwork access ladders installed by form workers/scaffolders ONLY; Ladders to be approved commercial grade, type SWL of 120kg; Ladders are to be extended 1 metre above working deck at an angle of 1:4	Power Integration Project Supervisor; All Employees		

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			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking					
13	Housekeeping	Rubbish and debris.	C	4	L	D	4	L	WHS regulations section 315.	Place rubbish in the correct bins. Maintain a tidy work area & good housekeeping progressively as work is completed; work area to be left clean and inspected before leaving. Recycle or reuse materials where possible (confirm with builder).	Power Integration Project Supervisor; All Employees		

SWMS No: 010									SWMS AMENDMENTS		

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			Likelihood	Consequence	Risk Ranking	Likelihood	Consequence	Risk Ranking			

			Catastrophic 1	Major 2	Moderate 3	Minor 4	Negligible 5
LIKELIHOOD	A	Almost Certain	Extreme	High	High	Medium	Low
	B	Likely	High	High	Medium	Medium	Low
	C	Possible	High	Medium	Medium	Low	Low
	D	Unlikely	Medium	Medium	Low	Low	Low
	E	Practically Impossible	Low	Low	Low	Low	Low

Likelihood

Almost Certain	Is expected to occur in most circumstances
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Consequence

Catastrophic	Death, offsite toxic release with detrimental effects, huge financial loss
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Authority

Extreme Risk	Approval by Construction Manager
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Date	Project No	Project Name	Client Name	Project Supervisor	Authorised By
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Likely	Will probably occur in most circumstances		Major	Extensive injuries, loss of production capability, off site release with no detrimental effects, major financial loss		High Risk	Approval by Manager / Project Supervisor
Possible	Might occur at some time		Moderate	Medical treatment required, on-site release contained with outside assistance, high financial loss		Medium Risk	Approval by Manager / Project Supervisor & active involvement by all employees
Unlikely	Could occur at some time		Minor	First aid treatment, on-site release immediately contained, medium financial loss		Low Risk	Managed by routine procedures
Practically Impossible	May occur only in exceptional circumstances		Negligible	No injuries, no environmental impact, low financial loss			

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|-----------------------|------------------------|---------------------|--------------------------------|-----------------------------------|---------------|
| 1. ELIMINATION | 2. SUBSTITUTION | 3. ISOLATION | 4. ENGINEERING CONTROLS | 5. ADMINISTRATIVE CONTROLS | 6. PPE |
|-----------------------|------------------------|---------------------|--------------------------------|-----------------------------------|---------------|

SWMS SIGN ON SHEET

****By Signing below indicates you have been CONSULTED in the content, READ the above SWMS, UNDERSTAND the document and will COMPLY with this SWMS****

Date	Name	Signature	Date	Name	Signature	Date	Name	Signature

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APPLICABLE LEGISLATION			APPLICABLE CODES OF PRACTICE						APPLICABLE STANDARDS		
ELECTRICAL SAFETY ACT 2002			Managing the risk of falls at workplaces Code of Practice 2011						AS/NZS 3000:2018 - Wiring Rules		
ELECTRICAL SAFETY REGULATION 2013			Managing risks of plant in the workplace Code of Practice 2013						AS/NZS 3012:2010 - Electrical Installations - Construction Sites		
WORK HEALTH & SAFETY ACT 2011			How to manage work health and safety risks Code of Practice 2011						AS2293:2005 - Emerg Evacuation Lighting - Inspection & Maintenance		
WORK HEALTH & SAFETY REGULATION 2011			Electrical safety Code of Practice 2013 - Managing electrical risks in the workplace						AS/NZS 3017:2007 - Electrical installations - Testing Guidelines		
			Electrical safety Code of Practice 2010 - Works						AS/NZS 3760:2010 - In-service safety insp'n & testing of elec. equip		
			Electrical safety Code of Practice 2010 - Working near overhead & underground electric lines						AS 3008.1.1:2017 - Electrical Installations - Selection of Cables		
									AS/NZS 4836.1:2011 - Safe working on LV electrical installations		

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Licences/Competencies Required			PPE Required						Permits Required		
Electrical Licence (or apprentice under Supervision)			Hard Hat						Isolation ☐ Energisation ☐		
General Construction Industry Induction			Cotton Drill Work Pants						Excavation / Permit to Dig ☐		
EWP Competency (If EWP to be used)			Steel Capped Work Boots						Exclusion Zone ☐		
Working at Heights and HRW Licence (WP) as req'd			Cut 3 or Higher Rated Gloves OR Riggers Gloves Dependant on Risk Assessment								
Power Integration Authorised Tester (for Isolation Officer)			Clear/Tinted Safety Glasses As A Minimum When Between Work Areas								
			Monogoggles or Safety Glasses & Face Shield As Required By Risk Assessment								
			High Visibility Shirt with reflective tape								
			Additional PPE As Required By Risk Assessment - LV Rescue Kit & Working Gloves								