

# ***Summary File ONLY***

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THIS PDF FILE  
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**IT IS BROWSABLE ON-SCREEN ONLY AND IS PROVIDED  
FOR YOUR INFORMATION TO DECIDE WHETHER TO  
BECOME A PROSPECTIVE TENDERER ONLY**

Note: This file may contain a brief scope statement, or an extract from the RFT documents, or a full exhibited copy – depending on the specific circumstances.

To participate in this tender process you **MUST** first download or order a full copy of the Request for Tender (RFT) documents, including the responsible components, and any addenda issued to date.

To do this return to the RFT web page on this web site and copy the RFT documents to your own computer or network – the blue “**DOWNLOAD A SOFT COPY**” link at the bottom provides access to the page from which you can do this.

# **Tender Document**

**for**

## **NSW Parliament House – Rooftop Photovoltaic System**

**Contract No: 0701991**

**December / 2007**

**Department of Commerce**

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# TABLE OF CONTENTS

	Page Number.
<b>Tendering</b>	
CONDITIONS OF TENDERING	C-1 to C-8
TENDER SCHEDULES	T-1 to T-17
<b>Specification</b>	
1. GENERAL CONDITIONS OF CONTRACT AND ANNEXURE	1-1 to 1-23
2. PRELIMINARIES	2-1 to 2-19
3. TECHNICAL SPECIFICATION	3-1 to 3-30
4. DRAWINGS	4-1 to 4-3

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# **TENDERING**

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# CONDITIONS OF TENDERING

[THERE ARE 8 PAGES IN THIS SECTION](#)

This section includes notices to tenderers.

The Conditions of Tendering section does not form part of the Contract.

## 1 GENERAL

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### 1.1 CONTACT PERSON

Refer requests for information about the Tender to:

Name: Christopher Wilson

Telephone number: (02) 9372 8105

Facsimile number: (02) 9372 8144

E-mail address: Christopher.Wilson@Commerce.nsw.gov.au

### 1.2 NSW GOVERNMENT CODE OF PRACTICE FOR PROCUREMENT

Tenderers must comply with the NSW Government *Code of Practice for Procurement*, which is available at:

[www.treasury.nsw.gov.au/procurement/cpfp\\_ig.htm](http://www.treasury.nsw.gov.au/procurement/cpfp_ig.htm)

Lodgement of a tender is evidence of the Tenderer's agreement to comply with the Code for the duration of any contract awarded as a result of the tender process. If a tenderer fails to comply with the Code, the Principal may take the failure into account when considering this or any subsequent tender from the tenderer, and may pass over such the tender.

## 2 TENDERER ELIGIBILITY

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### 2.1 ACCEPTABLE LEGAL ENTITIES

The Principal contracts only with recognised and acceptable legal entities. The Principal does not contract with firms under any form of external administration. Any tender submitted by an unincorporated business such as a sole trader, partnership, or business name must identify the legal entity that proposes to enter the contract.

If the Tenderer is a trustee, the Principal may require:

- an unconditional undertaking in accordance with Preliminaries Clause - **Additional security and obligations for trustees**; and
- a signed statement from the Tenderer, provided before the Contract is awarded, making the following undertaking:

'If (insert the legal name of the Tenderer) is awarded Contract No (insert the contract number) for (insert the contract description) it will provide security in the amount of (insert the amount of security advised by the Principal) in accordance with Preliminaries clause - **Additional security and obligations for trustees**, and it undertakes to ensure that, for the duration of the Contract, the total value of the trust beneficiaries' loans to the trustee is always greater than the total value of trust beneficiaries' loans from the trustee.'



## TENDER SCHEDULES

Failure to provide the signed statement may result in the Tender being passed over.

### 2.2 QUALITY MANAGEMENT

The Principal may elect to pass over a tender from a tenderer that does not demonstrate the capacity to systematically plan and manage the quality of its work in accordance with the NSW Government *Quality Management Systems Guidelines*, which are available at:

[www.managingprocurement.commerce.nsw.gov.au/system/index\\_procurement\\_guideline\\_documents.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_procurement_guideline_documents.doc)

Submit with the Tender the information identified in Tender Schedules - **Schedule of Quality Management Information.**

### 2.3 OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

Tenderers must demonstrate their capacity to manage occupational health and safety in accordance with the NSW Government *Occupational Health and Safety Management Systems Guidelines 4<sup>th</sup> Edition (OHSM Guidelines)*. The *OHSM Guidelines* are available at:

[www.managingprocurement.commerce.nsw.gov.au/system/index\\_procurement\\_guideline\\_documents.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_procurement_guideline_documents.doc)

Submit with the Tender the information identified in Tender Schedules - **Schedule of Occupational Health and Safety Management Information.**

### 2.4 FINANCIAL ASSESSMENT CRITERIA

The main criteria considered in financial assessment of tenderers are:

- Net Worth (total assets, excluding any assets of company directors, less total liabilities less intangible assets);
- Current Ratio (ratio of current assets to current liabilities); and
- Working Capital (current assets less current liabilities).

The Principal considers tenders with the following financial capacity, and no other significant detrimental financial characteristics to be financially satisfactory in respect of tenders:

- Net Worth exceeds 5% of the Contract Sum or initial Contract Price;
- Current Ratio exceeds 1; and
- Working Capital exceeds 10% of the Contract Sum or initial Contract Price.
- Where a tenderer is a trustee the total value of trust beneficiaries' loans to the trustee must be greater than the total value of trust beneficiaries' loans from the trustee.

Deviations below these indicative criteria will not necessarily prevent the Principal from considering any tender.

## 3 CONTRACT DETAILS

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### 3.1 INSURANCE

#### **Works and public liability insurance**

The Principal will arrange insurance of the Works (and any temporary works) and public liability, as required under General Conditions of Contract clause **Insurance**. Tenderers are

## *TENDER SCHEDULES*

not required to allow in tenders for payment of premiums for insurance of the Works or public liability.

The insurance policy is available at:

[www.managingprocurement.commerce.nsw.gov.au/system/index\\_contract\\_management\\_insurance\\_policies.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_contract_management_insurance_policies.doc).

The insurance broker is Jardine Lloyd Thompson Pty Ltd.

### **Asbestos liability insurance**

The Principal has arranged a policy for asbestos liability insurance. The Contractor must effect insurance under the policy if asbestos decontamination work is undertaken.

The insurance policy is at:

[www.managingprocurement.commerce.nsw.gov.au/system/index\\_contract\\_management\\_insurance\\_policies.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_contract_management_insurance_policies.doc)

The insurance broker is Marsh Pty Ltd.

The premium payable is the greater of \$3,200 or 14.56% of the GST exclusive value of asbestos decontamination work and related activities, including additional site establishment and air monitoring.

The premium initially payable is based on a reasonable estimate of the cost of asbestos decontamination work. The premium is adjusted following completion of the asbestos work, subject to the limitation of the minimum payable being \$3,200.

### **Other Insurance**

The Contractor must arrange and pay all premiums for all other insurance required under General Conditions of Contract clause – **Insurance**.

For professional indemnity insurance, a Certificate of Currency or evidence of the ability to obtain the required insurance, such as a letter from a broker or insurer, may be required as a condition of acceptance of tender.

## **4 CURRENT POLICIES**

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### **4.1 GOODS AND SERVICES TAX**

The tendered lump sum and/or rates must include GST if it is payable.

### **4.2 NSW GOVERNMENT PREFERENCE SCHEME**

#### **Preference**

The Principal will give a preference advantage to goods of Australian and New Zealand origin over imported goods supplied under the Contract. NSW country manufacturers may be eligible for an additional preference under the Country Industries Preference Scheme (CIPS). Details of these schemes may be obtained from the Department of State and Regional Development, telephone (02) 9338-6780; facsimile (02) 9338-6676.

The Industry Capability Network Office has been established to provide assistance in planning for, purchasing and using Australian and New Zealand made products. The office can provide professional advice on local industry capability and on the availability and efficiency of local supplies suited to Australian conditions, while retaining commercial confidentiality. The Industry Capability Network Office may be contacted on: telephone (02) 9819 7200; facsimile (02) 9181 3321; e-mail [enquiry@icnsw.org.au](mailto:enquiry@icnsw.org.au); internet [www.icnsw.org.au](http://www.icnsw.org.au).

### Imported Goods

Where imported goods are proposed, complete the Tender Schedules - **Schedule of Imported Materials and Equipment**. Provide details of alternatives to such goods which are of Australian or New Zealand origin, or give reasons why such alternatives cannot be supplied by completing the Tender Schedules - **Schedule of Alternatives to Imported Goods**.

The Principal may, but is not bound to, negotiate a reduction in price to accept the imported goods, but the reduction will be not less than 20% of the Principal's estimate of the imported value of the goods.

Refer to Preliminaries clause - **Australian and New Zealand Goods**.

## 4.3 DISCLOSURE OF TENDER AND CONTRACT INFORMATION

Details of this tender and contract awarded as a result of this tender process may be disclosed in accordance with the: Freedom of Information (Open Government – Disclosure of contracts) Act 2006 , Premier's Memorandum 2007-01 and NSW Government Tendering Guidelines at:

[http://www.managingprocurement.commerce.nsw.gov.au/nsw\\_government\\_guidelines/tendering\\_guidelines.pdf](http://www.managingprocurement.commerce.nsw.gov.au/nsw_government_guidelines/tendering_guidelines.pdf)

## 4.4 EXCHANGE OF INFORMATION BETWEEN GOVERNMENT AGENCIES

By submitting a tender, the Tenderer authorises the Principal to gather, monitor, assess, and communicate to other NSW Government agencies or local government authorities information about the Tenderer's financial position and its performance in respect of any contract awarded as a result of the tender process. Such information may be used by those agencies or authorities in considering whether to offer the Tenderer future opportunities for work.

## 4.5 FINANCIAL ASSESSMENT

By tendering for this Contract, the Tenderer agrees that the Principal may engage private sector consultants to financially assess tenderers. Financial details of tenderers may be obtained by an external Financial Assessor for assessment. Financial Assessors have a contract with the Principal to safeguard the financial details obtained. Financial Assessors must not disclose such details, either in whole or in part to any party other than NSW Government departments or agencies without the express written permission of the tenderer.

The Financial Assessor is Kingsway Financial Assessments Pty Ltd

Submit, when requested by the Financial Assessor or Principal, the Financial Assessment information shown in Tender Schedules - **Schedule of Financial Assessment Information**.

## 4.6 UNCONDITIONAL UNDERTAKINGS - APPROVED INSTITUTIONS

For the purpose of giving unconditional undertakings, the Principal has approved banks, building societies, credit unions and insurance companies listed by the Australian Prudential Regulation Authority (APRA) as being regulated by the APRA. Lists appear at the APRA website at:

[www.apra.gov.au/](http://www.apra.gov.au/)

The Principal is prepared to consider proposals from tenderers for the approval of Unconditional Undertakings by substantial financial institutions, not registered by APRA, which lawfully carry on business in Australia. The Principal may require the submission of evidence demonstrating the substance and status of any proposed financial institution without cost to the Principal.

## 5 FURTHER INFORMATION

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### 5.1 ADDENDA TO TENDER DOCUMENTS

If, as a result of a request for clarification from a tenderer or for any other reason, the Principal issues an instruction amending the tender documents, the instruction will be issued in writing to all tenderers in the form of an Addendum, which becomes part of the tender documents. Written Addenda issued by the Principal are the only recognised explanations of, or amendments to, the tender documents.

### 5.2 SITE ACCESS RESTRICTIONS

Tenderers and their agents or representatives must:

- obtain permission to inspect the Site from the Client's Representative at least 48 hours before access to the Site is required;
- upon arrival, at the pre-arranged time, introduce themselves at the Client Representative's office prior to undertaking their inspection of the Site.

The Client's Representative's details are:

Name:	Robert Nielsen
Telephone number:	(02) 9230 2257
Facsimile Number:	(02) 9230 2636
e-mail address:	<a href="mailto:Robert.Nielsen@parliament.nsw.gov.au">Robert.Nielsen@parliament.nsw.gov.au</a>

The Client's Representative may be contacted:

on the following days:	Mon – Fri
between the hours of:	9:00am – 4:00pm

Tenderers should telephone the Contact Person if they experience difficulty in securing an appointment with the Client's Representative for a site inspection.

### 5.3 PRE-TENDER MEETING

A mandatory pre-tender meeting will be held on the date, at the time and at the place nominated in the advertisement or invitation.

The Contact Person will be available at that time to answer any tenderer's queries regarding the tender.

## 6 PREPARATION OF TENDERS

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### 6.1 ALTERNATIVE TENDERS

The Principal may consider alternative tenders, provided the alternative tender meets the scope, functional intent and design concept expressed in the tender document. Where an alternative tender is proposed, submit a detailed description of the alternative stating clearly the manner in which it differs from the detailed requirements of the tender documents and including separate tender schedules applicable to the alternative.

Alternative tenders will not be considered unless the Tenderer has submitted a conforming tender.

## 6.2 TECHNICAL DATA

Submit, when requested, the details shown in Tender Schedules - **Schedule of Technical Data**.

## 7 SUBMISSION OF TENDERS

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### 7.1 DOCUMENTS TO BE SUBMITTED

The following documents must be completed and submitted by the Tenderer:

- Tender Schedule 1 – Tender Form
- Tender Schedule 2 – Schedule of Lump Sums
- Tender Schedule 3 – Schedule of Imported Materials and Equipment
- Tender Schedule 4 – Schedule of Alternatives to Imported Goods
- Tender Schedule 5 – Schedule of Technical Data
- Tender Schedule 6 – Schedule of Quality Management Information
- Tender Schedule 7 – Schedule of Occupational Health and Safety Management Information
- Tender Schedule 8 – Schedule of Financial Assessment Information
- Tender Schedule 9 – Undertaking to Comply with the NSW Government Code of Practice for Procurement
- Tender Schedule 10 – Schedule of Additional Information

Submit all information called for in the tender documents.

Where applicable, refer to each Addendum and state that the Tender allows for the instructions given in the Addendum.

### 7.2 SUBMISSION PROCEDURE

Submit the Tender Form, Tender Schedules marked 'Submit with the Tender Form' and other required documents or information by the date and time given in the advertisement or invitation, by any of the following methods:

- eTendering,
- Tender Box,

If more than one tender submission is made, mark each submission clearly as to whether it is a copy, an alternative tender, or whether the submission supersedes another submission.

Submit when requested, by the date, time and method stipulated in the request, Tender Schedules marked 'Submit when requested' and any other information required to allow further consideration of the Tender. Failure to meet this requirement may result in the Tender being passed over.

### 7.3 ETENDERING

Tenderers are encouraged to obtain Requests for Tenders (RFT) and submit tenders through NSW Government online eTendering at:

<https://tenders.nsw.gov.au>.

### Legal status

Tenders submitted electronically will be treated in accordance with the *Electronic Transactions Act 2000* (NSW), and given no lesser level of confidentiality, probity and attention than tenders submitted by other means.

Tenderers, by electronically submitting a tender, are taken to have accepted any conditions shown on the NSW Government eTendering web site.

The Principal may decline to consider for acceptance, tenders that cannot be effectively evaluated because they are incomplete or corrupt.

### Electronic Format for Submissions

Tenders submitted electronically must be in a file format that can be read, formatted, displayed and printed by Microsoft Word 97, or any format required by the RFT.

Any CAD files submitted with an electronically lodged tender must be in DGN, DWG, or DXF format. The Principal uses Microstation and Tenderers must ensure that any CAD files submitted that will correctly display and print in Microstation.

### File Compression

Tenderers may compress electronic tenders in any format that can be decompressed by WinZip. Tenderers must not submit self-extracting (\*.exe) zip files.

### Change of Tender Form Text

Tenderers must not change existing text in electronic tender forms other than to insert required information.

## 7.4 TENDER BOX

The Tender may be submitted in the Tender Box at:

McKell Building, Level 3, 2-24 Rawson Place, Sydney NSW 2000

Submit the Tender in a sealed envelope addressed to the Secretary of the Tender Opening Committee and marked with 'Tender for »' and the closing date and time.

## 7.5 LATE TENDERS

In accordance with the NSW Government *Code of Practice for Procurement*, available at:

[www.treasury.nsw.gov.au/procurement/cpfp\\_ig.htm](http://www.treasury.nsw.gov.au/procurement/cpfp_ig.htm),

late tenders will not be accepted, except where the integrity and competitiveness of the tendering process will not be compromised.

## 8 PROCEDURES AFTER CLOSING OF TENDERS

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### 8.1 EVALUATION OF TENDERS

In evaluating tenders, the Principal may take into consideration factors including, but not limited to: whole of life costs; ability to meet requirements of the NSW Government *Code of Practice for Procurement*; innovation; delivery time; quality offered; previous performance; experience; capability; occupational health and safety performance; industrial relations performance; environmental management performance; community relations; value adding including economic, social and environmental initiatives; and conformity.

The Principal may treat any detail required by the tender documents which is omitted, illegible or unintelligible as failing to fulfil the relevant requirement.

## **8.2 ACCEPTANCE OF TENDER**

The Principal may accept tenders that do not conform strictly with all requirements of the tender documents.

The Principal is not bound to accept the lowest or any tender. Tenders which do not comply with any requirement of, or which contain conditions or qualifications not required or allowed by, the tender document may be passed over.

No tender, or qualification or departure from a contract condition or specification, is accepted unless the Principal gives an acceptance or formal agreement in writing.

## **8.3 PROTECTION OF PRIVACY**

The Tenderer warrants, in respect of any personal information provided in this Tender or any contract arising from this Tender, that the information is accurate, up to date and complete, and that nominated individuals authorise its collection and are aware:

- that the information is being collected for the purpose of evaluating tenders and administering any contracts arising from those tenders and may be made available to other NSW government agencies or local government authorities for those purposes;
- whether the supply of the information by the individual is required by law or is voluntary, and any consequences for the individual if the information (or any part of it) is not provided; and
- of the existence of any right of access to, and correction of, the information.

### **END OF SECTION – CONDITIONS OF TENDERING**

## **TENDER SCHEDULES**

***THERE ARE 17 PAGES IN THIS SECTION***



## 1 TENDER FORM

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Location and Fax No. of  
Tender Closing Office:

Department of Commerce, Level 3, McKell Building, 2-24 Rawson  
Place, Sydney NSW 2000

Name of Tenderer  
(in block letters):

.....

A.B.N.  
(if applicable):

.....

Address:

.....

.....

Telephone number:

.....

Facsimile number:

.....

e-mail address:

.....

hereby tender(s) to perform the work for

NSW PARLIAMENT HOUSE

ROOFTOP PHOTOVOLTAIC SYSTEM

(Contract No. 0701991)

in accordance with the following documents:

TENDER DOCUMENT VOL. 1 SPECIFICATION

TENDER DOCUMENT VOL. 2 DRAWINGS

and Addenda Numbers: .....

For the lump sum of: .....

.....

(\$.....) including GST.

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

## 2 SCHEDULE OF LUMP SUM ITEMS

(SUBMIT WITH TENDER FORM)

Complete this Schedule by inserting the tendered lump sum under **Amount**. Where a rate is tendered, insert under **Amount** the amount arrived at by multiplying the tendered rate by the quantity. The lump sums tendered shall form part of the Contract. The correct extended amounts and total shall be used to assess tenders. This schedule is for information purposes only.

All rates and lump sums must include GST.

Item No.	Description	Quantity	Unit	Rate	Amount (\$)
<b>2.</b>	<b>Schedule of Lump Sum Items:</b>				
2.1	Design and Shop Drawings			Lump Sum	
2.2	Provision of Photovoltaic Modules			Lump Sum	
2.3	Provision of Inverter(s)			Lump Sum	
2.4	Provision of Mounting System			Lump Sum	
2.5	Provision of a Guard Railing System as per CLAUSE 10.3 of the TECHNICAL SPECIFICATION			Lump Sum	
2.6	Electrical Installation Fees			Lump Sum	
2.7	Structural Construction Fees			Lump Sum	
2.8	Commissioning and Testing and As Built Documentation			Lump Sum	
2.9	Operation and Maintenance Manual			Lump Sum	
2.10	Defects Liability Period	52 wks		Lump Sum	
2.11	All work and obligations under the Contract NOT INCLUDED ELSEWHERE in this Schedule.			Lump Sum	
	<b>TOTAL TENDER PRICE</b>				\$

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

### 3 SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT

(SUBMIT WITH TENDER FORM)

Provide brief details of all imported materials and equipment to be supplied or incorporated into the Works, and country of manufacture or origin. Do not include goods manufactured in New Zealand.

The value of the imported content must be the estimated duty paid value inclusive of the value of any services (eg. overseas freight and insurance, software in computer tenders, consultancy or engineering fees) or any charges of overseas origin, together with customs clearing charges.

This is not a Schedule of Rates within the meaning of the Construction Contract Conditions. See also Preliminaries Clause - **Australian and New Zealand goods**.

Description	Country of Origin	Value A\$
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

#### 4 SCHEDULE OF ALTERNATIVES TO IMPORTED GOODS

(SUBMIT WITH TENDER FORM)

Provide brief details of materials and equipment of Australian and/or New Zealand manufacture as alternatives to imported materials and equipment as listed in the SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT, or give reasons why such alternatives cannot be provided.

The Principal may accept a tender specifying all or any of the items listed below, with an adjustment to the contract price based on the difference between the prices listed in this Schedule and the SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT.

Description of Australian and/or New Zealand manufactured Alternatives	Value A\$
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

## 5 SCHEDULE OF TECHNICAL DATA

(SUBMIT WITH TENDER FORM)

List all information required by this Schedule, and attach details of manufactures product data together with illustrations as are necessary to fully describe the Tenderer's offer.

Item	Manufacturer	Model
<b>5. Schedule of Technical Data</b>		
5.1 Photovoltaic Modules		
5.2 Inverter(s)		
5.3 Mounting frames		
5.4 Data-Logger		
5.5 DC Switchgear		

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

*TENDER SCHEDULES*

5.6 AC Switchgear		

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

## 6 SCHEDULE OF QUALITY MANAGEMENT INFORMATION

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(SUBMIT WITH TENDER FORM)

Submit one of the following, to demonstrate the capacity to plan and manage the quality of work:

- evidence of current full certification of the Tenderer's Quality Management System to AS/NZS ISO 9001:2000 by a certifying body registered with the Joint Accreditation System - Australia and New Zealand (JAS-ANZ); **or**
- evidence that the Tenderer's Quality Management System complies with the NSW Government *Quality Management Systems Guidelines (QMS Guidelines)*; **or**
- a minimum of three (3) completed examples of Inspection and Test Plans used on recent past projects and complying with the requirements of the *QMS Guidelines*.

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

## 7 SCHEDULE OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT INFORMATION

(SUBMIT WITH TENDER FORM)

Provide documents and information indicated below in accordance with Conditions of Tendering clause – **Occupational health and safety management.**

Evidence of satisfactory OHS management

Nominate at least three contracts/projects completed within the last two years that demonstrate successful management of occupational health and safety by the Tenderer:

Client	Name & location of contract <i>Eg. Sutherland Hospital Carpark; Dubbo Water Treatment Plant; Tamworth Coles shopping Centre; 3 Storey Unit Block, Penrith.</i>	Contract Price/ Project Value	Start Date	Completion Date

**WHEN REQUESTED**, submit the following additional information for each of three contracts/projects selected from the above list:

- a client referee report (which may be a NSW Government agency Contractor Performance Report) commenting on the Tenderer's performance in relation to occupational health and safety management, identifying the referee's name, position, organisation and telephone and email contact details; **or**
- a third party audit report or internal audit report; **or**
- a site safety inspection report; **or**
- a Safety Management Plan; **or**
- three Safe Work Method Statements; **or**
- minutes of three Toolbox meetings.

Recent OHS prosecutions and fines

Provide:

- a statement confirming that the Tenderer is not in default of any fine issued for a breach of the OHS legislation; **AND**
- details of every OHS prosecution and fine imposed on the Tenderer in Australia during the last two years, together with a description of actions taken by the Tenderer in response to each prosecution and fine; **or**
- a statement that the Tenderer incurred no prosecutions or fines during the last two years.

Hazardous substances

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....



*TENDER SCHEDULES*

**WHEN REQUESTED**, submit details of proposed:

- i) methods for surveying for hazardous materials;
- ii) methods for handling and removal from the Site of hazardous materials; and
- iii) Consultants and Subcontractors and licence details.

