

## **FEASIBILITY STUDY REPAIR vs REBUILDING OF BROOKTON MEMORIAL HALL**



**19 October 2019 – Brookton Memorial Hall W.A 6306**

**Feasibility Report**  
**Ref No.: 285**

Client: Shire of Brookton  
Property Address: Cnr White & Whittington Street Brookton W.A 6306  
Date of Inspection: Saturday 19 October 2019  
Date of Report: Saturday 30 November 2019

To Whom It May Concern,

**RE: FEASIBILITY STUDY COMPARING COSTS OF REPAIRING vs REBUILDING  
BROOKTON MEMORIAL HALL**

### **1. PURPOSE**

The Shire of Brookton (The Client) has requested a study comparing costs of remedial works to preserve the existing Brookton Memorial Hall and further its service life, verses demolishing the building and reconstructing it as close to like for like using modern day methods and materials. The request for the feasibility study is following structural assessment report *Brookton Memorial Hall~285-REP-001\_Rev1* issued by this office as part of an assessment into the life expectancy and management of the building.

### **2. BACKGROUND**

The Brookton Memorial Hall has been built in its entirety in stages. In reference to a Conservation Management Plan commissioned by the Shire of Brookton in 2014 the hall was originally built in 1905 and added to in 1911, 1956 and 1979. The east side store building was built in 1905, the front central lesser hall built in 1911, the main west side hall and stage built in 1956 and the east side kitchen built in 1979. The structural maintenance history of the hall is underknown other than some timber stumps supporting the lesser hall have been removed and replaced with brick stumps

No design or engineering drawings or historical photos of the Memorial Hall were provided.

Drainage, masonry and roofing maintenance quotes were provided.

### **3. OBSERVATIONS**

No further inspection subsequent to the structural inspection detailed in *Brookton Memorial Hall~285-REP-001\_Rev1* was undertaken for this report.

#### 4. STRUCTURAL REMEDIAL SCOPE OF WORKS

The Memorial Hall structural remedial scope of work is detailed in *Brookton Memorial Hall~285-REP-001\_Rev1* and is summarized as follows:

- Repair, and installation of storm water drainage
- Repointing of fretting mortar in external brick work
- Treatment and possible replacement of corroding lintels
- Investigation of roof tie downs and end bearing of roof trusses over the Main Hall
- Investigation of roof truss and hanging beam intersection
- Re-laying of loose top course brick work in outside kitchen wall, as well as possible kitchen roof structure modification/s
- Replacement of sagging roof members
- Investigation work for possible corroding steel in the brick work
- Crack monitoring with possible future removal and replacing / re-laying of cracked brick work, epoxy filling cracked bed joints, crack stitching and expansion joint/s
- Biological degradation assessment and monitoring of timber structural members

#### 5. NON-STRUCTURAL REMEDIAL SCOPE OF WORKS

##### General Maintenance

Given the age of this building (first stage of the hall built 1905) it is expected that general maintenance is a given. The maintenance scope provided coincides with the drainage and masonry repointing scope captured in the structural remedial works (Section 4 above). In addition, the maintenance scope calls for roof sheeting restoration with supply and fit out of a new colorbond and corrugated iron roof. It is suggested during roof restoration works the eve line timbers are checked and are replaced if any degradation / defects are found. The eve lining should also be replaced.

##### Asbestos Removal

An asbestos survey by Occuhealth found asbestos materials in the following areas of the Memorial Hall:

- Projector Room walls and ceiling
- Switchboards
- Side entrance sink – black material under sink
- Equipment Room walls
- Main kitchen sink – black material under sink
- North end gable of Main Hall
- West end gable of Lessor Hall
- Building eaves

Based on the survey the switchboards require replacement. The other asbestos areas require removal or sealing to control the asbestos risk. Refer to the asbestos report in the Appendix for further details.

