

**Tender Document
for
Digital MATV and
Telecommunications
upgrade for
“McKell” 55 Walker St Redfern and
“Moorabin” 99 Lilyfield Rd Lilyfield**

Contract No: 0901504

August 2009

Department of Commerce

Subscriber Number: 94081284

Consultants: NSW Dept of Commerce

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TENDERING

CONDITIONS OF TENDERING

THERE ARE 10 PAGES IN THIS SECTION

This section includes notices to tenderers.

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

1 GENERAL

1.1 CONTACT PERSON

Refer requests for information about the Tender to:

Name: Brad O'keefe

Telephone number: 02 93728372

Facsimile number: 02 9372 8344

E-mail address: Brad.O'keefe@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 on the Internet at:

www.treasury.nsw.gov.au/procurement/cfpig

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

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.'

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 on the Internet at:

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 4th Edition (OHSM Guidelines)*. The *OHSM Guidelines* are available on the Internet at:

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.**

A tender will not be accepted from a tenderer that does not have a Corporate OHS Management System complying with the *OHSM Guidelines* and accredited by a NSW Government Construction Agency.

If the Tenderer does not have an accredited Corporate OHS Management System, submit with the Tender an undertaking that the Tenderer's Corporate OHS Management System will be revised to comply with the *OHSM Guidelines* and submitted to the Department of Commerce for accreditation within two (2) weeks after the close of tenders.

2.4 ENVIRONMENTAL MANAGEMENT

Tenderers must demonstrate their capacity to manage environmental matters in accordance with the NSW Government *Environmental Management Systems Guidelines (EMS Guidelines)* available on the Internet at:

www.managingprocurement.commerce.nsw.gov.au/system/index_procurement_guideline_documents.doc

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

A tender will not be accepted from a tenderer that does not have a Corporate Environmental Management System accredited by a NSW government construction agency.

If the Tenderer does not have an accredited corporate Environmental Management System, submit with the Tender an undertaking that the Tenderer's corporate Environmental Management System will be revised to comply with the *EMS Guidelines* and submitted to the Department of Commerce for accreditation within two (2) calendar weeks after the close of tenders.

2.5 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.

The Principal may elect to pass over a tender from a tenderer if any of the above financial assessment criteria that is below a threshold acceptable to the Principal.

3 CONTRACT DETAILS

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

The insurance policy is available on the Internet at:

www.managingprocurement.commerce.nsw.gov.au/system/index_contract_management_insurance_policies.doc

The insurance broker is Jardine Lloyd Thompson Pty Ltd.

The Contractor must arrange insurance of the Works (and any temporary works) and public liability and pay all premiums in accordance with General Conditions of Contract clause **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 not required to allow in tenders for payment of premiums for insurance of the Works or public liability.

The Principal will provide a copy of the insurance policy on request.

Asbestos liability insurance

The Contractor must arrange any asbestos related insurance required by law. Any other asbestos related insurance is at the discretion of the Contractor. The Contractor is not entitled to any additional payments for asbestos related insurance. The Principal does not require the Contractor to hold any particular Asbestos Liability Insurance under General Conditions of Contract clause **Insurance**.

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

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; internet 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**.

NSW Country Manufactured Goods

If the tenderer wishes to seek preference under the NSW Country Industries Preference Scheme, submit Tender Schedules – **Schedule of NSW country manufactured goods** with the tender.

4.3 DISCLOSURE OF TENDER AND CONTRACT INFORMATION

Details of this tender and contract awarded as a result of this tender process must be disclosed in accordance with the *Freedom of Information Act 1989* (NSW), Premier's Memorandum 2007-01 and the NSW Government Tendering Guidelines which are available on the Internet at:

www.managingprocurement.commerce.nsw.gov.au/system/index_procurement_guideline_documents.doc

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 INDUSTRIAL RELATIONS MANAGEMENT

Tenderers must demonstrate their capacity to plan and manage industrial relations (IR) and implement effective IR plans in accordance with the NSW Government *Industrial Relations Management Guidelines*. The Guidelines are available on the Internet at:

www.managingprocurement.commerce.nsw.gov.au/system/index_procurement_guideline_documents.doc

Submit when requested:

- Copies of any enterprise, workplace or other enforceable industrial relations agreements to which the Tenderer is bound; and
- Tender Schedules - **Schedule of Industrial Relations Information**.

4.7 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/

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

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:	Mike Mahendran
Telephone number:	02 9268 3543
MobileNumber:	0411 160 687
e-mail address:	Mike.Mahendran@housing.nsw.gov.au

The Client's Representative may be contacted:

on the following days:	Monday to friday
between the hours of:	9.00am to 5.00pm

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 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

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

7.1 DOCUMENTS TO BE SUBMITTED

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

- Tender Form
- Schedule of Prices “lump sum” for McKell and Moorabin
- Schedule of Rates for Variation for McKell and Moorabin
- Schedule of Technical Data for McKell and Moorabin
- Schedule of Quality Management Information
- Schedule of Occupational Health and Safety
- Schedule of Environmental Management Information
- Schedule of Financial Assessment Information (submit when requested by principal or Financial Assessor)
- Undertaking to Comply with Code of Practice for Procurement (submit when requested)

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,
- Facsimile.

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
Fax (02) 93728974

Submit the Tender in a sealed envelope addressed to the Secretary of the Tender Opening Committee and marked with 'Tender for MATV and Telecommunications upgrade for McKell and Moorabin Buildings' and the closing date and time.

7.5 LATE TENDERS

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

www.treasury.nsw.gov.au/procurement/cfpig

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

8.1 EVALUATION OF TENDERS

In addition to prices/rates tendered, evaluation criteria will contain the critical factors to be used in the evaluation of tenders and value for money. These factors may include, but are not limited to:

- whole-of-life costs, including costs of disposal;
- innovation offered;
- delivery times offered;
- quality offered;
- previous performance of Tenderer, and proposed personnel and subcontractors;
- relevant experience of Tenderer and proposed personnel and subcontractors;
- capability and capacity of Tenderer, including current commitments, technical skills and experience, management experience, resource and organisational capability and capacity;
- Tenderer's financial capacity (this is a pass/fail criterion - refer to Clause **Financial Assessment**);
- Tenderer's occupational and health and safety management practices and performance, including training management;
- Tenderer's workplace and industrial relations management practices and performance;
- Tenderer's environmental management practices and performance;
- conformity of tender with requirements.

The evaluation of tenders will take into account relevant information from any source, at the sole discretion of the Principal. The Principal may treat any required detail in the tender which is left out, illegible or unintelligible as failing to fulfil the relevant requirement. The Principal may assess, score or rate any detail in the tender which is left out, illegible or unintelligible in the way least favourable to the Tenderer, or in some other way at the Principal's absolute discretion.

The Principal may assess the tenders using a weighted scoring system against set criteria. In this case the ratio of price and non-price criteria will be 60:40.

If required, submit additional information, by the stipulated date and time, to allow further consideration of the tender before any tender is accepted. Failure to meet this requirement may result in the tender being passed over or evaluated without the additional information.

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

Location and Fax No. of
Tender Closing Office:

McKell Building Level 3, 2-24 Rawson Place,
Sydney NSW 2000
Fax (02) 93728974

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

MATV/SMATV and Telecommunications upgrade for McKell and
Moorabin buildings

(Contract No. 0901504)

in accordance with the following documents:

TENDER DOCUMENT VOL. 1 SPECIFICATION AND
DRAWINGS

and Addenda Numbers:

Option 1: Design and Install a Coaxial/Copper MATV and Telecommunications System

For the lump sum of:

(\$.....) including GST

Option 2: Design and Install a Hybrid(copper & fibre combo) Optical Fibre MATV and
Telecommunications System

For the lump sum of:

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

Option 3: Design and Install a Full Optical Fibre MATV and Telecommunications System

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 PRICES FOR A COAXIAL/COPPER INSTALLATION AT THE MCKELL BUILDING (OPTION 1)

(SUBMIT WITH TENDER FORM)

Insert the amount allowed for each of the following items.

If any item is not applicable, insert "nil". Insert any item not included.

This Schedule is for information only and does not form part of the Contract. Its purpose is to assist in evaluating tenders and making valuations of work carried out, but the Principal is not bound to use it. All amounts must include GST.

Item No.			Amount
1	Supply and install new MATV and Telecommunications backbone/horizontal cabling, outlets and conduit/ducting/tray		
1.1	Wing A and B	Lump Sum	\$.....
1.2	Wing C and D	Lump Sum	\$.....
1.3	Wing E, F and G	Lump Sum	\$.....
2	Supply and install new F.T.A headend	Lump Sum	\$.....
3	Supply and install new QAM headend	Lump Sum	\$.....
4	Supply and install new Telecommunications IDF	Lump sum	\$.....
5	Test and commission the works	Lump Sum	\$.....
6	Provide Operation & Maintenance Manuals and Work as Executed Drawings	Lump Sum	\$.....
7	Provision of the Maintenance	Lump Sum	\$.....
TOTAL OF TENDERED SUM FOR McKELL		TOTAL	\$.....

3 SCHEDULE OF PRICES FOR A HYBRID FIBRE INSTALLATION AT THE MCKELL BUILDING (OPTION 2)

(SUBMIT WITH TENDER FORM)

Insert the amount allowed for each of the following items.

If any item is not applicable, insert "nil". Insert any item not included.

This Schedule is for information only and does not form part of the Contract. Its purpose is to assist in evaluating tenders and making valuations of work carried out, but the Principal is not bound to use it. All amounts must include GST.

Item No.			Amount
1	Supply and install new MATV and Telecommunications backbone/horizontal cabling, outlets and conduit/ducting/tray		
1.1	Wing A and B	Lump Sum	\$.....
1.2	Wing C and D	Lump Sum	\$.....
1.3	Wing E,F and G	Lump Sum	\$.....
2	Supply and install Optical Fibre headend	Lump Sum	\$.....
3	Supply and install new F.T.A headend	Lump Sum	\$.....
4	Supply and install new QAM headend	Lump Sum	\$.....
5	Supply and install new Telecommunications IDF	Lump sum	\$.....
6	Test and commission the works	Lump Sum	\$.....
7	Provide Operation & Maintenance Manuals and Work as Executed Drawings	Lump Sum	\$.....
8	Provision of the Maintenance	Lump Sum	\$.....
TOTAL OF TENDERED SUM FOR McKELL		TOTAL	\$.....

4 SCHEDULE OF PRICES FOR A FULL FIBRE INSTALLATION AT THE MCKELL BUILDING (OPTION 3)

(SUBMIT WITH TENDER FORM)

Insert the amount allowed for each of the following items.

If any item is not applicable, insert "nil". Insert any item not included.

This Schedule is for information only and does not form part of the Contract. Its purpose is to assist in evaluating tenders and making valuations of work carried out, but the Principal is not bound to use it. All amounts must include GST.

Item No.			Amount
1	Supply and install new MATV and Telecommunications backbone/horizontal cabling, outlets and conduit/ducting/tray		
1.1	Wing A and B	Lump Sum	\$.....
1.2	Wing C and D	Lump Sum	\$.....
1.3	Wing E,F and G	Lump Sum	\$.....
2	Supply and install Optical Fibre headend	Lump Sum	\$.....
3	Supply and install new F.T.A headend	Lump Sum	\$.....
4	Supply and install new QAM headend	Lump Sum	\$.....
5	Supply and install new Telecommunications IDF	Lump sum	\$.....
6	Test and commission the works	Lump Sum	\$.....
7	Provide Operation & Maintenance Manuals and Work as Executed Drawings	Lump Sum	\$.....
8	Provision of the Maintenance	Lump Sum	\$.....
TOTAL OF TENDERED SUM FOR McKELL		TOTAL	\$.....

5 SCHEDULE OF PRICES FOR A COPPER/COAXIAL INSTALLATION AT THE MOORABIN BUILDING (OPTION 1)

(SUBMIT WITH TENDER FORM)

Insert the amount allowed for each of the following items.

If any item is not applicable, insert "nil". Insert any item not included.

This Schedule is for information only and does not form part of the Contract. Its purpose is to assist in evaluating tenders and making valuations of work carried out, but the Principal is not bound to use it. All amounts must include GST.

Item No.			Amount
1	Supply and install new backbone/horizontal cabling, outlets and conduit/ducting/tray	Lump Sum	\$.....
2	Supply and install new F.T.A headend	Lump Sum	\$.....
3	Supply and install new QAM headend	Lump Sum	\$.....
4	Supply and install new Telecommunications IDF	Lump sum	\$.....
5	Test and commission the works	Lump Sum	\$.....
6	Provide Operation & Maintenance Manuals and Work as Executed Drawings	Lump Sum	\$.....
7	Provision of the Maintenance	Lump Sum	\$.....
TOTAL OF TENDERED SUM FOR MOORABIN			\$.....

6 SCHEDULE OF PRICES FOR A HYBRID FIBRE INSTALLATION AT THE MOORABIN BUILDING (OPTION 2)

(SUBMIT WITH TENDER FORM)

Insert the amount allowed for each of the following items.

If any item is not applicable, insert "nil". Insert any item not included.

This Schedule is for information only and does not form part of the Contract. Its purpose is to assist in evaluating tenders and making valuations of work carried out, but the Principal is not bound to use it. All amounts must include GST.

Item No.			Amount
1	Supply and install new backbone/horizontal cabling, outlets and conduit/ducting/tray	Lump Sum	\$.....
2	Supply and install Optical Fibre head-end	Lump Sum	\$.....
3	Supply and install new F.T.A headend	Lump Sum	\$.....
4	Supply and install new QAM headend	Lump Sum	\$.....
5	Supply and install new Telecommunications IDF	Lump sum	\$.....
6	Test and commission the works	Lump Sum	\$.....
7	Provide Operation & Maintenance Manuals and Work as Executed Drawings	Lump Sum	\$.....
8	Provision of the Maintenance	Lump Sum	\$.....
TOTAL OF TENDERED SUM FOR MOORABIN			\$.....

7 SCHEDULE OF PRICES FOR A FULL FIBRE INSTALLATION AT THE MOORABIN BUILDING (OPTION 3)

(SUBMIT WITH TENDER FORM)

Insert the amount allowed for each of the following items.

If any item is not applicable, insert "nil". Insert any item not included.

This Schedule is for information only and does not form part of the Contract. Its purpose is to assist in evaluating tenders and making valuations of work carried out, but the Principal is not bound to use it. All amounts must include GST.

Item No.			Amount
1	Supply and install new backbone/horizontal cabling, outlets and conduit/ducting/tray	Lump Sum	\$.....
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3	Supply and install new F.T.A headend	Lump Sum	\$.....
4	Supply and install new QAM headend	Lump Sum	\$.....
5	Supply and install new Telecommunications IDF	Lump sum	\$.....
6	Test and commission the works	Lump Sum	\$.....
7	Provide Operation & Maintenance Manuals and Work as Executed Drawings	Lump Sum	\$.....
8	Provision of the Maintenance	Lump Sum	\$.....
TOTAL OF TENDERED SUM FOR MOORABIN			\$.....

8 SCHEDULE OF RATES FOR VARIATION FOR “MCKELL”

(SUBMIT WITH TENDER FORM)

Complete the Schedule by inserting the tendered rates under RATE. The rates tendered shall form part of the Contract, and shall be used for valuing Variations.

All rates shall include GST.

Item No.	Description	ADDITIONS	DEDUCTIONS
1.	Supply and install approved conduit including accessories/metre		
	20 diameter	\$...../m	\$...../m
	32 diameter	\$...../m	\$...../m
	50 diameter	\$...../m	\$...../m
2.	Supply and install hot dipped galvanised cable tray including all accessories/metre		
	150 wide	\$...../m	\$...../m
	300 wide	\$...../m	\$...../m
3.	Supply and install 16 x 16 mini-duct including all accessories/metre	\$...../m	\$...../m
4.	Supply and install Rg-6 quad shield cable/metre	\$...../m	\$...../m
5.	Supply and install Rg-11 quad shield cable/metre	\$...../m	\$...../m
6	Supply an install Single Mode Optical Fibre (SMOF)	\$...../m	\$...../m
7	Supply and install cat6 lateral cable	\$...../m	\$...../m
8	Supply and install cat 5/6 trunk cable	\$...../m	\$...../m
9	Supply and install RJ45 outlet	\$...../m	\$...../m
7	Supply and install Sat/Terr amplifier	\$.....each	\$.....each
8	Supply and install 2, 3 or 4 way splitter	\$.....each	\$.....each
9	Supply and install 4 way 10 or 15 dB coupler	\$.....each	\$.....each
10	Supply and install MATV outlet	\$.....each	\$.....each
11	Relocate furniture inside units for cable installation	\$.....perhour	\$.....perhour
12	Supply and install additional 3.0 metre flyleads to SOU's		

9 SCHEDULE OF RATES FOR VARIATION FOR “MOORABIN”

(SUBMIT WITH TENDER FORM)

Complete the Schedule by inserting the tendered rates under RATE. The rates tendered shall form part of the Contract, and shall be used for valuing Variations.