Occupational Health and Safety Management Monthly Report

The Tenderer undertakes, if awarded the Contract, to provide Monthly OHS Management Reports as described in Preliminaries clause – **Occupational Health and Safety Management**.

Independent certification of formwork

The Tenderer undertakes, if awarded the Contract, to provide evidence of independent certification of formwork as required by Preliminaries clause – **Occupational Health and Safety Management**.

Signed for the Tenderer by: ..... Date:.....  
Name (in block letters): ..... (Authorised Officer)  
In the Office Bearer capacity of: .....

## 8 SCHEDULE OF FINANCIAL ASSESSMENT INFORMATION

(SUBMIT WHEN REQUESTED BY PRINCIPAL OR FINANCIAL ASSESSOR)

Provide documents and information listed below in accordance with Clause Conditions of Tendering - **Financial assessment.**

1. Financial Statements for last three years for the entity under consideration, including:
  - i) Balance Sheets;
  - ii) Profit and Loss Statement;
  - iii) detailed Profit and Loss Statement;
  - iv) statement of Cash Flows;
  - v) notes to and Forming Part of the Accounts;
  - vi) an Accountant's Report; and
  - vii) where existing, Auditor's Reports.

Consolidated accounts of a parent organisation or group to which the entity belongs are not acceptable.
2. Where latest financial statement is more than 6 months old, the latest management report showing:
  - i) a trading statement;
  - ii) a profit and loss statement; and
  - iii) a trial balance.
3. Where the company is required to lodge audited financial statements with ASIC, copies of these statements for the last three years.
4. Where any financial statement supplied is not audited, copies of the entity's tax returns for last three years.
5. A letter from the Tenderer's banker providing details of overdraft and guarantee facilities including:
  - i) Bank, Branch, and Account Names,
  - ii) type and limit of bank overdraft facility,
  - iii) type and limit of bank guarantee facility,
  - iv) current bank overdraft balance,
  - v) number and amount of bank guarantees outstanding; and
  - vi) details of other bank funding facilities available to the Tenderer, such as term loans, lines of credit, commercial bills and other debt instruments.
6. Current and projected cash flows for all work on hand.
7. Forecast budget for forthcoming financial year including Revenue and Profit and Loss.
8. Names and contact numbers of:
  - i) major suppliers; and
  - ii) major subcontractors.
9. Details relating to the Tenderer's history and Directors Profiles.

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

**9 UNDERTAKING TO COMPLY WITH THE NSW GOVERNMENT  
CODE OF PRACTICE FOR PROCUREMENT .**

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(SUBMIT WHEN REQUESTED)

The Tenderer, if awarded the Contract, will comply with the NSW Government *Code of Practice for Procurement*.

Signed for the Tenderer by: ..... Date:.....  
Name (in block letters): ..... (Authorised Officer)  
In the Office Bearer capacity of: .....

## 10 SCHEDULE OF ADDITIONAL INFORMATION

(SUBMIT WITH TENDER FORM)

Provide documents and information indicated below in accordance with the Technical Specification  
CLAUSE 5.1.

10. Schedule of Additional Information	
10.1	Evidence of Australian Business Council for Sustainable Energy (BCSE) Design accreditation by the proposed designer as per CLAUSE 5.1 of the TECHNICAL SPECIFICATION
10.2	Evidence of Australian Business Council for Sustainable Energy (BCSE) Installer accreditation by the proposed installer as per CLAUSE 5.1 of the TECHNICAL SPECIFICATION

Please describe at least three (3) recent and relevant photovoltaic system design and installations your organisation has been involved in. Include details such as client details (including contact details), the nature of the project (i.e. rooftop or groundmount) and the size of the photovoltaic installation (kWp).

10. Schedule of Previous Experience		
10.3	Project Description	Project Size (kWp)
(a)	..... ..... .....	
(b)	..... ..... .....	
(c)	..... ..... .....	

### END OF SECTION –TENDER SCHEDULES

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

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# SPECIFICATION

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# 1 GENERAL CONDITIONS OF CONTRACT AND ANNEXURE

*THERE ARE 23 PAGES IN THIS SECTION*

## GENERAL CONDITIONS OF CONTRACT - MINOR WORKS

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### 1 DEFINITIONS

- 1.1** The Principal is as stated in the Annexure.
- 1.2** The Principal's Representative is as stated in the Annexure and is the person appointed by the Principal to act with its full authority in all matters relating to the Contract.
- 1.3** The Principal's Agent is as stated in the Annexure.
- 1.4** The Works means the whole of the work to be carried out and materials and services to be provided under the Contract.
- 1.5** The Contract Sum means:
- (a) where the Principal accepted a lump sum, the lump sum;
  - (b) where the Principal accepted rates, the amount calculated by firstly multiplying the rates by their respective quantities in the schedule of rates and then adding those products;
- but excluding any additions or deductions which are made under the Contract.
- 1.6** day means calendar day.
- 1.7** Site means the lands and other places made available to the Contractor by the Principal for the purpose of the Contract.
- 1.8** Text within the following format denotes a definition:



### 2 CONTRACT

**2.1** The written agreement between the Principal and the Contractor for the performance of the Works, including all documents and parts of documents to which reference may properly be made to determine the rights and obligations of the parties (the Contract Documents) shall evidence the Contract.

**2.2** The Contract Documents shall be taken as mutually explanatory and anything contained in one but not in another shall be treated as if contained in all.

**2.3** If the Contractor finds any discrepancy, error or ambiguity in or between the Contract Documents, the Contractor is to inform the Principal's Representative before starting such work and follow the directions given by the Principal's Representative.



**3 DESIGN AND CONSTRUCTION**

**3.1** The Contractor is to supply all materials and construct the Works in accordance with the Principal's design and any further development of the design allowed under the Contract. Minor items not included in the Principal's design which are needed for the satisfactory completion of the Works are to be provided by the Contractor.

**3.2** If the Contractor is to undertake design as part of the Works, the Contractor is to develop the Principal's design and submit the completed design comprising drawings, specifications, calculations and any statutory certificates required to the Principal's Representative within the period stated in the Annexure.

**3.3** The Contractor is not to depart from the Principal's design, unless directed by the Principal's Representative.

**3.5** The Principal is not bound to check the completed design for errors, omissions or compliance with the requirements of the Contract. The Principal is not liable to the Contractor for any claim whatsoever due to the Principal not detecting or notifying the Contractor of any errors, omissions or non-compliance with the requirements of the Contract in the completed design.

**3.4** The Contractor's completed design is to comply with the Contract and be fit for the intended purpose of the Works which can be reasonably inferred from the Contract Documents.

**3.6** Responsibility for the completed design and its satisfaction of the Contract requirements remains solely with the Contractor and the Principal is relying on the Contractor's knowledge, skill and judgment to carry out this responsibility.

**3.7** The Contractor is to grant to the Principal an irrevocable licence to use the Contractor's design for the Works. Such licence is also to include any subsequent repairs to, maintenance or servicing of (including the supply of replacement parts) or additions or alterations to the Works.

#### 4. CARE OF THE WORKS AND OTHER PROPERTY

**4.1** From and including the date the Site is made available to the Contractor to the date of Completion of the Works, the Contractor is responsible for the care of the Works, constructional plant and things entrusted to the Contractor by the Principal for the purpose of the Works.

The Contractor is to make good at the Contractor's expense any damage which occurs to the Works while responsible for their care.

The Contractor is also liable for damage caused by the Contractor during the Defects Liability Period.

**4.2** The Contractor is to indemnify and keep the Principal indemnified against any loss or damage to the property of the Principal (including existing property in, about or adjacent to the Works) and against any legal liability for injury, death or damage to property of others arising from the performance of the Works.

**4.3** Nothing in Clause 4 relieves the Principal from liability for the Principal's own default and defaults of others for whom the Principal is liable.

**5. INSURANCE**

**5.1** On acceptance of the tender, the Contractor is to hold or take out an insurance policy covering Workers Compensation in the State of NSW and shall also ensure that every subcontractor, who is not taken to be a worker employed by the Contractor in accordance with the *Workplace Injury Management and Workers Compensation 1998* (NSW) Schedule 1, must hold or take out insurance covering Workers Compensation.

If insurance of the Works and public liability is to be arranged by:  
the Principal, go to **5.2**  
the Contractor, go to **5.3**

**5.2** If insurance of the Works and public liability is to be arranged by the Principal (see the Annexure) the Principal must effect insurance of the Works and public liability.

The Principal must make a copy of the policy for insurance of the Works and public liability available to the Contractor.

Go to **5.4**

**5.3** If insurance of the Works and public liability is to be arranged by the Contractor, (see the Annexure) then, before commencing work on the Site, the Contractor is to hold or take out policies of insurance covering the Contractor, Principal and subcontractors for:

- (a) public liability to an amount of not less than \$5,000,000 for any single occurrence; and
- (b) loss or damage to the Works, any temporary works and all materials, constructional plant and other things that are brought onto the Site by or on behalf of the Contractor or are entrusted to the Contractor by the Principal. The amount insured is not to be less than the Contract Sum.

The Principal is to be named as an insured in the policies.

The policies must include cross liability and waiver of subrogation clauses under which the insurer, in respect of liability, agrees that the term 'insured' applies to each of the persons covered as if a separate insurance policy had been issued to each of them and generally agrees to waive all rights of subrogation or action against any of the persons covered.

Go to **5.4**

**5.4** If the Works include work described in (a) or (b) below, the Contractor is to take out the following additional insurance policies before starting such work:

- (a) For the use of water-borne craft in excess of 8 metres in length: marine liability insurance;
- (b) For design of the Works undertaken by the Contractor: professional indemnity insurance.

The policy under (a) is to be in the name of the Contractor with the Principal as an additional name insured and is to cover the Contractor, the Principal, and all subcontractors employed from time to time in relation to the Works for their respective rights and interests and cover their liabilities to third parties. The policy is to be for an amount not less than \$5,000,000 for any one occurrence and shall include cross-liability and waiver of subrogation clauses under which the insurer, in respect of liability, agrees that the term 'insured' applies to each of the persons covered as if a separate insurance policy had been issued to each of them and generally agrees to waive all rights of subrogation or action against any of the persons covered.

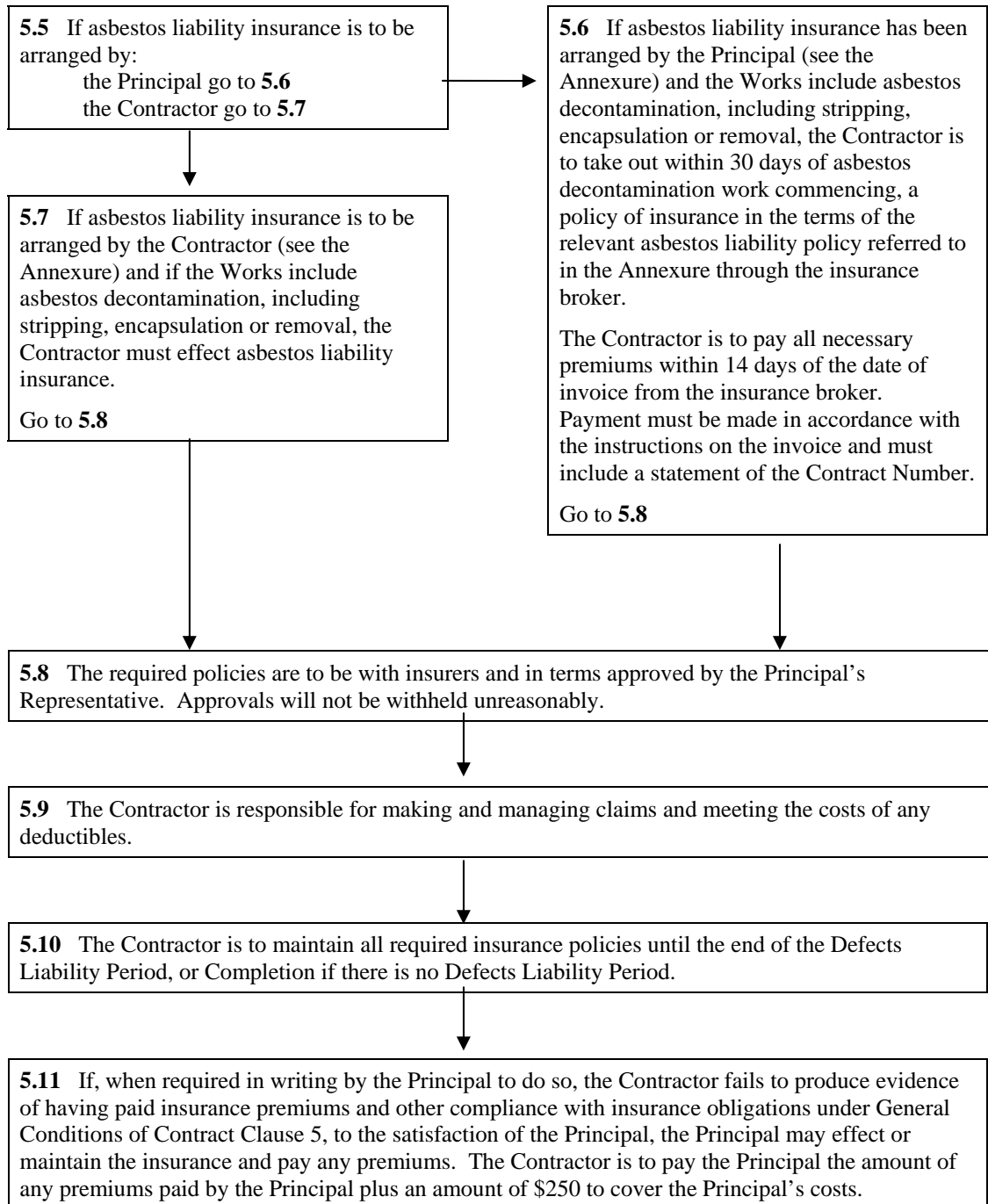
The policy under (b) is to cover the Contractor for liability to the Principal for a minimum amount of \$500,000 or 20% of the Contract Sum, whichever is greater, to a maximum of \$5,000,000 for loss (whether economic loss only or other loss) in a single occurrence arising from errors or omissions in design of the Works carried out by the Contractor or any subcontractor.

Go to **5.5**

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**1. GENERAL CONDITIONS OF CONTRACT AND ANNEXURE**

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## 6. SITE AND POSSESSION

**6.1** The Principal is to give the Contractor possession of the Site by the time stated in the Annexure.



**6.2** The Principal is to give the Contractor sufficient possession to allow the Contractor to perform the Works but is not required to give the Contractor sole or uninterrupted possession of or access to the Site.



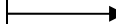
**6.3** The Contractor is to begin work on the Site as soon as practicable after being given possession of the Site by the Principal.



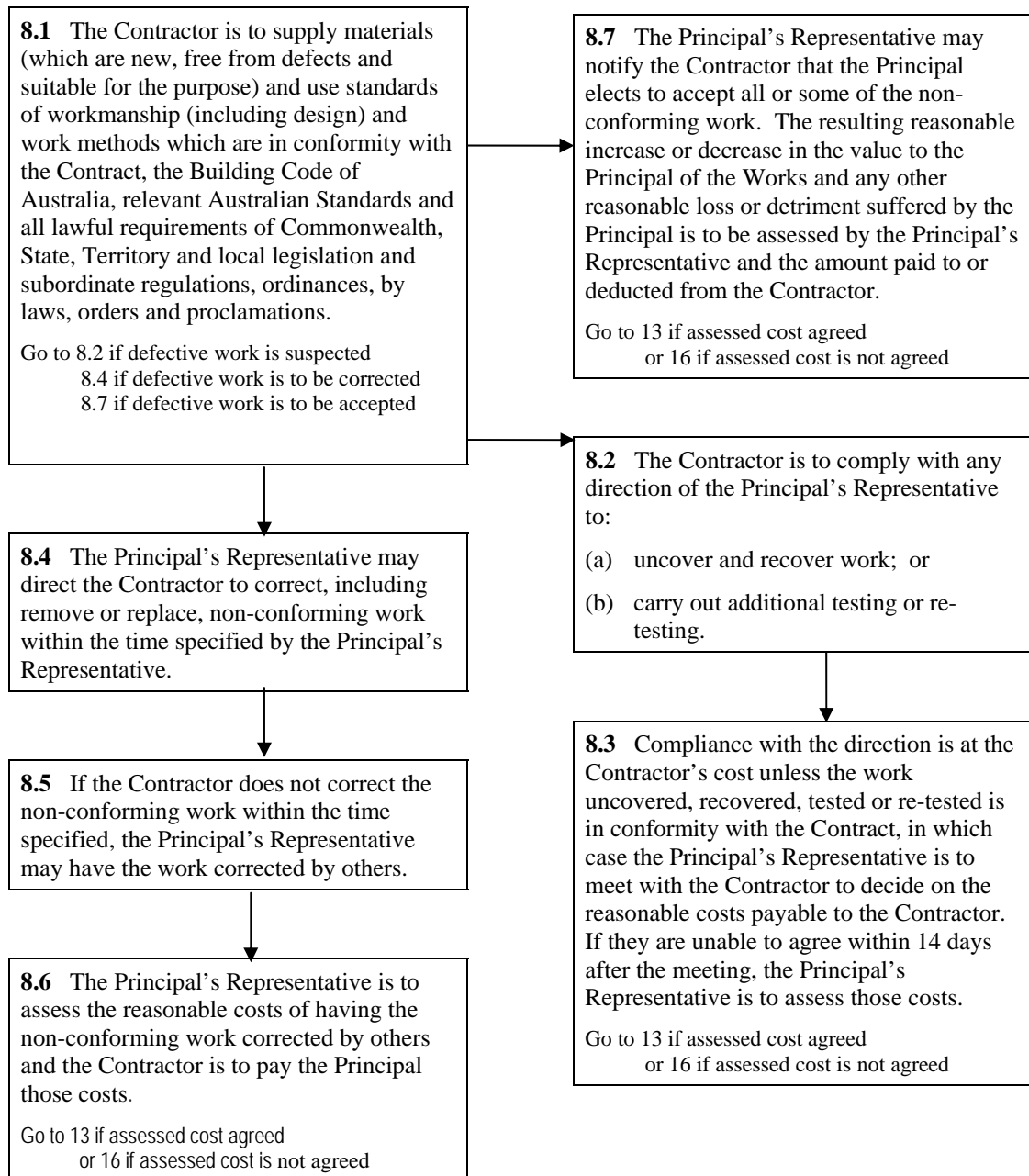
**6.4** The Contractor is to give the Principal's Representative, agents and contractors reasonable access to the Site for any purpose.

## 7. SITE CONDITIONS

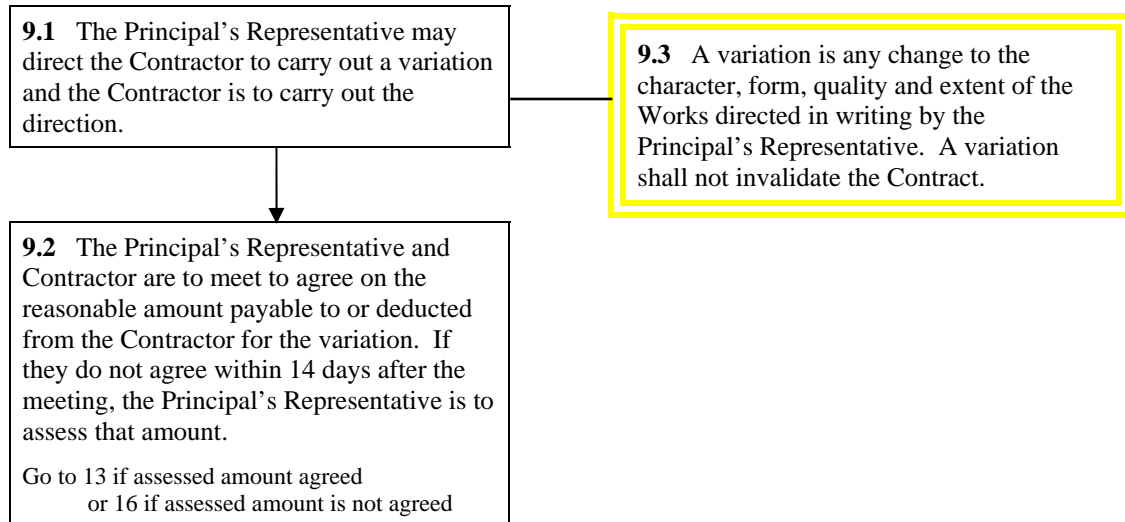
**7.1** If the Contractor discovers that the conditions on, about or below the Site differ from what ought to have reasonably been anticipated at Tender time the Contractor is to inform the Principal's Representative immediately and, where possible, before the conditions are disturbed.



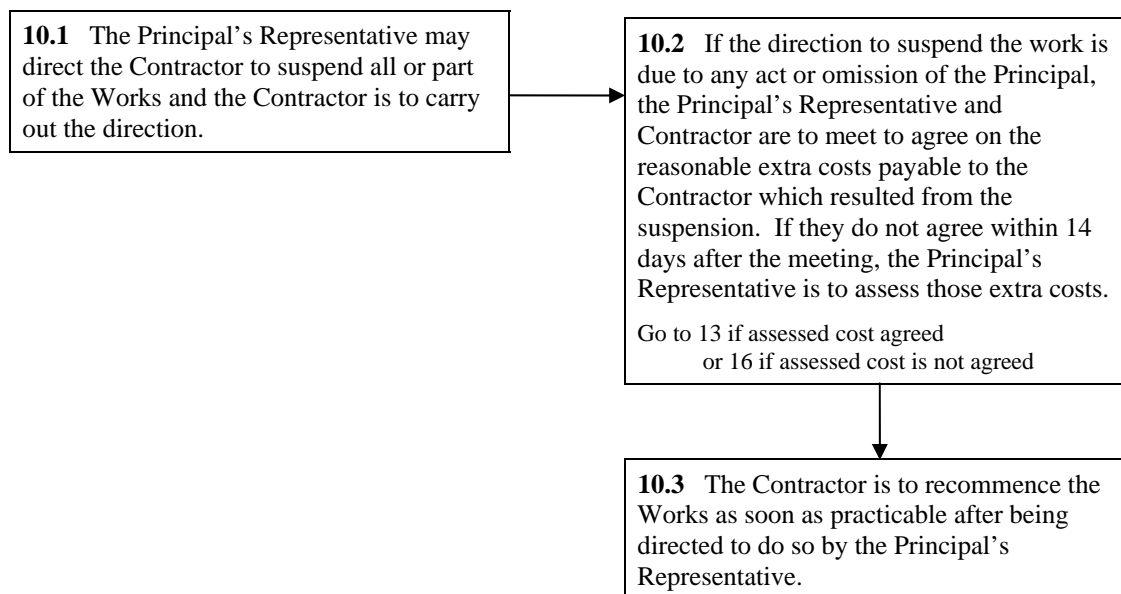
**7.2** The Contractor is not entitled to any extra payment for the different Site conditions. If the different conditions are such that the Principal's Representative directs the Contractor to carry out a variation, the procedure in Clause 9 is then to be followed.

**8. NON-CONFORMING WORK**

## 9. VARIATIONS



## 10. SUSPENSION



**11. COMPLETION OF THE WORKS**

**11.1** The Contractor is to Complete the Works within the period stated in the Annexure which starts on the date of being given possession of the Site.

**11.2** The Contractor is to inform the Principal's Representative when, in the Contractor's opinion the Works have reached Completion.

**11.3** The Principal's Representative is to:

- (a) determine if the Works have reached Completion, and if so, the date of Completion; and
- (b) give the Contractor written notice of the determination.

**11.4** The Works have reached Completion and are Complete when the Works are capable of use for their intended purpose, and should be free from any omissions or defects, and the Contractor has made good the Site and its surroundings.

**12. DELAY IN COMPLETION**

**12.1** If the Contractor is delayed in reaching Completion then the Contractor is to notify the Principal's Representative within 14 days after the commencement of the delay and to meet with the Principal's Representative to determine the cause of delay. Where such a delay is caused by:

- (a) a direction given by the Principal's Representative except under:
  - Clause 8; or
  - Clause 10 where the event giving rise to the direction was not beyond the control of the Contractor; or
- (b) a breach of the Contract by the Principal; or
- (c) any event beyond the control of the Contractor,

the period for Completion is to be extended.

**12.2** If the Principal's Representative and the Contractor do not agree on an extension to the period for Completion within 14 days of the meeting to determine the cause of delay, the Principal's Representative is to assess a reasonable extension of time. The Principal's Representative may for any reason and at any time extend the period for Completion.