## 6. BUILDING LIFE EXPECTANCY

Structural report *Brookton Memorial Hall~285-REP-001\_Rev1* has deemed the Brookton memorial Hall structurally sufficient in its current state on the proviso the discussed defects are where required further inspected, repaired and or monitored in accordance with engineered solutions, and a regular maintenance resume is instigated to report and address any further structural anomalies in particular corrosion of steel and biological degradation of wood structural components.

Based on the structural sufficiency of the Memorial Hall in its current state, the building's life expectancy without any remedial work carried out is estimated as a further possible 8-10 years before significant structural defects may start to surface. This is on the proviso the further investigation areas outlined in the structural report are attended to (and the results don't require immediate remedial work/s) and the size of cracks don't change or more cracks appear. The life expectancy does not include individual defects such as localised eave sagging above the Main Hall front west corner which requires obvious immediate works.

If restoration / repair works are carried out the remedial works can be designed to the required service life of the building. The overall life expectancy of the Memorial Hall could then meet the restoration design life expectancy provided a maintenance plan and budget are implemented alongside the restoration works. The aim of the maintenance plan would be to address defective areas that integrate with the restored areas, as well as maintain the refurbished elements as per their functional specification.

## 7. PRELIMINARY COST OF REMEDIAL RESTORATION WORKS

Quantity Surveyors McGarry Associates were consulted to prepare a preliminary cost estimate for the remedial works required to restore / repair the Brookton Memorial Hall, for an extended life expectancy. The scope of work is based on Section 4 and 5 of this report. Since no fully dimensioned drawings of the Memorial Hall were available basic floor and elevation area drawings were commissioned to enable take-offs for the restoration of the Hall. Refer to Appendix for the drawings.

General assumptions / exclusions used in the estimate are as follows:

- Removal of asbestos in project room only, and painting of all other asbestos
- Comprehensive termite inspection and treatment. No allowance for remedial works resulting from termite inspection
- New / replacement of roof tie downs (N.B this may not be needed)
- Provisional sum for possible corroded reinforcement
- Replacing / re-laying of top brick work in main hall along crack line (N.B this may not be needed)
- 25% contingency allowance (percentage of total costs less client costs & general maintenance), for known unknowns i.e. more repair work required
- Lump sum general maintenance allowance of \$100,000 Exc GST which this office estimates as general sum for a circa ten to fifteen-year maintenance period

The total cost for restoration / repair of the Memorial Hall is estimated as \$617,000 excluding GST. This office has changed the following amounts in the estimated cost:

- Deducted the building inspections cost of \$12,784.10, this should be considered in the general maintenance allowance
- Lintel treatment cost reduced to \$14,880.22 (deducted \$40,000) since there has been a mis understanding in scope
- Removal and re-laying of town hall cracked bricks cost reduced to \$5000 (deducted \$13,932.58) since there has been a misunderstanding in scope
- Adjusted the contingency to \$78,842.70 in accordance with the above changed amounts

Considering the above deductions, the total estimated cost of restoration of the Brookton Memorial Hall reduces to \$533,744 excluding GST.

For a review of the complete estimate, list of assumptions and exclusions refer to the Quantity Survey Report in the Appendix.

## 8. PRELIMINARY COST FOR DEMOLITION & RE-CONSTRUCTION

Quantity Surveyors McGarry Associates were consulted to prepare a preliminary cost estimate for the demolition and re-construction of the Brookton memorial Town Hall like for like using modern day materials and meeting existing specifications and current Standards. General assumptions / exclusions used in the estimate are as follows:

- One only construction contract
- Design, engineering, construction, project management and procurement facilitation of the new Memorial Town Hall are included in the cost
- The Contractor is based in Perth and its white-collar project team mobilised to Brookton for the project duration
- Contractor's blue-collar workforce and subcontractors are south west region based with no mobilisation costs
- Basic flooring, electrical, data, and safety systems
- Medium standard air-conditioning throughout, except wet areas
- No changes to paved areas, landscaping and the like except within a 1.0m wide perimeter strip
- Stage area is concrete ground slab laid on imported fill
- Mezzanine floor (concrete) over foyer only
- The main structure is cavity brick walls with hard wall plaster internal. Cavity is wide to accommodate structural steel columns. Attached piers have been excluded. Internal walls brick work with plaster both sides
- No retaining walls, civil drainage and bulk earth works
- No changes to external services
- No Statutory fees
- No heritage considerations
- No audio visual, computing peripherals or building management systems
- 25% contingency allowance (percentage of total costs less general maintenance), based on the preliminary level of design for this feasibility study
- Lump sum future general maintenance allowance of \$50,000 Exc GST which this office estimates as a general sum for a circa ten-year maintenance period