All rates shall include GST.

Item No.	Description	ADDITIONS	DEDUCTIONS
1.	Supply and install approved conduit including accessories/metre		
	20 diameter	\$...../m	\$...../m
	32 diameter	\$...../m	\$...../m
	50 diameter	\$...../m	\$...../m
2.	Supply and install hot dipped galvanised cable tray including all accessories/metre		
	150 wide	\$...../m	\$...../m
	300 wide	\$...../m	\$...../m
3.	Supply and install 16 x 16 mini-duct including all accessories/metre	\$...../m	\$...../m
4.	Supply and install Rg-6 quad shield cable/metre	\$...../m	\$...../m
5.	Supply and install Rg-11 quad shield cable/metre	\$...../m	\$...../m
6	Supply and install Single Mode Optical Fibre (SMOF)	\$...../m	\$...../m
	Supply and install cat6 lateral cable	\$...../m	\$...../m
	Supply and install cat 5/6 trunk cable	\$...../m	\$...../m
	Supply and install RJ45 outlet	\$...../m	\$...../m
7	Supply and install Sat/Terr amplifier	\$.....each	\$.....each
8	Supply and install 2, 3 or 4 way splitter	\$.....each	\$.....each
9	Supply and install 4 way 10 or 15 dB coupler	\$.....each	\$.....each
10	Supply and install MATV outlet	\$.....each	\$.....each
11	Relocate furniture inside units for cable installation	\$.....perhour	\$.....perhour
12	Supply and install additional 3.0 metre flyleads to SOU's		

10 SCHEDULE OF TECHNICAL DATA FOR “MCKELL”

(SUBMIT WHEN REQUESTED BY PRINCIPAL)

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	TENDERER OFFER
Headend Cabinet Make and Model
QAM Head End Make and Model
Optical Fibre Head End Make and Model
FTA Antenna Make and Model
FTA Head End Manufacturer and Type
IDF manufacture and type (Krone or Equivalent)
Building Outlets Manufacturer and Type
Drop/Horizontal Cabling Manufacturer and Type - Coaxial
Drop/Horizontal Cabling Manufacturer and Type - Cat 5/6
Trunk Cabling Manufacturer and Type - Coaxial
Trunk Cabling Manufacturer and Type - Cat 5/6
Single Mode Optical Fibre Manufacture and type
Provide proposed outline designs and layouts, and demonstrate what is proposed complies with the specification requirements.
Provide all details, including illustrations and drawings, necessary to fully describe the offer

11 SCHEDULE OF TECHNICAL DATA FOR “MOORABIN”

(SUBMIT WHEN REQUESTED BY PRINCIPAL)

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	TENDERER OFFER
Headend Cabinet Make and Model
QAM Head End Make and Model
Optical Fibre Head End Make and Model
FTA Antenna Make and Model
FTA Head End Manufacturer and Type
IDF manufacture and type (Krone or equivalent)
Drop/Horizontal Cabling Manufacturer and Type - Coaxial
Drop/Horizontal Cabling Manufacturer and Type - Cat 5/6
Building Outlets Manufacturer and Type
Trunk Cabling Manufacturer and Type Coaxial
Trunk Cabling Manufacturer and Type Cat 5/6
Single Mode Optical Fibre Manufacture and type
Provide proposed outline designs and layouts, and demonstrate what is proposed complies with the specification requirements.
Provide all details, including illustrations and drawings, necessary to fully describe the offer

12 SCHEDULE OF QUALITY MANAGEMENT INFORMATION

(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*.

13 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.**

Accreditation of OHS Management System

Submit a copy of a letter from a NSW Government Construction Agency evidencing that the Tenderer's OHS Management System has been accredited as complying with the *NSW Government Occupational Health and Safety Management Systems Guidelines 4th Edition (OHSM Guidelines)*.

Alternatively, submit a statement confirming that the Tenderer's OHS Management System will be revised to comply with the *OHSM Guidelines* and submitted to the Department of Commerce for accreditation within 2 weeks after the close of tenders.

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>E.g. Sutherland Hospital Car park; 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. 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; **and**
- b. a copy of a third party audit report, **or** internal audit report, **or** site safety inspection report, **or** site safety review report **or** other similar evidence.
- a. 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**
- b. a third party audit report or internal audit report; **or**
- c. a site safety inspection report; **or**
- d. a Safety Management Plan; **or**

- e. three Safe Work Method Statements; **or**
- f. 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

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.

Demolition

WHEN REQUESTED, for each item to be demolished, submit details of the proposed method of demolition including:

- i) plant and equipment to be used;
- ii) protection of the Site including, but not limited to, protection of any items specified; and
- iii) Arrangements, including details and extent of protective hoardings, for the protection of the public and property adjoining the Site.

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**.

14 SCHEDULE OF ENVIRONMENTAL MANAGEMENT INFORMATION

(SUBMIT WITH TENDER FORM)

Provide the documents and information specified below in accordance with Conditions of Tendering clause - **Environmental management**.

Accreditation of corporate Environmental Management System

Submit a copy of a letter from a NSW government construction agency evidencing that the Tenderer's corporate Environmental Management System has been accredited under the NSW Government *Environmental Management Systems Guidelines (EMS Guidelines)*.

Alternatively, submit a statement confirming that the Tenderer's corporate Environmental Management System will be revised to comply with the EMS Guidelines and submitted to the Department of Commerce for accreditation within 2 calendar weeks after the close of tenders.

Recent prosecutions and fines

Submit:

- a statement confirming that the Tenderer is not in default of any fine issued for a breach of environmental legislation; **and**
- details of every prosecution and fine incurred by the Tenderer during the last two years under the *Protection of the Environment Operations Act 1997 (POEO Act)* or other Australian environmental legislation, together with a description of the actions taken by the Tenderer in response to each prosecution and fine; **or**
- a statement that the Tenderer incurred no prosecutions or fines under environmental legislation during the last two years.

Evidence of satisfactory environmental management

Nominate at least three contracts/projects, for work of comparable nature to the Works and completed within the last two years, that demonstrate successful environmental management by the Tenderer:

Client	Name & location of contract <i>Eg. Concord 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 a copy of an Environmental Management Plan implemented by the Tenderer for a contract/project, similar in type and value to this Contract, that was completed within the last two years

Environmental management objectives and measures

- **WHEN REQUESTED**, submit details of:
 - environmental management objectives proposed for the work under the Contract;
 - key environmental management actions proposed for the work under the Contract; and
 - the persons who will be responsible for managing the actions proposed.

15 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.
8. Details relating to the Tenderer's history and Directors Profiles.

16 SCHEDULE OF INDUSTRIAL RELATIONS INFORMATION

(SUBMIT WHEN REQUESTED)

List the Federal and NSW awards to which the Tenderer is bound:

Federal and NSW awards

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List the enterprise, workplace or other enforceable industrial relations agreements to which the Tenderer is bound, and attach copies of those agreements to this Schedule

Enterprise, workplace and other enforceable industrial relations agreements

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Undertaking to Provide Information

The Tenderer, if awarded the contract, will, on request, provide appropriate information to verify compliance with these awards, enterprise or workplace agreements and all other legal obligations relating to employment.

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

(SUBMIT WHEN REQUESTED)

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

END OF SECTION –TENDER SCHEDULES

GENERAL CONDITIONS OF CONTRACT AND ANNEXURE

1 GENERAL CONDITIONS OF CONTRACT AND ANNEXURE

THERE ARE 26 PAGES IN THIS SECTION

GENERAL CONDITIONS OF CONTRACT - MINOR WORKS

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:



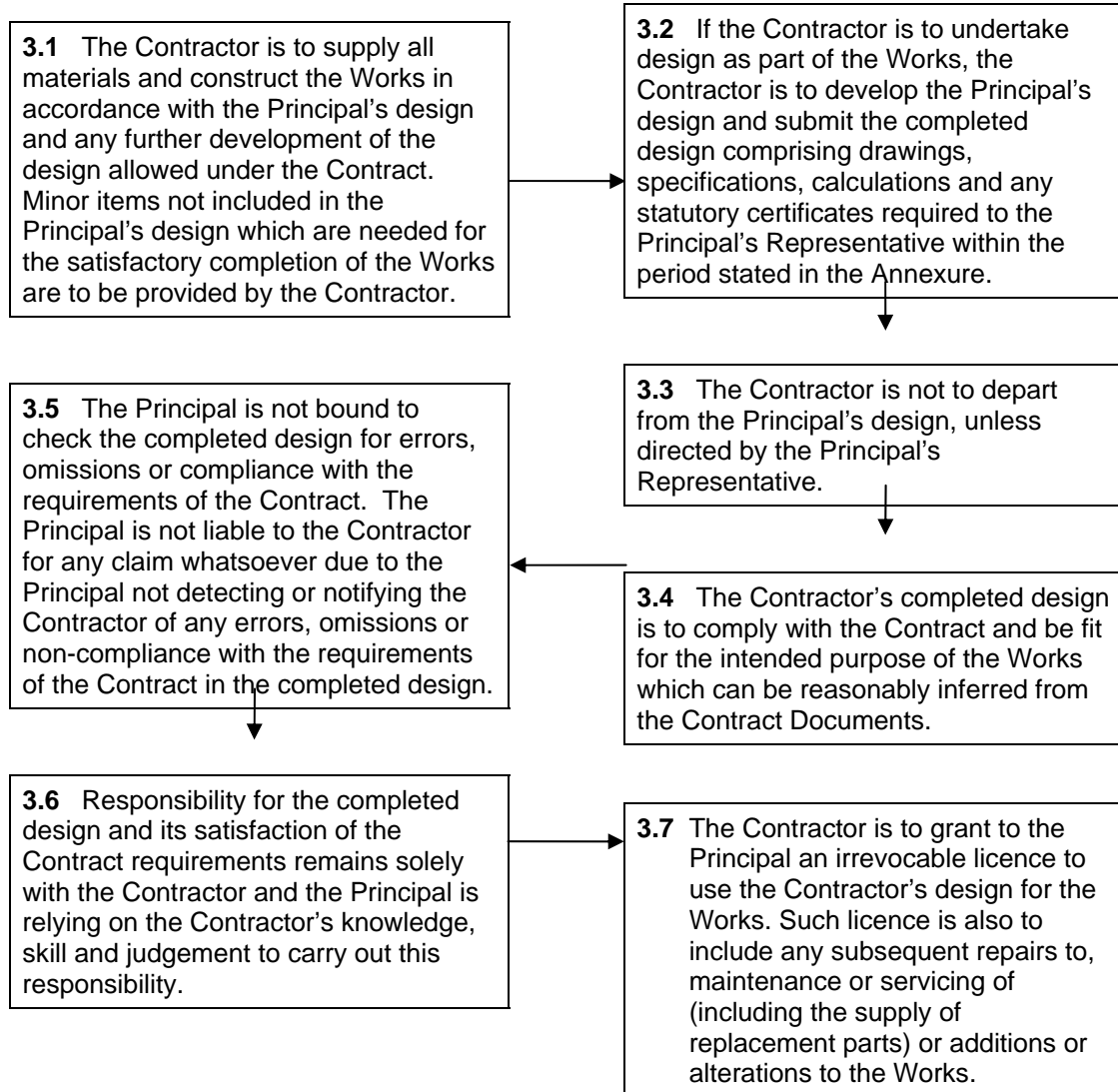
2 CONTRACT

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



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**



5.5 The required policies are to be with insurers and in terms approved by the Principal's Representative. Approvals will not be withheld unreasonably.

5.6 The Contractor is responsible for making and managing claims and meeting the costs of any deductibles.

5.7 The Contractor is to maintain all required insurance policies until the end of the Defects Liability Period, or Completion if there is no Defects Liability Period.

5.8 If, when required in writing by the Principal to do so, the Contractor fails to produce evidence of having paid insurance premiums and other compliance with insurance obligations under General Conditions of Contract Clause 5, to the satisfaction of the Principal, the Principal may effect or maintain the insurance and pay any premiums. The Contractor is to pay the Principal the amount of any premiums paid by the Principal plus an amount of \$250 to cover the Principal's costs.

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.

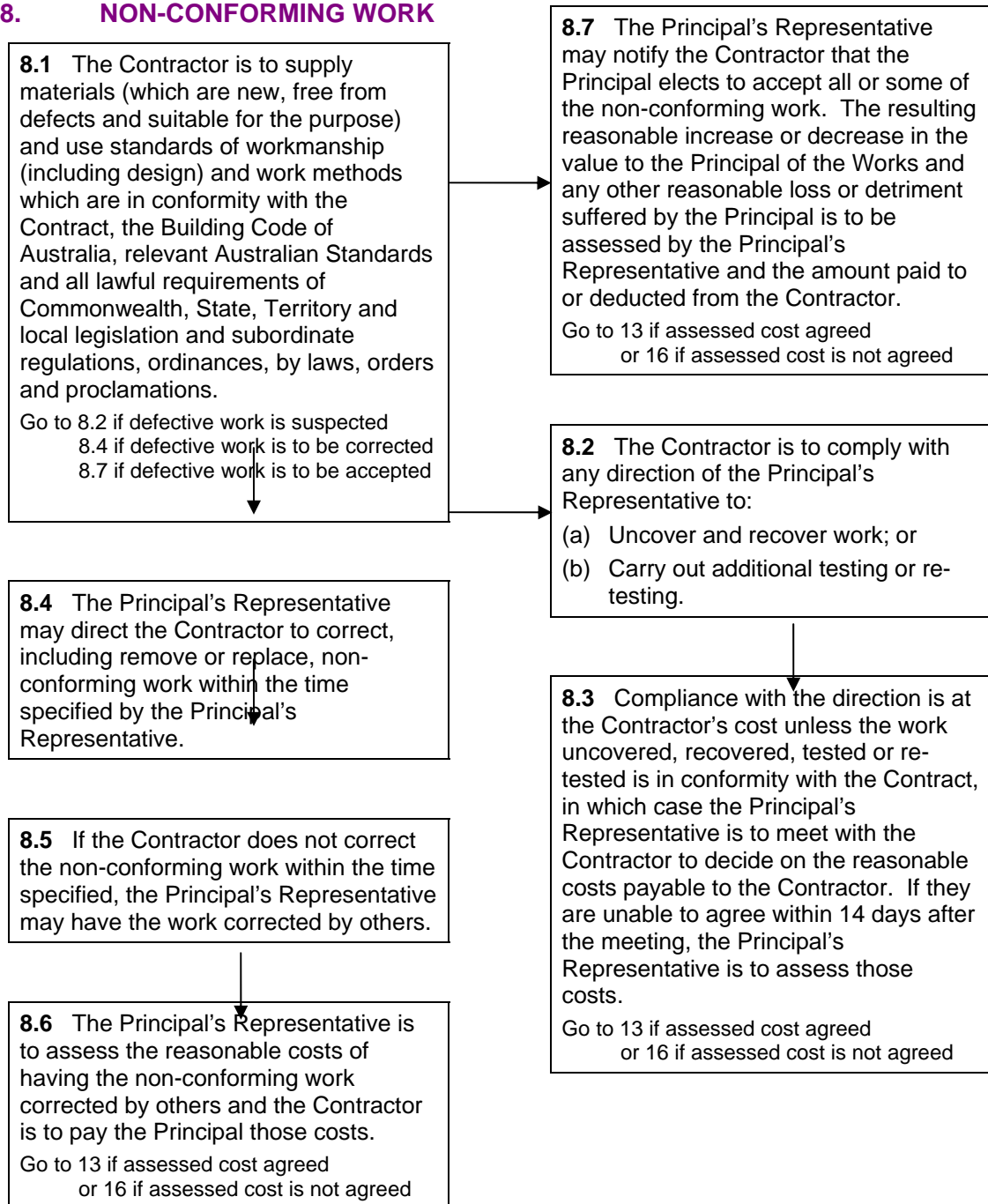
6.4 The Contractor is to give the Principal's Representative, agents and contractors reasonable access to the Site for any purpose.

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

9.1 The Principal's Representative may direct the Contractor to carry out a variation and the Contractor is to carry out the direction.