Go to 16 if assessed extension of time is not agreed.

**12.3** If the Contractor does not Complete the Works by the last day of the period for Completion then the Contractor is to pay to the Principal liquidated damages from, but excluding that date, to and including the date the Works are Complete at the rate stated in the Annexure.



### 13. PAYMENT AND RETENTION

**13.1** *If the Contract has substantial Demolition and the 'Amount of Security' in the Annexure is >\$0:*

Before commencing any work on the Site, the Contractor is to provide security in the amount stated in the Annexure and in the form as detailed in Schedule - Unconditional Undertaking.

**13.2** *If the Contract requires the Contractor to pay the Contract Sum to the Principal:*

Before commencing any work on the Site, the Contractor is to pay the Principal the Contract Sum.

**13.3** *If the Contract requires the Principal to pay the Contract Sum to the Contractor:*

The Contractor is to give the Principal's Representative a written claim for payment when a Milestone stated in the Annexure is reached. The claim is to identify the Milestone, the amount claimed, how the amount is calculated, deductions to which the Principal is entitled and, when additions are claimed, the legal and factual basis of the claim. Additions are extra costs or other amounts to which the Contractor is entitled under or in connection with the subject matter of the Contract.

When a Milestone is reached the amount which the Contractor is entitled to claim, and be paid, is the sum of:

- for work for which the Principal accepted rates, an amount calculated by applying the rates to the quantities of work carried out to that date;
- for work for which the Principal accepted a lump sum, the percentage stated in the Annexure for the Milestone;
- for any additions for which the Principal has approved an amount in writing or for which an amount has been finally determined by an Expert under Clause 16, the amount approved or determined;

less payments previously made (including under Clause 16), costs payable by the Contractor to the Principal and deductions to which the Principal is entitled under or in connection with the subject matter of the Contract, including but not limited to retention moneys, liquidated damages and other damages whether liquidated or unliquidated.

With each claim for payment, and at any other time as requested by the Principal's Representative, the Contractor is to give the Principal's Representative a completed statutory declaration, as detailed in Schedule - Statutory Declaration.

Within 10 business days after receipt of the Contractor's payment claim, the Principal is to provide to the Contractor a payment schedule identifying the progress claim to which it relates and stating the payment, if any, which the Principal will be making. If the payment is to be less than the amount claimed by the Contractor the payment schedule is to indicate why it is less. For the purposes of this clause a business day is any day other than a Saturday, Sunday, public holiday or 27, 28, 29, 30 or 31 December.

**13.3 (Continued)**

Payment is to be made:

- within 20 business days after receipt of the Contractor's written payment claim; or
- within 5 business days after the statutory declaration is received; or
- by the specified time after any action required prior to payment has been carried out,

whichever is the latest. If the Contractor breaches the requirement to submit a completed statutory declaration the Principal is not obliged to make any payment to the Contractor while the breach continues.

Any claim by the Contractor on the Principal is to be made within 28 days after the date of the Principal's Representative's written notice of Completion under Clause 11.3. All claims whatsoever by the Contractor against the Principal made after that time are barred. However, if the contract includes a Defects Liability Period, and the Contractor has a claim against the Principal under Clause 14.4 or because of an event which occurred during the Defects Liability Period, the Contractor may make that claim up to 28 days after the end of the Defects Liability Period. If the claim is made after that time it is barred.

Unless stated otherwise, all payments by the Principal to the Contractor are to be made by Electronic Funds Transfer to a bank, building society or credit union account nominated by the Contractor. No payment is due to the Contractor until details of the nominated account (name of financial institution, account name and account number) are notified in writing to the Principal's Representative. The Contractor is to promptly notify the Principal's Representative in writing of any changes to the nominated account and the Principal is not responsible for any payments made into a previously nominated account before notification of such change is received by the Principal's Representative.

Payment is not evidence of the value of work or an admission of liability or that the work is satisfactory but is a payment on account only.

**13.4** *When the Works are Complete and the Contract requires Security:*

When the Contractor has provided an Unconditional Undertaking for Security (Annexure 13.1) the Principal is to return the Unconditional Undertaking, less any amounts the Contractor is to pay the Principal, within 14 days of Completion.

**13.5** *When the Works are Complete and the Contract has a Defects Liability Period:*

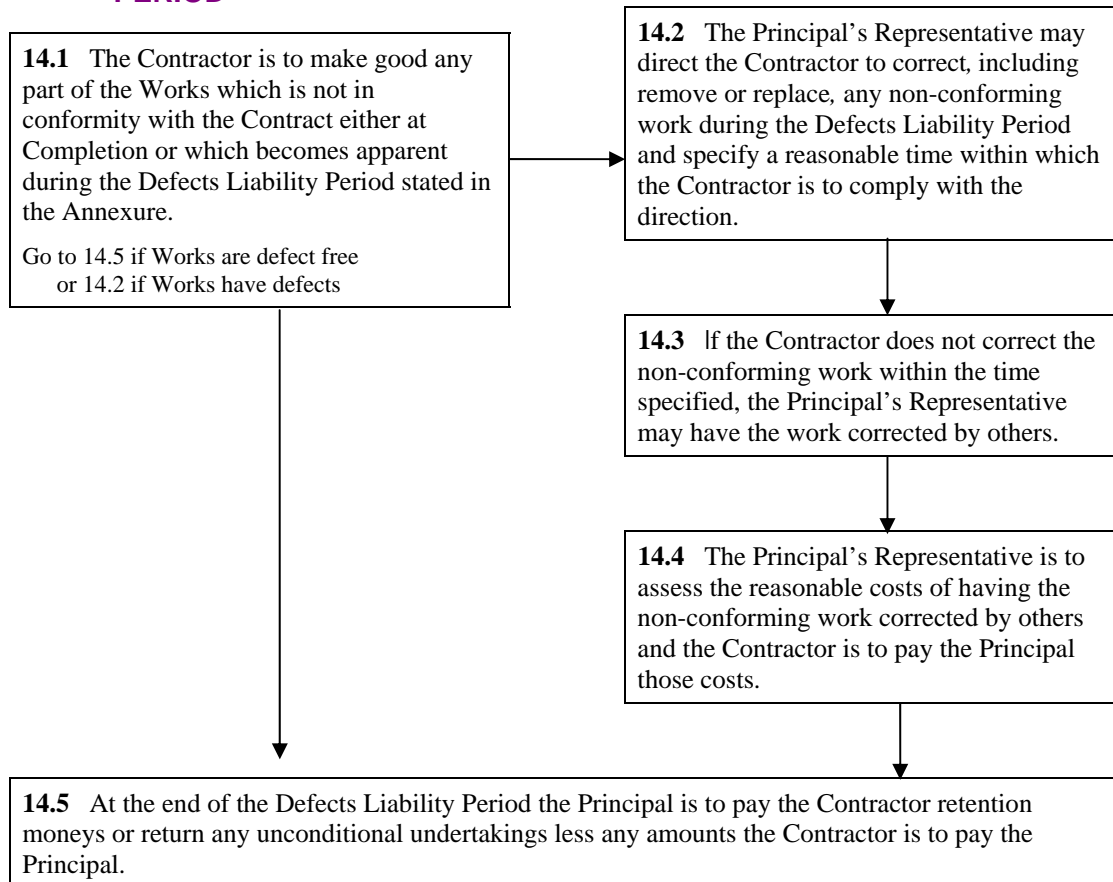
An amount of 2.5% of the Contract Sum is to be retained by the Principal against the due and proper performance of the Contract, except when there is no Defects Liability Period.

The Contractor may, instead of the retention, provide security in the amount of the retention in the form as detailed in Schedule – Unconditional Undertaking.

**13.6** *If an Unconditional Undertaking is required:*

All Undertakings must be provided by a financial institution acceptable to the Principal.

## 14. DEFECTS LIABILITY PERIOD



**15. DEFAULT AND INSOLVENCY**

**15.1** Without prejudice to any other rights which the Principal has, if the Contractor commits a substantial breach of the Contract, including:

- (a) failing to carry out a direction of the Principal's Representative within the time specified or if no time is specified, within a reasonable time;
- (b) not progressing Works at a reasonable rate,

the Principal may, in writing, specify the breach and ask the Contractor to give reasons why the Principal should not take further action.

**15.3** If the Contractor either fails to give a written response within 7 days of receiving the Principal's notice, or fails to give reasons satisfactory to the Principal, then:

Go to 15.5 for Termination option  
or 15.4 for Takeover option

**15.5** The Principal, may immediately terminate the Contract by notice in writing to the Contractor, in which case the respective rights and liabilities of the parties shall be the same as they would be at common law if the Contractor had wrongfully repudiated the Contract.

**15.7** If the calculation results in a shortfall to the Principal, the Contractor is to pay the amount of the shortfall to the Principal within seven days of a written demand for payment.

**15.2** If the Contractor is wound up or declared insolvent then:

**15.4**

- (a) The Principal may immediately take over the uncompleted Works by notice in writing; and
- (b) suspend payments due or which would become due under Clause 13; and
- (c) have the Works Completed by others.

**15.6** The Principal's Representative is to calculate the difference between:

- (a) the costs of having the Works Completed by others; and
- (b) the amount of suspended payments and retention moneys held by the Principal.

Go to 15.7 Contractor to pay  
or 15.8 Principal to pay

**15.8** If the calculation results in an excess to the Principal, the Principal is to pay the amount of the excess to the Contractor.

**16. DISPUTES**

**16.1** If either party is dissatisfied with an act or omission of the other party in connection with the Contract, including assessment of a claim, failure to agree, or an instruction, that party is to notify the Principal's Agent and the other party in writing of a dispute within 14 days of the act or omission. The notifying party is to provide particulars, including the factual and legal basis of any claimed entitlement.

If a party gives notice of a dispute but not within the time provided by this Clause 16.1, then it is not entitled to interest for the period before the party gave notice.

**16.2** Within 7 days of the giving of the notice, the Contractor and Principal's Agent are to meet to attempt to resolve the dispute.

**16.3** If the dispute is not resolved within 14 days after the notice providing particulars of the dispute, the parties are to appoint an independent Expert.

If the parties fail to agree upon an Expert, either may request the Chief Executive Officer of the Australian Commercial Disputes Centre Ltd Sydney to nominate an Expert. If there is no Chief Executive Officer or the Chief Executive Officer fails to make a nomination within a reasonable time, the Principal is to nominate an Expert.

**16.4** The person nominating the Expert is not to nominate:

- an employee of the Principal or Contractor,
- a person who has been connected with the Contract, or
- a person upon whose appointment the Principal and the Contractor have previously failed to agree.

**16.5** When the person to be the Expert has been agreed on or nominated, the Principal, on behalf of both parties is to appoint the expert in writing, with a copy to the Contractor, setting out:

- the dispute being referred to the Expert for a decision,
- the Expert's fees,
- the procedures detailed in this Clause 16, and
- any other matters which are relevant to the engagement.

**16.6** The Principal and the Contractor are to share equally the Expert's fees and out-of-pocket expenses, including security deposit if required. Each party is to otherwise bear their own costs and share equally any other costs of the process.

**16.7** Each party is to make written submissions to the Expert and provide a copy to the other party as follows:

- (a) Within 7 days after the appointment of the Expert, the notifying party is to submit details of the claimed act or omission.
- (b) Within 14 days after receiving a copy of that submission, the other party is to submit a written response. That response can include cross-claims.

**16.8** The Expert is to decide whether the claimed event, act or omission did occur and, if so:

- when it occurred,
- what term of the Contract or other obligation in law, if any, requires the other party to pay the claimant money in respect of it, and
- the merits in law of any defence or cross-claim raised by the other party.

The Expert then decides the amount, if any, which one party is legally bound to pay the other on account of the event, act or omission.

The Expert is also to decide any other questions required by the parties, as set out in the dispute referred to the Expert at Clause 16.5.

**16.9** In making the decision, the Expert acts as an expert and not as an arbitrator and is:

- (a) not liable for acts, omissions or negligence;
- (b) to make the decision on the basis of the written submissions from the parties and without formalities such as a hearing;
- (c) required within 35 days of appointment to give the decision in writing, with brief reasons, to each party; and
- (d) bound by the rules of natural justice.

**16.10** If the Expert decides that one party is to pay the other an amount exceeding \$250,000 (calculating the amount without including interest on it), and within 14 days of receiving the decision of the Expert, either party gives notice in writing to the other that the party is dissatisfied, the decision is of no effect and either party may then commence litigation.

**16.11** Unless a party has a right to commence litigation under Clause 16.10:

- (a) The parties are to treat each determination of the Expert as final and binding and give effect to it.
- (b) If the Expert decides that one party owes the other party money, that party is to pay the money within 14 days of the receiving the decision of the Expert.

## 17. TERMINATION FOR THE PRINCIPAL'S CONVENIENCE

**17.1** The Principal may terminate the Contract by giving notice with effect from the date stated in the notice, for its convenience and without the need to give reasons. The Contractor must leave the Site by the date stated in the termination notice and remove all plant, equipment and amenities it has brought onto the Site for the construction of the Works.

If the Contract is terminated for the Principal's convenience, the Principal must pay the Contractor:

- the value of all work carried out (as determined in clause 13) up to the date of the termination notice takes effect; plus
- 2% of the difference between the Contract Sum, adjusted by any amounts agreed or assessed under clause 9.2 or finally determined under clause 16, and the total of all amounts paid and payable to the contractor for payment claims.

The payments referred to in this Clause are full compensation under this Clause, and the Contractor has no claim for damages or other entitlement whether under the Contract or otherwise.

The Contractor must, wherever possible, include in all subcontracts and supply agreements an equivalent provision to this Clause.

**SCHEDULE 1**

**APPROVED FORM OF UNCONDITIONAL UNDERTAKING**

*[To be submitted on a Financial Institution's letterhead and show, at a minimum, the Financial Institution's name and address]*

At the request of ..... ('the Contractor')  
and in consideration of ..... ('the Principal')  
accepting this undertaking in respect of the contract for  
..... ('the Contract'),  
..... ('the Financial Institution')  
unconditionally undertakes to pay on demand any sum or sums which may from time to time be  
demanded by the Principal to a maximum aggregate sum of  
.....(\$.....)('the Sum').

*The undertaking is to continue until notification has been received from the Principal that the Sum is no longer required by the Principal or until this undertaking is returned to the Financial Institution or until payment to the Principal by the Financial Institution of the Sum or such part as the Principal may require. The Principal must not assign the unconditional undertaking without the prior **written** agreement of the Financial Institution, which must not be unreasonably withheld.*

*Should the Financial Institution be notified in writing, purporting to be signed by or for and on behalf of the Principal that the Principal requires payment to be made of the whole or any part or parts of the Sum, it is unconditionally agreed that the Financial Institution will make the payment or payments to the Principal forthwith without reference to the Contractor and notwithstanding any notice given by the Contractor not to pay same.*

*Provided always that the Financial Institution may at any time without being required so to do pay to the Principal the Sum less any amount or amounts it may previously have paid under this undertaking or such lesser sum as may be required and specified by the Principal and thereupon the liability of the Financial Institution hereunder shall immediately cease.*

DATED at ..... this ..... day  
of ..... 20 .....

.....

[Signature]

.....

[Print name of person signing the Undertaking]

.....

[Position / Title]



**SCHEDULE 2****Statutory Declaration***Oaths Act 1900  
(NSW)***Definitions**

*The Principal is* .....

*The Contractor is* .....

ACN/ABN.....

*The Contract is* Contract No. ....

Contract Title.....

dated .....(Date of Contract) between the party identified as the Principal and the party identified as the Contractor.

**Declaration**

*Full name* **I,** .....

*Address* of .....

do hereby solemnly declare and affirm that:

*Insert position title of the Declarant* **1** I am the representative of the Contractor in the Office Bearer capacity of .....

**2** I am in a position to make this statutory declaration about the facts attested to.

**REMUNERATION OF CONTRACTOR'S EMPLOYEES ENGAGED TO CARRY OUT WORK IN CONNECTION WITH THE CONTRACT**

- 3** All remuneration payable to the Contractor's relevant employees for work done in connection with the Contract to the date of this statutory declaration has been paid and the Contractor has made provision for all other benefits accrued in respect of the employees.
- Relevant employees are those engaged in carrying out the work done in connection with the Contract.

Remuneration means remuneration or other amounts payable to relevant employees by legislation, or under an industrial instrument, in connection with work done by the employees [s127(6) of the *Industrial Relations Act 1996* (NSW)].

**REMUNERATION OF THE EMPLOYEES OF SUBCONTRACTORS ENGAGED TO CARRY OUT WORK IN CONNECTION WITH THE CONTRACT**

- 4** The Contractor *is/is not* a principal contractor for the work done in connection with the Contract, as defined in section 127 of the *Industrial Relations Act 1996* (NSW).
- 5** Where the Contractor is also a principal contractor for work done in connection with the Contract, the Contractor has been given a written statement in its capacity of principal contractor under section 127(2) of the *Industrial Relations Act 1996* (NSW) by each subcontractor in connection with that work stating that all remuneration payable by each subcontractor to the subcontractor's relevant employees for work done in connection with the Contract to the date of this declaration has been paid, and each subcontractor has made provision for all other benefits accrued in respect of each subcontractor's employees.
- 6** I am aware that the *Industrial Relations Act 1996* (NSW) requires any written statement provided by subcontractors must be retained for at least 6 years after it was given and declare that the Contractor has accordingly made arrangements for

Delete the words  
*in italics* that are  
not applicable.

the secure retention of the written statements.

**WORKERS COMPENSATION INSURANCE OF THE CONTRACTOR'S WORKERS**

- 7 All workers compensation insurance premiums payable by the Contractor to the date of this statutory declaration in respect of the work done in connection with the Contract have been paid. This statutory declaration is accompanied by a copy of any relevant certificate of currency in respect of that insurance.

**WORKERS COMPENSATION INSURANCE FOR WORKERS OF SUBCONTRACTORS**

- 8 The Contractor *is / is not* a principal contractor for work done in connection with the Contract, as defined in section 175B of the *Workers Compensation Act 1987* (NSW).
- 9 Where the Contractor is also a principal contractor for work done in connection with the Contract, the Contractor has been given a written statement under section 175B of the *Workers Compensation Act 1987* (NSW) in the capacity of principal contractor in connection with that work to the intent that all workers compensation insurance premiums payable by each subcontractor in respect of that work done to the date of this statutory declaration have been paid, accompanied by a copy of any relevant certificate of currency in respect of that insurance.
- 10 I am aware that the *Workers Compensation Act 1987* (NSW) requires any written statement provided by subcontractors and any related certificate of currency must be retained for at least 7 years after it was given and declare that the Contractor has accordingly made arrangements for the secure retention of the written statements.

Delete the words *in italics* that are not applicable.

**EMPLOYER UNDER THE PAY-ROLL TAX ACT**

- 11 The Contractor *is registered as / is not required to be registered as* an employer under the *Pay-roll Tax Act 2007* (NSW).
- 12 All pay-roll tax payable by the Contractor in respect of wages paid or payable to the relevant employees for work done in connection with the Contract to the date of this statutory declaration has been paid.
- 13 The Contractor *is / is not* a principal contractor for work done in connection with the Contract, as defined in section 17 of Schedule 2 to the *Pay-roll Tax Act 2007* (NSW).
- 14 Where the Contractor is also a principal contractor for work done in connection with the Contract, the Contractor has been given a written statement under section 18 of Schedule 2 to the *Pay-roll Tax Act 2007* (NSW) in the capacity of principal contractor in connection with that work to the intent that all pay-roll tax payable by each subcontractor in respect of the wages paid or payable to the relevant employees for that work done to the date of this statutory declaration has been paid.
- 15 I am aware that the *Pay-roll Tax Act 2007* (NSW) requires any written statement provided by subcontractors must be retained for at least 5 years after it was given and declare that the Contractor has accordingly made arrangements for the secure retention of the written statements.

Delete the words *in italics* that are not applicable.

Delete the words *in italics* that are not applicable.

**PAYMENTS TO SUBCONTRACTORS**

- 16 The Contractor has paid every subcontractor, supplier and consultant all amounts payable to each of them by the Contractor as at the date of this statutory declaration with respect to engagement of each of them for the performance of work or the supply of materials for or in connection with the Contract.
- 17 The provisions of clause "SECURITY OF PAYMENT", if included in the Contract, have been complied with by the Contractor.
- 18 The Contractor has been informed by each subcontractor and consultant to the Contractor (except for subcontracts and agreements not exceeding \$25,000 at their commencement) by written statement in equivalent terms to this declaration (made no earlier than the date 14 days before the date of this declaration):
- .1 that their subcontracts with their subcontractors, consultants and suppliers comply with the requirements of clause "SECURITY OF PAYMENT", if included

## 1. GENERAL CONDITIONS OF CONTRACT AND ANNEXURE

in the Contract, as they apply to them; and

.2 that all of their employees, subcontractors, consultants and suppliers, as at the date of the making of such a statement have been paid all remuneration and benefits due and payable to them by, and had accrued to their account all benefits to which they are entitled from, the subcontractor or consultant of the Contractor or from any other of their subcontractors or consultants (except for their subcontracts and agreements not exceeding \$25,000 at their commencement) in respect of any work for or in connection with the Contract.

19 I am not aware of anything to the contrary of any statutory declaration referred to in paragraph 18 of this declaration and on the basis of the statements provided, I believe the matters set out in paragraph 18 to be true.

20 And I make this solemn declaration, as to the matters aforesaid, according to the law in this behalf made, and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Signature of  
Declarant .....

declared at

Place .....

Date on.....

before me

Signature of legally  
authorised person\*  
before whom the  
declaration is made .....

Name and title of  
person\* before  
whom the declaration  
is made .....

### Notes:

#### 1. In this declaration:

- (a) the words “principal contractor”, “employee”, “employees” and “relevant employees” have the meanings applicable under the relevant Acts;
- (b) the word “subcontractor” in paragraphs 5, 6, 9, 10, 14 and 15 has the meaning applicable under the relevant Act; and
- (c) otherwise the words “Contractor”, “subcontractor”, “supplier” and “consultant” have the meanings given in or applicable under the Contract.

#### 2. \* The declaration must be made before one of the following persons:

##### (a) where the declaration is sworn within the State of New South Wales:

- (i) a justice of the peace of the State of New South Wales;
- (ii) a solicitor of the Supreme Court of New South Wales with a current practising certificate;
- (iii) a notary public; or
- (iv) another prescribed person legally authorised to administer an oath under the *Oaths Act 1900* (NSW);

or

##### (b) where the declaration is sworn in a place outside the State of New South Wales:

- (i) a notary public; or
- (ii) any person having authority to administer an oath in that place.

## **ANNEXURE TO GENERAL CONDITIONS OF CONTRACT - MINOR WORKS**

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### **Clause**

#### **1.1**

The Principal is the Minister for Commerce for the State of NSW.

### **Notices and Submissions to the Principal**

Notices and Submissions to the Principal must go to the Principal's Representative.

#### **1.2**

The Principal's Representative is : Christopher Wilson

and is located at: The Department of Commerce, Building Engineering Services, Level 17, McKell Building, 2-24 Rawson Place, Sydney 2000.

#### **1.3**

The Principal's Agent is : Rod Kemp

and is located at: The Department of Commerce, Building Engineering Services, Level 17, McKell Building, 2-24 Rawson Place, Sydney 2000.

#### **3.2**

The period to submit the completed design is: 14 days before its use for construction.

#### **5.2**

The Principal has arranged insurance of the Works and public liability through insurance broker Jardine Lloyd Thompson Pty Ltd.

The insurance policy is at:

[www.managingprocurement.commerce.nsw.gov.au/system/index\\_contract\\_management\\_insurance\\_policies.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_contract_management_insurance_policies.doc)

#### **5.6**

The Principal has arranged asbestos liability insurance through insurance broker Marsh Pty Ltd.

The insurance policy is at

[www.managingprocurement.commerce.nsw.gov.au/system/index\\_contract\\_management\\_insurance\\_policies.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_contract_management_insurance_policies.doc)

#### **6.1**

The time to give possession of Site is: 7 days after the Principal accepted the tender.

#### **11.1**

The period for Completion is: 12 calendar weeks.

#### **12.3**

The rate per day of liquidated damages is: N/A

If no rate is stated common law damages are to apply.