The total cost for demolition and re-construction of the Memorial Hall is estimated as \$4,525,000 excluding GST.

For a review of the complete estimate, list of assumptions and exclusions refer to the Quantity Survey report in the Appendix.

## 9. RISKS

The main qualitative (subjective) risk associated with each of the estimates is the level of uncertainty in the scope of works. The demolition and replacement of the Memorial Hall has lower risk because the scope can be accurately established within the battery limits (defined parameters) of the project. In this instance the estimate assumptions have been listed and the cost has been calculated.



The restoration / repair remedial scope of works on the other hand has been provided using the engineering assessment of discrete visible defect areas of the Memorial Hall, speculation of the extra work that will most likely be required based on a set of assumptions formed from the engineering assessment, as well as the maintenance scope provided.

The level of risk is normally considered in the calculation of the contingency in the estimate. In this instance both estimates by McGarry Associates have used very similar contingency percentages and rely on the forecast of general maintenance to capture any difference in risk. This is considered a shortfall in capturing any higher risk as an additional cost. In order to overcome this shortfall a quantitative risk analysis has been undertaken for the restoration / repair scope using a very simple Expected Monetary Value (EMV) method. The subjective assumptions used in the analysis are:

- The known high risk of scope uncertainty during the restoration /repair works will produce a Class 1 estimate with a 60% level of confidence assigned, and a 40% allowance for known unknowns i.e. more repair work required. The uncertainty in the estimate has been used as the cost impact

Table 2 below summarises the results.

Risk	Probability (%)	Cost Impact (\$)	Expected Monetary Value EMV (\$)
Extra scope for restoration / repair	100	\$181, 960 (40% of estimated costs less contingency)	\$181,960

**Table 2. Expected Monetary Value Quantitative Risk Analysis for Repair Works**

The EMV risk amount has been added to the total amount for restoration / repair remedial works in Section 7 to sum to a total cost of repairs of \$715,704 excluding GST.

## 10. CONCLUSION

The Shire of Brookton has requested a study comparing costs of remedial works to preserve the existing Brookton Memorial and further its service life, verses demolishing the building and reconstructing it as close to like for like using modern day methods and materials. This feasibility report has found that the preliminary cost of restoration / repairing the Memorial Hall is \$715,704 excluding GST and the preliminary cost of demolition and re-building the Memorial Hall is \$4,525,000 excluding GST. As a percentage the restoration / repair cost is approx. 16% of the rebuild cost. In its current state the Memorial Hall's life expectancy without any remedial work carried out is estimated as a further possible 8-10 years before significant structural defects may start to surface. This is on the proviso the further investigation areas outlined in the structural report are attended to (and the results don't require immediate remedial work/s), and the size of cracks don't change or more cracks appear. The life expectancy does not include individual defects such a localised eve sagging above the Main Hall front west corner which requires obvious immediate works. With restoration / repair remedial works and an implemented maintenance plan the life expectancy of the Hall can be increased to the required service life of the building,

Should there be any further enquiries please feel free to contact me.