9.3 A variation is any change to the character, form, quality and extent of the Works directed in writing by the Principal's Representative. A variation shall not invalidate the Contract.

9.2 The Principal's Representative and Contractor are to meet to agree on the reasonable amount payable to or deducted from the Contractor for the variation. If they do not agree within 14 days after the meeting, the Principal's Representative is to assess that amount.
Go to 13 if assessed amount agreed
or 16 if assessed amount is not agreed

10. SUSPENSION

10.1 The Principal's Representative may direct the Contractor to suspend all or part of the Works and the Contractor is to carry out the direction.

10.2 If the direction to suspend the work is due to any act or omission of the Principal, the Principal's Representative and Contractor are to meet to agree on the reasonable extra costs payable to the Contractor which resulted from the suspension. If they do not agree within 14 days after the meeting, the Principal's Representative is to assess those extra costs.
Go to 13 if assessed cost agreed
or 16 if assessed cost is not agreed

10.3 The Contractor is to recommence the Works as soon as practicable after being directed to do so by the Principal's Representative.

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:

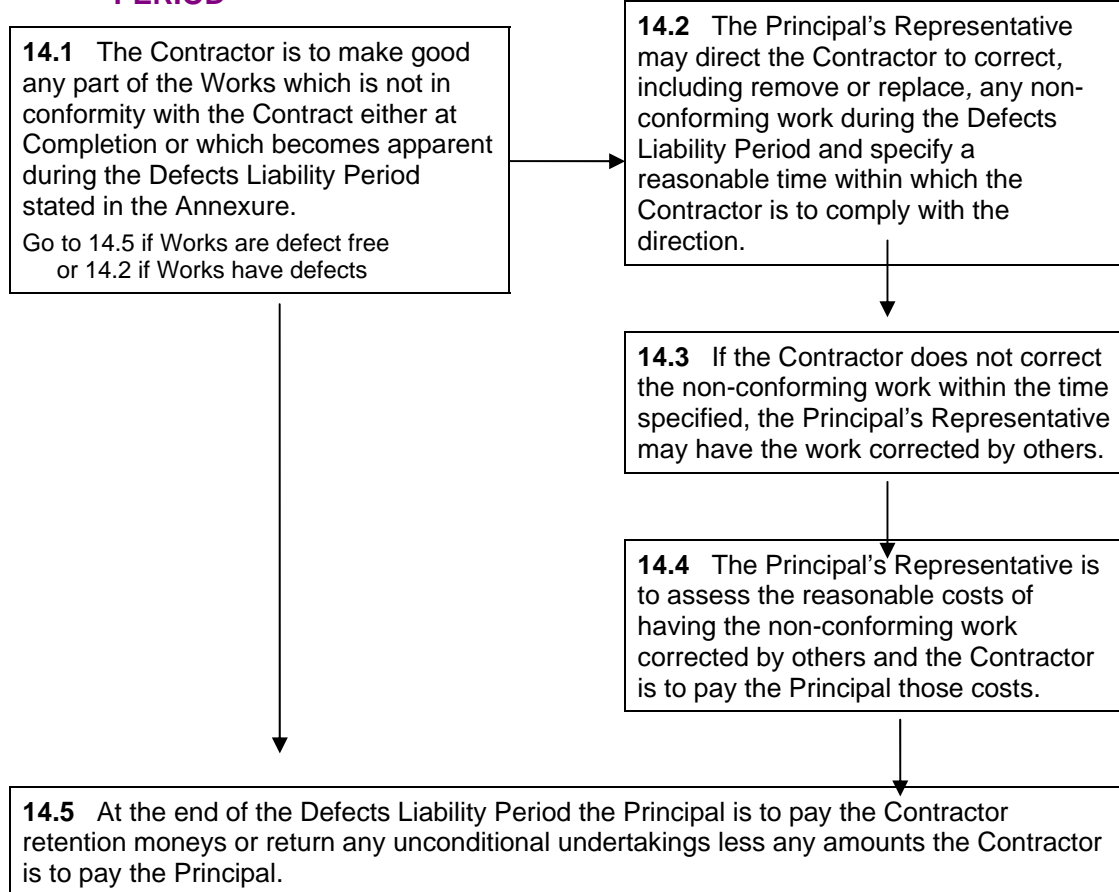
An amount of 2.5% of the Contract Sum is to be retained by the Principal against the due and proper performance of the Contract, except when there is no Defects Liability Period.

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.

15.2 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.

15.3 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.

15.6 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

15.7 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.

15.8 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

Definitions

Oaths Act 1900
(NSW)

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).

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

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 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). Delete the words *in italics* that are not applicable.
- 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.
- EMPLOYER UNDER THE PAYROLL TAX ACT**
- 11 The Contractor *is registered as / is not required to be registered as* an employer under the *Payroll Tax Act 2007* (NSW). Delete the words *in italics* that are not applicable.
- 12 All payroll 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 *Payroll Tax Act 2007* (NSW). Delete the words *in italics* that are not applicable.
- 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 *Payroll Tax Act 2007* (NSW) in the capacity of principal contractor in connection with that work to the intent that all payroll 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 *Payroll 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.
- 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 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

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 : Ken Duffy

Phone number: 02 93728102

and is located at: NSW Dept of Commerce Government Architect's Office , 2-24 Rawson Place Sydney

The Principal may at any time change the person for any reason whatsoever by giving written notice.

1.3

The Principal's Agent is : Rod Kemp – Manager Engineering Services

Phone number: 02 93728112

and is located at: NSW Dept of Commerce Government Architect's Office, 2-24 Rawson place Sydney

The Principal may at any time change the person for any reason whatsoever by giving written notice.

3.2

The period to submit the completed design is: 7 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 available on the Internet at:

www.managingprocurement.commerce.nsw.gov.au/system/index_contract_management_insurance_policies.doc

6.1

The time to give possession of Site is: 14 Days after the Principal accepted the tender.

11.1

The period for Completion of both buildings is: 18 calendar weeks

McKell Building and Moorabin Buildings

Milestone 1: The completion of design of the Works by the Contractor - 1 calendar

week after the Principal has accepted the tender.

Milestone 2: Construction of the Works - 18 calendar weeks after the Principal has accepted the tender.

Milestone 3: Provision of Work As Executed Drawings and Operation & Maintenance Manuals and testing and commissioning 2 calendar weeks from the Completion of Milestone 2.

Milestone 4: Carrying out the Maintenance as described in the Technical Specification - 52 calendar weeks from the Completion of Milestone 3.

12.3

The rate per day of liquidated damages for the whole of the Works is \$500.00. Liquidated damages are not applicable for the Maintenance. If no rate is stated common law damages are to apply.

13.1

The amount of Security is: Refer to clause 13.5 of the General Conditions of Contract.

If no amount is stated then no Security applies.

13.3 The Milestones and Percentages are as below:	
Milestone	Percentage of the adjusted Contract Sum
Milestone 1: The completion of design of the Works by the Contractor - 1 calendar week after the Principal has accepted the tender.	5
Milestone 2: Construction of the Works - 16 calendar weeks after the Principal has accepted the tender.	75
Milestone 3: Provision of Work As Executed Drawings and Operation & Maintenance Manuals and testing and commissioning 2 calendar weeks from the Completion of Milestone 2.	17.5
Milestone 4: Carrying out the Maintenance as described in the Technical Specification - 52 calendar weeks from the Completion of Milestone 3.	2.5

END OF SECTION – GENERAL CONDITIONS OF CONTRACT AND ANNEXURE

2 PRELIMINARIES

THERE ARE 33 PAGES IN THIS SECTION

1 ADMINISTRATION AND CONTRACTING

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 USE OF QUALIFIED TRADEPERSONS

Use qualified tradepersons when completing the Works. The use of such persons shall not relieve the Contractor of liability for the fitness of the Works for the purposes required by the Contract.

1.3 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 on the Internet at:

www.lspc.nsw.gov.au

1.4 COLLUSIVE ARRANGEMENTS

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

- www.treasury.nsw.gov.au/procurement/cfpf_ig

1.5 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* which are available on the Internet at:

- www.managingprocurement.commerce.nsw.gov.au/system/index_performance_management.doc

1.6 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.

1.7 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.

1.8 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.

1.9 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.

1.10 PAYMENT CLAIMS FOR LUMP SUM ITEMS

A claim for payment of any proportion of a lump sum, including any lump sum in a *Schedule of Rates* or *Schedule of Prices*, must be expressed as a percentage.

1.11 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.

1.12 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 on the Internet at:

- 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:

Conformance records	Time when records are required
Completed Inspection & Test Plans and associated checklists	With each Payment Claim

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.

1.13 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.

1.14 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.

1.15 INDUSTRIAL RELATIONS MANAGEMENT

Requirement

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

Verification of Compliance with Industrial Relations Obligations

Submit before beginning works on the Site, a statement on the Contractor's letterhead, signed by an authorised person, attesting to the Contractor's compliance, in the preceding twelve months, with all employment and legal obligations including, but not limited to:

- payment of remuneration to employees
- annual leave
- Long Service Leave Payment Scheme registration
- workers' compensation insurance, including self- insurance arrangements
- superannuation fund membership and contributions
- over-award payments such as redundancy fund contributions

If the Contractor engages an independent industry or employer association or other specialist organisation to provide an auditing service to verify compliance with employment and legal obligations, a statement or declaration from that organisation may be submitted instead of the statement by the Contractor.

Project IR Management Details

Submit, before beginning work on the Site, a statement detailing:

- the location of time and wage records and other documents that are required to be kept to verify ongoing compliance with all employment and legal obligations; and
- the names of Federal or NSW awards that are likely to cover subcontractors and other contractors on the project.
- the names of those responsible for coordinating industrial relations on the project;
- an outline of:
 - the Contractor's consultation and communication mechanisms with workers, unions, and employer or industry associations
 - the measures to be implemented to coordinate the interface on the project with subcontractors, unions and other contractors
 - the measures for assessing subcontractor's ability to comply with industrial relations and employment obligations
 - the measures to monitor and verify subcontractors' ongoing compliance

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 7th day after the required action has been carried out.

2. CONTRACTOR'S CODE OF CONDUCT

INTRODUCTION

This Contractor's Code of Conduct (Code) supports the Principal's policy towards its clients. The Principal's clients are tenants of its residential properties to which the Principal is committed to providing a consistent and quality service. The Principal its officers and representatives therefore have a duty to tenants and their families to maintain high ethical standards, honour agreements and undertakings, act in good faith, and be courteous at all times.

The Contractor has a similar duty to adopt high ethical standards, honour agreements and undertakings, and be courteous at all times. The Contractor must therefore ensure that its employees, its subcontractors and the employees of its subcontractors are familiar with the contents of the Code and observe its requirements at all times whilst working in and upon the Principal's properties.

The Principal has produced a booklet, called Department of Housing Contractor Conduct Requirements, which summarises the requirements of the Code. The text of the booklet is attached as Schedule 1. Copies of the booklet are available on request. A copy of the booklet must be given to the employees of the Contractor and its subcontractors before entering in or upon any of the Principal's properties.

WHEN FIRST ARRIVING AT A TENANT'S HOME

When first arriving at a tenant's home, the Contractor's representative should seek out the Tenant, show his or her Identification Card, and, in a friendly and courteous manner, ask if it is convenient to commence work.

In order to minimise noise and inconvenience to the tenant avoid, where practicable, driving any vehicle into the driveway of a property without first seeking the permission of the tenant to park on the premises.

COURTESY AND GENERAL APPEARANCE

The Principal's tenants include a wide range of people, some of whom have special and complex needs and should be treated with understanding and sensitivity. Such people include the elderly, Aboriginals, those from other diverse cultural backgrounds and persons having disabilities, suffering terminal illness or who have experienced trauma.

When visiting or working at a tenant's home, other areas such as grounds and neighbourhood precincts employees must therefore:

- Show all occupants full courtesy and respect;
- Be of neat and tidy personal appearance and suitably attired in a reasonable standard of dress;
- Ensure footwear and clothing is cleaned of mud, wet paint, grease etc before entering a tenant's home;
- Treat the tenant's home and personal property with due care and respect at all times; and
- Give full consideration to the tenant's comfort, well-being, health, welfare, safety, and security. Any disruptions to the occupants must be kept to a minimum.

TENANTS WITH NON ENGLISH LANGUAGE BACKGROUND

The Principal is committed to providing equal service to all tenants, including those with a language background other than English.

If communication with a tenant proves difficult, the Contractor may request the Principal's Representative to arrange for an interpreter service. The interpreter service is provided at the Principal's expense.

The Principal will make prior arrangements for an interpreter where the requirement is already known.

LANGUAGE AND GENERAL BEHAVIOUR

Bad language must not be used in the presence or hearing of any tenant, visitor, guest or employee of the Principal.

Loud and boisterous behaviour (without bad language) can be threatening and offensive to others, especially the elderly and infirm, and those suffering an illness.

Ensure that personal behaviour does not interrupt nor threaten the general enjoyment by tenants of their home and surrounding environment.

Do not be judgemental nor belittle a tenant for any reason by attitude, tone of voice or action.

Do not make any derogatory or non-essential comments on the work of others who may have serviced a tenant's home or on faults or problems the Contractor has been engaged to rectify.

NOISE

Take care to minimise noise. Tenant requests to limit noise must be respected.

Such requests may come from tenants who are shift workers, have young families, are ill or have suffered bereavement.

If agreement cannot be reached, the matter must be referred to the relevant officer or representative of the Principal for resolution.

The use of radios and other sound equipment in occupied properties and common areas (e.g. hallways, stairways, entrance areas in apartments etc), is only permitted with the approval of the tenant of the property or tenants using common areas in apartment buildings.

HEALTH AND SAFETY

All possible safety precautions must be taken to ensure the health and safety of all persons in and around the property in which the work is being carried out. Ensure that clear and timely warnings are given of any hazards.

The possible presence of children must be kept in mind when manoeuvring vehicles or large equipment and mechanical devices.

Tools, especially power tools, must not be left unattended as they present a safety risk to children.

Holes and trenches must be made safe and covered with strong material when left unattended.

SMOKING, ALCOHOL AND PROHIBITED SUBSTANCES

Do not smoke in any property of the Principal.

Persons must not be under the influence of alcohol or a prohibited substance whilst performing work under the Contract.

Alcohol and prohibited substances must not be consumed on or prior to entering any

Property of the Principal

PROTECTION OF TENANT'S PROPERTY

Take all reasonable precautions to protect the tenant's property from theft or damage. Immediately advise the Principal's Representative of any damage or loss that occurs to the property of the Contractor or the property of the tenant.

USE OF A TENANT'S SERVICES AND FACILITIES

Do not use a tenant's power, gas, or water, without prior permission.

Tenants must be reimbursed for all costs incurred where permission is given.

Do not use the tenant's toilet, washbasins or cooking facilities without prior permission.

Do not prepare or eat food in the tenant's home without prior permission.

If permission is not given in these situations the tenant's wishes must be accepted with good grace and alternate arrangements made.

TENANT'S TELEPHONE

Do not use a tenant's telephone to make or receive calls except in case of emergency.

Calls must not be diverted to a tenant's telephone from mobile telephones or other communication services.

PARKING AND STORAGE

Do not store any materials or equipment on the Site without permission of the tenant. Anything stored on the Site is stored entirely at the Contractor's risk and no responsibility for its security or safety will be accepted by the tenant or others. Permission must be obtained from the tenant before parking or placing any vehicle, site office, storage container or other facility in the grounds of their home, or on any verge. Do not obstruct any driveway, footpath crossing, road, pathways or any other access in the grounds of apartments or neighbourhood precincts.

WORK DURING ABSENCE OF TENANT

Remaining at a tenant's home during the tenant's absence is not desirable and should be avoided where practicable.

Carrying out work on property where children, not supervised by adults, are present should be avoided where practicable.

Written permission must be obtained from the tenant before working in a tenant's home during the absence of the tenant.

The property must be left in a secure state when unattended.

CLEANING UP

Regularly remove all rubbish resulting from the work, and leave the property in a clean and tidy, clean state at the end of each day.

VISITORS

Personal visitors of the Contractor are not permitted to enter the premises of a tenant including front and back yards, neighbourhood precinct areas and apartment common areas.

ANIMALS

No animals or pets owned by an employee of the Contractor are allowed in or upon any property of the Principal.

Animals and pets owned by tenants must not be antagonised or mistreated.

ETHICAL CONDUCT

Do not, under any circumstances, comment on any matters relating to the Contract or the operations of the Principal.