### 13.3

The Milestones and Percentages are as below:

Milestone	Percentage
Provide design and shop drawings and Program of Works	5%
Delivery of all equipment (including all solar PV equipment) to site	20%
Complete solar PV installation as per the TECHNICAL SPECIFICATION	60%
Provision of Commissioning and Testing certification	5%
Provide all completion documentation as per CLAUSES 15 & 16 of the TECHNICAL SPECIFICATION	5%
Defects Liability Period	5%

### 14.1

The Defects Liability Period, which commences at Completion of the Works is: 52 weeks.

**END OF SECTION – GENERAL CONDITIONS OF CONTRACT AND ANNEXURE**

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## 2 PRELIMINARIES

*THERE ARE 19 PAGES IN THIS SECTION*

### 1 ADMINISTRATION AND CONTRACTING

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#### 1.1 ELECTRONIC COMMUNICATIONS

The parties agree and consent that notices and communications may be by electronic communication in accordance with the *Electronic Transactions Act 2000* (NSW).

#### 1.2 LONG SERVICE LEVY

Before commencing the works, the Contractor must:

- pay to the Building and Construction Industry Long Service Payments Corporation or the Corporation's agent the amount of the long service levy payable under the *Building and Construction Industry Long Service Payments Act 1986* (NSW); and
- produce to the Principal the document evidencing payment of the levy.

Additional information and the Levy Payment Form are available at: [www.lspc.nsw.gov.au](http://www.lspc.nsw.gov.au)

#### 1.3 COLLUSIVE ARRANGEMENTS

The Contractor must comply with the NSW Government *Code of Practice for Procurement*, which is available at:

[www.treasury.nsw.gov.au/procurement/cpfp\\_ig.htm](http://www.treasury.nsw.gov.au/procurement/cpfp_ig.htm).

#### 1.4 CONTRACTOR PERFORMANCE REPORTING

During the course of the Contract, the Contractor's performance may be monitored and assessed in accordance with the *Performance management system guidelines* at:

[www.managingprocurement.commerce.nsw.gov.au/system/index\\_performance\\_management.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_performance_management.doc)

#### 1.5 EXCHANGE OF INFORMATION BETWEEN GOVERNMENT AGENCIES

The Contractor authorises the Principal and its employees and agents to make information concerning the Contractor and its performance available to other NSW government agencies and local government authorities, which may take such information into account in considering whether to offer the Contractor future opportunities for work.

The Principal regards the provision of information about the Contractor to any NSW government agency or local government authority as privileged under the *Defamation Act 2005*. The Contractor agrees that it will have no entitlement to make any claim against the Principal in respect of any matter arising out of the provision or receipt of such information.

#### 1.6 NATSPEC SUBSCRIPTION

If any of the Contractor's Documents are based on NATSPEC, then the Contractor must provide to the Principal proof of the Contractor's current NATSPEC subscription.



## 1.7 GOODS AND SERVICES TAX

All prices, rates and other amounts referred to under the Contract must include GST if it is payable.

The Principal will issue payment schedules in the form of Recipient Created Tax Invoices. The Contractor must not issue Tax Invoices in respect of the Contract.

The Principal will issue Adjustment Notes in respect of adjustment events known to the Principal. The Contractor must notify the Principal of details of any adjustment event not known to the Principal.

Each party warrants it is registered for GST at the time of entering into the Contract, and must notify the other party if it ceases to be registered for GST or to satisfy any requirements for the issue of Recipient Created Tax Invoices.

## 1.8 PASSING OF PROPERTY AND RISK

Unless otherwise provided, items supplied by the Contractor become the property of the Principal when unloaded as required in the Contract. Such items remain at the risk of the Contractor until property therein passes to the Principal.

## 1.9 QUALITY MANAGEMENT REQUIREMENTS

### Design Plan

Prior to commencing design work, prepare and implement a Design Plan complying with the NSW Government *Quality Management Systems Guidelines (QMS Guidelines)*, covering each phase of design and addressing the key activities.

The *QMS Guidelines* are available at:

[www.managingprocurement.commerce.nsw.gov.au/system/index\\_procurement\\_guideline\\_documents.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_procurement_guideline_documents.doc)

### Inspection and Test Plans

Prepare and implement Inspection and Test Plans, complying with the *QMS Guidelines*, incorporating the Hold and Witness points specified in the Contract.

Submit copies of Inspection and Test Plans and checklists not less than 7 days before commencing the work to which they apply. Also submit certification that the relevant Inspection and Test Plans of Subcontractors and Consultants meet the requirements of the *QMS Guidelines*. Do not start any work before this documentation is submitted.

Give at least 24 hours notice prior to reaching a Hold or Witness point.

The Contractor must not proceed beyond a Hold point without endorsement by the Principal or its authorised representative.

The Principal, at its discretion, may inspect the work at a Witness point, but work may proceed without endorsement.

Endorsement by the Principal at a Hold or Witness point does not release the Contractor from its obligations to achieve the specified requirements of the Contract.

Surveillance (monitoring) by the Principal will apply to all work associated with the Contract.

### Conformance records

Submit copies of conformance records as specified, including:

## 2. PRELIMINARIES

Activity requiring Inspection & Test Plan	Stage of Work requiring inspection of test	H or W point (for attendance by Principal's Representative)
Site specific safety management plan	Prior to work commencement	H
Completed Inspection & Test Plans and associated checklists	With each Payment Claim	W
Program of Works	Within 7 days of accepting the tender	W
Quality or test records obtained from manufacturers and suppliers	Prior to equipment procurement	H
Safe Work Method Statements and Safety Management Plan	In accordance with <b>CLAUSE OHS Management</b>	H
Arrangement of the PV array as per <b>CLAUSE 7.1</b> of the <b>TECHNICAL SPECIFICATION</b> .	Prior to PV system installation	W
Final inverter configuration as per <b>CLAUSE 8.3</b> of the <b>TECHNICAL SPECIFICATION</b> .	Prior to PV system installation	W
Operation and Maintenance Manual	At practical completion	W
Structural certification of PV array in complying with <b>AS1170</b> as per <b>CLAUSE 7.3</b> of the <b>TECHNICAL SPECIFICATION</b> .	At practical completion	W
Structural certification of the guard railing system as per <b>CLAUSE 12</b> of the <b>TECHNICAL SPECIFICATION</b> .	At practical completion	W
Notice of Electrical Work Form	At practical completion	W
Acceptance testing and final inspection	Progressively and at practical completion	W
Work as executed documents	Progressively and at practical completion	W
As specified elsewhere in the contract	As specified elsewhere in the contract	As specified elsewhere in the contract

### Failure to Comply

If the Contractor fails to comply with the requirements of this clause, the Principal may implement such inspections and tests as the Principal determines and the cost incurred by the Principal shall be a debt due from the Contractor.

### 1.10 AUSTRALIAN AND NEW ZEALAND GOODS

Do not supply or incorporate into the Works any items imported into Australia except:

- items manufactured in New Zealand;
- items included in Tender Schedules - **Schedule of Imported Materials and Equipment** lodged with the Tender and accepted by the Principal;

- a single item with an imported content valued at less than 2% of the Contract Sum or \$20,000, whichever is the lesser. If an item is one of a group of similar items, the group shall be considered as one single item.

The Principal will not pay for imported goods supplied or incorporated into the Works in breach of the provisions of this clause.

## 1.11 SECURITY OF PAYMENT

### General

In this clause “subcontract” includes an agreement for supply of goods or services (including professional services and plant hire) or both and “subcontractor” includes a supplier of goods or services (including professional services and plant hire) or both.

The Contractor shall ensure that each subcontract, whether written or oral, entered into by the Contractor or any subcontractor in respect of the work under the Contract and which has a value of \$25,000 or more at the commencement of the subcontract, includes provisions in the form or to the effect of the form, as the case may be, of those contained in this clause, including the provisions of this subclause.

### Options as to Form of Security

Each subcontract which -

- requires the subcontractor to provide a cash security to its principal;
- allows the subcontractor's principal to deduct retention moneys from any payment made by it to the subcontractor; or
- provides for both of the above

shall allow the subcontractor the option at any time to provide an unconditional undertaking or unconditional undertakings in lieu of a cash security or retention moneys. To the extent that the subcontractor provides an unconditional undertaking or undertakings, the subcontractor's principal shall not deduct retention moneys and shall forthwith release to the subcontractor any retention moneys or cash security then held.

### Trust for Cash Security and Retention Moneys

Each subcontract shall include a provision having the effect that:

- When a party receives or retains security in cash or converts security to cash, that security is held in trust by the security holder from the time of receipt, retention or conversion, as the case may be, and the security holder must forthwith deposit the money into a trust account in a bank selected by that party;
- the moneys shall be held in trust for whichever party is entitled to receive them until they are paid in favour of that party and the security holder shall maintain proper records to account for such moneys; and
- any interest earned by the trust account shall not be held in trust, and shall be owned by the party holding the security.

If the party holding security has a policy of insurance protecting subcontract payments due to the other party which is equivalent to the HIA Security of Payment Bond, then compliance with the above of this subclause is not required.

Whenever requested by the Principal to provide evidence verifying that the Contractor is holding in trust an amount which the Contractor should be holding in trust, the Contractor shall provide evidence to the reasonable satisfaction of the Principal that the amount is held in trust. If the Contractor fails to do so then, in addition to any other remedy which the Principal may

have against the Contractor, the Principal may withhold an equivalent amount from payments to the Contractor.

### Payments

Each subcontract shall include:

- an obligation, which takes precedence over any inconsistent provision of the subcontract, for the subcontractor's principal to pay the subcontractor regular progress payments of 100% of the value of work, goods or services provided by the subcontractor less only retention moneys, if any, paid into the trust account referred to in subclause - **Trust for cash security and retention moneys**;
- an entitlement to progress payments within the following periods after the date upon which a progress claim is lodged by the Contractor with the Principal's Representative:
  - in the case of the Contractor's subcontractors, 28 days;
  - in the case of all other subcontractors, 35 days,

Compliance with this subclause shall not prevent the Contractor from paying a subcontractor an amount in excess of that claimed from the Principal, or paying before the time stipulated in this subclause.

### Alternative Dispute Resolution

Each subcontract shall include provisions incorporating the dispute resolution procedures outlined in the Contract except that, in each case, it shall not be mandatory for the subcontractor to pursue the contractual dispute resolution mechanism if the only remedy sought by the subcontractor is an order that the subcontractor's principal pay to it an amount which is not disputed to be due and payable under the subcontract.

### Documents to be Provided to Subcontractors

Each subcontract shall include a provision which requires the subcontractor's principal to provide to the subcontractor, before the subcontractor commences work under the subcontract, a copy of the following provisions of the contract between the subcontractor's principal and its principal:

- the provision equivalent to this Preliminaries clause - **Security of Payment**; and
- the clauses relating to proof of payment of subcontractors, times for payment claims and payment and alternative dispute resolution.

### Register of Subcontracts

Maintain a register of all subcontracts which have a value of \$25,000 or greater showing brief details of the subcontract work, the name, address and telephone number of the subcontractor, and provide an up to date copy of the register when requested by the Principal's Representative.

If further requested by the Principal's Representative, provide an unpriced copy of the subcontract agreement within 14 days of such request.

## 1.12 ADDITIONAL SECURITY AND OBLIGATIONS FOR TRUSTEES

If the Contractor is a trustee:

- before commencing the Works, the Contractor must give the Principal an unconditional undertaking as security for any amount previously agreed in writing by the parties. The unconditional undertaking must be in the form detailed in Schedule 1- **Approved Form of Unconditional Undertaking** and from a financial institution acceptable to the Principal.

- The security will be retained by the Principal against the due and proper performance of the Contract by the Contractor. Unless the Principal has made or intends to make a demand against the unconditional undertaking, the Principal will return the unconditional undertaking within 14 days after the date of Completion of the Works determined or agreed by the Principal.
- The Contractor must not prevent the Principal making any demand against the unconditional undertaking, or prevent the provider of an unconditional undertaking complying with the unconditional undertaking or any demand by the Principal, but the Contractor may seek damages if the Principal makes a demand in breach of the Contract.
- The Contractor must ensure that, for the duration of the Contract, the total value of the trust beneficiaries' loans to the trustee is always greater than the total value of trust beneficiaries' loans from the company.

### 1.13 INDUSTRIAL RELATIONS MANAGEMENT

#### Requirement

The Contractor must comply with the NSW Government *Industrial Relations Management Guidelines*.

Submit, before beginning work on the Site, confirmation that the Contractor will comply with the industrial relations aspects of the NSW Government *Code of Practice for Procurement* and the associated Implementation Guidelines.

#### Failure to comply

If at any time the Contractor has not carried out its obligations under this clause - **Industrial Relations Management**, then notwithstanding any other provision of the Contract, no payment is due to the Contractor until the 7<sup>th</sup> day after the required action has been carried out.

### 1.14 PROTECTION OF CHILDREN AND OTHER VULNERABLE PEOPLE

#### Employees

The Contractor must not employ or permit to be employed on work under the Contract at the Site a person whom the Principal advises the Contractor poses unacceptable risks to children or other vulnerable people cared for at that site.

The Contractor must not employ or permit to be employed on work under the Contract at the Site a person who has been convicted of a serious sex offence and is a prohibited person under the *Child Protection (Prohibited Employment) Act 1998* (NSW).

#### Code of behaviour

The Contractor must ensure that all persons working on the Site, including but not limited to the Contractor's employees and managers, consultants, subcontractors and suppliers (Contractor Employees) understand and comply with the requirements shown below:

- All Contractor Employees must gain permission to enter the school or facility before commencing work and may only enter approved areas. The Contractor's representative or where a subcontractor is working without the supervision of the Contractor, the subcontractor's representative must report their presence to the person in charge of the school or facility on arrival each day and record, in the Site Visit Log, the details of all Contractor's or subcontractor's employees working at that site that day.
- Contractor Employees should avoid talking with, touching or interacting with any children or residents or other users of the school or facility except where the work requires it or in an emergency or safety situation.

- Contractor Employees must only use approved toilets and other facilities, unless the person in charge of the school or facility gives written authority to use alternative arrangements.
- The work area must not be able to be used or accessed by children, or residents or other users of the school or facility while work is in progress. Clear signs and barricades (where appropriate) must be used to prevent any inadvertent or unauthorised access.
- Appropriate privacy must be maintained when working on toilets and similar facilities. Contractor Employees must ensure that toilets and similar facilities are not occupied or in use by children, residents or other users before entering to perform work, and that work does not continue when use of the facilities is required. Where practicable male employees should perform work on male facilities and female employees on female facilities.
- Contractor Employees must wear clothing that is tidy and in good condition, including a shirt and shorts, trousers or a skirt at all times.
- Contractor Employees should report any concerns about children's behaviour or child abuse to the person in charge of the school or facility.
- Contractor Employees must wear or carry an identity card at all times when on the Site.

### 1.15 AUDIT AND REVIEW

Make available, on request, all records, including those of or relating to Subcontractors or suppliers, relevant to compliance with requirements of the Contract, for the purposes of audit, review or surveillance. Provide all reasonable assistance during the audits or reviews including attendance by the Contractor.

Promptly implement effective corrective action on matters disclosed by audit or review.

## 2 SITE AND WORKS

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### 2.1 WORKING HOURS AND WORKING DAYS

Unless the Contract provides otherwise the Site is available to the Contractor to perform the Works between 7 am and 5 pm Monday to Friday but excluding public holidays.

The Principal's Representative may approve additional working hours or working days, subject to conditions which may include, but are not limited to:

- restrictions on the performance of work which requires supervision; and
- a requirement that the Contractor meet the costs of supervision, by or on behalf of the Principal, of work performed during the additional working hours or working days.

### 2.2 EXISTING SERVICES

#### Locating Existing Services – Dial Before You Dig

The Contractor is responsible for locating services.

Before commencing excavation the Contractor must obtain, from the Dial Before You Dig information service or relevant public authorities or owners of underground services, written confirmation of the exact positions of all underground services at and around the Site, and verify and prominently mark the locations of the underground services on the Site.

### Dealing with Existing Services

Existing services (such as drains, watercourses, public utilities, telecommunications and other services) obstructing the Works or if damaged in the course of the Contract, must be dealt with as follows:

- if the service is to be continued: repair, divert, relocate as required;
- if the service is to be abandoned: cut and seal or disconnect and make safe as required;

### Cost and Delay

Where an existing service is damaged by the Contractor for any reason whatsoever, the Contractor shall bear all costs and any delays for repairing or disconnecting the service.

### Notification

Notify the Principal's Representative immediately upon the discovery of services obstructing the Works not shown in the Contract documents.

## 2.3 OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

### Specification and Statutory Requirements

The Contractor must comply with the NSW Government *Occupational Health and Safety Management Systems Guidelines 4<sup>th</sup> Edition* (OHSM Guidelines) and all statutory requirements including, but not limited to, the *Occupational Health and Safety Act 2000* (NSW) and *Occupational Health and Safety Regulation 2001* (NSW). In the event of any inconsistency, the Contractor must comply with the statutory provisions.

### Appointment as principal contractor

The Contractor, having responsibility for the construction work at all times until the work is completed under the Contract, is appointed principal contractor and controller of the premises for the construction work under Clause 210 of the *Occupational Health and Safety Regulation 2001* (NSW), and is authorised to exercise such authority of the owner as is necessary to enable it to discharge the responsibilities of principal contractor and controller of premises imposed by the *Occupational Health and Safety Act 2000* (NSW) and Chapter 8 of the *Occupational Health and Safety Regulation 2001* (NSW).

### Design

The Contractor must ensure that systematic assessments are undertaken in carrying out any design required, that:

- identify hazards and analyse the associated risks, probability and consequences of injury or illness;
- involve consultation with appropriate people on the safe construction, use and maintenance of the designed asset;
- establish a Design Hazard Register for the designed asset to record any hazards not eliminated in the design that may impose a risk to those constructing, using or maintaining the asset.

An up to date copy of the Design Hazard Register must be provided to the Principal at the date of Completion of the Works or the date the Works are occupied or taken over, whichever is earlier.

### Site-specific Safety Management Plan

Develop and implement a Site-specific Safety Management Plan that complies with the *OHSM Guidelines*.



Submit the Site-specific Safety Management Plan no later than 14 days before construction work commences. Do not start construction work before a complying Site-specific Safety Management Plan has been submitted.

Ensure the following risks are covered in the Site-specific Management Plan:

- Electrocution
- Working at heights
- Slips, trips and falls
- Manual handling
- Prolonged outdoor exposure
- Exposure to hazardous materials

This list of risks is not exhaustive and must not be relied upon by the Contractor. The Contractor must undertake its own detailed analysis of all occupational health and safety risks under the Contract.

### **OHS Management Monthly Report**

Submit, no later than the seventh (7<sup>th</sup>) day of each month, an OHS Management Monthly Report, detailing *Inspection, testing and servicing* activities, *Internal reviews* and *Incident management and corrective action*, and including the information listed below, as evidence of the implementation of the Site-specific Safety Plan during the previous month.

#### **Contract Details**

- Contract
- Contractor
- Contractor's representative
- Signature and Date
- Period Covered

#### **Implementation of Risk management** (OHSM Guidelines Section 5, element 1)

Summary of OHS inspections and reviews carried out to identify risks and hazards and ensure risk management controls are being implemented for:

- plant and equipment
- incoming products
- work site conditions
- adherence to and completeness of Risk Assessments, Safe Work Method Statements and Site Safety Rules
- work site access and exits
- personal protective equipment

#### **Implementation of OHS training** (OHSM Guidelines Section 5, element 3)

An up to date copy of the Induction Register and details of OHS training carried out.

#### **Implementation of Incident management** (OHSM Guidelines Section 5, element 4)



Details of:

- any OHS incidents or OHS issues, including non-compliance with OHS procedures and near misses
- implementation of incident management
- implementation of corrective action
- OHS statistics for entire the Contract including:

	This Month	Total Cumulative
Number of Lost Time Injuries		
Number of Hours Worked		
Number of Hours Lost Due to Injury		
Lost Time Injury Frequency Rate LTIFR		
Number of OHS Management Audits		
Number of OHS Inspections		

**Implementation of Safe Work Method Statements** (*OHSM Guidelines* Section 5, element 6)

An up to date copy of the register of Safe Work Method Statements, including confirmation that the principal contractor has ensured that all Safe Work Method Statements comply with the *OHS Regulation 2001* and that their implementation is being monitored.

### Incident Reports

Ensure compliance with the notification and other requirements of *OHS Regulation 2001* Clauses 341 and 344 for accidents, incidents and non-disturbance occurrences, including immediate notification of WorkCover where required.

Immediately notify the Principal of any accident or incident defined in *OHS Regulation 2001* Clauses 341 and 344.

Provide a written report to the Principal within twenty-four hours of the incident, giving details of the incident and evidence that notification requirements have been met.

When requested, provide an incident investigation report, including identification of the cause of the incident and corrective actions taken, in the form directed.

### Prohibition and Improvement Notices and On-The-Spot Fines

Immediately notify the Principal of any Prohibition and Improvement Notice (PIN) or on-the-spot fine issued by WorkCover. Provide the Principal with a copy of the PIN or fine notice and written details of the corrective action taken by the Contractor and/or the applicable subcontractor to rectify the breach and to prevent recurrence.

### Electrical work on electrical installations

In compliance with section 207 of the *OHS Regulation 2001*, ensure that electrical work on an electrical installation is not carried out while the circuits and apparatus of the part of the installation that is being worked on are energised, unless it is necessary to do so in the interests of safety and the risk of harm would be greater if the circuits and apparatus were de-energised before work commenced.

### Independent Certification of Formwork

In this clause, the terms “qualified engineer” and “formwork” have the meanings given in Clause 209 of the *OHS Regulation 2001*. “Related Entities” means businesses, one of which is owned wholly or in part by the other or that have proprietors, directors, officers, shareholders or employees in common.

Inspection and certification of formwork, if required by Clause 233 of the *OHS Regulation 2001*, must be carried out by a qualified engineer who is not a proprietor, director, officer, or employee either of the entity carrying out the formwork erection or a Related Entity to that entity. In addition, if the Contractor carries out the design of the formwork, then the qualified engineer must not be a proprietor, director, officer or employee either of the Contractor or a Related Entity to the Contractor.

If such inspection and certification are required, the Contractor and any subcontractors involved must include the inspection and certification as actions in Safe Work Method Statements for the erection and use of formwork, and they must be hold points in the Contractor's and subcontractors' Inspection and Test Plans.

Submit formwork certification before commencing the use of the formwork. Do not use the formwork before this certification is submitted.

### **Failure to Comply**

If at any time the Contractor has not carried out its obligations under the Contract in relation to occupational health and safety management, then notwithstanding any other provisions of the Contract, no payment will be due to the Contractor until the 7<sup>th</sup> day after the required action has been carried out.

## **2.4 HAZARDOUS SUBSTANCES**

### **Definition**

Hazardous Substance means a substance that is listed in the document entitled *List of Designated Hazardous Substances* published by Worksafe Australia; or a substance that fits the criteria for a hazardous substance set out in the document entitled *Approved Criteria for Classifying Hazardous Substances* published by Worksafe Australia.

Asbestos, material containing asbestos, polychlorinated biphenyl (PCB) and lead based paints are recognised as hazardous substances. Other substances in certain situations are also considered hazardous and therefore require controlled handling. Examples are glues, solvents, cleaning agents, paints, and water treatment chemicals.

Work involving stone, rock, concrete, masonry and such materials containing silica, is work under the Contract whether explicitly identified in the Specification or not. The Contractor is responsible for the control of any hazard which may arise from the presence of silica.

### **Response to Unexpected Discovery**

If any hazardous substance not specified in work under the Contract is discovered on the Site the Contractor must suspend all work which may result in exposure to such hazardous substance and notify the Principal's Representative immediately of the type of substance and its location.

With the initial notification, or as soon as practicable thereafter, submit details, including:

- the additional work and additional resources the Contractor estimates to be necessary to deal with the substance so that work and subsequent use of the Works may proceed safely and without risk to health
- the time the Contractor anticipates will be required to deal with the substance and the expected delay in achieving Completion;
- the Contractor's estimate of the cost of the measures necessary to deal with the substance; and
- other details reasonably required by the Principal's Representative

The Contractor must, in planning and carrying out any work dealing with the substance take all reasonable steps:

- to carry out the work concurrently with other work wherever possible; and
- to otherwise minimise effects of the work on the Contractual Completion Date.

### Responsibility For Decontamination

Control and decontamination of any hazardous substances is the responsibility of:

- the Principal, in respect of any such substances not identified in the Contract Documents, which are discovered on the Site; and
- the Contractor, in respect of any such substances identified in the Contract Documents.