Regards



**Raymond Condelli**  
**Civil & Structural Engineer, Project manager**  
**BEng (Civil) Hons, MIEAust**  
**ENGINEERS AUSTRALIA Reg 3713233**

*Attached / Included:*

- *Asbestos Survey Report*
- *Preliminary drawing*
- *Preliminary Estimate by McGarry Associates*

### Limitations of Report and Scope of Work:

This report and scope of work should be read with an understanding of the limitations of the assessment carried out. The inspection carried out was a visual assessment of those elements of the Brookton Memorial Hall that were accessible and in plain view. Therefore, certain elements of the structure such as the construction methods, wall / floor framing, cladding, foundations / footings, backing blocks, drainage, reinforced masonry / concrete, roof construction, roof tie downs, cavity structural components, floor slab, mezzanine, any suspended slab, as well as connections were not readily visible and the status of these elements cannot be easily confirmed. No inspection of the floor spaces, floor slabs, roof, roof spaces, entire building, Projector Room and Equipment / Store were undertaken. No tests were carried out and no samples were taken, in particular no testing of soil, concrete strength, masonry strength, ground vibrations, corrosion, wood species, biological degradation, site compaction, welds, asbestos / other harmful contaminants, material specifications nor material strengths / residual strengths. No structural survey of the geometric position and shape of walls, frame elements, ceilings, floor slabs, roof members and connection elements was completed. The conclusions outlined in this report are based on what was visually assessed and any information provided by the client and any documents gathered. While every endeavour was made to carry out a comprehensive inspection of all elements of the areas under consideration, it is possible that some potential defects or construction elements may not have been considered due to being hidden / repaired, beneath the ground, covered in insulation, covered in vegetation / landscaping / building materials, covered by the make safe, covered by paving / concrete / bitumen, covered by plaster / render / cladding / masonry, concealed by floor coverings, covered by debris, covered by mouldings, concealed by furniture / household / storage materials, concealed by waterproofing, covered by water, overlooked, obscured, restricted, not inspected, removed / demolished, no design / engineering drawings / pictures provided, or positioned in inaccessible / reachable / unsafe locations. This report and or scope of work does not certify the Memorial Hall Building, any additions / extensions / renovations, any remedial work carried out, make safe nor any other structures on the properties. No assessment of the entire Memorial Hall was undertaken. This report and scope of work assesses the defects discussed only, is specific to the inspected areas outlined and does not assess any adjacent structures, retaining walls, fences, drainage and civil works, paths nor other concreted / paved areas of the property. No make safe, demolition nor construction / re-construction methodology has been implied, recommended or certified. Any estimates discussed in this report are indicative and are for preliminary assessment only. No liability is accepted whether directly or indirectly for any third-party assessments or reports organized by this office. A more detailed inspection with unlimited access is required should this report and or scope of work not be conclusive / exhaustive. No liability will be accepted whether directly or indirectly for any matter in connection with this report and or scope of work later than 60 days of the date of inspection.

Revision	Authored	Reviewed	Authorised	Comments	Job #	Date
0	RCO	RCO	RCO	Issued for use	285	30 November 2019



## APPENDIX

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# Asbestos Survey

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## Brookton Memorial Hall

Survey Date: 3<sup>rd</sup> of October 2019

Compiled by: Ethan Norris

Asbestos Inspection Assessor

8<sup>th</sup> of October 2019

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## 1 Executive Summary

This report details the findings from the review of asbestos containing material (ACM) at the Brookton Memorial Hall, Brookton

As per the Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018(2005) risk assessments shall be reviewed on a regular basis and company asbestos registers updated, to prevent exposure to airborne asbestos fibres while asbestos containing material (ACM) remains in the workplace. This Review took place on the 3<sup>rd</sup> of October 2019.

Specifically, this report is to identify the following;

- Is there ACM present on site.
- Is the ACM in good condition, enclosed or sealed.

## 2 Methodology

In accordance with the Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018(2005)], a survey was conducted on the 3<sup>rd</sup> of October 2019 to locate asbestos containing material. Within the qualitative assessment, the potential health risks to the building occupants and whether the type of work or location of the work is likely to cause disturbance to the asbestos material was determined.

Samples were taken from various locations around the premises. Observations on the condition of the material and judgement on the stability have been made to the following areas:

- Walls Ceiling and Lino in the Projector Room.
- East wall and ceiling in the stairwell.
- Wall and ceiling of the Equipment Room.
- Kitchen area.
- South wall of the Main Hall.