This includes discussion and comment on the condition of the Principal's properties; policy of the Principal; or matters of a personal nature of the tenant such as conduct, appearance, ethnic origin, the condition of the property or on any issue relating to standard of housekeeping.

ILLEGAL ACTS

If any person sees an illegal act or a crime in progress they must immediately inform the Police.

EMERGENCIES

If there is any immediate danger to life or property, the appropriate emergency service must be called immediately. Also notify the Principal's Representative.

DIFFICULTIES ENCOUNTERED ON SITE

The Contractor, employees of the Contractor or a subcontractor, if concerned for their health or safety, or the safety of their materials, tools or equipment, may leave the Site providing they have been acting reasonably. However such an employee or subcontractor must inform the Contractor of the situation immediately upon leaving the property. The Contractor's representative is responsible for advising the Principal's Representative.

It is not possible to define every event where it might be considered inadvisable to enter in or upon property or advisable to leave after entering. The following instances are examples of where decisions of this nature might reasonably be made:

- Where persons appear affected by alcohol or other substances and entering or remaining in or upon the property may provoke an undesirable situation;
- Where there are groups of people at or near the property and their demeanour and general attitude is one of menace;
- Where persons are agitated or displaying erratic or other inappropriate behaviour which may be a threat to personal safety;
- Any display of aggression by persons or animals;
- Any instance where personal safety, the safety of others or the safety of machinery,
- Equipment, and other property, is either in danger or under threat of danger, or where an unsafe situation has developed.

In these or similar circumstances employees should not enter the property or should withdraw from the property immediately.

The Contractor, employees of the Contractor or a subcontractor should also leave a property if a situation becomes unmanageable or if a dispute arises with an occupant which will significantly affect progress of the work. The Contractor, employees of the Contractor or a subcontractor should politely decline to engage in non-essential discussion.

The Contractor, employees of the Contractor or a subcontractor must not respond or argue. They should collect their tools and equipment, leave the premises and immediately inform the Principal's Representative.

BREACHES OF CODE OF CONDUCT

Any complaint submitted to the Principal by a tenant will be investigated by the Principal's Representative.

2 SITE AND WORKS

2.1 PROGRAMMING OF WORK

Requirement

Within 2 weeks of the Date of Acceptance of Tender, supply a detailed program for carrying out the programmed construction and Annual Assessment components of the works.

Format

Set out the program on calendar dates with individual activity durations. The program must show but not be limited to:

- a project calendar clearly denoting which days are work days (allow for restrictions on working time and contingencies for which the Contractor is responsible under the terms of the Contract. This would include but not be limited to week-ends, holidays, Christmas close-down, union designated and other days off and manufacture and trade delays);

- the inter-relationships between activities;

- the estimated duration of significant activities;

- the sequence of activities which constitutes the critical path or paths

- mobilisation to the Site;

- appointment of subcontractors and their respective programs;

- the time allowed for testing;

- the preparation of documents required;

- the differences or divergences from the tender program.

If requested, submit the required program in electronic format.

3 SITE

3.1 SITE ACCESS AND LIMITATIONS

Refer to section 2 preliminaries

Occupancy by Principal

The Principal or persons authorised by the Principal will continue in possession and occupancy of all buildings. The tenants, including visitors to tenants, are regarded as persons authorised by the Principal.

Principal's Access

Provide safe access to such premises for the Principal and such authorised persons as are notified to the Contractor by the Superintendent.

Contractor's Responsibility

Take responsibility for the suitability of all persons and subcontractors on the Site, set reasonable standards of conduct, investigate complaints about their behaviour and take appropriate action including removal from the Site if so warranted.

Specific Requirements

Refer to clauses **PROTECTION OF CHILDREN AND OTHER VULNERABLE PEOPLE** in subsection **ADMINISTRATION** section **PRELIMINARIES** and Appendix D **NSW DEPARTMENT OF HOUSING CONTRACTOR'S STANDARDS OF CONDUCT**.

Take care to minimise noise. Tenant requests to limit noise must be respected as such requests may come from tenants who are shift workers, have young families, are ill or have suffered a bereavement.

If agreement cannot be reached, the matter must be referred to the Superintendent for resolution.

The use of radios and other sound equipment in occupied properties and common areas (e.g. hallways, stairways, entrance areas in apartments etc), is only permitted with the approval of the tenant of the property or tenants using common areas in apartment buildings.

Access to Sole Occupancy Units (SOU's)

Where access is required to SOU's for programmed maintenance or upgrade work compile a program scheduling when access to SOU's is required. To avoid undue disturbance to tenants co-ordinate different categories of work to minimise the number of visits required to be made to each SOU e.g. annual tests of smoke alarms, thermal and smoke detectors, fire doors, etc to be planned for same time. On completion of this program use the following procedure to arrange access to Sole Occupancy Units and subsequently carry out works required:

Prepare a spreadsheet listing all units, a description of work to be carried out inside unit, date and time of scheduled visit.

Notify tenants by letter, in format approved by the Superintendent, and include the following:

- a) The Department of Housing and Contractor's letterheads must be shown;
- b) A description of work to be carried out;
- c) Number of visits required to perform work and approximate length of each visit and number of workers that will be present;
- d) Contact person including contact telephone number and office hours when nominated contact person will be available (Note: Contact number must have facility to record messages when phone is left unattended) encourage tenants to make alternative access arrangements if they cannot be present at the scheduled time;

Make follow-up attempt to contact each tenant, by telephone calls and by visiting their unit, to confirm actual dates of work, and record details on spreadsheet;

Conduct the schedule site visits;

If on first scheduled visit the tenant is absent make a follow up attempt to gain access following completion of other works, if still unable to gain access leave notification of visit by card or letter and schedule a return visit, with minimum 5 working day gap between visits, with advice as to when the return visit is schedule and contact details if tenant wishes to make alternative arrangements;

Record details on spreadsheet, highlighting units to which access could not be gained including details of attempts to gain access, date and time of attempts and forward spreadsheet to the Superintendent's Representative to enable early advice to be forwarded to the client;

Conduct second scheduled visit and repeat process used for first visit if still unable to gain access schedule a third visit to be conducted on a Saturday, update spreadsheet and forward copy to the Superintendent's Representative.

Conduct third visit and on completion update spreadsheet and forward to the Superintendent's Representative with advice on preferred time of return to complete any outstanding units.

Where, after the third visit, there are units still to be completed the Superintendent's Representative will make arrangements to gain access and will advise of date and time to return to site to complete the scheduled works.

On completion update the spreadsheet and forward to the Superintendent's Representative as a final sign off.

3.2 WORKING HOURS

Normal working hours, for applying tendered hourly rates, are 8.00am to 6pm Monday to Friday.

Saturdays working hours are 8.00am to 6.00pm with minimal to no noise works

For specific programmed work, e.g. third access attempt to Sole Occupancy Units for annual testing, 8.00am to 6.00pm Saturday is to be considered normal working hours.

3.3 EXISTING SERVICES

Locating Existing Services – Dial Before You Dig

The Contractor is responsible for locating services and in doing so, must comply with the WorkCover Work Near Underground Assets Guideline, which is available on the Internet at:

www.workcover.nsw.gov.au/NR/rdonlyres/96ACDD20-8FC0-4583-A6F4-97292055A954/0/work_near_underground_asset_1419.pdf

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.

3.4 OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

Specification and Statutory Requirements

The Contractor must comply with the NSW Government *Occupational Health and Safety Management Systems Guidelines 4th 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.

Project OHS Management Plan

Develop and implement a Project OHS Management Plan that complies with the *OHSM Guidelines*.

Submit the Project OHS Management Plan no later than 14 days before construction work commences. Do not start construction work before a complying Project OHS Management Plan has been submitted.

Ensure the following risks are covered in the Project OHS Management Plan:

- Residents Safety in Common areas during construction

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.

Include a program indicating the timetable and resources allocated for *Inspection, testing and servicing* and *Internal review* (*OHSM Guidelines* Section 4, elements 8 and 11).

Nominate the resources allocated for *Incident management and corrective action* (*OHSM Guidelines* Section 4, element 9).

OHS Management Monthly Report

Submit, no later than the seventh (7th) 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 Project OHS Management Plan during the previous month.

As a minimum, the OHS Management Monthly Report must include the following information:

Contract Details

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

Implementation of *Inspection, testing and servicing* procedures (OHSM Guidelines Section 4, element 8)

Summary of OHS inspections and tests carried out 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 *Incident management and corrective action* procedures (OHSM Guidelines Section 4, element 9)

Details of:

- any OHS incidents or OHS issues, including non-compliance with OHS processes and 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 *Internal Reviews* (*OHSM Guidelines* Section 4, element 11)

Details of internal reviews, including audits and inspections, undertaken to verify that on-site OHS processes and practices conform with the Project OHS Management Plan including:

- System element(s) and activities audited and/or reviewed
- Non-conformance(s), improvement(s) identified and corrective action(s) taken
- Details of auditors and reviewers and dates and durations of audits and reviews
- Copies of third party audit reports and details of the Contractor's responses to the reports.

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.

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.

Site Safety Rules

Develop site safety rules that are equal to or better than the following minimum set of site safety rules, include them in the Site-specific Safety Management Plan and ensure implementation.

Site safety rules must make it a condition of entry to the applicable work site that all employees and visitors comply with their provisions, including:

- **Construction OHS Induction.** All persons must display evidence of completing OHS Induction training prior to being inducted to commence work on the Site.
- **Site Induction.** All persons working on the Site must attend a Site Induction prior to entering it. Visitors may enter a work site if, either, they first attend a Site Induction, or if they are accompanied by a person who has attended a Site Induction. All persons each day must sign in and out on the Site Register.

- **Safe Work Method Statements.** Safe Work Method Statements must be prepared and used for all work activities assessed as having a safety risk.
- **Toolbox Talks.** Weekly or more regular discussions must be held with workers to consult on site safety matters.
- **Safety Helmets, Safety Footwear and Safety Vests.** Safety helmets and steel-capped safety footwear must be worn by all supervisors, employees, and visitors in the construction area at all times. The footwear must comply with AS 2210. Safety vests must be worn when moving plant is present or work is undertaken near traffic.
- **Personal Protective Equipment (PPE).** PPE, such as safety eye protection, hearing protection, safety gloves and masks and the like, must be worn when welding, drilling and with all other tasks with similar risks.
- **Accidents and Incidents.** Accidents, incidents and injuries must be reported immediately to the Contractor's and applicable subcontractor's site representative in charge.
- **Alcohol and Drugs.** The consumption of, or being under the influence of, alcohol and illegal drugs on the Site is prohibited.
- **Amenities.** Access to clean toilets and meal facilities, cool, clean drinking water, and the other requirements of the WorkCover [Code of practice: Amenities for construction work](#) must be provided for all persons.
- **Electrical.** All electrical work and electrical plant must comply with the WorkCover [Code of practice: Electrical practices for construction work](#).
- **Emergency evacuation.** Arrangements must be included in the Site Induction and clearly identified.
- **Excavations.** Barricading and signage for all excavations must be provided, with excavations 1.5 metres or more deep also to be benched, battered or shored. See the WorkCover [Code of practice: Excavation](#).
- **Fire Prevention.** Fire prevention must be used by all persons on the Site. An appropriate fire extinguisher must be on hand for all welding sets and oxy acetylene work.
- **First Aid.** All persons requiring first aid treatment must contact the first aid officer who will administer the treatment and record the injury in the WorkCover Register of Injuries, including the person's name and the nature of the injury.
- **Hazardous Substances.** Chemicals and hazardous substances must be used and stored in compliance with up to date Material Safety Data Sheets (MSDS) and details recorded in the Register of Hazardous Substances.
- **Housekeeping.** Work areas must be kept clean and tidy, with rubbish and other safety hazards cleaned up promptly. All protruding nails must be removed immediately from timber.

- **Leads and Power Tools.** All leads, power tools and electrical equipment must be inspected and tagged by a qualified person prior to their use and then at monthly intervals. See the WorkCover [Code of practice: Electrical practices for construction work](#).
- **Mobile Plant.** Every owner of plant must ensure plant is registered with WorkCover when required and operators are appropriately qualified. Plant must be fitted with working hazard lights/reversing lights and beepers. See the WorkCover [Code of Practice for Moving Plant on Construction Sites](#).
- **Overhead Power Lines.** The requirements of the WorkCover [Code of Practice – Work near Overhead Power Lines](#) must be complied with.
- **Site Security and Public Access.** Security measures, including perimeter fencing, must be used to prevent unauthorised access to construction areas and ensure safe access and passage for all those on and adjacent to the Site. Security must comply with Clause 235 of the OHS Regulation 2001 and the WorkCover [Position paper: The requirements for fencing](#).
- **Underground Services.** Prior to any underground work being carried out, services must be located using Dial Before You Dig, a services locator, potholing and the other precautions identified in the WorkCover [Work Near Underground Assets Guideline](#).
- **Working at Height.** Working at heights must be in accordance with WorkCover requirements, including certification of formwork and scaffolding. See the WorkCover [Guide to Safe Working at Heights](#).

OHS Management Monthly Report

Submit, no later than the seventh (7th) 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 Management 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 7th day after the required action has been carried out.

3.5 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

3.6 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 2nd 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 2nd 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.

3.7 ENVIRONMENTAL MANAGEMENT

Requirement

The Contractor must comply with the NSW Government *Environmental Management Systems Guidelines* which are available on the Internet at:

www.managingprocurement.commerce.nsw.gov.au/system/index_procurement_guideline_documents.doc

Environmental Management Plan

Develop and implement a Project Environmental Management Plan that complies with the *EMS Guidelines*.

Submit the Environmental Management Plan no later than 7 days before commencing the Works. Do not commence work before a complying Environmental Management Plan has been submitted.

Environmental Management Monthly Report

Submit an Environmental Management Monthly Report with each claim for payment, signed by the Contractor's representative and including the information specified below, as evidence of implementation of the Environmental Management Plan.

Contract details - the names of the Contract, Contractor and Contractor's representative, the report date and the period covered.

Implementation of *environmental management* - details of:

- the environmental risks and opportunities, and significant environmental impacts associated with the work;
- environmental objectives, targets and measures of performance (where practical); and
- management actions, including environmental controls, training, inspections and testing.

Implementation of *incident management, including emergency response* - details of all environmental incidents or emergencies, including non-compliance with environmental procedures and near misses, implementation of incident and emergency response management, and implementation of corrective action.

Implementation of reviews - details of internal reviews, audits and inspections undertaken to verify that on-site environmental processes and practices conform with the Environmental Management Plan, including:

- monitoring, measurement, evaluation and review of activities;
- the consequences of non-conformances;
- investigation, analysis, evaluation and follow-up verification; and
- corrective and preventive action taken.

The Contractor may elect to complete Schedule to Preliminaries - **Environmental Management Plan**, adding objectives and actions as required to suit the risks/hazards associated with the work under the Contract, and implement the completed version as the Environmental Management Plan.

Incident reports

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

Immediately notify the Principal of any pollution incident that may cause material harm to the environment, providing evidence that notification requirements of the POEO Act have been met, where applicable.

Report immediately the details of any waste removed from the Site and not disposed of at a lawful facility.

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 environmental management obligations under the Contract, then notwithstanding any other provisions of the Contract, no payment is due to the Contractor until the 7th day after the required action has been carried out.

3.8 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Requirement

Apply strategies to maximise the achievement of ecologically sustainable development in the design, construction and operation of the Works, including reducing pollutants, greenhouse gas emissions and demand on non-renewable resources such as energy sources and water.

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.

3.9 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* available on the Internet at:

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 certificates and/or company certification confirming appropriate, lawful disposal of waste.

3.10 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.

3.11 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.

3.12 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.

3.14 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.

3.15 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.

3.16 GUARANTEES

Generally

Obtain and ensure that NSW Housing 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.

Floor Coverings

Ensure that NSW Housing will have the benefit of, all warranties and guarantees in State Contracts Control Board *Standing Offer Agreements* in respect of floor coverings listed in those *Standing Offer Agreements* which are provided under this Contract.

3.17 SCHEDULE TO PRELIMINARIES - ENVIRONMENTAL MANAGEMENT PLAN

(Note: Refer to Preliminaries clause – **Environmental Management** where the Contractor elects to adopt this Plan. The Contractor must complete the Environmental Management Plan by inserting contract-related requirements as necessary or 'NA' where a particular item is not applicable.)