### Decontamination By Principal

Where the Principal is responsible for the control and decontamination of any hazardous substances, the Principal's Representative may suspend the whole or any part of the Works until the hazardous substances are isolated or removed.

### Decontamination By Contractor

Where the Contractor is responsible for the control and decontamination of the Site following the discovery of hazardous substances, handle, use, isolate, remove and dispose of such substances in accordance with statutory requirements.

The Environment Protection Authority or Waste Service NSW may advise of suitable disposal sites.

### Working Hours

When the Contractor is required to decontaminate hazardous substances on occupied Sites, all such decontamination shall be carried out outside normal hours of occupation, unless otherwise approved in writing by the Principal's Representative. Normal hours of occupation are:

- Mon-Fri 8:00am to 5:00pm

No decontamination shall be carried out during NSW Parliament sitting days. This includes periods when the Legislative Assembly is sitting, the Legislative Council is sitting and both houses are sitting. A sitting day calendar is available from the following website:

<http://www.parliament.nsw.gov.au>

Generally both houses will not sit during the months January and February and during school holiday periods.

## 2.5 ASBESTOS REMOVAL

### Requirement

Where the Contractor is responsible for asbestos removal work, comply with the relevant statutory requirements, standards, codes and guidelines, including but not limited to the:

- *Occupational Health and Safety Act 2000* (NSW)
- *Occupational Health and Safety Regulation 2001* (NSW)
- WorkCover Authority of NSW requirements
- Australian Safety and Compensation Council *Code of Practice for the Safe Removal of Asbestos 2<sup>nd</sup> Edition* (2005)
- Australian Safety and Compensation Council *Code of Practice for the Management and Control of Asbestos in Workplaces* (2005)

- Australian Safety and Compensation Council *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2<sup>nd</sup> Edition* (2005)
- *Environmentally Hazardous Chemicals Act 1985* (NSW)
- *Waste Avoidance and Resource Recovery Act 2001* (NSW)

### Notification and Permit

Not less than seven days prior to commencing any asbestos removal work, notify the local office of WorkCover and the Principal of the intention to carry out that work.

Where the regulations require a licence for asbestos removal work, before the work commences, submit a copy of the current licence held by the entity that will undertake the work and a copy of any WorkCover permit required for the work.

### Monitoring

Provide air monitoring by an independent testing authority on each day during asbestos removal and on completion of each area where removal has been undertaken.

### Clearance Certificate

Submit to the Principal a clearance certificate from an independent testing authority at the completion of the asbestos removal work.

## 2.6 ENVIRONMENTAL MANAGEMENT SYSTEM

### Requirement

The Contractor must comply with the NSW Government *Environmental Management Systems Guidelines*.

### Project Environmental Management Plan

Document and implement a Project Environmental Management Plan that complies with the NSW Government *Environmental Management Systems Guidelines*.

The Contractor may elect to complete Preliminaries Schedule – **Project Environmental Management Plan** as required to suit the project and implement the completed version as the Project Environmental Management Plan.

Submit the Project Environmental Management Plan no later than 7 days before construction work commences. Submit revisions to the Plan

### Incident Reports

Ensure compliance with the notification and other requirements of the *Protection of the Environment Operations Act 1997* (NSW).

Immediately notify the Principal of any pollution incident that may cause material harm to the environment, providing evidence that notification requirements of the *Protection of the Environment Operations Act 1997* (NSW) have been met, if applicable.

When requested, provide an incident investigation report, including identification of the cause of the incident and corrective actions taken, in the form directed.

### Failure to comply

If at any time the Contractor has not carried out its obligations under this clause - **Environmental management**, then notwithstanding any other provisions of the Contract, no payment will be due to the Contractor until the 7<sup>th</sup> day after the required action has been carried out.

## 2.7 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

### Restricted Timbers

Do not use the following timbers or their products for work under the Contract:

- rainforest timbers, unless certification is provided that they are plantation grown;
- timber from Australian high conservation forests.

## 2.8 WASTE MANAGEMENT

### Requirement

Implement waste minimisation and management measures, including:

- recycling and diverting from landfill surplus soil, rock, and other excavated or demolition materials, wherever practical;
- separately collecting and streaming quantities of waste concrete, bricks, blocks, timber, metals, plasterboard, paper and packaging, glass and plastics, and offering them for recycling where practical.

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

### Monitoring

Monitor and record the volumes of waste and the methods and locations of disposal.

Submit a progress report every two months, and a summary report before Completion, on the implementation of waste management measures, including the total quantity of material purchased, the quantity purchased with recycled content, the total quantity of waste generated, the total quantity recycled, the total quantity disposed of and the method and location of disposal in the form of a *Waste Recycling and Purchasing Report*, which is available at:

[www.managingprocurement.commerce.nsw.gov.au/contract\\_management/cm\\_sf\\_waste\\_recycling\\_and\\_purchasing\\_report.doc](http://www.managingprocurement.commerce.nsw.gov.au/contract_management/cm_sf_waste_recycling_and_purchasing_report.doc)

With the *Waste Recycling and Purchasing Report*, submit waste disposal dockets and/or company certification confirming appropriate, lawful disposal of waste.

## 2.9 PEST CONTROL

Do not use any chemical pesticides or termiticides for new construction work. Use preventive treatment by physical means to minimise the risk of pest infestations.

Chemical treatments may be used in existing buildings only as a last resort for the eradication of pest and termite infestations. Chemical pesticides used for this purpose must be registered by the National Registration Authority for Agricultural and Veterinary Chemicals and applied by a Pest Control Operator licensed by WorkCover.

Pest preventive methods must comply with AS 3660.1-2000 Protection of Buildings from Subterranean Termites (except for references to chemical soil barriers), as well as supplementary standards for existing buildings.

## 2.10 WORK METHOD

If the Contract prescribes a particular work method or the Principal or Principal's Representative directs that a particular work method must be used to the exclusion of the other work methods, then that work method is part of the Contract.

Otherwise, the work method is not part of the Contract and the Contractor is free to use any work method. This is so even though, before or after acceptance of the tender, the Contractor made known to the Principal the Contractor's proposed work method and the Principal accepted or approved it.

If the work method is not part of the Contract, the fact that the proposed work method is impractical or impossible or the Contractor, with or without the approval of the Principal's Representative, uses another work method will:

- not entitle the Contractor to make a claim on the Principal;
- not be grounds for an extension of time for Completion;
- not cause the Contract to be frustrated.

## **2.11 STANDARDS**

Where the Contract requires compliance with a standard or Code, unless otherwise specified that Standard or Code shall be the one current at the closing date for tenders, except for the Building Code of Australia, which shall be the one current at the Date of Completion.

Where the Contract refers to an Australian Standard it does not preclude the adoption of a relevant international standard.

## **2.12 CLEANING UP**

All visible external and internal surfaces, including fittings, fixtures and equipment, must be free of marks, dirt, dust, vermin and unwanted materials, at Completion.

## **2.13 PROPRIETARY ITEMS**

Identification by the Principal of a proprietary item does not necessarily imply exclusive preference for that item, but indicates the required properties of the item.

The Contractor may offer an alternative to any proprietary item. Apply in writing for approval to use the alternative. The request must be accompanied by all available technical information and describe how, if at all, the alternative differs from the proprietary item and how it will affect other parts of the Works and performance of the Works.

Except to the extent that the approval, if any, of the Principal's Representative includes a contrary provision, the approval shall be deemed to include the conditions that:

- use of the alternative must not directly or indirectly result in any increase in the cost to the Principal of the Works;
- the Contractor must indemnify the Principal against any increase in costs;
- use of the alternative must not directly or indirectly cause any delay to the Works and if it does, the Contractor will compensate the Principal for any loss which the delay causes.

## **2.14 GUARANTEES**

### **Generally**

Obtain and ensure that NSW Parliament House Building Services will have the benefit of warranties or guarantees as specified in the Contract or offered by suppliers, including warranties or guarantees that are obtained by, or offered to the subcontractors of the Contractor.

## 2. PRELIMINARIES

### 2.15 SCHEDULE TO PRELIMINARIES - ENVIRONMENTAL MANAGEMENT PLAN

ISSUE	OBJECTIVE	HOW THE OBJECTIVE WILL BE ACHIEVED. ACTIONS REQUIRED TO ACHIEVE THE OBJECTIVE	WHEN THE ACTIONS WILL BE TAKEN	WHO WILL ENSURE THAT THE OBJECTIVE IS ACHIEVED	ACTION ACTUALLY TAKEN TO ACHIEVE THE OBJECTIVE	OTHER RECORDS AND WHERE THEY ARE KEPT
<b>General</b>						
Vehicles and plant	Exhaust emissions are minimised	No vehicles or plant producing excessive exhaust emissions will be used				
Emergencies - Incident reporting.	All environmental incidents are reported to the Principal's Representative. immediately	All environmental incidents will be reported to the Principal's Representative immediately				
Emergencies - Spills	Spills are contained, damage to the eco-system minimised and rectification organised	Emergency procedures to handle spills including oil and chemicals will be established before delivery begins				
Other environmental emergencies	Damage to the eco-system from environmental emergencies is minimised	Emergency procedures to handle other foreseeable environmental emergencies will be established				
Compliance Audit	Compliance with environmental requirements and, if breaches are detected, rectification of defects	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Cooperate with periodic environmental audits; and</li> <li>• Rectify any environmental breaches identified within the time frame specified in the audit</li> </ul>				
Noise	Minimal detrimental impact	<p>Adherence to EPA, Council and other noise limits will be mandatory</p> <p>Equipment will be kept in good repair and condition</p> <p>The Contractor will contact, co-operate and coordinate with neighbouring facility operators</p>				

## 2. PRELIMINARIES

ISSUE	OBJECTIVE	HOW THE OBJECTIVE WILL BE ACHIEVED. ACTIONS REQUIRED TO ACHIEVE THE OBJECTIVE	WHEN THE ACTIONS WILL BE TAKEN	WHO WILL ENSURE THAT THE OBJECTIVE IS ACHIEVED	ACTION ACTUALLY TAKEN TO ACHIEVE THE OBJECTIVE	OTHER RECORDS AND WHERE THEY ARE KEPT
Waste - Quantity of materials	Minimal quantity of waste materials generated as a consequence of the Contract	Development and implementation of a strategy to reduce the quantity of waste generated as a consequence of the Contract				
Waste Disposal	<p>Appropriate and lawful disposal of waste associated with the Contract including:</p> <ul style="list-style-type: none"> <li>• Packaging materials;</li> <li>• Replaced or redundant parts or materials;</li> <li>• Chemicals;</li> <li>• Oils and grease from machinery;</li> <li>• Paints and solvents including the cleaning of equipment, tools and brushes;</li> <li>• Cleaning materials and rags;</li> <li>• Trade Waste;</li> <li>• Materials unsuitable for re-use; and</li> <li>• Other waste</li> </ul>	<p>Identify lawful places for disposal of all types of waste generated as a consequence of the Contract.</p> <p>Ensure that no waste from the site is conveyed to or deposited at any place that cannot lawfully be used as a waste facility for that waste.</p> <p>Record, for all waste, the method and location of disposal, and whether or not that location was a place that could lawfully be used as a waste facility for that waste.</p> <p>Submit to the Principal's Representative reports, including the record of waste disposal and method and location of disposal; and immediate reports of the details of any waste from the site which has been conveyed or deposited at any place that cannot lawfully be used as a waste facility for that waste.</p>				



## 2. PRELIMINARIES

ISSUE	OBJECTIVE	HOW THE OBJECTIVE WILL BE ACHIEVED. ACTIONS REQUIRED TO ACHIEVE THE OBJECTIVE	WHEN THE ACTIONS WILL BE TAKEN	WHO WILL ENSURE THAT THE OBJECTIVE IS ACHIEVED	ACTION ACTUALLY TAKEN TO ACHIEVE THE OBJECTIVE	OTHER RECORDS AND WHERE THEY ARE KEPT
Records	Sufficient records to demonstrate appropriate environmental management  Notifications and Fines from the EPA and the resulting Corrective Action	This Environmental Management Plan and modifications to suit this Contract will be submitted to the Principal's Representative  The Environmental Management Plans will be updated as required  Appropriate progress and other reports will be submitted to the Principal's Representative  The Principal's Representative will be notified of all EPA action and Fines from the EPA and the resulting Corrective Action  All records will be securely filed using an effective document retrieval system				
<b>Delivery</b>						
Vehicle access	Damage to the ecosystems on Site is minimised	All vehicles and plant will access the site along designated routes				
Parking of vehicles and plant.	Damage to the ecosystems on Site is minimised	All vehicles and plant will park in designated areas				
Movements of Pedestrians, materials and equipment	Damage to the ecosystems on Site is minimised	All pedestrian materials and equipment movement from and to vehicles will be along approved access routes				
Wash down of vehicles and plant.	Stormwater is not polluted by residues from wash down	Vehicles and plant will be washed down only in areas approved by the Principal's Representative for this purpose				

## 2. PRELIMINARIES

ISSUE	OBJECTIVE	HOW THE OBJECTIVE WILL BE ACHIEVED. ACTIONS REQUIRED TO ACHIEVE THE OBJECTIVE	WHEN THE ACTIONS WILL BE TAKEN	WHO WILL ENSURE THAT THE OBJECTIVE IS ACHIEVED	ACTION ACTUALLY TAKEN TO ACHIEVE THE OBJECTIVE	OTHER RECORDS AND WHERE THEY ARE KEPT
<b>Removal and Making Good</b>						
Reinstatement	Re-instatement of damaged eco-systems to their previous condition	Relevant areas of Site will be cleaned and re-instated				

**END OF SECTION - PRELIMINARIES**

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## TECHNICAL SPECIFICATION

### 3 GENERAL

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#### 3.1 INTERPRETATIONS

Unless the context otherwise requires, the following definitions apply:

- Supply: "Supply", "furnish" and similar expressions mean "supply only".
- Provide: "Provide" and similar expressions mean "supply and install",
- Commented "Commented", "endorsed", "reviewed", "directed" and similar expressions mean suggested means to comply with the documents. This is not a direction to comply but an indication that the contractor's documents do not seem to comply with the documents.
- Give notice: "Give notice", "submit", "advise", "inform" and similar expressions mean "give notice (submit, advise, inform) in writing to the Principal's Representative",
- Obtain: "Obtain", "seek" and similar expressions mean "obtain (seek) in writing from the Principal's Representative".
- Proprietary: "Proprietary" mean identifiable by naming manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Samples: Includes samples, prototypes and sample panels.
- Contractor: Within the various clauses of the Electrical Specification the word "contractor" generally refers to the contractor responsible for the installation of the system.
- RCD: Residual Current Device
- ED S&IR: The Electricity Distributor's Service and Installation Rules
- PV: Photovoltaic
- Extra-low voltage: Not exceeding 50 V a.c. or 120 V ripple-free d.c.
- Low-voltage: Exceeding extra-low voltage, but not exceeding 1000 V a.c. or 1500 V d.c.

#### Tests

Except where otherwise defined in referenced documents, the following definitions apply:

Pre-completion tests: Tests carried out before completion tests.

Type tests: Tests carried out on an item identical with a production item, before delivery to the site.

Production tests: Tests carried out on the purchased equipment, before delivery to the site.

Site tests: Tests carried out on site.

Completion tests: Acceptance tests and final tests.

Acceptance tests: Tests carried out on completed installations or systems and, except for final tests, before the date for practical completion, to demonstrate that the installation or system, including components, controls and equipment, operates correctly, safely and efficiently and meets performance and other requirements.

Final tests: Acceptance tests carried out before completion of the maintenance period. Maintenance period Coextensive with the defects liability period.

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## 4 INTRODUCTION

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The purpose of the Technical Specification Section is to stipulate the requirements to provide a new 20 (twenty) kilowatt total nominal rated capacity grid-connected photovoltaic (PV) power system to NSW Parliament House. This initiative aligns with other energy saving programs that NSW Parliament House has committed.

The purpose of the photovoltaic system is to offset the electricity use to energy efficient lights in both the upper and lower houses of NSW Parliament and provide surplus energy generation to the rest of the building operations. The primary objective is to maximise energy yield and reduce greenhouse gas emissions of the site, while as a secondary purpose, promote education and awareness in renewable energy generation.

The successful tenderer must supply and install all solar PV equipment, which includes, but is not limited to, the PV modules, mounting frame, inverter(s), metering, data-logger and monitoring device and provide any installation hardware necessary to complete the installation of the system described herein. The successful tenderer shall also install a suitable guard rail / safety rail and gates to provide protection for maintenance personnel.

### 4.1 SCOPE

The work to be done under this specification will comprise the design, supply, delivery, installation, commissioning, and provision of a 20kW (nominal) grid-connected photovoltaic system, together with associated works, serving the NSW Parliament House Building that comprises:

- A photovoltaic array located on the roof of the NSW Parliament House building
- An inverter station located within the NSW Parliament House building
- DC and AC cabling from the rooftop module array to the DC and AC switchboards and inverters, and to an existing electrical distribution board
- Electrical metering of the photovoltaic system
- Data logging monitoring PV system performance with output to a PC database within the NSW Parliament House network
- Provision of a guard rail and gates that surround the extent of the PV array
- All associated building works
- Inspections of the PV system by the local energy authority
- Testing and commissioning.
- Training of NSW Parliament House representatives into the basic operation, maintenance, and trouble-shooting of the PV system.
- Operation and Maintenance manuals.

- Application on behalf of NSW Parliament House to the Australian Greenhouse Office Photovoltaic Rebate Program (PVRP) and other relevant rebate programs.
- Operating warranty

All works must be carried out generally as shown on the accompanying drawings and detailed hereunder and must comply with the relevant clauses of this specification. The complete installation must meet all requirements of the Governing and Statutory Authorities and relevant Australian Standards listed in CLAUSE 5.3.

The tenderer shall advise any ambiguities in the document at the time of tender for the works specified. Claims for extra costs based on the lack of knowledge of the documents will not be accepted after submission of the tender.

### **Completeness**

Provide all apparatus, appliances, materials, labour and services not specifically mentioned, that are necessary to form complete fully operational systems in all respects and without any additional cost. Price variation or extensions of time will not be allowed on the basis of lack of knowledge or familiarisation with other documentation for the project.

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## **5 TENDERER REQUIREMENTS**

### **5.1 ACCREDITATION**

Contractors must be accredited by the Australian Business Council for Sustainable Energy (BCSE) in order to carry out PV design and installation works. Alternatively, the contractor must subcontract a BCSE accredited designer and/or installer to carry out the PV work.

For further information please see the Australian Business Council for Sustainable Energy Website at: <http://www.bcse.org.au>

Evidence of BCSE accreditation must be provided in the Tender Schedules as per Tender Schedule 10 – Schedule of Additional Information.

### **5.2 OCCUPATIONAL HEALTH AND SAFETY (OH&S)**

In carrying out the installation of grid-connected solar power systems, the contractor will be required to undertake the work in accordance with the BCSE OH&S requirements and the NSW OH&S requirements including, but not limited to, the following:

- *Occupational Health and Safety Act (2000) No 40* – Clause 8: Duties of employers
- *Occupational Health and Safety Regulation 2001* – Division 6: Working at heights (all sections)
- *Occupational Health and Safety Regulation 2001*- Division 8: Electricity (all sections)

Tenderer must complete the Schedule of Occupational Health and Safety Management Information – Tender Schedule 10.

A summary of relevant Occupational Health and Safety Laws and Regulations is available from Workcover NSW.

### 5.3 STANDARDS

In carrying out the installation of grid-connected solar power systems, the contractor will be required to undertake the work in accordance with the following most recent Australian Standards:

AS 5033	Installation of Photovoltaic Arrays
AS 3000	Electrical Wiring Rules
AS 1768	Lightning Protection
AS 1170.2	Wind Loads
AS 4777	Grid Connections of Energy Systems via Inverters
AS 1657	Fixed Platforms, Walkways, Stairways and Ladders – Design, Construction and Installation
AS 3080	Telecommunications Installations – Generic Cabling for Commercial Premises (ISO/IEC 11801:2002, MOD)
AS 4296	Cable Trunking Systems
AS 2053	Conduits and Fittings for Electrical Installations

## 6 STATEMENT OF REQUIREMENTS

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### 6.1 TOTAL PHOTOVOLTAIC SYSTEM POWER CAPABILITY

The photovoltaic array must comprise sufficient number of photovoltaic modules whose individual nominal rating under Standard Test Conditions (STC) results in a total array nominal rated capacity of 20 kilowatts minimum.

### 6.2 INVERTER STATION & ELECTRICAL DISTRIBUTOR BOARD LOCATION

The inverters and the associated AC and DC combining equipment and switchgear must be installed in the location shown in Drawing E01.

The location of the of the existing building electrical distribution board, BD13N, into which the photovoltaic system main AC supply cable will be connected is located as shown on Drawing E01.

### 6.3 PV MODULE REQUIREMENTS

#### Selection of Modules

No particular brand or model of photovoltaic modules is specified within the specification. However, preference shall be given to offers that provide PV modules of Australian and New Zealand origin.

The Contractor will nominate the brand and model of photovoltaic module proposed for this project. The modules can be either monocrystalline or multicrystalline silicon.

However, the proposed photovoltaic module must meet the all the criteria set out in CLAUSE 6.3 of the TECHNICAL SPECIFICATION.

Preferred or similar photovoltaic module manufacturers include:

**BP Solar Australia** (ph: 1800 802 762, [www.bpsolar.com.au](http://www.bpsolar.com.au))

**Conergy Pty Ltd** (ph: 1300 551 303, [www.conergy.com.au](http://www.conergy.com.au))

**Kyocera Solar** (ph: (02) 9870 3963, [www.kyocerasolar.com.au](http://www.kyocerasolar.com.au))

**SCHOTT Solar Australia Pty Ltd** (ph: (02) 8426 1607, [www.schott.com/solar](http://www.schott.com/solar))

**Sharp Australia** (ph: 1300 13 55 30, [www.sharp.net.au](http://www.sharp.net.au))

### **Australian Standards**

The proposed photovoltaic modules must comply with AS/NZS 5033:2005.

### **Certification**

The proposed photovoltaic modules must be certified with IEC-61215. Evidence of this certification must be provided in the Schedule of Technical Data – Schedule 5.

### **Warranty**

The photovoltaic module must have the following minimum warranted power percentages:

25 years – at 80% power output

10 years – at 90% power output

The successful Tenderer must supply a warranty to which NSW Parliament House can make a warranty claim to the photovoltaic module manufacturer.

The photovoltaic module must be warranted against defects in material and workmanship where the module fails to produce the warranted power percentage of the minimum power output specified above. If, under the manufacturer's testing conditions, the modules are not providing the warranted percentage power, the manufacturer must repair or replace the module(s) and provide all additional component(s) to bring aggregate power output to at least the warranted percentage minimum power output. The term of the warranty is measured from the date of initial purchase.

The manufacturer may use, at its discretion, new, remanufactured or refurbished parts or products when repairing or replacing the photovoltaic modules under the warranty. Replaced parts or products may become the property of the photovoltaic manufacturer.

The photovoltaic module manufacturer is not responsible for, and NSW Parliament House hereby agrees to bear, the costs of any on-site labour and any costs associated with the installation, removal, reinstallation or transportation of the photovoltaic modules or any components thereof for service under the warranty.

Notwithstanding anything to the contrary in the warranty conditions, the warranty provided herein shall apply so long as the photovoltaic modules are owned by NSW Parliament House.

The Contractor is responsible for ensuring the photovoltaic modules are installed as per manufacturer's installation, operation or maintenance instructions.

### **OTHER REQUIREMENTS**

The photovoltaic modules supplied must be chosen with price-per-performance in mind i.e. Australian dollars per watt peak should be considered. It is recommended that photovoltaic modules rated at 100W nominal capacity or greater should be nominated for the system.

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## **7 PV ARRAY REQUIREMENTS**

### **7.1 PHOTOVOLTAIC MODULE ARRAY ARRANGEMENT**

The photovoltaic module array must be installed within the area of the NSW Parliament House roof shown in Drawing E01.



Notwithstanding the total photovoltaic array power capability as required under this specification, the number of individual photovoltaic modules must be such, and the array so arranged, that the physical arrangement of the array is either symmetrical or geometrically ordered.