## 3 Description of Workplace

### 3.1 Building Description

The Brookton Memorial Hall consists of an entry and foyer area and the lesser hall that was built in 1911 and to the west is the store room (built in 1905). The main hall and stage were built in 1956 and a kitchen was added in 1979.

The building is predominately a large brick construction with a Colourbond roof.

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## Appendix 1: Asbestos Register

Location & Item description	Hazard Type	Photo ref#	Material I.D	Material Condition	Friability	Estimate Quantity	Disturbance potential	Risk Rating	Label	Control Priority	Control recommendation/ comments	Status	Record work undertaken
Projector room wall	Chrysotile Amosite	1	Panels	Poor, unsealed, damaged in some areas	Friable	10 - 50m <sup>2</sup>	Medium	1	No		Removal or sealing the panels will control	Open	
Projector room ceiling	Chrysotile Amosite	1	Panels	Poor, unsealed, damaged in some areas	Friable	10 - 50m <sup>2</sup>	Medium	1	No		Removal or sealing the panels will control	Open	
Switchboards (3)	Presumed ACM from previous survey	1	Zelemite	Good	Non-friable	<1m <sup>2</sup>	Low	3	No		Remove when convenient	Open	
Projector room lino,	No asbestos detected	1										Closed	N/A
Stairwell ceiling and wall panel	No asbestos detected	2										Closed	N/A
Side entrance switchboard	Presumed ACM from previous survey	3	Zelemite	Good	Non-friable	<1m <sup>2</sup>	Low	3	No		Remove when convenient	Open	
Side entrance lino	No asbestos detected	3										Closed	N/A
Side entrance sink	Presumed ACM from previous survey	N/A	Black material under sink	Good	Non-friable	<1m <sup>2</sup>	Low	3	No		Remove when convenient	Open	
Equipment room walls	Chrysotile Amosite	4	Panels	Poor, sealed but damaged in some areas	Friable	10 - 50m <sup>2</sup>	Medium	2	No		Removal or sealing the panels will control	Open	
Equipment room ceiling	No asbestos detected	4										Closed	N/A
Main hall south wall above entry	No asbestos detected	5										Closed	N/A

N/A denotes – not applicable

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Location & Item description	Hazard Type	Photo ref#	Material I. D	Material Condition	Friability	Estimate Quantity	Disturbance potential	Risk Rating	Label	Control Priority	Control recommendation/ comments	Status	Record work undertaken
Main kitchen sink	Presumed ACM from previous survey	6	Black material under sink	Good	Non-friable	<1m <sup>2</sup>	Low	3	No		Remove when convenient	Open	
Stage change room walls	No asbestos detected	7										Closed	N/A
Stage switchboard	Presumed ACM from previous survey	N/A	Zelemite	Good	Non-friable	<1m <sup>2</sup>	Low	3	No		Remove when convenient	Open	
North external gable end	Chrysotile Amosite	8	Panels	Sealed, good condition	Non-friable	10 - 50m <sup>2</sup>	Low	3	No		Removal or sealing the panels will control	Open	
West gable end on roof	Chrysotile Amosite	9	Panels	Sealed, good condition	Non-friable	10 - 50m <sup>2</sup>	Low	3	No		Removal or sealing the panels will control	Open	
Building eaves	Presumed ACM from previous survey	10	Panels	Good, broken in some areas	Non-friable	<1m <sup>2</sup>	Low	3	No		Remove when convenient	Open	



## ACM Register Key

**Location & item description** lists the location and description of the material inspected/sampled.

**Hazard type** indicates the type of hazard identified (asbestos, SMF).

**Photo ref #** corresponds to the photo of the material inspected/sampled provided in the report.

**Material I.D** confirms the type of asbestos (chrysotile/amosite/crocidolite) if sampled. Where a sample has not been taken a professional assessment of the material has been provided i.e. assumed to contain/not contain asbestos.