IMPLEMENTATION

ENVIRONMENTAL OBJECTIVES	ACTION TO BE TAKEN	WHEN ACTION WILL BE TAKEN	PERSON RESPONSIBLE	ACTION COMPLETED
1. CONSERVATION OF PLANTS & WILDLIFE				
1.1 Protect flora and fauna	Protect existing trees and plants at and around the Site from damage unless approved by the Principal			
	Do not remove trees and plants without approval from the Principal			
	Control weeds on the Site			
	Protect birds, fish and animals at and around the Site from harm			
	Do not remove birds, fish and animals from the Site without the written agreement of the Principal			
	Do not bring birds, fish, animals and plants onto the Site without written agreement from the Principal			
	Minimise the use of pesticides and herbicides for minimal impact on the environment			
1.2 Control movement of pedestrians, materials, vehicles and plant to minimise damage to the environment	Use only designated routes for access to the Site			
	Use designated site roads and access routes for all movements on and adjacent to the Site			
	Locate compounds, and park all vehicles and plant, in designated areas on the Site			
2. CONSERVATION OF RESOURCES				
2.1 Design for energy efficiency	Adopt energy efficiency, environmental enhancement and waste minimisation as design criteria			
2.2 Select materials to minimise: 1. resource use and waste 2. ozone	Use low energy usage construction, fittings and appliances (including heating/cooling and lighting)			
	Incorporate conservation of resources obligations into subcontracts			
	Reuse all topsoil on the Site and minimise the use of imported topsoil			
	Mulch and chip cleared vegetation as appropriate			

2. PRELIMINARIES

ENVIRONMENTAL OBJECTIVES	ACTION TO BE TAKEN	WHEN ACTION WILL BE TAKEN	PERSON RESPONSIBLE	ACTION COMPLETED
depleting effects 3. detrimental effects on air, water, and land quality 2.3 Conserve heritage items and other physical attributes of the Site	Maximise use of materials that are recyclable or from a sustainable source			
	Use timber from sustainable managed sources only			
	Implement a strategy to reduce the quantity of waste, including minimising and recycling packaging			
	Use low water demand fittings & appliances (dual flush toilets, water conserving shower roses & taps)			
	Minimise the use of solvents, glues, paints and other materials which release odours or vapour			
	Comply with statutory requirements for conservation of heritage items			
	Manage the conservation of physical attributes of the Site, including (LIST THE ATTRIBUTES):			
3. POLLUTION CONTROL				
3.1 Control discharges and emissions from vehicles and plant to minimise damage to the environment	Do not use vehicles, plant or equipment that produce excessive emissions			
	Monitor emissions from vehicles and plant			
	Do not bring vehicles or plant and equipment with hydraulic fluid, fuel or oil leaks to the Site			
	Wash down vehicles, plant and equipment only in controlled areas acceptable to the Principal			
	Prevent and clean up any spills from transport vehicles			
3.2 Prevent pollution of stormwater and adverse effects on land and vegetation by control of cleaning activities and discharges	Use only water based, non-toxic paints and use only water to clear point brushes and rollers			
	Control all run-off from cleaning activities			
	Discharge only non-toxic cleaning products generally			
3.3 Control soil erosion	Identify the existing drainage paths on the Site and protect them against siltation			
	Protect vulnerable and exposed surfaces and stockpiles against scouring			

2. PRELIMINARIES

ENVIRONMENTAL OBJECTIVES	ACTION TO BE TAKEN	WHEN ACTION WILL BE TAKEN	PERSON RESPONSIBLE	ACTION COMPLETED
	Install the following sediment control devices before starting construction (LIST THE DEVICES):			
	Monitor and manage the effectiveness of sediment control devices			
	Remove sediment control devices when no longer required			
3.4 Prevent release of soil contamination to the environment	Establish, before commencing work on the Site, in consultation with the Principal, if contaminated soil is present at the Site			
	If contaminated soil is present, manage the work to prevent release to the environment			
3.5 Manage refrigerants and other dangerous goods to meet statutory requirements	Ensure the procedures used for the charging and disposal of refrigerants and use of dangerous goods meet statutory obligations			
	Use appropriately trained employees			
	Obtain the licences required			
	Document dangerous goods identification, disposal and management, and retain the documentation			
3.6 Minimise noise and vibration impacts on neighbours, occupants and users of any facility	Comply with noise limits and conditions prescribed by the EPA, Department of Environment and Conservation and Council (as applicable)			
	Use equipment in good repair and condition			
	Use noise suppression equipment (e.g. silencers on compressors) and acoustic barriers as required			
	Do not expose workers, neighbours or visitors to excessive noise, and cooperate and coordinate with operators of any neighbouring facility			
	Do not expose people or property to excessive vibrations			
3.7 Comply with Trade Waste Licence conditions applicable to the facility	Implement procedures to avoid breaches of the Trade Waste Licence conditions (may apply to discharges from cooling water systems, condenser water systems, heating water systems, cooking facilities, engine discharges, water treated with chemicals or where large sediment loads exist)			

2. PRELIMINARIES

ENVIRONMENTAL OBJECTIVES	ACTION TO BE TAKEN	WHEN ACTION WILL BE TAKEN	PERSON RESPONSIBLE	ACTION COMPLETED
3.8 Minimise air pollution from dust and emissions	Minimise areas of exposed earth and stockpiles			
	Cover and secure materials in open transport			
	Use water sprays and/or other means to control dust			
	Keep emissions within statutory or other required limits			
	Minimise fire risks, and prevent and control fires			
3.9 Dispose of waste in accordance with statutory requirements	Implement appropriate disposal procedures for all waste items, including using lawful places for disposal, recording and reporting on the method and location of disposal and any non-conformances			
	EITHER Provide valid disposal certificates for each applicable item OR Provide company certification of appropriate disposal of the following (LIST THE ITEMS): <ul style="list-style-type: none"> • Packaging materials • Replaced or redundant materials • Chemicals • Oils and greases from machinery, cooking and other processes • Paints and solvents, including those used to clean equipment, tools and brushes • Cleaning materials and rags Materials unsuitable for re-use, including hazardous materials such as asbestos			
3.10 Minimise damage to the environment from emergencies	Document emergency procedures to manage all reasonably foreseeable harm, including spills and other environmental emergencies			
	Ensure emergency procedures are followed			
	Obtain the agreement of the Principal to procedures for handling oil, chemicals and other dangerous goods before placing them on the Site, including secure storage arrangements			
	Re-instate and clean damaged areas and features, including work areas			
	Re-instate damaged eco-systems and features to their previous condition			
	Identify key contacts: (LIST NAMES and ROLES)			

2. PRELIMINARIES

ENVIRONMENTAL OBJECTIVES	ACTION TO BE TAKEN	WHEN ACTION WILL BE TAKEN	PERSON RESPONSIBLE	ACTION COMPLETED
3.11 Comply with environmental requirements and rectify breaches	Inspect the Site daily to ensure appropriate environmental controls are in place and operating effectively, and that all environmental management requirements are being met			
	Cooperate with environmental audits by others			
	Rectify any environmental breaches identified within the time specified in an audit or by the Principal			
4. RECORDS AND REPORTING				
4.1 Provide sufficient documentation to demonstrate appropriate environmental management, including:	Prepare, submit and update the Environmental Management Plan			
	Maintain and submit records of environmental training			
	Report on implementation of the Environmental Management Plan			
	Submit applicable waste disposal certificates and/or company certification of appropriate disposal			
	Submit to the Principal copies of correspondence with regulators, including incident reports and notification of non-compliances or fines			
	Submit documentation evidencing that the causes of non-compliances have been corrected			
	Keep records for inspection securely filed using an effective document retrieval system			
4.2 Report environmental incidents	Immediately report all environmental incidents to the Principal			
	Immediately report environmental incidents as otherwise required			

END OF SECTION – PRELIMINARIES

3 TECHNICAL SPECIFICATION

1 GENERAL

1.1 GENERAL

All work under the Contract must be carried out in strict accordance with the details shown in and requirement of the Specification and Drawings.

The Contract involves the supply and installation (including testing and commissioning) of the MATV and Telecommunications backbone and horizontal cabling, splitters/couplers, outlets and other works as specified.

The contractor must not use or interfere with any existing communication and TV cable distribution system within the building.

The work under the Contract includes demolition and disposal of all waste and materials and equipment no longer serviceable or no longer required by the Principal, which will become the property of the Contractor and must be removed from the Site.

Equipment of value, F.T.A headends, QAM headends, their enclosures, amplifiers disconnected from old systems will remain the property of NSW Housing and must be handed over to the Principal's Representative.

1.2 NOTICE OF COMMENCEMENT

The Contractor must notify the Principal's Representative before any work is commenced.

The Contractor must obtain the keys to the McKell or Moorabin Building from the Principal's Representative. The Contractor must return the keys to the Principal's Representative after use.

1.3 MANUFACTURER'S RESPONSIBILITIES

Warranties provided by manufacturers and contractor's and their obligations under law must be managed so that in the event of equipment failure, action by the manufacturer and contractor will be arranged to rectify defects and faults.

1.4 SUPPLY OF ELECTRICITY

Electricity will be available to the Contractor from the common area power points or GPO's located in the switchboard cupboards in the building. The contractor must provide any portable RCD protection required.

1.5 SITE AMENITIES

The Contractor must provide all site amenities, lunch room, storage, toilets, required for the work under this Contract.

No builder's materials are to be stored in any common areas of the building during the carrying out of the Works.

1.6 SPECIAL SECURITY ARRANGEMENTS

Many of N.S.W Housing residents or tenants in these buildings are frail and elderly and are vulnerable to possible physical attack.

During the work under this Contract, particularly during the installation of the backbone cabling phase, the Contractor must ensure absolute security is maintained with the premises of such people. Tenant units must not be left in an unsecured situation.

3. TECHNICAL SPECIFICATION

1.7 CLEANING AND CARE OF PROPERTY.

The Contractor must clean up and remove from the Site, any trade waste, including any inside the building, and the cleaning of corridors and common areas.

If the cleaning work is not carried out to the satisfaction of the Principal's Representative an independent cleaner will be engaged to carry out the work. All costs incurred by the Principal in employing this independent cleaner will be a debt from the Contractor to the Principal.

1.8 NOTICE AND PERMITS

The Contractor must comply with all such Ordinances, Regulations and By-Laws as must be binding in relation to the Works, and must give all notices and obtain all permits and pay all fees necessary in connection therewith.

1.9 NOTIFICATION OF ELECTRICAL WORK

AS/NZS 3000:2007 requires electricians to self-test their work and to complete a Notification of Electrical Work form for work involving:

- changes to electrical circuits;
- the remedying of any defect in an installation;
- reconnection of supply by an electrician when Authorised by the Supply Authority.

It is understood the form is not required if the work consists only of the disconnection, reconnection or replacement of appliances, switches, lighting points or socket outlets without an increase in their number or the electrical loads imposed by them.

2 SCOPE OF WORK

2.1 OUTLINE

The works under the Contract comprises the provision of all materials, labour, transport, tools, plant, applications, payment of fees and everything else necessary for the construction, installation, testing, commissioning and defects rectification required to carry out the Works together with all minor and incidental work not specifically mentioned herein, to the true intent and meaning of this specification and the accompanying Drawings.

The work under the Contract for the McKell Building - 55 Walker Street Redfern

- Design, supply and install (including test and commission) new MATV and Telecommunications Backbone, Horizontal Cabling and Distribution systems.
- The MATV system must be completely replaced
- The Telecommunications system must be replaced on the building side of the MDF. The MDF and street connection are Telstra property and must not be altered
- The MATV design can be of coaxial/copper cabling only or single mode fibre only or a combination of both. Contractors must submit tenders for Coaxial/Copper, Optical Fibre Hybrid (combination) or Full Optical Fibre designs
- All units must receive all Digital and Analogue Free to Air (F.T.A).
- The design must be capable of accommodating the following services to all units within the McKell building
 1. All locally available analogue Free To Air channels ie, 2, 7 9 10 & 28 must be provided by way of transmodulation from their COFDM equivalents to analogue.
 2. Analogue channel 31 TVS
 3. F.T.A Digital TV Channels 6,8,11,12,34 and 35
 4. The Digital headend must be able to accommodate future new digital channels. The digital headend will have room for extra modules/cards.
 5. Connect T.V (Russian) Via QAM
 6. TVB Jadeworld (Chinese) Via QAM
 7. Select T.V (Spanish,Italian,Greek) Via QAM
 8. Vision Asia (Indian) Via QAM
 9. World Media/Mysat (Arabic/Lebanese) Via QAM
 10. Telecommunications/ Internet(ADSL)/Data
 11. DAB Digital Radio
 12. AM/FM Radio
- The lateral MATV cables to units must include two cat 6 cables for each unit. One cable must be used for telecommunications/Data(ADSL), the second cable must be available for future Broadband/IPTV services. All cables must be terminated in the lounge room of each unit. Cat6 cables via RJ45 and MATV cables via "F" type terminations.
- Inactive Cat 6 cables must be left neatly coiled in the communications riser, clearly labelled with their respective unit number for future use.

3. TECHNICAL SPECIFICATION

- Locate all existing services including electrical cables installed in concrete floors and in electrical riser cupboards prior to drilling.
- Penetrations through electrical riser cupboards or concrete floors must be fire rated (FRL of -/90/90) with an approved compound.
- Supply and install new IDF telecommunications distribution blocks (krone or equivalent) in communication risers.
- Supply and install cable tray in communication cupboards. The tray must be of appropriate width such that only 50% of the tray width is used for the entire installation that supports the backbone cabling in electrical risers.
- Supply and install rigid conduit and inspection tees to support horizontal cabling in walkways. Conduit must be tamper resistant and robust ie; galvanised metal pipe AS/NZS3013, AS/NZS2053, WSX2 Mechanical protection systems
- A sample of Conduit/Ducting proposed for common area use must be supplied prior to commencement of construction.
- The Principal's Representative must approve any duct/conduit proposed to be installed in common areas.
- Supply and install new headend equipment rack in the MATV room.
- Supply and install new FTA antenna on the roof.
- Supply and install new satellite dish(es) on the roof
- Supply and install four spare MATV quadshield cables from the roof to the headend for future satellite use
- Supply and install new QAM headend in the MATV room
- Supply and install new Optical Fibre headend(optional). The Optical Fibre Headend must be compatible with a standards-based Passive Optical Network (PON) capable of supporting broadband, telephone and IPTV services.
- Supply and install new Conduit and draw string/wire to the exterior of the building for future Fibre connection to NBN(National Broadband Network)(when available). Conduit must also allow future connection to the three buildings opposite the McKell building on Moorehead St known as the "Poets" buildings. Conduit must accommodate trunk style single mode optical fibre.
- Provide provision for the connection to the Poets buildings via an output at the fibre headend
- Provide provision for the connection to the NBN via an input at the fibre headend
- Supply and install new surface plastic miniduct ducts inside SOU's (single occupancy units) to the existing T.V outlet in the lounge room of each unit.
- Supply and install new drop/horizontal cabling to each SOU in approved duct/conduit.
- Supply and install new surface outlets to each SOU. MATV outlets must be F type. Cat 6 outlets (telephone) must be RJ45
- Inactive Cat 6 outlets must be blank wall plates

3. TECHNICAL SPECIFICATION

- Supply a new RG6 or RG59 quad shield fly lead (max 3 meters) and adjust and fine-tune the resident's TV and VCR to ensure the quality of the video picture and sound is satisfactory and acceptable to the Principal's Representative.
- Remove all old MATV and telecommunications components and cabling and dispose of as per waste management section 3.10 preliminaries.
- Test and commission the complete system.
- The new MATV and Telecommunications cabling system must be separate from the existing MATV and Telecommunications cabling system
- The existing MATV and Telecommunications system is to be left in working order until the new system is installed and commissioned. Once the new system is commissioned, transfer the building to the new system and decommission and remove the old system

The work under the Contract for the Moorabin Building

99 Lilyfield Road Lilyfield.

- Design, supply and install (including test and commission) new MATV and Telecommunications Backbone, Horizontal Cabling and Distribution system.
- The MATV system must be completely replaced
- The Telecommunications system must be replaced on the building side of the MDF. The MDF and street connection are Telstra property and must not be altered.
- The Moorabin building has an existing Foxtel "cable" backbone. The backbone is Telstra property and must not be disturbed.
- The MATV design can be of coaxial/copper cabling only, a combination of both (Hybrid) or single mode fibre only. Contractors must submit tenders for Coaxial/Copper, Optical Fibre Hybrid (combination) or Full Optical Fibre designs.
- All units will receive all Digital and Analogue Free to Air (F.T.A).
- The design must be capable of accommodating the following services to all units within the Moorabin building
 1. All locally available analogue Free To Air channels ie, 2, 7 9 10 & 28 must be provided by way of transmodulation from their COFDM equivalents to analogue.
 1. Analogue channel 31 TVS
 2. F.T.A Digital TV Channels 6,8,11,12,34 and 35
 3. The Digital headend must be able to accommodate future new digital channels. The digital headend will have room for extra modules/cards.
 4. Connect T.V (Russian) Via QAM
 5. TVB Jadeworld (Chinese) Via QAM
 6. Select T.V (Spanish,Italian,Greek) Via QAM
 7. Vision Asia (Indian) Via QAM
 8. World Media/Mysat (Arabic/Lebanese) Via QAM
 9. Telecommunications/ Internet(ADSL)/Data
 10. DAB Digital Radio
 11. AM/FM Radio