The photovoltaic module arrangement shall be arranged so that the photovoltaic array is located within the zone shown generally on Drawing E01. The photovoltaic array must also be arranged such that photovoltaic modules will not shade or cover each other to any extent between the hours of 10:00am and 3:00pm on all winter months (June, July and August). Evidence of these calculations must be provided to the Principal's Representative.

The proposed array arrangement is to be approved by the Principal's Representative before any installation work commences on site.

## **7.2 NSW PARLIAMENT HOUSE ROOF**

The NSW Parliament House roof is flat to the horizontal and is made of concrete pavers, approximately 50mm thick, placed upon a waterproof sealed nuralite membrane covered with sheeted rubber. The membrane contains asbestos fibres. Drawing A357 shows the precast concrete paving tiles and waterproof membrane details and has been provided for information only.

## **7.3 MOUNTING**

The PV array shall be raked on ballast mounting frames to maximize solar insolation and to negate the need for penetrations into the roof membrane.

The ballast mounting frame must be designed so that the photovoltaic modules point with a tilt angle of 33 degrees  $\pm$  5 degrees to the horizontal and orientated  $\pm$  5 degrees to true north.

The array mounting structure must be suitable for Region B (intermediate) Terrain Category 2 maximum wind speed regions as outlined in AS1170.

The mounting of the photovoltaic module array must be certified by an accredited structural engineer and submitted to the Principal's Representative for approval.

The ballast mounting frame must be a proprietary system, similar or equivalent to a Unirac Solarmount Modular PV Ballast Frame.

The ballast mounting frame must be positioned such that the mounting frame structure fits within the space between the roof and the concrete pavers, positioned directly upon the existing roof membrane, while utilising the existing concrete pavers as the ballast for the mounting frame. The existing concrete pavers may be cut as necessary to provide an aesthetically pleasing appearance.

If additional ballast weights are required to ensure the mounting system is sufficiently windloaded as per AS1170, the additional ballast weights must be high-density concrete blocks made of the same material or finish as the existing concrete pavers. Approval for the choice of additional ballast weights must be obtained from the Principal's Representative prior to their purchase.

Any bolts, washers, screws, nails or metal objects in contact with the mounting frame must be rust-proof or not cause a galvanic reaction.

The mounting structure must comply with the requirements of AS1170: Structural design actions – Wind actions.

## 8 INVERTER REQUIREMENTS

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### 8.1 SELECTION OF INVERTER

The selection of the inverter brand and model is not specified, but must be fully compliant with Australian Standards and all other relevant Authorities' requirements.

The tenderer will nominate the brand and model of inverter(s) proposed for this project. The inverter system must be suitable for use with the specified 20 kilowatt photovoltaic system.

In addition, the proposed inverter(s) must meet the criteria set out in CLAUSE 8 of the TECHNICAL SPECIFICATION.

Preferred or similar grid-connect PV inverter manufacturers include:

**SMA / BP Solar** (ph: 1800 802 762, [www.bpsolar.com.au](http://www.bpsolar.com.au))

**Conergy** (ph: 1300 551 303, [www.conergy.com.au](http://www.conergy.com.au))

**Fronius / Choice Electric Co**

### 8.2 AUSTRALIAN STANDARDS

The inverter(s) supplied must conform to: AS4777. Evidence of this must be provided.

### 8.3 TECHNICAL REQUIREMENTS

The total capacity of the inverter(s) must be such that it is rated sufficiently for the total capacity of the photovoltaic array. However, the size of the inverter(s) must be as small as possible without sacrificing generated energy. It is recommended to size inverters to 80% of the photovoltaic array total rated capacity.

The inverter(s) must also be well ventilated to prevent over-heating and must be capable of autonomously synchronizing with the existing grid voltage.

A typical DC / Inverter / AC schematic has been provided in Drawing E01 for information only. The final inverter configuration must be approved by the Principal's Representative prior to system installation.

#### Load Balancing

The completed installation must be balanced over three (3) phases within 5% and to the approval of the Electricity Distributor's requirements. Any modification necessary to the specified circuiting to achieve this balance must be to the approval of the Principal's Representative and any such variations must be noted on the 'as installed' drawings. Spread electrical load equally across circuits to prevent overloading and inadvertent circuit breaker operation.

### 8.4 WARRANTY

The inverter must have a minimum warranty of 5 years. The contractor must supply a warranty to which NSW Parliament House can make a warranty claim to the inverter manufacturer.

### 8.5 MAINTENANCE

The inverter must be maintenance-free.

## **9 ELECTRICAL INSTALLATION REQUIREMENTS**

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### **9.1 AUSTRALIAN STANDARDS**

In addition to the standards listed elsewhere, grid protection devices must be installed in accordance with AS4777.

The photovoltaic system must also be installed in accordance with AS/NZS 5033:2005.

The installation must also comply with AS/NZS 3000.

### **9.2 LICENSED ELECTRICIAN**

All electrical installations must be conducted by a licensed electrician.

### **9.3 DC CABLING SIZING**

Cables must be sized to maximise system performance. The voltage drop of the photovoltaic system between the photovoltaic array and inverter must be lower than 5% of the total PV array D.C. voltage.

### **9.4 AC CABLING SIZING**

The Contractor must allow the shortest possible A.C. cable runs with a secure cable installation and while providing cable access without obstructing any walkways, passages or windows, and must have the capacity to handle the PV system AC output.

The A.C. cable must be sized such that the voltage drop between the inverter station and the distribution board, DB13N, is less than 2% of the total PV inverter A.C. voltage.

The A.C. cable shall be sized such that there is 15% spare capacity to allow for future upgrade to the photovoltaic system.

Conduit diameters are to be sized such that there is 25% spare capacity for future upgrade to the photovoltaic system.

### **9.5 DC CABLING INSTALLATION**

The DC cabling from the modules will be laid out together into a single run, and within a Colorbond box system with clip down cover, from the array across the roof leading to the inverter station, generally as shown in Drawing E01.

The Colorbond box system will be painted in a prominent colour, such that it is clearly noticeable and shall be firmly fixed to existing concrete pavers.

The colour of the Colorbond boxing must be approved by the Principal's Representative prior to purchase.

The DC cables shall not be positioned in locations of water drainage or in locations that are likely to prevent the egress of rainwater.

### **9.6 AC CABLING INSTALLATION**

AC cabling from the inverter station to the building distribution board, DB13N, into which the photovoltaic system AC cables will be connected, will be located generally as shown in Drawing E01.

DB13N is located on level 12 north and is positioned adjacent to DB12N. It is an orange painted sheet metal enclosure without a door comprising Quicklag circuit breakers. Cables enter from the top of the distribution board.

Provide a new 40 amp triple pole circuit breaker within DB13N of similar make and model to the existing Quicklag circuit breakers and connect the new A.C. cables from the inverter station to this circuit breaker.

## 9.7 MOULDED CASE AND MINIATURE CIRCUIT BREAKERS

### General

Moulded case breakers: To AS 60947.1, AS 2184 and AS 60947.2.

Miniature circuit breakers: To AS/NZS 60898.1 or AS 3111.

Operation: Independent manual operation including positive ON/OFF indicator.

Trip type:

Moulded case breakers: Adjustable thermal, fixed magnetic.

Miniature circuit breakers: Fixed thermal, fixed magnetic.

Current limiting:

Moulded case breakers: Required.

Isolation facility: Required.

Mounting: Mount circuit breakers so that the ON/OFF and current rating indications are clearly visible with covers or escutcheons in position. Align operating toggles of each circuit breaker in the same plane.

Utilisation category: Moulded case breakers:

Final subcircuits category: Category A.

Mains and submains: Category B.

Trip units: Connect interchangeable and integrally fused trip units so that trip units are not live when circuit breaker contacts are open.

## 9.8 POWER CABLES

### Standard

PVC and XLPE cables: To AS/NZS 5000.1.

### Cable

General: Select multi-stranded copper cable generally, except for mineral insulated metal sheathed (MIMS).

Minimum size:

Lighting sub-circuits: 1.5 mm<sup>2</sup>.

Power sub-circuits: 2.5 mm<sup>2</sup>.

Sub-mains: 6 mm<sup>2</sup>.

Voltage drop: Select final subcircuit cables within the voltage drop parameters dictated by the route length and load.

Fault loop impedance: Select final subcircuit cables selected to satisfy the requirements for automatic disconnection under short circuit and earth fault/touch voltage conditions.

Distribution cables: To AS/NZS 4961.

### **Conductor colours**

General: For fixed wiring, provide coloured conductor insulation. If this is not practicable, slide at least 150 mm of close fitting coloured sleeving on to each conductor at the termination points.

Active conductors in single phase circuits: Red.

Active conductors in polyphase circuits:

A phase: Red.

B phase: White.

C phase: Blue.

### **General**

Standard: Classifications to AS/NZS 3013.

Handling cables: Report damage to cable insulation, serving or sheathing.

Stress: Ensure that installation methods do not exceed the cable's pulling tension. Use cable rollers for cable installed on tray/ladders or in underground enclosures.

Straight-through joints: Unless unavoidable due to length or difficult installation conditions, run cables without intermediate straight-through joints.

Cable joints: Locate in accessible positions in junction boxes.

Extra-low voltage circuits: Individual wiring of extra-low voltage circuits: Tie together at regular intervals.

### **Tagging**

General: Identify multicore cables and trefoil groups at each end with stamped non-ferrous tags clipped around each cable or trefoil group.

### **Marking**

General: Identify the origin of all wiring by means of legible indelible marking.

## **9.9 ACCESSORIES**

### **General**

General: Provide accessories as documented.

Proprietary equipment: The requirements of this specification over-ride the specifications inherent in the selection of particular make and model of accessories.

Conformity: All accessories and outlets located in close proximity are to be the same manufacture, size and material if available.

### **Isolating switches**

Standard: To AS/NZS 3133.

## **9.10 COPPER CONDUCTOR TERMINATIONS**

### **General**

General: Other than for small accessory and luminaire terminals, terminate copper conductors to equipment, with compression-type lugs of the correct size for the conductor. Compress using the correct tool or solder.

### **Within assemblies and equipment**

General: Loom and tie together conductors from within the same cable or conduit from the terminal block to the point of cable sheath or conduit termination. Neatly bend each conductor to enter directly into the terminal tunnel or terminal stud section, allowing sufficient slack for easy disconnection and reconnection.

Alternative: Run cables in UPVC cable duct with fitted cover.

Identification: Provide durable numbered ferrules fitted to each core, and permanently marked with numbers, letters or both to suit the connection diagrams.

Spare cores: Identify spare cores and terminate into spare terminals, if available. Otherwise, neatly insulate and neatly bind the spare cores to the terminated cores.

## **9.11 WIRING**

### **Concealed Cables and Conduits**

Provide conduits as necessary to allow wiring replacement without structural work or the removal of cladding, lining, plaster or cement rendering.

### **Sequence of Work**

Install conduits and cables before the installation of wall and ceiling linings, and before any external landscaping works.

### **Installation**

Do not penetrate damp-proof courses. Arrange wiring such that it does not bridge the cavity in external masonry.

## **9.12 CONDUITS**

### **Type**

General: Rigid.

### **Sizes**

Conduits:  $\geq 20$  mm.

Underground:  $\geq 25$  mm.

Conduits for telecommunications:  $\geq 25$  mm.

### **Fixings**

Saddles: Double sided fixed.

### **Colour**

Conduits for telecommunications systems: White.

### **PVC Conduit**

Corrugated PVC conduit must only be installed with the prior approval of the Principal.

### **Heavy Duty UPVC Conduit**

HD UPVC conduit must comply with AS 2053 and with 'Category A' enclosures as defined in the SAA Wiring Rules.

### **Steel Conduit**

Steel conduit and fittings must be galvanised to meet the requirements of 'medium protection' as set down in AS2052. Joints must be painted to protect against corrosion. Steel conduits must be electrically and mechanically continuous.

## **9.13 CONDUIT SYSTEMS – INSTALLATION**

### **Set out**

General: If exposed to view, install conduits in parallel runs with right angle changes of direction.

### **Bends**

General: Install conduits with the equivalent of  $\leq 2$  right angled bends per cable draw-in run.

### **Inspection fittings**

General: Locate in accessible positions.

### **Draw cords**

General: Provide 5 mm<sup>2</sup> polypropylene draw cords in conduits not in use.

### **Draw-in boxes**

General: Provide draw-in boxes as follows:

Spacing: < 30 m.

At changes of level or direction.

Underground draw-in boxes: Provide casketed covers and seal against moisture. Install in accessible pits.

### **Expansion**

General: Allow for thermal expansion/contraction of conduits and fittings due to changes in ambient temperature conditions. Provide expansion couplings as required.

### **Rigid conduits**

General: Provide straight long runs, smooth and free from rags, burrs and sharp edges. Set conduits to minimise the number of fittings.

### **Routes**

General: Run conduits concealed in wall chases, embedded in floor slabs or installed in inaccessible locations directly between points of termination, minimising the number of sets. Do not provide inspection fittings.

### **Conduits in concrete slabs**

Route: Do not run in concrete toppings. Do not run within pretensioning cable zones. Cross pretensioning cable zones at right angles. Route to avoid crossovers and minimise the number of conduits in any location. Space parallel conduits  $\geq 50$  mm apart.

Minimum cover: The greater of the conduit diameter and 20 mm.

Fixing: Fix directly to top of the bottom layer of reinforcing.

### **Hollow-block floors**

Locate conduits in the core-filled sections of precast hollow-block type floors.

## **9.14 CABLE TRAYS**

All cable trays and supports must be located within concealed areas such as concealed roof spaces. Exposed cable trays and supports must be approved by the Principal's Representative prior to installation.

All cable tray and duct is to be fully earthed. All trays must have a cold rolled galvanised finish and must be machine press formed, with both edges returned a minimum of 50mm for stiffening.

Tray must be complete with galvanised perforated fishplates, bends and galvanised fixings, all to manufacturer's recommendations.

### **Installation**

Tray must be secured to the structure and must be installed with sufficient clearance to permit installation of cable clips and other cable fixings. Supports must be evenly spaced to ensure that tray is true and straight. Spacing of supports must be within the manufacturer's recommendations for the loading concerned and in any case not less than two (2) supports must be provided per length of tray.

Supports must be of substantial fabricated hot-dip galvanised steel construction.

The complete installation must be free of any distortion or bowing.

All cable trays and supports where exposed must be painted.

## **9.15 COLOUR CODE**

The following colour code must be used throughout the installation:

Busbars and cabling within switchboards, and all submains cores and polyphase subcircuits must be coloured red, white and blue in accordance with the Supply Authority's phase rotation and consistent throughout the site. Wrong phase rotation and consequences shall be rectified at the contractor's expense.

Single-phase subcircuits for lighting and power must be coloured as follows:

Active conductors	Three Phase	- red, white, blue
	Single Phase	red
Neutral conductors		- black
Switchwires		- white
Earth conductors		- green/yellow

## **9.16 MARKING AND LABELLING**

### **General**

General: Provide labels including control and circuit equipment ratings, functional units, notices for operational and maintenance personnel, incoming and outgoing circuit rating, sizes and origin of supply and kW ratings of motor starters.

ADDITIONAL MARKINGS: Provide marking as follows in addition to that required by AS 3000.



Labelling of switchboards must be in accordance with AS 4777.1. Signs shall be installed in prominent positions on the Main Switchboard and all immediate distribution boards, namely DB13N, DB12N, DB11N and DB10N. The warning label wording must be identical to the SIGN EXAMPLES given in APPENDIX A of AS 4777.1.

Lettering heights: Include the following requirements:

Isolating switches:  $\geq 5$  mm

Switchboards, main assembly designation:  $\geq 25$  mm

Switchboards, outgoing functional units:  $\geq 8$  mm

Switchboards, sub assembly designations:  $\geq 15$  mm

Warning notices:  $\geq 4$ mm

### **Labels on assembly exteriors**

Manufacturer's name: Required.

Assemblies: Label with essential markings.

Designation labels: For other than main assemblies, provide designation label stating source of electrical supply. Identify separate sections of enclosures.

Assembly controls: Label controls and fault current limiters, including the following:

Circuit designation for main switches, main controls and submains controls.

Details of consumers mains and submains.

Incoming busbar or cable rating to first tee-off.

Fuse link size.

### **Labels on assembly interiors**

General: Provide labels for equipment within assemblies. Locate so that it is clear which equipment is referred to, and so that lettering is not obscured by equipment or wiring.

Moulded case circuit breakers: If circuit breaker manufacturer's markings are obscured by operating handle mechanisms or motor operators, provide additional markings open to view on, or next to, the circuit breaker.

Arrestors: Label each group of primary arrestors, stating their purpose and the necessary characteristics.

### **Danger, warning and caution notices**

Busbars: If polymer membrane coating is used without further insulation, provide warning notices on the front cover near the main switch or local main switch and on rear covers, indicating that busbars are not insulated.

Fault current limiters: In assembly sections containing fault current limiter fuses provide caution notices fixed next to the fault current limiters, stating that replacement fuse links are to match the installed fuse link ratings, make and characteristics. Provide separate label stating make and fault current limiting fuse ratings.

Externally controlled equipment: To prevent accidental contact with live parts, provide warning notices for equipment on assemblies not isolated by main switch or local main switch.

Stand-by power: Provide warning notices stating that assemblies may be energised from the stand-by supply at any time.

Anti-condensation heaters: To prevent accidental switching off, provide caution notices for anti-condensation heaters.

Insulation and shrouding: For insulation or shrouding requiring removal during normal assembly maintenance, provide danger notices with appropriate wording for replacement of insulation shrouding before re-energising assemblies.

Positioning: Locate notices so that they can be readily seen, next to or, if impracticable, on busbar chamber covers of functional units and behind the front cover of functional units. Provide circuit identification labels in the cabling chamber of each functional unit, located next to external terminations.

### Single-line diagrams

Main and submain assemblies: Provide single-line diagrams.

Format: Non-fading print, at least A3 size, showing the situation as installed.

Mounting: Enclose in a non-reflective PVC frame and wall mount close to assembly.

### Marking cables

General: Identify the origin of all wiring by means of legible indelible marking.

Identification labels: Provide durable labels fitted to each core and sheath, permanently marked with numbers, letters or both to suit the connection diagrams.

Multicore cables and trefoil groups: Identify multicore cables and trefoil groups at each end with durable non-ferrous tags clipped around each cable or trefoil group.

### Labels

Unless otherwise specified labels must consist of black engraved lettering in polished white Traffolyte or similar materials. The sizes of all labels and lettering thereon must be to the approval of the Principal's Representative. Labels must be secured by adhesive and screws.

Where deemed necessary by the Principal's Representative stand-off type labels must be used.

LABEL TYPES: Unless otherwise specified, provide the following label types:

For Exterior use: Zincanneal steel, baked enamel finish. or engraved and filled stainless steel. Screw fix identification labels

Interior switchboards and plant main labels: Two colour laminated plastic or photo-anodized aluminium.

For general interior use: Engraved two-colour laminated plastic.

For all interior general-purpose outlets and switch-plates: Computer generated permanent indelible adhesive type similar to Brother, black lettering on white background.

Label edges: Round or bevel the edges of labels exceeding 1.5 mm thickness.

COLOURS: TO Australian Standard

Warning notices: White lettering on a red background.

Other labels: Black lettering on a white background.

## 10 DATA-LOGGING REQUIREMENTS

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### 10.1 GENERAL REQUIREMENTS

A data-logger must be supplied, installed and connected to the solar PV power system's inverter(s). The data-logger must be fully compatible with the nominated inverter(s).

### 10.2 TECHNICAL REQUIREMENTS

The data-logger must be capable of recording the following information:

- Energy Total (kWh)
- A calculation of CO2 saved (kg)
- Power now (W, kW)
- Energy today (Wh, kW)
- Time period / date for energy generated
- Instantaneous voltage of PV system (V)
- Instantaneous current of PV system (A)

The data-logger must be capable of monitoring up to 20 inverters or more and must be able to record individual inverter performance and operation parameters of the PV, such as DC voltage and current, and AC voltage, current and frequency.

Preferred or similar data-logger products include:

**SMA Sunny WebBox**

**Fronius IG Datalogger & Interface**

The data-logger and interface must have the following capabilities:

Built-in storage capacity  $\geq 16$  megabytes

Save cycles  $\leq 30$  minutes

Connection interfaces: USB-interface, USB socket and RS 485, RJ 45-sockets.

The data-logger must come complete with PC software with an open source protocol for automatically transferring the PV system data to a database located on the NSW Parliament House network.

### 10.3 CONNECTION OF DATA-LOGGER TO NSW PARLIAMENT HOUSE NETWORK

The data-logger shall be connected to the NSW Parliament House network via a Cat5e data cable to the Building Distributor located on level 12 north. The cable route is shown generally in Drawing E01.

#### **Software installation**

The contractor must provide software allowing data to be streamed directly from the data-logger to a Principal nominated PC located on the NSW Parliament House network.

The contractor must set up a database for PV system data storage, enable, commission and test the communication between the data-logger / interface and the PC.

### **Web Service**

Provide a proprietary web service and internet platform for Photovoltaic plant monitoring and visualisation.

Preferred or similar web service platforms include:

#### **SMA Sunny Portal**

#### **Fronius SolarWeb**

The web service must provide the following functions:

- System information via e-mail (energy yield, maximum output, CO<sub>2</sub> reduction, system messages)
- Presentation of system data in diagrams and tables
- Ability to publish web data on other websites, including the NSW Parliament House website
- Ability to customise individual web pages through HTML and insert own images

The contractor shall register the web service product on behalf of the NSW Parliament House and test the system for functionality. Data shall be broadcasted on the web service daily.

The contractor shall provide training to NSW Parliament House staff in the use and functionality of the web service product and shall supply all information necessary to maintain the system upon practical completion, including necessary usernames and passwords. These shall be documented in the Operation and Maintenance Manual stipulated in CLAUSE 15 of the TECHNICAL SPECIFICATION.

### **Standards**

Category 5e, to AS/ACIF S009, AS3084, AS3080 and AS/NZS ISO/IEC 15018 and in accordance with the recommendations of SAA HB 29.

### **Level of Performance**

The structured cabling system shall comply with the relevant standards and meet the Category 5e performance criteria of AS3080.

### **Installation**

General: To manufacturers recommendations.

Crossover: Install cables neatly and without crossovers between cables.

Loom size: Loom cables into groups not exceeding 50 cables, and hold looms in place using reusable cable ties at least 20 mm wide. Do not exert compressive force on the cables when installing cable straps.

### **Cable separation**

For safety: To AS/ACIF S009, and by at least 150 mm.

Electromagnetic interference(EMI): To AS HB 29.

Fluorescent luminaires: Maintain a clearance of  $\geq 300$  mm.

### **External cables**

External cables: To ACIF C524.

### Labelling

Telecommunications cables: Label cross-connects and outlets in accordance with the requirements of AS/NZS 3080 and SAA HB 29 Figures 5 – 18.

Cables: Label to indicate the origin and destination of the cable.

Outlets: Label to show the origin of the cross-connect, the workstation or outlet number and the port designation.

## 10.4 TESTING

Provide evidence of web service functionality to the Principal's Representative and that the data-logger interfaces adequately with the NSW Parliament House network.

### Standards

Testing of balanced cabling systems: To AS/NZS IEC 61935.1.

Testing of patch cords: To AS/NZS IEC 61935.2.

### General

General: Carry out 100% channel tests.

Tests: To AS/NZS 3080 in conformance with SAA HB 29. Include the following:

Basic Link and Channel transmission tests including the following:

Wire map.

Length.

Attenuation.

NEXT.

ACR.

Propagation delay.

Delay skew.

Power sum NEXT.

Power sum ACR.

ELFEXT.

Power sum ELFEXT.

Return loss.

Optical fibre cable: Carry out Basic Link transmission tests including the following:

Length.

Attenuation.

## 11 METERING REQUIREMENTS

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The contractor will arrange all metering requirements for the connection of the PV system to the grid. This includes the provision of appropriate meters, which meet the requirements of the local distribution network service provider, and the physical connection of the Photovoltaic system to the electricity grid. This service should be included in the tendered price.

The metering equipment and metering installation must comply with the following:

- NSW Service and Installation Rules;
- Energy Australia's service and installation rules
- AS/NZS 3000 Wiring Rules;

- The National Electricity Rules.

The NSW Parliament House solar PV system will not be required to export electricity back into the grid and a bi-directional meter will not be necessary. Connect the NSW Parliament House solar PV system to the existing metering equipment.