3. TECHNICAL SPECIFICATION

- The lateral MATV cables to units must include two cat 6 cables for each unit. One cable must be used for telecommunications/Data(ADSL), the second cable must be available for future Broadband/IPTV services. All cables must be terminated in the lounge room of each unit. Cat6 cables via RJ45 and MATV cables via "F" type terminations.
- Inactive Cat 6 cables must be left neatly coiled in the communications riser, clearly labelled with their respective unit number for future use.
- Locate all existing services including electrical cables installed in concrete floors and in electrical riser cupboards prior to drilling.
- Supply and install new IDF telecommunications distribution blocks (krone or equivalent) in communication risers.
- Penetrations through electrical riser cupboards or concrete floors must be fire rated (FRL of -/90/90) with an approved compound.
- Supply and install cable tray in communication cupboards. The tray must be of appropriate width such that only 50% of the tray width is used for the entire installation that supports the backbone cabling in electrical risers.
- Supply and install rigid conduit and inspection tees to support horizontal cabling in walkways. Conduit must be tamper resistant and robust ie; galvanised metal pipe. AS/NZS3013, AS/NZS2053, WSX2 Mechanical protection systems
- A sample of Conduit/Ducting proposed for common area use must be supplied prior to commencement of construction.
- The Principal's Representative must approve any duct/conduit proposed to be installed in common areas.
- Supply and install new headend equipment rack in the MATV room nominated.
- Supply and install new FTA antenna on the roof.
- Supply and install new Satellite Dish(es) on the roof
- Supply and install four spare MATV quadshield cables from the roof to the headend for future satellite use
- Supply and install new QAM headend in the MATV room
- Supply and install new Optical Fibre headend(optional). The Optical Fibre Headend must be compatible with a standards-based Passive Optical Network (PON) capable of supporting broadband, telephone and IPTV services
- Supply and install new Conduit and draw string/wire to the exterior of the building for future Fibre connection to NBN(National Broadband Network)(when available). Conduit must accommodate trunk style single mode optical fibre.
- Provide provision for the connection to the NBN via an input at the fibre headend
- Supply and install new surface plastic mini duct ducts inside SOU's (single occupancy units) to the existing T.V outlet in the lounge room of each unit.
- Supply and install new drop/horizontal cabling to each SOU in approved duct/conduit.
- Supply and install new surface outlets to each SOU. MATV outlets must be F type. Cat 6 outlets (telephone) must be RJ45.

3. TECHNICAL SPECIFICATION

- Inactive Cat 6 outlets must be blank wall plates
- Supply a new RG6 or RG59 quad shield fly lead (max 3 meters) and adjust and fine-tune the resident's TV and VCR to ensure the quality of the video picture and sound is satisfactory and acceptable to the Principal's Representative.
- Remove all old MATV and telecommunications components and cabling and dispose of as per waste management section 3.10 preliminaries
- Test and commission the complete system.
- The new MATV and Telecommunications cabling system must be separate from the existing MATV and Telecommunications cabling system
- The existing MATV and Telecommunications system must be left in working order until the new system is installed and commissioned. Once the new system is commissioned, transfer the building to the new system and decommission and remove the old system

2.2 TECHNICAL INFORMATION TO ACCOMPANY TENDER

Design Documents

Submit designs and layouts to demonstrate that the design is within the parameters described in the Specification.

All documents are to be checked by the person responsible for directing the preparation of designs and documents, and each document is to be initialled by such a person.

GUARANTEES: The Contractor must submit guaranteed equipment rating and selection tables which will be used to establish guaranteed plant capacities if tests cannot be carried out under design conditions.

2.3 DRAWINGS AND INFORMATION BY CONTRACTOR

Requirement

The drawings and information described in this clause must be provided by the Contractor within the periods stated and in all cases early enough to avoid delay to carrying out the Works and to allow examination of the drawings.

Drawing Register

Submit a drawing register before design work commences or workshop drawings are submitted.

Shop Drawings

Shop drawings must be produced to AS 1100 and show the proposed layout and the detailed construction of the installation and shall include:-

- All details as required for execution of the Works.
- New and existing services.
- Plans and elevations as necessary showing the route, size and configuration of all equipment ducts, pipes, conduit and wiring & cabling. The drawings must be at a scale of not less than 1:100 and must be coordinated with the other services.
- Schematic and cabling diagrams of the MATV/SMATV and Telecommunications system including control equipment, special apparatus and the like.

Final installation dimensions must be confirmed by site measurement to ensure satisfactory set out and co-ordination with the structure and new or existing services.

3. TECHNICAL SPECIFICATION

Catalogue, performance data and other details as may be deemed necessary must be provided to enable the suitability of the proposed equipment to be fully assessed.

As Installed Drawings

Three sets of as installed drawings must be provided and shall include:-

- All corrected Shop Drawings considered necessary by the Principal's Representative.
- Layout drawings showing the final location of all services.
- E drawings. Electronic drawings must be provided on a disk in a format as described in section 7.3 ETENDERING.

Operation and Maintenance Manuals

Three sets of Operation and Maintenance Manuals stating the name of the Contract must be supplied. Manuals of operating and maintenance procedure must be neatly and logically arranged, bound into loose leaf type covers, colour and type acceptable to the Principal's Representative, properly labelled and indexed, and must include:

- Work as executed or installed drawings reduced to A3 size and laminated.
- List of equipment fittings, components and appliances installed, together with make, type and reference number, and manufacturer's warranties and ordering instructions.
- List of spare equipment, replacement parts and tools recommended to be kept.
- Full and clear explanation of the functions and procedures to be adopted in the operation and use of the various systems and devices.
- If possible electronic copies of manuals are to be supplied
- *Commissioning Information and Test Data*

Include in the Manuals Service instructions for preventative maintenance, checking, operations, fault finding and breakdown procedures, together with list of names of persons and/or firms that are capable of carrying out these functions together with addresses and telephone numbers.

- *Manufacturers Warranties and Guarantees*

Include in the Manuals instructions for maintenance to comply with AS 1851 and to enable a certificate of maintenance and design performance to be issued annually.

Include in the Manuals title pages stating names of the Contract Principal, building owner and Contractor (and any subcontractors).

- *Certificate and Forms of Compliance*

All pages of the Manuals must be A4 whilst drawings must be A3 size. Binding holes must be reinforced.

These documents must be reviewed for accuracy and any errors, discrepancies and/or omissions corrected by the Contractor and full replacement of copies and files before expiry of the required period for completion.

As any such required corrections must be considered a defect under the Contract.

Provide a draft copy of the Manuals at 75% completion and not later than 3 weeks of the Completion of the construction of the Works.

3. TECHNICAL SPECIFICATION

2.4 TESTING AND ACCEPTANCE

Requirement

The installation must be tested to the satisfaction of the Principal's Representative and the relevant statutory authorities prior to the acceptance of the installation. The tests must comprise a thorough inspection of the entire installation, and the operational and performance tests required to confirm compliance with the Specification.

The tests must be carried out by an independent testing authority using a Systems Analyser, producing Test Certificates, dated and signed by a responsible person and supplied in triplicate.

The Contractor must arrange and provide all necessary facilities, independent testing authority, labour, apparatus and instruments, properly calibrated, required for carrying out the tests, and give the Principal's Representative five working days' notice of tests.

2.5 OPERATING INSTRUCTIONS

Requirement

When the preliminary tests and adjustments have been completed the Contractor must provide, a skilled person to operate the plant and instruct the Principal's Representative or a nominee, in its efficient operation.

The instruction time must be allocated as nearly as practicable to periods of maximum loading on the plant or any other condition of usage or occupation likely to produce maximum design conditions.

The Contractor must be responsible for the care of the installation during the period of instruction.

2.6 MAINTENANCE

Requirement

The installation must be maintained during the required period.

Portions of the installation, which are replaced during the maintenance period, must be subject to guarantees and maintenance for at least that period for the date of replacement.

During the period the Contractor must arrange with the Principal's Representative and then visit the site at least every 3 months, inspect major equipment and test its operation, and consult the Principal's Representative and receive advice on any item requiring attention.

Submit a signed, written report to the Principal's Representative following each inspection with details including date, names and personnel involved and work performed, including items adjusted or replaced.

Any portions of the installation which prove unreliable or require undue maintenance during the period must be completely replaced with new equipment at the direction of the Principal's Representative.

2.7 NON COMPLIANCE

Should the system fail to comply with the requirement set down in the Specification, the Contractor must rectify such faults within five (No 5) working days of written notification at no additional cost to the Principal.

2.8 INTERRUPTION TO EXISTING SERVICES

Requirement

In order that interruptions to existing services cause a minimum of inconvenience, all work likely to disrupt an existing service must be carried out at times agreed by the Principal's Representative. In this regard the Contractor is to confer with the Principal's Representative, to ensure that residents are not unduly affected by interruptions of service.

The connection of new work (temporary or permanent) to existing services must not be permitted unless prior agreement has been obtained from the Principal's Representative in writing. A written request must be made by the Contractor on each occasion and sufficient details must be provided to the Principal's Representative to indicate the nature and proposed timing of the work. At least 48 hours notice is required.

All such work is to be proceeded expeditiously so that the duration of interruption is reduced to a minimum.

Notify the relevant authorities of any disruption to services and advise them when the service is back on line. Authorities may include, but not be limited to, Local Fire Authority, Supply Authority, Local Water Authority and the like.

2.9 CERTIFICATION

Requirement

Upon completion of the Works provide a certificate in a form satisfactory to the Principal's Representative and complying with Australian Standards, for each service stating that it has been designed, installed and is capable of operating to the standards specified herein and required by the relevant authorities.

2.10 COMPLETION

Requirement

The following requirements shall be fulfilled before the Works can be considered complete:

- Commissioning and testing complete and documented.
- As installed drawings provided.
- Operation and Maintenance Manuals provided.
- Inspection and Test Plans, signed off.

2.11 CONTRACTOR TO INFORM HIMSELF

Requirement

Inspect the site and examine all relevant documents to obtain all necessary information concerning the work.

2.12 FEES AND FINES

Requirement

Pay all fees, charge and fines associated with carrying out the Works.

2.13 PENETRATIONS

Requirement

Provide all penetrations necessary for carrying out the Works. Fire rate penetrations as necessary.

3. TECHNICAL SPECIFICATION

Location

The Contractor must make sure that no existing electrical, communications and hydraulic services in the concrete slab are in the vicinity of proposed penetrations. The Contractor must locate all existing electrical, communications and hydraulic services in the concrete slab and mark them appropriately.

SPECIAL NOTE: At the McKell Building. The backbone cabling must be installed at the communications end of the riser cupboard and the Contractor must not interfere with the existing Russian Satellite TV cabling system. The new QAM headend must have Russian Satellite TV; the output frequency must be the same as the output on the existing QAM headend

Approval

Obtain approval from the Principal's Representative of the proposed location of all penetrations before proceeding.

Damage

If any of the existing electrical, communications and hydraulic services in the concrete slab is damaged during the carrying out of the Works they must be repaired by the contractor at the contractor's expense.

Size of Penetrations

The size of each penetration must be determined by the number and size of the cables passing through. At least 50% spare space is to be provided for future MATV cabling. The minimum size penetration is to be 50mm dia.

Further

Make good and seal all penetrations.

Scope

With penetrations comply with the following:-

- Diamond drilled core holes through concrete structures and masonry walls.
- Avoid/minimise cutting of reinforcing steel. Epoxy coat exposed steel.
- Provide a structural engineer's certificates for each penetration through structural elements.
- Provide pipe sleeve for fire rated walls and floors and where expansion is required.
- Prime paint ferrous surfaces.
- Fire stop where passing through fire rated elements, and provide a certificate showing that a representative specimen of the element of construction incorporating the proposed fire stopping, has attained the required fire resistance rating when tested in accordance with AS 1530.4
- Provide appropriate gunned self extinguishing grade silicone rubber joint sealer for non-fire rated elements or a weak sand cement mix as applicable.
- Provide under and over flashing for penetrations through external elements and restore watertight membranes where penetrated.
- Restore surface finishes.

2.14 INSTALLATION OF DUCTS AND CONDUITS

Requirement

The method of installing of all ducts and conduits is to be subject to the approval of the Principal's Representative prior to execution. The Contractor must submit a detailed proposal for approval before proceeding.

Existing ducts in housing units may be used if there is adequate space within.

Cables must not be visible at any point along the route in tenant accessible areas.

2.15 RECORD OF CONDITION

Requirement

Record of the condition of all services prior to work commencement. The Principal's Representative must be provided with a copy of the record and notified in writing of any defects. Defects not recorded and notified prior to work commencement must be deemed to be the Contractor's responsibility and must be made good at the Contractor's costs.

Installation of Cable

Cables must be installed in accordance with the manufacturer's recommendation and as follows:

Minimum bend radius:

RG-6	76mm
RG-11	114mm
CAT6	76mm

Maximum pull tension:

RG-6	74kg
RG-11	140kg

Conduit fill area:

1 cable	50%
2 cables	33%
3 + cables	40%

Install pull boxes for every two 90° bends of route length.

Cable Identification

All cables must be identified as to their function and destination. The means of cable identification is not to distort or damage the cable. Identification must be permanently affixed to the cable. The Contractor must submit their proposed method of cable identification with their Tender.

Installation of Equipment

Equipment installed in tenant accessible areas must be protected by a key (type to be identified and is subject to the Principal's approval) lockable enclosure labelled "MATV and/or Telecommunications" screw fixed to the wall.

2.16 PROGRAM

Requirement

The Contractor must submit a construction program prior to commencement of construction. The program must be subject to the approval of the Principal's Representative. The Contractor must provide updates of this program at each regular

3. TECHNICAL SPECIFICATION

meeting. The various items of related work must generally be started concurrently and finished as soon as possible after starting.

Order of Work

The order of work is to suit the needs of the Department of Housing and tenants. All trades are to run concurrently so as minimise the interruptions to the tenants. The tenants must have access to their units at all times.

Cash Flow

Within two weeks after awarding the Contract and before the first claim for payment, the Contractor must submit a proposed cash flow for the work under the Contract.

2.17 DILAPIDATION RECORD

Joint Inspection

Before commencement of work on the Site, arrange a joint inspection with the Principal's Representative.

Records

Make written and photographic records of the condition of all adjoining properties, structures, facilities, surfaces and the like which are in a damaged condition or may be damaged during the carrying out of the Works. Take photographs where directed. Furnish one endorsed copy of each record to the Principal's Representative and keep another set on the Site.

Damage Assessment

Use the dilapidation record amongst other things as a means of assessing the responsibility for damage and/or repair arising out of the performance of work under the Contract. Make the copy of the record on site available for inspection when required.

3 MATV, TELECOMMUNICATIONS & ELECTRICAL SERVICES

3.1 PERFORMANCE REQUIREMENTS

All materials and workmanship used in installations must be of a standard and quality which meets the requirements of the Contract and all relevant standards.

Equipment selected for use with this contract must be equivalent to or have higher technical quality than Matchmaster or Hills equipment

General: For the purposes of this specification the abbreviations given below apply.

BER: Bit error ratio.

CNR: Carrier to Noise Ratio

COFDM: Coded Orthogonal Frequency Division Multiplexing

DAB+: Digital Audio Broadcast + (Digital Radio)

DVB-C: Digital Video Broadcast – Cable

DVB-S: Digital Video Broadcast – Satellite

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DVB-S2: Digital Video Broadcast – Satellite 2 (HD)

DVB-T: Digital Video Broadcast - Terrestrial

IPTV: Internet Protocol Television

AGC: Automatic Gain Control

MATV: Master Antenna Television

MER: Modulation Error Ratio.

PAL: Phase Alternating Line

LNB: Low Noise Block converter

QAM: Quadrature Amplitude Modulation.

QPSK: Quadrature Phase Shift Keying.

SMATV: Satellite Master Antenna Television.