The contractor must comply with Energy Australia's service and installation rules which includes, but is not limited to:

- Lodging a Application for Connection form and Supplementary Application for Connection form;
- Providing Notice of Electrical Work
- Undertaking a mandatory site inspection prior to energising.

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## 12 GUARD RAIL REQUIREMENTS

### 12.1 GENERAL

A guard rail is to be provided around the perimeter of the PV array and the northern entrance to the roof from the inverter station room, which is shown generally in Drawing E01.

The purpose of the guard railing system is for OH&S requirements to restrain personnel from gaining access to the side of the roof.

The guardrail must comply with the requirements of AS 1657 – 1992.

Two gates on the north and south side of guard railing system shall be installed as shown generally in Drawing E01 with hinging fixed to the building structure. The two gates will be able to be padlocked.

#### Guardrail Profile

The guard railing shall be a framed structure and shall be constructed in accordance with the following requirements:

A top rail, supported by posts, parallel to the concrete paver floor at a vertical height of not less than 900 mm nor more than 1100 mm above standing level. One intermediate rail shall be provided parallel with the top rail and the concrete paver floor having a maximum distance of 450 mm between rails or between the lowest rail and the top of the toe-board where fitted. Where a toe-board is not fitted, the maximum distance between the lowest rail and the floor shall be not greater than 560 mm. No infill shall be used.

The guard railing system must comply with CLAUSE 12.2 below.

#### Gates

Construction: Construct gates as follows:

Ledges and braces: Match fence rails.

Pickets or palings: Match fencing.

Hardware: Provide the following:

Drop bolt and ferrule to each leaf of double gates.

Latch to one leaf of double gates.

Provision for locking by padlock.

Hinges to ensure smooth operation.

Hand access: Where required provide hand holes to give access from outside to reach locking provision.

#### **Toe-board**

The toe-board shall be firmly attached to the floor or posts, and any gap between the toe-board and the floor shall not exceed 10 mm. The top of the toe-board shall be not less than 100 mm above the top of the concrete paver floor.

#### **Testing**

In accordance with AS 1657 -1992 CLAUSE 3.4.4.

#### **Waterproofing License**

If penetrations into the waterproof membrane are required to ensure the guard railing system complies with AS 1657 – 1992, penetrations must be waterproofed by a waterproofing license holder. This requires the completion of:

- BCG31403 Certificate III in Waterproofing (general construction)

Or, completion of the following superseded qualification:

- Qualification 90464 Certificate III in General Construction (Waterproofing), TAFE course #8126

For further information please visit the NSW Fair Trading website,  
<http://www.fairtrading.nsw.gov.au>.

## **12.2 STRUCTURAL STEEL WORK**

### **STANDARDS**

Design all structural steelwork to the requirements of AS4100 *SAA Steel Structures Code*, AS 1657, AS1170.1 and other relevant Codes.

### **DOCUMENTS**

Prepare drawings for all works, showing layout plans, framing elevations and sections and working details. On request submit two copies of the approved and stamped drawings to the Principal.

### **BOLTS**

All bolts (except for purlins) shall be minimum M16-8.8/S. Use larger diameter bolts as the design requires. All bolts, nuts and washers shall be hot dipped galvanised. Holding down bolts may be black bolts if fully encased in concrete.

### **WELDS**

All welds shall be shop welds. Site welding shall not be used, unless approved by the Principal.

### **DEFLECTION CONTROL**

Design all steelwork, especially beams and purlins, to ensure deflections are within acceptable limits.

Pay particular attention to:

Dead load and wind deflections of purlins and girts.

Members restraining and carrying windows.

Members supporting accordion doors - design to resist lateral and torsional loadings in addition to vertical loads.

### EXPOSED STEELWORK

If applicable, maintain the design intent shown on the TECHNICAL SPECIFICATION, with particular regard to the aesthetics of connections.

### CORROSION PROTECTION

The Principal requires the Contractor to provide a performance guarantee of 15 years before first maintenance is required for the as-installed corrosion protection system for the structural steelwork.

As a minimum requirement provide corrosion protection for all structural steelwork whether external or internal, to the requirements of AS2312 - *Guide to the Protection of Iron and Steel Against Exterior Atmospheric Corrosion*. **Protect internal steelwork** as for external. Determine atmospheric classification for the site from Clause 2.2 of the standard.

If the atmospheric classification is "marine" or "severe marine", according to the above standard, use only a galvanised system for all exposed external steelwork and those elements which are not easily accessible for future maintenance (eg. columns in a wall). Based on this system, use further coating mass in terms of galvanising or painting to comply with the 15 years guarantee requirement, as necessary. Comply with Australian Standard AS1650 - *Hot-dipped galvanised coatings on ferrous articles* and AS1214 *Hot-dip galvanised coatings on threaded fasteners*. Select member sizes and fabrication details which safeguard against warpage and distortion.

When selecting the protection system, ensure compatibility of the primer and top-coats. Do not use products containing lead or chrome bases.

Notwithstanding any other requirements, all cold-formed steel shall be zinc coated with a minimum coating mass of 200g/sq.m. in accordance with AS1397 *Steel sheet and strip-Hot-dipped zinc-coated or aluminium/zinc coated*. Provide additional protection as the design requires.

Avoid steelwork directly in contact with the ground by providing encased concrete protection

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## 13 STRUCTURAL AND SAFETY REQUIREMENTS

### 13.1 ROOF ACCESS

The roof is accessible via the north and south fire stairs.

### 13.2 WORK METHOD STATEMENT AND SAFETY PROCEDURE

The contractor must submit a comprehensive site-specific Safety Plan, including Work Method Statements and Safety Procedures, to the Principal's Representative for approval prior to work commencement.

The contractor must ensure the provision and maintenance of WorkCover approved stable and securely fenced work platform, secure perimeter screens, fencing, handrails or other forms of physical barriers that are capable of preventing the fall of a person, are provided as required.

All anchorage points must be inspected by a competent person before their first use and then on a regular basis so they are capable of supporting the design loads.



### 13.3 OTHER REQUIREMENTS

Weather proofing all wall and floor penetrations to ensure a lifetime barrier to the ingress of water.

The site is to be completely cleared of all debris and installation detritus and any damage to fittings or other equipment is to be repaired to the satisfaction of The Principal's Representative.

## 14 TESTING AND COMMISSIONING

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### 14.1 TESTS

Commissioning tests as listed below must be performed in accordance with AS/NZS 5033:2005 Appendix I.

In addition to the commissioning tests outlined below all photovoltaic equipment must be tested that they are operating correctly including the photovoltaic modules, modules strings, inverter(s), meter, data-logger and electrical protection devices.

- Open Circuit Voltage Measurements
- Short Circuit Current Measurements
- Earth Fault Protection Test (if relevant)

#### Electrical Installations

Inspection: Visually inspect the installation to AS/NZS 3000 before testing. Record on a checklist.

Test and verify the installation to AS/NZS 3000 Section 6 (Mandatory and Optional tests), using the methods outlined in AS/NZS 3017. Record the results of all tests.

Where electrical tests are required and the actual load is not available, provide a dummy load equal to at least 75% of the design load.

Before completion, provide one copy of each Ready for Test certificate, now called Certificate of Compliance Electrical Work, as submitted to the supply authority and as required by the supply authority and the Department of Fair Trading.

#### Telecommunications Cabling

To CLAUSE 10.4 of the TECHNICAL SPECIFICATION.

### 14.2 RECORDS

The inspecting personnel must prepare a report that includes voltage and temperature measurements, the current and irradiance measurements, and the Earth Fault Protection Test (if relevant) and states the condition of the PV array wiring after the test, including any repairs and corrections carried out as a result of the inspections.

## 15 DOCUMENTATION REQUIREMENTS

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### 15.1 OPERATION AND MAINTENANCE MANUALS

A draft copy of the Operation and Maintenance Manual must be written and forwarded to the Principal's Representative prior to the installation of the photovoltaic system.

The completed Operation and Maintenance Manual can be finalized after the installation. Three copies and an electronic copy must be made and forwarded to the

Principal's Representative by the commencement of practical completion and defects liability period.

## 15.2 CONTENTS OF THE OPERATION AND MAINTENANCE MANUAL

The supply of all necessary information for the satisfactory operation and maintenance of the services must form part of this contract.

In addition to the "Work as Executed" drawings the Contractor must supply approved detailed operating and maintenance instructions. Instructions must be supplied with the "as-installed" drawings in approved bindings and must be supplemented by diagrams and spare parts schedules, catalogue information etc to the approval of the Principal.

Refer to Preliminaries, clause 1.9 "QUALITY MANAGEMENT REQUIREMENTS".

The Operation and Maintenance Manual must contain the following information:

### Folder requirements

- Plastic hard-backed three or four ring binder
- All pages in plastic sleeves
- Section separation by coloured dividers with numbered tabs
- Sub-section separation by coloured dividers with no tabs

Folder Front Cover - Contractors name and logo and project name in full – i.e. NSW Parliament House Photovoltaic System, Project Title

Folder Spine – Project Title

### Internal to Folder

#### First Page

- Contractors name and logo and project name in full – i.e. NSW Parliament House Photovoltaic System, Project Title.
- Full contact details of all parties to the project – Contractor, Consultant, Architect, Client, Sub-Contractors - addresses, phone and fax numbers, email addresses

#### Second Page

- Date of awarding of Practical Completion
- Date and time of commencement of defects liability period
- Date and time of completion of defects liability period

#### Third Page

- Contents page.

#### Section 1 – Photovoltaic Systems Descriptions

- Detailed description of complete installation, including all separate systems, all system component locations, ID names, etc.
- Design criteria for system – photovoltaic system power output, photovoltaic array arrangement, climate data of location, insolation data for location, single line diagram, voltage drop calculations, etc.

#### Section 2 – Description of Photovoltaic System Operation

- Detailed description of photovoltaic systems operation and control methods – how everything works – including all controls topography drawings, controls settings and controls logic diagrams

**Section 3 – Photovoltaic System Schedules**

- Complete schedules of all equipment – ID numbers, make and model, capacities

**Section 4 – Photovoltaic System Catalogues**

- Comprehensive PV system manufacturers' literature for every item of PV system and/or equipment – each PV system literature separated by coloured divider.

**Section 5 – Maintenance Schedules**

- Manufacturers' maintenance requirements for each and every item of PV system
- Contractors' maintenance requirements for each system

**Section 6 – PV System Test Certificates**

- All certification documents – each system component certification separated by coloured divider.

**Section 7 – Commissioning Data**

- Comprehensive PV system commissioning data for every component of the system – each test data separated by coloured divider.

**Section 8 – As-Installed Drawings**

- Every approved as-installed drawing for the contract – each drawing within a plastic sleeve with fold-over top

Some specific items to be provided in the Operation and Maintenance Manuals are as listed below:

- Overview wiring diagram, single-pole complete with electrical ratings of the PV array, and the ratings of all fuses and circuit breakers.
- Connection scheme with details of type, manufacturer, wiring and function.
- Description of the type and operating control of the inverter.
- A step-by-step shutdown and start-up procedure for the entire photovoltaic system.
- A simple trouble-shooting guide to help quickly resolve simple problems that may occur with the solar PV power system.
- DC and AC wiring sizing calculations including cross-sectional area of wire used and voltage drop calculations.
- Inverter(s) sizing calculations including expected performance of inverter(s).
- Energy yield projections.
- Shading analysis.
- Recommended maintenance for the system.

Provide three (3) copies of Service Manuals. (One (1) copy to be provided with all pages in transparent protective covers).

Provide a prototype copy for approval before proceeding.

## **16 OTHER REQUIREMENTS**

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### **16.1 APPLICATION TO PVRP**

The contractor will make application to partially fund this project through the Australian Greenhouse Office (AGO) Photovoltaic Rebate Program (PVRP) on behalf of NSW Parliament House (i.e. they must complete all paperwork and completely fill out the application form on behalf of NSW Parliament House).

Initial application paperwork may include, but is not limited to, the System performance guarantee, an installation report including serial numbers of installed equipment, electrical diagrams, photographs, and notice of electrical works.

The contractor must comply with the terms and conditions set out by the AGO. Tenderers should be aware that this includes the possibility that completed installations may be randomly inspected by an AGO representative.

### **16.2 PROGRAM OF WORKS**

Within 7 days of the acceptance of the tender, the contractor shall submit a program of works detailing the manufacture, supply, delivery to site, installation and commissioning of work described herein.

### **16.3 WORKING HOURS AND WORKING DAYS**

The site is generally available to the Contractor to perform the Works between 7am and 5pm Monday to Friday but excluding public holidays.

No work is to be carried out on site during NSW Parliament sitting days. This includes periods when the Legislative Council is sitting, the Legislative Assembly is sitting and both houses are sitting. A sitting day calendar is available from the following website:

<http://www.parliament.nsw.gov.au>

Generally both houses will not sit during the months January to February and during school holiday periods.

### **16.4 ON-SITE TRAINING**

On completion of the installation, the contractor will provide instructions to the NSW Parliament House Building Manager and technical in-house staff on the main components of the system (including cabling, wiring and shut-down procedure) and instruct them in basic maintenance and trouble shooting (for a minimum of two hours).

### **16.5 MAINTENANCE ACCESS**

The arrangement of all the components of the photovoltaic system will be arranged so that the photovoltaic modules, inverters, data loggers, and any other component, is readily accessible for maintenance and replacement if required.

### **16.6 INSPECTION AND PUBLICATION OF PV SYSTEM INFORMATION**

Parties chosen at NSW Parliament House's discretion must be allowed to visually inspect all parts of the photovoltaic system, at NSW Parliament House's risk, after practical completion. This does not include physical intervention with any part of the system, other than simple operation of the data logger, or for physical intervention during emergency situations.

In addition, pictures of any part of the photovoltaic installation, or documents regarding the photovoltaic system, and any other information obtained by the system's data-logger, is the property of NSW Parliament House.

The contractor must obtain the approval of NSW Parliament House before the project can be used in any marketing or advertising material. If no approval is provided, then marketing or advertising is prohibited.

#### **16.7 CONTRACT DRAWINGS**

The drawings as scheduled are issued as a guide only and must be considered to be diagrammatic and approximate. The drawings and specification are intended to be mutually explanatory and complete, but all work called for by one, even if not by the other, must be fully executed.

#### **16.8 SHOP DRAWINGS**

Prepare all necessary co-ordinated manufacturing and installation shop drawings covering the services included under this contract. Confirm final installation dimensions by site measurement, to ensure satisfactory set out and co-ordination with the structure and new or existing services.

All shop drawings must be submitted in reproducible negative form. Shop drawings must be submitted to the Principal's Representative for comments and approval. Manufacture and/or installation as applicable must not be commenced prior to the Principal Representative's written comments to the drawings. The Principal Representative must not be regarded as the Contractor's checking agents.

Comments to shop drawings will be given in principle only and without prejudice to the responsibility of the Contractor for the proper co-ordination, installation and operation of the services.

The preparation of shop drawings must be scheduled to enable the necessary approvals to be gained and for the Contractor to comply with his programme for installation of the services. Delays caused by late submission, incorrectness or inadequacy of shop drawings will not be recognised as a reason for variations to the contract time or contract sum. Copies of the approved shop drawings must be submitted to the appropriate authorities as necessary for their approval.

#### **16.9 WARRANTIES OR GUARANTEES**

The Contractor shall obtain, and ensure that the NSW Parliament House via the Principals Representative will have the benefit of, all warranties or guarantees on all new equipment and materials installed by the Contractor or as may be supplied from equipment or material manufacturers or suppliers of all new equipment installed under this specification.

The contractor shall not be responsible for warranties already in place having regard to equipment supplied by the Principal. Copies of any warranty documents must be forwarded to the Principal's Representative.

The Contractor is reminded that his installation works must be warranted for a period of not less than 12 months from the successful completion and hand over of the project.

#### **16.10 EQUIPMENT MANUFACTURE**

All electrical control equipment and fittings supplied under this contract must, within their respective type, be of the same manufacture throughout the works.

Where applicable, each piece of apparatus must be fitted with a rating plate giving particulars of manufacturer's type number and serial number or other means of identification, together with full details of plant and equipment in readily visible positions.

#### 16.11 SAMPLES

Submit samples of all main items as listed below for review by the Principal's Representative prior to procurement and manufacture. Samples may be submitted to the Principal Representative's office if of a suitable size or arrangements may be made for the Principal's Representative to view samples at the place of manufacture.

Provide the following samples:

- Photovoltaic modules
- Inverters
- Datalogger
- Mounting structure
- Handrail / guardrail
- Gate profile

The Principal's Representative may reject any product data or samples that are not consistent with the design philosophies of the project. Responsibility to verify compliance and suitability for purpose of the samples rests solely with the Contractor.

Such samples and prototypes, tagged or otherwise properly identified as to their purpose and the date, may be retained by the Principal's Representative until the completion of the work, and used as a standard for acceptance or rejection of the items provided under the contract.

#### 16.12 CLEANING OF WORK AREA

The Contractor is responsible for keeping the works area and adjacent surroundings clean and tidy at all times. At the Completion of each days work, the work areas **MUST** be left clean and secure, all to the satisfaction of the Principal's Representative.

#### 16.13 COMPLETION

Fully clear the Site and clean the works of this contract on completion. Cleaning must include the removal of all cement, paint droppings, plaster and other foreign matter from conduit and pipework, plant equipment and fittings. All damaged finishes must be made good.

#### 16.14 COMMISSIONING

The Contractor is responsible for the commissioning of the installations carried out under this Contract. Commissioning must include all adjustments necessary to ensure that the installation works safely and correctly and to the satisfaction of the Principal's Representative.

Failed Tests; the contractor shall be liable for the cost of re-attendance of witnesses to tests if the tests have to be repeated due to failure.

Test records must be included in the Operation and Maintenance (O&M) Manual. A Certificate of Compliance Electrical Work must also be included in the O&M Manual as per the compliance requirements of the NSW Office of Fair Trading.

#### 16.15 REGULATIONS, FEES AND NOTICES

The services installation specified in this section, must be complete with all equipment necessary for their satisfactory operation, control, maintenance and safety under all

normal conditions of service, and must comply in every respect with the Regulations and By-Laws of all Authorities having jurisdiction, including the latest requirements of the following, as applicable:

- Local Municipal Council
- WorkCover Authority
- SAA Wiring Rules
- Electricity Distributor – Energy Australia
- Insurance Council of Australia

The Contractor must obtain and fill in all notices required by the various authorities when necessary and pay all fees in connection therewith and must submit for approval all necessary drawings and obtain all consents required to permit execution of the works. Submit all necessary for electricity supply. Liaise with the electricity distributor and comply with the ED S&IR.

#### **16.16 PRECAUTIONS IN CARRYING OUT WORKS**

In carrying out the works, the Contractor shall comply with all requirements of the main body of the specification. Work processes and any specific safety precautions which may be applicable during the installation of works.

The Principal's Representative shall have the authority to restrict or deny the contractor's staff access to the site if the Contractors staff do not comply with required safety precautions. The Principal shall not be responsible for any additional costs associated with the Contractors inability to comply with safety requirements or recall / return costs for the Contractors staff or any specific safety equipment or machinery in the event of the Contractor being denied entry due to non-compliance with and OH & S matter.

#### **16.17 INTERNAL BUILDING SERVICE DAMAGE**

The Contractor shall take particular care to ensure that damage to internal services is not incurred either directly or as a consequence of works or actions undertaken by the Contractor within the building. The Contractor shall at his expense repair any damage to any existing services caused either directly or as a consequence of the Contractors actions during the installation works. A reference to damage to internal services shall also be taken to mean damage to internal ceilings and walls.

All existing rooftop concrete pavers that are damaged as a result of the work described herein shall be replaced to the satisfaction of the Principal's Representative. Replacement concrete pavers shall be identical in shape, type and dimension to the existing rooftop concrete pavers.

#### **16.18 MATERIALS AND LABOUR**

Other than supplied equipment, the contractor shall provide ALL materials and labour together with cartage, tools, plant, scaffolding and any other materials, etc. as may be required for the satisfactory completion, commissioning and proper operation for all the Works contained in this specification. All works shall be carried out in thorough and substantial manner by trained and skilled tradespersons to ensure a first class finish throughout. Where installed works are not satisfactory a defect notice will be issued and the Contractor shall rectify the matter at his expense within 14 days of notification.

Unless otherwise specified, all materials shall be new, the best of their respective kinds and conform to the relevant Australian Standard or Code as prepared by the

Standards Association of Australia and be SSL approved. UL approvals alone are not sufficient and must be accompanied by Factory Mutual (FM) approvals.

**16.19 FIXINGS**

Fixings necessary for attaching equipment, conduit, ducting, brackets, lighting fittings and similar items to floors, ceilings and walls must be Ramset, Expandite or equal adjustable metal expansion devices of the type installed in predrilled holes. Wooden plugs and powder set fixings will not be allowed.

**16.20 PRECAUTIONS**

Ensure that all conduits or conductors forming part of his electrical installation do not contact pipes or telephone and other wiring systems.

**16.21 SAFETY FACILITIES**

Installations carried out under this contract must be provided with all normal safety facilities for protection against personal hazard and damage to equipment and complying with the requirements of all Authorities having jurisdiction over the works.

**16.22 DISPLAY DRAWINGS**

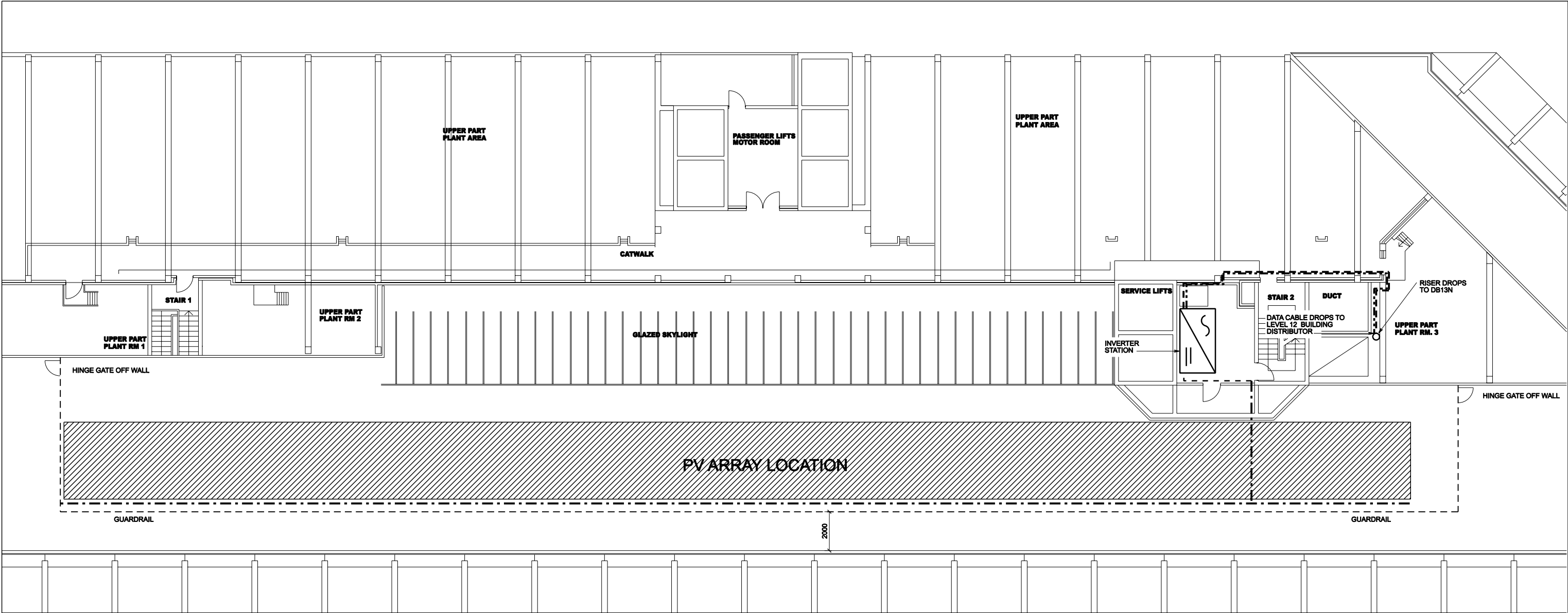
Update the electrical schedule located on the doors of DB13N and the Main Switchboard to indicate the installation of new electrical equipment.

The display drawings must be mounted behind a heavy clear acrylic cover sheet.

**End of Section – TECHNICAL SPECIFICATION**

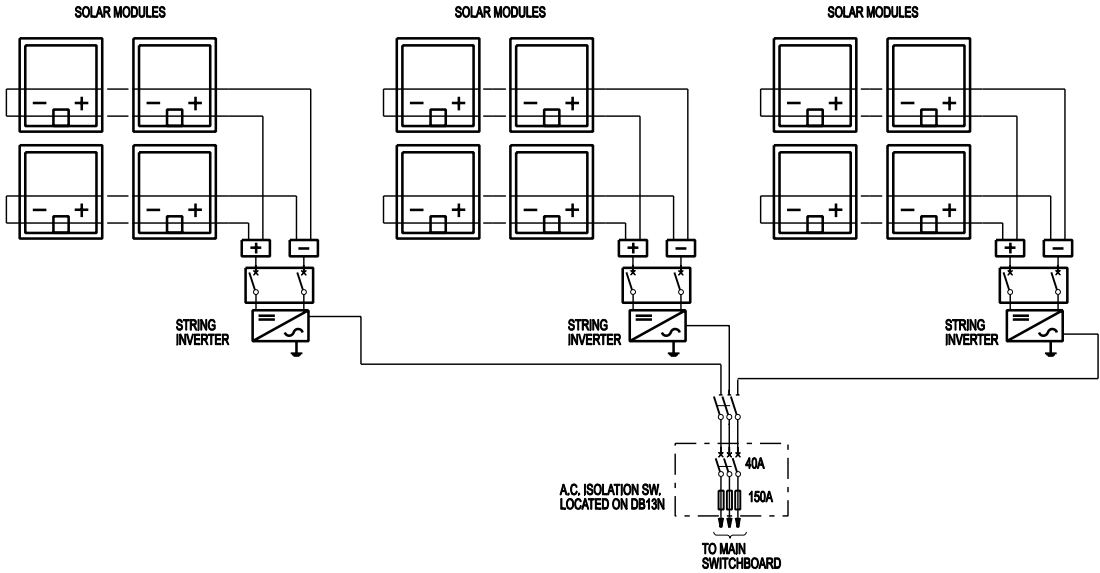


## **DRAWINGS**



NOTES:

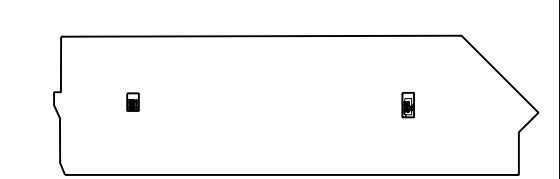
1. INSTALLATION TO COMPLY WITH AS4777, AS5033:2005 AND AS3000
2. NUMBER OF MODULES IN SERIES AND NUMBER OF PARALLEL STRINGS TO BE NOMINATED BY THE TENDERER
3. NEUTRAL CONNECTIONS NOT SHOWN FOR CLARITY
4. FINAL ELECTRICAL INVERTER AND PV MODULE CONFIGURATION TO BE APPROVED BY THE PRINCIPAL'S REPRESENTATIVE PRIOR TO INSTALLATION



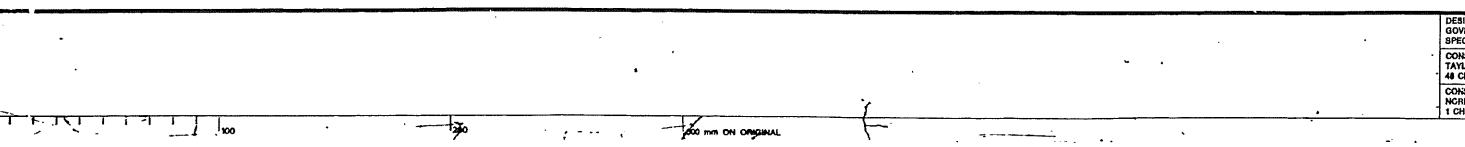
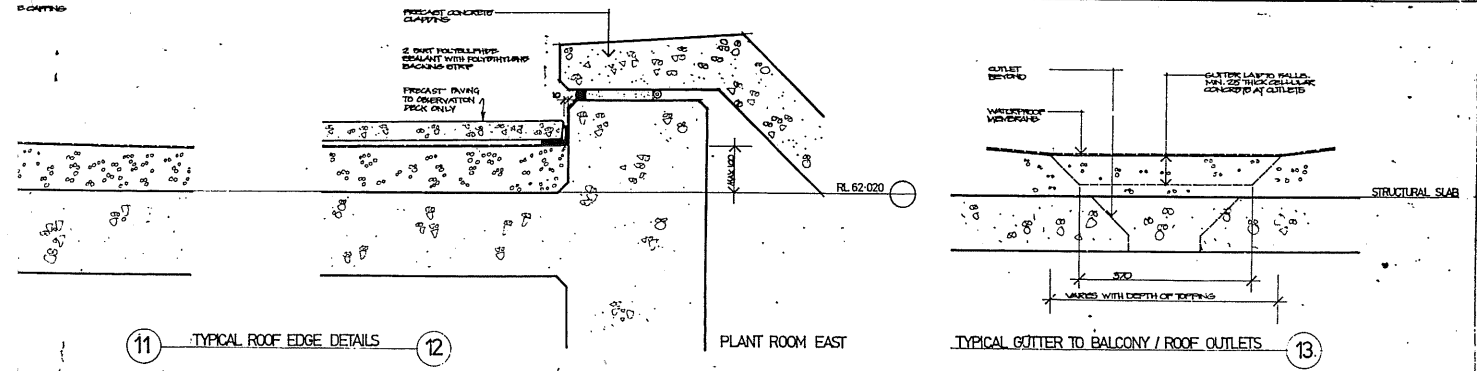
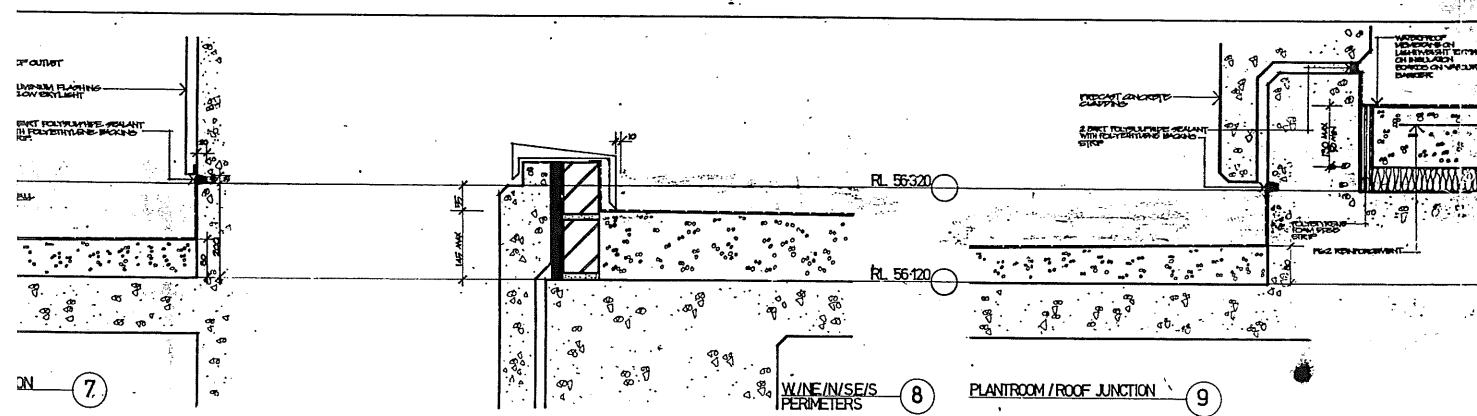
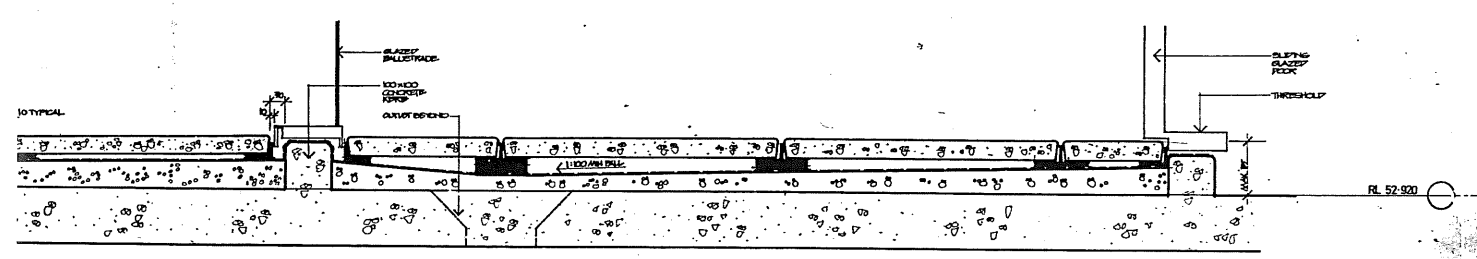
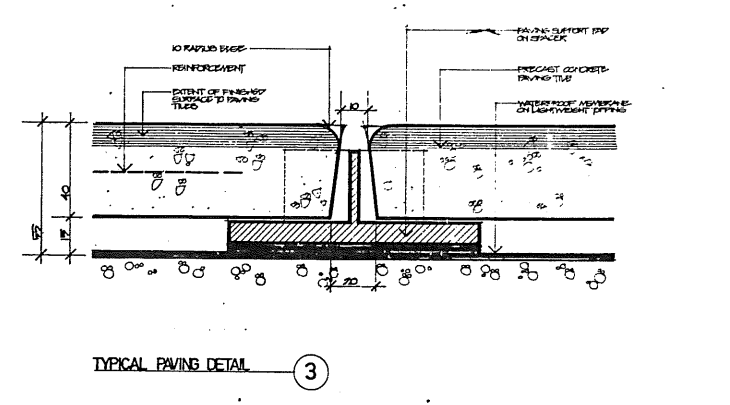
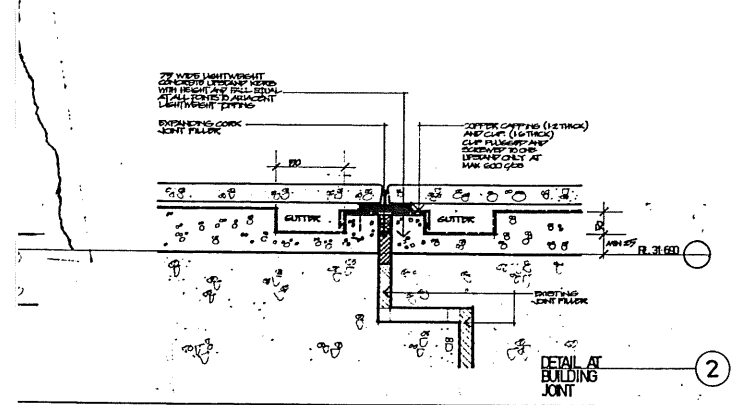
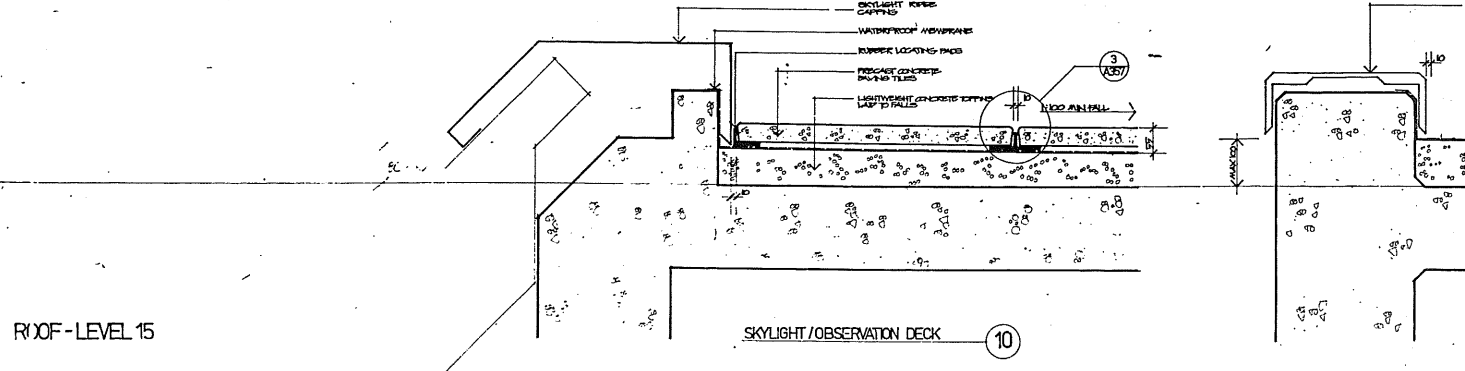
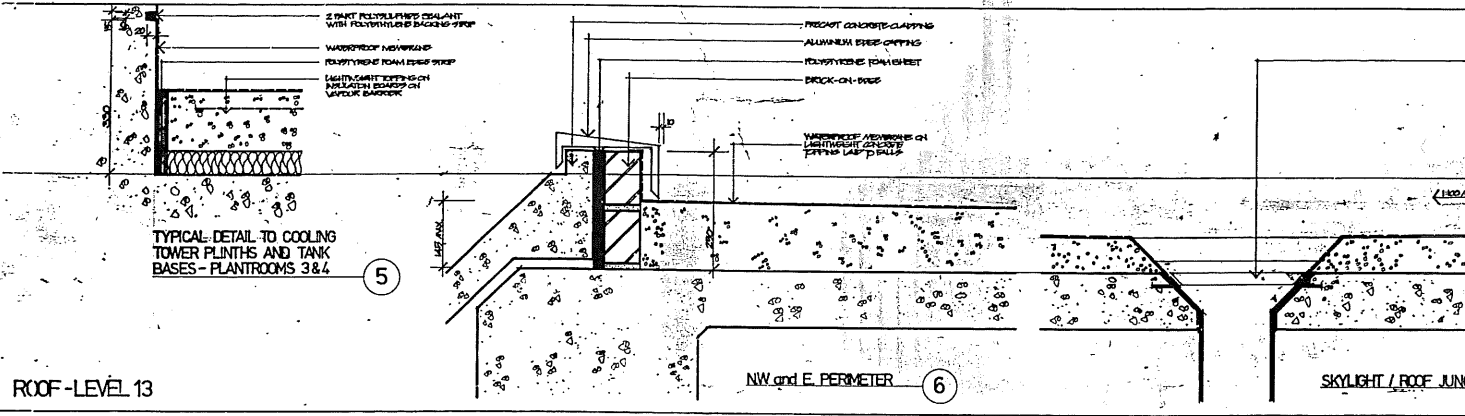
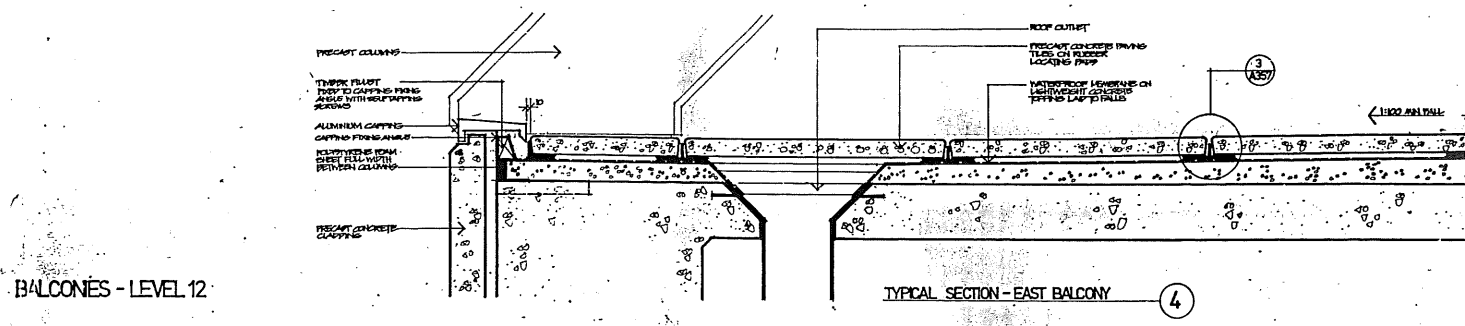
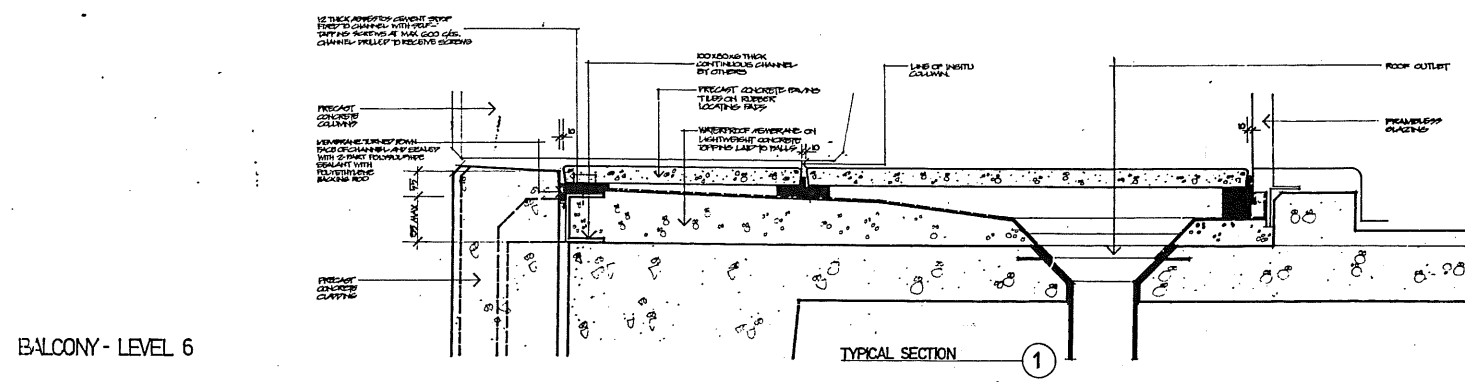
TYPICAL DC/ INVERTER / AC SCHEMATIC

KEY:

- GUARDRAIL AS PER AS1657-1992
- - - - - DC CABLES SURFACE MOUNTED IN A PAINTED COLOURBOND BOX
- - - - - DC CABLES SURFACE MOUNTED IN FLEXIBLE PVC CONDUIT
- - - - - AC CABLES SURFACE MOUNTED IN CONDUIT
- - - - - CAT 5e DATA CABLE SURFACE MOUNTED IN CONDUIT
- 3 POLE CIRCUIT BREAKER
- 3 POLE ISOLATOR
- 3 POLE FUSE

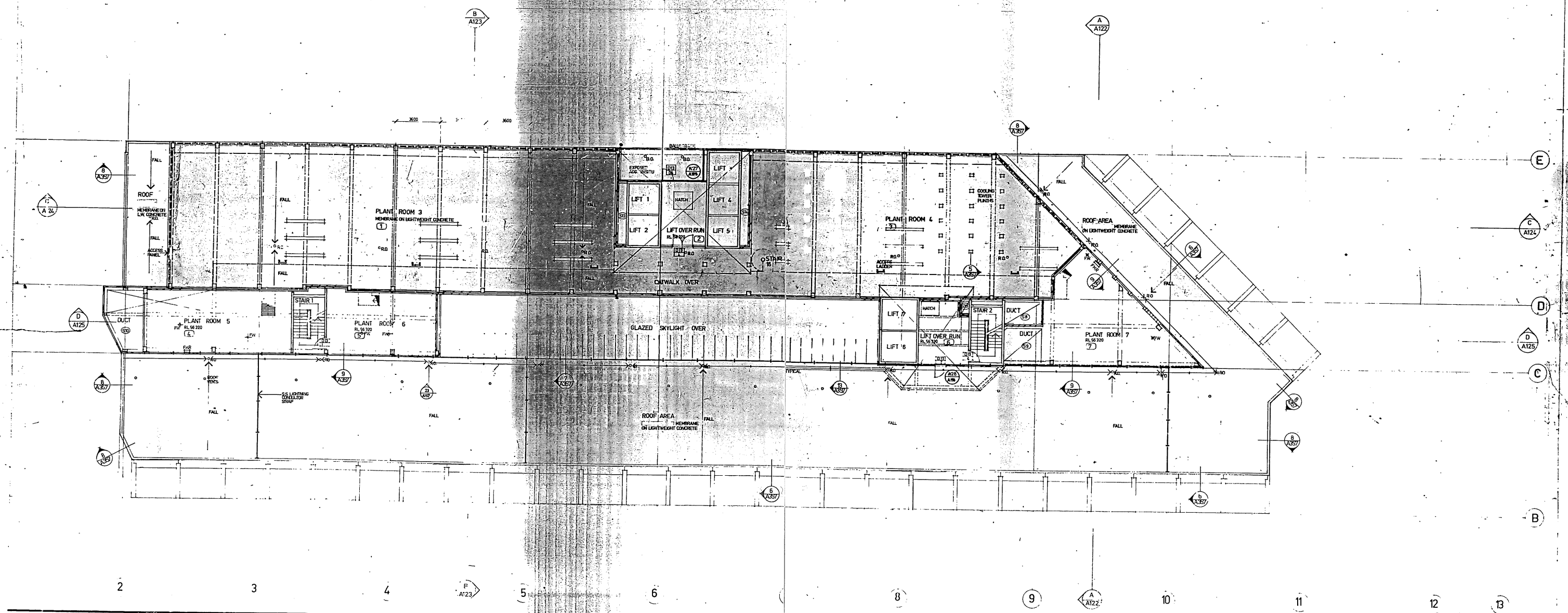
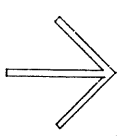


OVERALL PLAN



NO WORKING DRAWINGS BY BENT ARCHITECTS BRANCH PROJECTS SECTION	20 511	CONSULTING ENGINEERS HYDRAULIC LEONARD HENRY AND PARTNERS PTY LTD 24 CHANDOS ST ST LEONARDS	439 1422	CONSULTING ENGINEER ACoustics LOUIS A CHALLIS AND ASSOCIATES PTY LTD 106 QUEEN ST WOOLLAHRA	328 1302	DEPARTMENT OF PUBLIC WORKS NEW SOUTH WALES W. K. FILE DIRECTOR OF PUBLIC WORKS	PLAN ROOM NUMBER PB21/290
ING ENGINEERS STRUCTURAL HOMER WITTING PTY LTD 48 ST ST LEONARDS	439 7288	LIFT ENGINEER DEPARTMENT OF PUBLIC WORKS 74-80 PHILLIP ST SYDNEY	20 511	FOOD BEVERAGE ALLIED SERVICES CONSULTANTS B. WATKINS, H. ROSE, K. CLARKE 20 COTTAGE AVE BARKENTON	708 9811		NUMBER IN SET A357
ING ENGINEERS ELECTRICAL MECHANICAL DISH AND YOUNG PTY LTD 48 ST ST LEONARDS	439 4333	QUANTITY SURVEYORS CHAS A HARDING WIDEMAN AND TROLLOPE 40 MILLER ST NTH SYDNEY	809 5855			SCALES RS/1:5 / 1:50	

Roll 783



NO. DATE		AMENDMENTS		WORKING DRAWINGS BY		CONSULTING ENGINEERS HYDRAULIC		CONSULTING ENGINEER ACOUSTICS		DEPARTMENT OF PUBLIC WORKS		PARLIAMENT HOUSE NSW		PLAN ROOM NUMBER	
A 24/3/79		PERGAST PAVING TILES RELETED		NT ARCHITECTS BRANCH		LEIGHAM HENRY AND PARTNERS PTY LTD		LOUIS A CHALLIS AND ASSOCIATES PTY LTD		NEW SOUTH WALES		LEVEL 13 PLAN WATERPROOF MEMBRANE		PB21/289	
20 511				TOGETS SECTION		24 CHAMBERS ST. ST LEONARDS		154 QUEEN ST. WOOLLAHRA		W.K. P.B. DIRECTOR OF PUBLIC WORKS		RL 56 320		NUMBER IN SET	
439 7288				G ENGINEERS STRUCTURAL		DEPARTMENT OF PUBLIC WORKS		FOOD BEVERAGE ALLIED SERVICES CONSULTANTS		J.W. THOMSON		1:100		SHEET NUMBER	
439 4333				G ENGINEERS ELECTRICAL MECHANICAL		QUANTITY SURVEYORS		CHAS A HARDING WIDMELL AND TROLLOPE		GOVERNMENT ARCHITECT				A355 A	
						40 MILLER ST. NTH SYDNEY		929 5355							

300m.m. ON ORIGINAL SCALE

300m.m. ON ORIGINAL SCALE