EDFA: Erbium Doped Fibre Amplifier

Definitions

MATV: System that primarily provides access to terrestrial television signals but may also carry radio services. Terrestrial signals may be distributed at their original frequency or shifted to a more convenient frequency below 860MHz. In-house services may also be provided by modulating base band signals from an appropriate source.

SMATV – L Band: MATV system where satellite signals are distributed in native L-Band QPSK at the Intermediate Frequency delivered by the LNB.

SMATV – QAM: MATV system where satellite signals received at the dish are transmodulated at the headend and distributed as QAM at frequencies below 860 MHz.

CATV: MATV system that distributes signals over a wide area often using fibre optic as the main transmission medium. Satellite signals may be either native L Band or QAM

A list of the relevant Standards applicable is given below:

MATV

IEEE EFM 802.3ah	Gigabit Ethernet Passive Optical Network (GEPON)
ITU-T G.984	GPON conforming to guiding standard.
AS 1367-2007	Coaxial cabling Systems for the Distribution and Sound Signals in single and Multiple Unit Installations.
AS 1417	Rules for antennae for reception of radio and television broadcasting for the range 30 to 1000 MHz. Part 1. Construction and Installation.
AS 3000	Wiring Rules. Wiring Methods.

3. TECHNICAL SPECIFICATION

AS4053 (1997)	(Inc. Amendment 1-2000) Limits and Methods of Measurement of Immunity Characteristics of Sound and Television Broadcast Receivers and associated equipment
EN50083	Cable Distribution Systems.
IEC-169-2	Coaxial Unmatched Connector.
IEC-169-24	RF Coaxial Connectors with Screw Coupling.
IEC - 728	Measurement Procedures for Cabled Distribution Systems
CCIR	Recommendation 500 - 1 (KYOTO, 1978, Vol. X1).
CENELEC	EN 50083.
FD/T/E/2207-5015	Satellite Installation Manual – SIM for Multi-Dwelling Units, Multi-Residential Estates and Commercial Installations. Issue 8 Revision 1

Telecommunications

AS/NZS 60950	Electrical safety
AS/ACIF S008	Cabling products
AS/NZS 3080	Cabling products
AS/ACIF S009	Installation of Cabling
AS/NZS 3084	Installation of Cabling
SAA HB 29	Installation of Cabling
SAA HB 243	Installation of Cabling
AS/ACIF 3085.1	Cable Management and Documentation
ACIF C524	External Cables
AS/NZS IEC	61935.2 – Testing of Balanced Cable Systems

3.2 SCOPE

Outline Description

The MATV distribution system must have the capacity for a total of 60 forward channels. An upstream band split of 5 – 30MHz [or 5 – 65MHz] must be utilized for interactive functions Refer to Section Spectrum Assignment for Television Channel Allocations.

The system must be able to receive and distribute up to seventy analogue and digital VHF and/or UHF channels within the bandwidth 5-860 MHz, WITHOUT any changes in the distribution system.

Current Services VHF/UHF (5-860 MHz).

The 70 channels could be made up of:

- All existing Analogue channels (transmodulated)
- All “FREE VIEW” Digital Channels
- Transcoded Satellite Channels

3. TECHNICAL SPECIFICATION

- Digital Pay TV Services
- Digital Radio Services

FTA TV Description

Analogue – The VHF channel 2, 7, 9, 10 and UHF channels 28, 31 must be received by separate antennae and converted into and reticulated by separate cables to the headend location. Digital and analogue compatible antennae must be installed – such as the Matchmaster Digimatch series or equivalent.

Analogue – Channels 2, 7, 9, 10, 28 must be Transmodulated from their digital equivalent by equipment such as the WISI Topline OV-79C or equivalent. Analogue Community ch 31 must be included if the survey shows it to be a viable signal and it must be processed using a channel processor such as the WISI OV45D channel processor or approved equivalent.

Digital - The VHF channels 6, 8, 11, 12 and UHF channel 34 must be received and reticulated to the headend location. Antennae that have been specifically manufactured for digital terrestrial reception must be installed such as the Matchmaster Digimatch series or equivalent.

Each down lead cable must have an individual galvanic isolator. This isolator must have low insertion loss and flat frequency response over a bandwidth of 5 to 1000 MHz such as the Matchmaster 19MM-IS3K or equivalent.

The Digital off air TV channels must not be frequency shifted from their original frequency locations. A single channel AGC processor with adjacent channel suppression > 60 dB and noise performance > 80 dBc @ 10kHz must be used such as the WISI Topline OV-45D DVB channel processor. Where the signal level at the channel processor input is < 60 dBμV an F connected masthead amplifier such as Johansson J series with interstage gain controls must be used.

Off-Air Radio Description

Full band II FM radio must be processed and distributed using a range amplifier such as the WISI Topline OV-22 FM or equivalent. FM radio signal levels must be maintained at 10 dB below the lowest television carrier at the outlet plate.

Pay Television Services

Existing QAM satellite output frequencies must be duplicated on the new QAM headend so as to minimize delays during system change over

SPECIFICATION FOR THE SUPPLY OF QAM HEAD END EQUIPMENT

Scope

N.S.W Housing intends to supply Transparent Digital Trans modulators (TDT's) for the conversion of DVB-S (QPSK) to DVB-C (QAM). This digital Head end equipment is part of an on going project to improve access to Digital television services throughout N.S.W Housing's high rise buildings in Sydney

Transmodulators must have twin digital satellite (QPSK) inputs and dual digital cable (QAM) outputs. Transmodulators must be of a small size, occupying no more than 9 RU (height) x 300mm (depth) of rack space for each 20 QAM outputs.

Each transmodulator head end must have the necessary amplification to ensure a minimum output level of 104 dBV at -60 dBV IMR to DIN 45004B.

All satellite QPSK services must be transmodulated to QAM using equipment such as the WISI Topline OV-75M-1121 dual QAM modulator or equivalent.

3. TECHNICAL SPECIFICATION

Key Performance Indicators of the TDTs

Signal Input - QPSK

(SAT-IF)

Input connector	"F" type 75
Type of modulation (ETS 300 421)	QPSK - DVB-S
Frequency range	950-2150 MHz
LNB frequency tracking range	± 3 MHz
Tuning steps	1 MHz
Input level	47-80 dBV
Impedance	75
Input Return loss	>12dB
Symbol rate (36MHz BW)	2-40 Mband
Filtering	Nyquist $\gamma\cos$
Internal error protection	K=7, R=1/2, 2/3, 3/4, 5/6, 7/8
Spectrum inversion	Auto selectable
Interleaving	Conv., I=12
FEC outer code	Reed Solomon (204, 188,8)
Symbol rate locking range	100 PPM

Signal Output - QAM (Cable)

Output connector (IEC 60169-2)	"F" type 75
Type of modulation DVB-C (ETS 300 429)	16, 32, 64, 128, 256 QAM
Frequency range 45-862MHz	Tuning steps 250kHz
Output level for 16, 32, 64, 128, 256 QAM	>72 dBV
Output impedance	75
Return loss	14dB
Signal to spurious frequency ratio (45-862MHz)	60 dB (45-862Mhz)
Out of band emission Maximum	50 dBuV
Symbol rate	1 - 7.499 MS/s
Filtering	Nyquist $\gamma\cos$
Roll-Off	0.15
Interleaving	Conv., I=12
FEC outer code	Reed Solomon (204, 188, 8)
MER (64 QAM)	>39dB
IQ amp imbalance	0%
IQ phase error 0°	0°
SNR ratio >41dB (64 QAM)	>41dB
Echo >30dB from main carrier	>30dB from main carrier
Phase Jitter	<0.4% RMS
Bit rate changing (bit stuffing)	Not permitted

3. TECHNICAL SPECIFICATION

General - Environmental & Regulatory

Operating temperature	-20°C...+55°C
Electrical Safety	AS/NZS 60950
Size	Compact suitable for installation into small riser locations
Mounting options	19" rack mount

Reception

For the analogue television channels, the received signal at any point within the MATV system where the impairment to any single parameter must be no worse than Grade 4 on the 5 point scale for television reception impairment (CCIR Recommendation 500-1 Kyoto 1978 Vol. X1).

- 5: Imperceptible impairments
- 4: Perceptible (not annoying) impairments
- 3: Slightly annoying impairments
- 2: Annoying impairments
- 1: Very annoying impairments

Subjective evaluations must be done by assessing the TV signal on a test colour TV receiver. The picture must be observed from a distance equal to 6 times the picture height in subdued lighting conditions. All signals must be distributed in PAL format on standard frequency allocations.

For the digital television channels the received signal at any point within the MATV system must have a carrier to noise ratio of greater than 30 dB and a measured BER of greater than 2^{-6} . The flatness of any channel multiplex must be < 2 dB at the antenna terminals and < 3 dB at any other point in the system.

All signal analysis must be completed using a CATV spectrum analyzer, such as a Tektronix 2715 or a HP 8793, or a combined analogue/digital analyzer made specifically for MATV measurement such as the Rover Instruments DL Range.

Optical Fibre

Fiber Transmitters, EDFA, must operate at 1550nm

Fiber passives, i.e. receivers must be able to operate within the range of 1310-1550nm

Optical fibre must be Single Mode Optical Fibre (SMOF) and must meet with the water peak requirements of IEC 60793-2-50 regarding the B1.3 fibre category. Optical Fibre such as Prysmian Magnalight typically meets this specification

4. SPECTRUM ASSIGNMENT

TELEVISION CHANNEL ALLOCATIONS

CHANNEL NUMBER	FREQUENCY LIMITS [MHz] [Vc]	ALLOCATION
A0	45 - 52 46.25	VACANT - OLD VCR
A1	56 - 63 57.25	VACANT - OLD VCR
A2	63 - 70 64.25	ABC ANALOGUE
A3	85 - 92 86.25	FM RADIO SERVICES
A4	94 - 101 95.25	FM RADIO SERVICES
A5	101 - 108 102.25	FM RADIO SERVICES
S2	111 - 118 112.25	NOT AVAILABLE
S6	139 - 146 140.25	
S7	146 - 153 147.25	
S9	160 - 167 161.25	
A6	174 - 181 177.500	7 Network Digital
A7	181 - 188 182.25	7 NETWORK ANALOGUE
A8	188 - 195 191.625	9 Network Digital
A9	195 - 202 196.25	9 NETWORK ANALOGUE
A9A	202 - 209 203.25	
A10	209 - 215 209.25	10 NETWORK ANALOGUE
A11	215 - 222 218.500	10 Network Digital
A12	223 - 230 226.500	ABC Digital
S11	230 - 237 231.25	
S12	237 - 244 238.25	
S13	244 - 251 245.25	
S14		
S15	258 - 265 259.25	
S16	265 - 272 266.25	
S17	272 - 279 273.25	
S18	279 - 286 280.25	
S19	286 - 293 287.25	
S20	293 - 300 294.25	
S21	302 - 309 303.25	
S22	309 - 316 310.25	
S23	316 - 323 317.25	
S24	323 - 330 324.25	
S25	330 - 337 331.25	
S26	337 - 344 338.25	
S27	344 - 351 345.25	
S28	351 - 358 352.25	
S29	358 - 365 359.25	
S30	365 - 372 366.25	
S31	372 - 379 373.25	
S32	379 - 386 380.25	
S33	386 - 393 387.25	
S34	393 - 400 394.25	

3. TECHNICAL SPECIFICATION

CHANNEL NUMBER	FREQUENCY LIMITS [MHz]	[Vc]	ALLOCATION
S35	400 - 407	401.25	
S36	407 - 414	408.25	{tc V 1 ""}
S37	414 - 421	415.25	
S38	421 - 428	422.25	
S39	428 - 435	429.25	
S40	435 - 442	436.25	
S41	442 - 449	443.25	
S42	449 - 456	450.25	
S43	456 - 463	457.25	
S44	463 - 470	464.25	
S45	470 - 477	471.25	
A21	477 - 484	478.25	
A22	484 - 491	485.25	
A23	491 - 498	492.25	
A24	498 - 505	499.25	
A25	505 - 512	506.25	
A26	512 - 519	513.25	
A27	519 - 526	520.25	
A28	526 - 533	527.25	SBS ANALOGUE
A29	533 - 540	534.25	[SBS Digital Melbourne]
A30	540 - 547	541.25	[SBS Digital Perth]
A31	547 - 554	548.25	
A32	554 - 561	55.25	
A33	561 - 568	562.25	[SBS Digital Adelaide]
A34	568 - 575	571.500	SBS Digital Sydney
A35	575 - 582	576.25	
A36	582 - 589	585.500	[SBS Digital Brisbane]
A37	589 - 596	590.25	
A38	596 - 603	597.25	
A39	603 - 610	604.25	
A40	610 - 617	611.25	
A41	617 - 624	618.25	
A42	624 - 631	625.25	
A43	631 - 638	632.25	
A44	638 - 645	639.25	
A45	645 - 652	646.25	
A46	652 - 659	653.25	
A47	659 - 666	660.25	
A48	666 - 673	667.25	
A49	673 - 680	674.25	
A50	680 - 687	681.25	
A51	687 - 694	688.25	
A52	694 - 701	695.25	
A53	701 - 708	702.25	
A54	708 - 715	709.25	
A55	715 - 722	716.25	

3. TECHNICAL SPECIFICATION

CHANNEL NUMBER	FREQUENCY LIMITS [MHz]	[Vc]	ALLOCATION
A56	722 - 729	723.25	{PRIVATE }{tc V 1 ""}
A57	729 - 736	730.25	
A58	736 - 743	737.25	
A59	743 - 750	744.25	
A60	750 - 757	751.25	
A61	757 - 764	758.25	
A62	764 - 771	765.25	
A63	771 - 778	772.25	
A64	778 - 785	779.25	
A65	785 - 792	786.25	
A66	792 - 799	793.25	
A67	799 - 806	800.25	
A68	806 - 813	807.25	
A69	813 - 820	814.25	

5 TECHNICAL PERFORMANCE REQUIREMENTS

5.1 GENERAL

The MATV System must conform with manufacturer's specifications, Australian Standard AS1367-2000 and the following parameters:

The levels of any signal other than the specified services must be below 48 dBc at any point in the system.

The level of any one channel, digital or analogue, across any two-service outlets must not differ by more than 10 dB.

Carrier/noise ratio for analogue carriers must be equal to or better than 47 dBc at any point in the system.

Carrier/noise ratio for analogue carriers must be equal to or better than 52dBc at the output of the headend launch amplifiers.

Carrier/noise ratio for digital carriers must be equal to or better than 30 dBc at any point in the system.

Carrier/noise ratio for digital carriers must be equal to or better than 32 dBc at the output of the headend launch amplifiers.

The BER for digital carriers must be equal to or greater than 2^E6 at any point in the system.

The flatness of any channel multiplex must be < 2 dB at the antenna terminals and < 3 dB at any other point in the system.

Composite distortion performance must be equal to or better than 52 dB.

Carrier to 50 Hz hum ratio must be equal to or better than 46 dB.

Antenna Levels

The antennae signals must be adjusted so that the optimum level is presented at the input to the terrestrial processors.

3. TECHNICAL SPECIFICATION

Isolation

The isolation between any two-service outlets must be equal to or better than 34 dB.

Cross Modulation

The modulation of any signal by the other signals must be less than or equal to -48 dBc at any service outlet. Cascaded amplifiers must be correctly adjusted to maintain this cross modulation level.

Power Failure

All active components automatically reset to their pre-programmed sequence of events upon the return of power after any power disruption.

5.2 HEADEND COMPONENTS

General

The headend must accept the off air television and radio signals while producing the in house television and in house music signals. Within the headend the off air radio, in house television and in house music signals must be converted to radio frequency (RF) signals and combined with the processed off air television signals. The RF signals are then broadband amplified before being inserted onto the MATV distribution network. The completed headend must be assembled in 19" equipment racks with a single fan tray per rack installed to maintain thermal cooling requirements. All equipment is to be compliant to Australian EMC emission & immunity standards.

Terrestrial Converters

Equipment such as the WISI Topline OV-45A terrestrial channel processors or OV45D DVB processors or equivalent must be used.

Digital Receivers

Equipment such as the REAC Digital Receivers or equivalent must be used.

Stereo Modulators

Equipment such as the WISI Topline OV-36A Stereo Modulators or equivalent must be used.

Separate converters must be provided for each channel that requires conversion. Analogue off air television channels must be converted to alternate frequencies with the original frequencies left vacant to minimise any interference or receiver tuning difficulties. The digital off air television channels must not be converted but processed on their original frequency assignments. The converters must be the same style as the modulators and mounted within the 19" equipment racks located at the MATV headend.

Headend Channel Combiners

A high isolation, high return loss passive combiner must be utilised to combine channel module outputs.

Input port isolation >40dB.

Input/output return loss > 18 dB at 1 GHz.

Headend Broadband Amplifiers

Launch and distribution amplifiers must be used with a 6 dB slope output level capability of 109 dBuV, 36 dB gain and CSO, CTB & CMR performance of -60 dB with 42 CENELEC analogue channels loading. All amplifiers must be of the GaAs power doubling variety and have a noise figure of < 6 dB. Amplifiers such as the WISI VX-22 or equivalent must be used.

3. TECHNICAL SPECIFICATION

Low Irritant Screen Generator

A low irritant screen video generator must be provided. A suitable logo must be generated for insertion on all background music and AM/FM radio channels.

Headend Enclosure

The MATV headend must consist of enclosed 19-inch racks bolted together and mounted on a wooden plinth. 240VAC 50 Hz GPO's must be provided down the rear of each rack in the quantities required. Power and heat loadings are to be calculated specifying the number of GPO's per rack and dedicated 240 VAC power supply circuits. A protective earth is required for connection to the headend racks.

5.3 TELEVISION DISTRIBUTION PANELS (TVDP) COMPONENTS

General

The active TVDP's must be constructed in metal cabinets with all components mounted on a steel sub-plate. The cabinets are to be common keyed. The 240VAC mains outlet must be mounted adjacent to the cabinet. This 240VAC mains outlet must come from the same dedicated power supply circuit and protective earth as the headend. Passive distribution materials must be contained within an electrical polybox. The components must be mounted on an insulated mounting pan and the box must be secured with tamper proof sealing. The distribution network must be a balanced star configuration with a separate RG6 Quad drop cable to each outlet. Equipment such as the WISI DM series splitters and taps or equivalent must be used throughout.

5.4 COMPONENTS

Cables

MATV coaxial cable with a Structural Return Loss [SRL] of >26 dB and a Velocity of Propagation [Vp] of .85 C must be utilised. All lateral & drop cabling must be RG-6 Quadshield & all trunk cables RG-11 Quadshield.

Attenuation Characteristics: RG-6Q <20 dB/100M @ 862 MHz

RG-11Q <13 dB/100M @ 862 MHz

Cable Installation

To minimise the chance of damage during installation and corrosion after installation, flexible cables, for example, RG11 Quad Shield, must have a continuous dielectric such that the centre solid conductor is in full contact with the dielectric and homogenous to the shield, along the entire length of the cable.

Cables that comply with this standard include those constructed with solid, foam or cellularised-polymer dialectics as long as they comply with all parts of this section where appropriate.

Flexible cables constructed without this characteristic, such as air-spaced or semi-air spaced cables, or cables with a multi-strand centre conductor do not comply with this specification.

The use of backbone hardline cables constructed with a sealed cell dielectric, or equivalent, that prevents moisture entry is permitted.

- All cables installed underground must be of the flooded type.
- The screening effectiveness of super trunk feeders, trunk feeders and branch feeders, measured according to IEC 96-I Amendment 1, should be $\geq 95\text{dB}$ in the range 30MHz to 100MHz and $\geq 85\text{dB}$ in the range above 1000MHz to 2150MHz.

3. TECHNICAL SPECIFICATION

- The screening effectiveness of drop feeders, measured according to IEC 96-1 Amendment 1, must be $\geq 95\text{dB}$ in the range 30MHz to 100MHz and $\geq 85\text{dB}$ in the range above 1000MHz to 2150MHz
- The structural return loss for all cables, including terminal fly-leads, must not be less than 26dB.

Note: Cables that meet these specifications are typically RG6 and/or RG11 quad shield manufactured by companies such as Commscope, Digimatch, Belden and Timesfibre.

Cable Termination

A minimum length of 150 mm is to be left for cut-off prior to termination: exposed ends of cables must be taped prior to termination to prevent the "take-up" of moisture.

When preparing cables for termination care is to be taken to prevent damage to the cable shield or centre conductor. The centre conductor shall be cleaned of di-electric or non-metallic coatings.

"F" type compression connectors are to be used for cable connections. Care is to be taken that the correct type of connector for the particular cable is used. Only the proper tools for the stripping of coaxial cable and crimping of connectors are to be used.

Trunk Cable

Trunk cables connect the Headend to splitters and/or directional couplers. All trunk cable runs must be terminated to an effective return loss value of at least 25 dB. The following lists some key characteristic for trunk cables:

- RG11 Quad Shield - For trunk cables.
- Other larger sizes of cables to be used when, the loss at 860 MHz is higher.
- Flooded versions may be used in underground installations.
- All cables must be clearly marked with the manufacturer's name and serial number. Unmarked cables will NOT be accepted.

All cables must meet with the following requirements:

- RG11 Quad Shield cables must have MAXIMUM insertion loss of 13 dB at 860 MHz per 100 metres length and Minimum Braid coverage 60%.
- RG 6 Quad Shield cable must have MAXIMUM insertion loss of 20 dB at 860 MHz per 100 metres length and Minimum Braid Coverage 60%.

Drop/Horizontal Cable

Drop/Horizontal/horizontal cables run from the system outlets to concentration points, being either splitters or directional taps. The characteristics of Drop/Horizontal cables must meet the requirements. RG 6 Quad Shield for use in all cable lengths.

For all Headend interconnections, RG 59 Quad Shield cable may be used with Minimum Braid coverage of 95%.

Connectors

Only compression F-type connectors must be used at the interface between passive devices and flexible cables unless otherwise specified.

Fibre connectors shall be SC/APC

3. TECHNICAL SPECIFICATION

- The connectors specified must comply with IEC 169-24.
- The maximum diameter of the male contacts used with these connectors must not exceed 1.762mm.
- The return loss of any TV interface port, located on the system outlet, must be \geq (14dB - 1.5dB/octave) in the range 40MHz to 2150MHz to a minimum of 10dB.
- The screening effectiveness of the system outlet connectors, measured according to IEC 728, should be \geq 75dB in the range 30MHz to 1000MHz and \geq 65dB in the range above 1000MHz to 2150MHz.
- Wall plates to incorporate right angled F connectors and standard white mounting block to allow for surface ducting and cable connections.

Splitters and Directional Couplers

Splitters and directional couplers with high input/output return loss and high port isolation performance must be used as per the design schematics. Equipment such as the WISI DM or Matchmaster GM series or equivalent product range must be used.

- The return loss for all ports located on taps and splitters must be \geq 14dB in the range 5MHz to 40MHz and \geq (14dB - 1.5dB/octave) in the range 40MHz to 2150MHz to a minimum of 10dB.
- For all taps, the peak-to-peak narrowband flatness from input to output and, input to any customer tap port, must be ± 0.2 dB for any 0.5MHz segment and ± 0.5 dB for any 7MHz segment.
- The isolation between the output ports for a splitter must be \geq (14dB - 1.5dB/octave) in the range 40MHz to 2150MHz to a minimum of 10dB.

In the case of splitters with unequal output division, the above requirements for isolation must be increased by the difference in attenuation between the output ports.

- The screening effectiveness of any tap, measured according to IEC 728 must be \geq 75dB in the range 30MHz to 1000MHz and \geq 65dB in the range above 1000MHz to 2150MHz.

Flyleads

3.0metre fly leads to be provided as part of this contract.

- Terminal fly-leads are defined as those cables that connect a terminal device to a system outlet and/or those cables that connect a customer's terminal device to any device connected between the system outlet and the input to the terminal device.
- All connectors fitted to terminal fly-leads must comply with IEC 169-1 and either IEC 169-2 or, in the case of F-type connectors, as specified earlier.
- The return loss of terminal fly-lead when terminated with a precision termination must be \geq 14dB in the range 5MHz to 49MHz and \geq (14dB - 1.5dB/octave) in the range 40MHz to 2150MHz to a minimum 10dB.
- The terminal fly-lead must be constructed from cable having the same structural return loss as that specified under coaxial cable in this section.
- The screening effectiveness of the fly-lead, measured according to IEC 96-1 Amendment 1, must be \geq 95dB in the range 30MHz to 1000MHz and \geq 85dB in the range above 1000MHz to 2150MHz.

3. TECHNICAL SPECIFICATION

- To minimise the chances of damage, the dielectric of the fly-lead must be continuous along its entire length in the manner specified under coaxial in this section.

Service Outlets

Type and construction must be single gang outlet plate with incorporated galvanic isolation on both inner and outer conductors.

All MATV outlets must be mains isolated

Frequency Range	5 to 2150 MHz
Insertion Loss	0.5 dB Maximum
Galvanic Isolation	800 VDC peak

Outlets must be installed adjacent to existing outlets.

Terminating Resistors

With the exception of service outlets, a 75-ohm F connector-terminating resistor must be connected to all unused RF ports.

Earth Screen Segregation

Galvanic isolators on the antenna down lead cables must be provided to prevent any rising potential differences in earth voltages.

Equipotential Bonding

All antenna masting must be connected to the building lightning protection system, equipment racks and TVDPs must be earthed to the nearest Low Voltage Distribution Board.

System Equalisation

The broadband signal must be launched from the headend with flat response characteristics. All trunk cable equalisation correction and tilt compensation must be achieved via the use of fixed value passive cable equalisers. The node amplifiers must be adjusted for flat response characteristics at the design output level.

5.5 LOCAL BROADCAST RECEPTION COMPONENTS

Antennae

Television and radio receiving antennae will be sited to achieve the best-balanced digital and analogue channel performance. Particular attention will be paid to the flatness, CNR and BER of each digital multiplex and to CNR, video/audio carrier ratio and multipath interference of the analogue channels. This position will be selected from the results of a site survey and through liaison with the Principal's Representative.

Mast Installation

If required to achieve the results specified, a guyed mast is to be installed on the roof depending on final site tests. The nominal height of the mast to be 5 m maximum above the roof, the final height of the installation is to be submitted to the Principal's Representative before any permanent work takes place. The Contractor must select an antenna that achieves the best reception with a MINIMUM height.

The structure and installation must conform to the Australian Standard AS 1417. The antenna/mast supports and guys must be carried on adequate strength building members. Roof penetrations must be properly flashed to the approval of the Principals' Representative.

3. TECHNICAL SPECIFICATION

Guy wires must be attached using suitable wire clamps and thimbles. Attachment of the mast must be by the minimum of two point fixing. The mast must be guyed four ways to fascia anchor points. The total length of mast between support or guy points not exceeds 4.0 metres. The total length of masting above the topmost or guy point must not exceed 3.0 metres. The mast strength must be appropriately chosen to withstand a thrust of 1080 N/m² and permissible bending moment greater than that calculated for the number of antennae used.

The mast and all mounting components must be galvanised. Any steel surfaces which become exposed in the erection of the installation must be protected by an approved rust-inhibiting treatment.

When mast mounted diplexers and/or preamplifiers are used they must be connected within easy reach for servicing but as close to the antenna as possible to minimise downlead losses.

The downlead cable must be supported to the mast using stand-offs one wavelength away. Adhesive PVC tape or cable ties as a means of support will not be accepted. The distance between the stand-offs must be irregular to avoid periodicity.

Supports

The antennae and their associated supports must be designed to withstand sustained wind velocity of 150 km/h without incurring any damage or change in orientation.

Aerial type must be selected after site survey and submitted for approval by the Principal's Representative.

Antenna Down lead Cables

Antenna down lead cables must be correctly terminated and suitably protected from the environment. Antenna down leads must be RG-6 quadshield up to 30 Metres in length and RG-11 Quadshield cable for lengths greater than 30 Metres. High return loss 1 GHz F-type Hex crimp, weatherproof connectors must be employed.

Mast Earthing

The antennae mast installation must be securely bonded and earthed via a 10 mm insulated copper conductor to the main building, complying with the Australian Standard AS 3000 Part 5.4.6

Satellite

Provide satellite receiving dish, LNB and associated equipment appropriate for the signals being received. Equipment must comply with the requirements of the satellite service provider.

Install the receiving dish in a position for best reception and where possible in a position that is least obtrusive to the overall building aesthetics.

Provide mast, associated brackets and hardware hot dipped galvanised after fabrication.

Provide waterproofing and flashing as required.

Provide test results including signal level and MER of all received signals at the dish on dish installation to the Principal's representative.

5.6 AMPLIFIERS AND MODULATORS

Broadband Distribution Amplifiers

Wideband amplifiers must have separate band attenuators. Alternatively equalisation must use F type equalisers.

3. TECHNICAL SPECIFICATION

All wideband amplifiers must have flat frequency response in the frequency range of 5-2150 MHz within +/-1 dB. They must be enclosed in metal cabinets with maximum radiation of 20dBpW when the output level is 120 dBuV.

Amplifiers in plastic or partially metal enclosures must NOT to be used. Amplifiers may have separate power supplies, approved by the relevant authorities. If the power supply is an integral part of the amplifier, then it (power supply section) must be RF isolated from the amplification unit itself by means of a separate compartment, to reduce noise induction.

Derating factor for sixty channels should be applied in all calculations.

Cross modulation and second order harmonics of -60 dB, must be used in all calculations.

Launch levels must be adjusted to achieve a minimum of 65 dBuV at any system outlet.

Other requirements:

- Impedance: 75 Ohm.
- RF Connectors: F type compression.
- Power connectors: RCA, J35 or other.
- Return Loss, Input & Output - Greater than 14dB over all bands
- Maximum noise figure: 8 dB.
- Optional gain adjustment: 20 dB with 75-Ohm impedance. An external F type fixed value attenuator may also be used.
- Optional internal test point: -30dB. An external directional coupler may also be used.
- Operating temperature: -40 to +55 degrees Celsius.
- Optional Automatic Level Control: +/-20 dB.

Where the number of outlets exceeds 200, the group delay within any 5 MHz range, must not exceed 2 ns, and the hum modulation 0.03%.

5.7 HEADEND EQUIPMENT CUBICLE

The equipment rack must be:

- Firmly attached to the floor or wall.
- Bolted together with the manufactures recommended kit.
- Fitted with a 10-way power outlet bus, mounted vertically in the rear of the cabinet.
- Provided with an internal cable manager. (e.g. cable tray).
- Fitted with lockable doors, steel rear and front. Lock to be L&F 92268. The doors to have 180 degree swing and mounted on lift off hinges.
- Fitted with a two (2), low noise fans top panel mounted and with safety protective finger guards.

3. TECHNICAL SPECIFICATION

- Dimensions: 625mm wide, 600 mm deep and 1730 mm high

5.8 TESTING AND COMMISSIONING & SYSTEM HANDOVER

(see also section 3 Technical specification 2.4 – 2.10)

Pre-commissioning tests

General

Prior to Completion, the names of technically competent personnel and details of appropriate equipment to undertake the nominated tests must be provided to the Principal's Representative. A list of the automated tests and a sample of procedures and results must be provided to the Principal's Representative before testing and commissioning is commenced.

The testing must be carried out up to 860 MHz for the complete MATV system.

Signal Level{tc \l 2 " Level"}

The video carrier level/average signal power for every RF channel must be measured and recorded at the combined headend launch output, at every active distribution node and at every outlet. A printout of the full spectral display must be provided for every active distribution node. Similar printouts must be provided for a 10% random sample of outlets on each distribution node.

Multiplex Flatness

The multiplex flatness for every digital channel must be measured and recorded at the combined headend launch output, at every active distribution node and at selected outlets. A printout of each channels performance at the combined headend launch output must be provided.

Signal Clarity

A portable television set, standard fly lead and appropriate digital decoder must be provided to allow the Principal's Representative to visually inspect and approve the picture and sound quality at randomly selected outlets.

Trunk Signal Test

A printout of the full spectral display demonstrating noise and non-linear distortion performance must be provided for at every active distribution node.

The 50 Hz carrier to hum ratio must be measured at every active distribution node.

System Ingress

Ingress and spurious interference must be measured on the longest cabled outlet of each distribution node. The headend must be disconnected and the network input terminated in 75 Ohms.

RF Mutual Isolation

The isolation between the longest and shortest drop cable outlets must be measured at every distribution node.

Carrier / Noise Ratio

The carrier to noise ratio must be recorded at the headend and at every active distribution node for every channel.

Composite Triple Beat

CTB must be recorded at the headend and at every active distribution node.

3. TECHNICAL SPECIFICATION

Results

All test results must be documented. The method of verification will be subject to the approval of the Principal's Representative

END OF SECTION
TECHNICAL SPECIFICATION