**Material condition** indicates the condition of the material and considers the potential of exposure to personnel:

**Good:** The material is not damaged and is showing little or no signs of deterioration, exposure could result from physically breaking, drilling or significantly disturbing the material.

**Fair:** The material is slightly damaged and is beginning to show signs of deterioration, exposure could result from further damage or minor disturbance.

**Poor:** The material is badly damaged and/or showing significant signs of deterioration, exposure could occur from normal use.

**Risk Rating** takes into consideration the condition, location, disturbance potential, friability etc of the ACM'S in order to prioritise abatement works.

**Risk Rating 1** – Hazard with a high risk potential – There is a high potential for exposure to asbestos fibres or for fibres to be generated during normal use. Should be controlled first.

**Risk Rating 2** – Hazard with a medium risk potential – There is a risk of exposure to asbestos fibres only if works will disturb the ACM'S or if it is damaged and in a sensitive location (air handling units). Should be programmed second but may be managed in-situ if it can be stabilised.

**Risk Rating 3** – Hazard with a low risk potential – There is a risk of exposure to asbestos fibres only during maintenance or during dismantling, demolition, repair or alteration of ACM'S.

**Label provided** if the material is already confirmed or assumed to contain asbestos a sticker outlining the presence of asbestos should be in location.

**Friability** Indicates whether the ACM'S were friable (can be easily crumbled, pulverised or reduced to powder by hand pressure). Friable materials are generally a greater risk than non friable if not managed correctly.

**Estimated Quantity** is an estimation of the size in square (m<sup>2</sup>) of the documented ACM or Suspected ACM. Value ranges. <1m<sup>2</sup>: 1-10m<sup>2</sup>: 10 -50m<sup>2</sup>: >50m<sup>2</sup>

**Disturbance Potential** Indicates the potential for the ACM'S to be disturbed by personnel or work undertaken in the area.

**High** – ACM'S were in a location where work is undertaken or personnel are accessing in a way that may disturb the ACM'S regularly (daily).

**Medium** – ACM'S were in a location where work is undertaken or personnel are accessing in a way that may disturb the ACM'S infrequently (weekly/monthly).

**Low** – ACM'S were in a location where work is undertaken or personnel are accessing in a way that may disturb the ACM'S rarely (yearly or greater).

**Control priority** provides a numerical value that refers to the priority order in which control or removal work should be undertaken. Number 1 represents the most significant hazard and should be considered an immediate priority whilst successive numbers suggest an order for ongoing maintenance and improvement work.

Note: Friability, Estimated Quantity; Risk rating, Disturbance Potential, and Control Priority does not apply to the Non-Asbestos Materials documented in this ACM register.





**Control recommendations/comments** provide specific recommendations in order to manage and/or stabilise the material.





**Status** where asbestos was not identified or the asbestos was entirely removed the STATUS column will indicate "Closed". If the asbestos remains the STATUS column will indicate "Open" and further action is required.

**Records/work undertaken** lists any available records or work which is planned to occur.

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## Appendix 2: Reference Pictures.

<p>Reference picture 1: Projector room</p>	<p>Reference picture 2: Stairwell ceiling and walls</p>
	
<p>Reference picture 3: Side entrance switchboard, lino and sink.</p>	<p>Reference picture 4: Equipment room walls and ceiling.</p>
	

<p>Reference picture 5: Main hall south wall.</p>	<p>Reference picture 6: Underside of kitchen sink.</p>
	
<p>Reference picture 7: Stage change room walls.</p>	<p>Reference picture 8: North gable end (external).</p>
	

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Reference picture 9:  
West gable end on roof.



Reference picture 10:  
Building eaves.



**Occuhealth Pty Ltd**  
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**WA 6210**



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 to Australian/national standards.

**Attention:** Ethan Norris  
**Report** 680554-AID  
**Project Name** **BROOKTON MEMORIAL HALL**  
**Project ID** **RC CONSULTING**  
**Received Date** Oct 03, 2019  
**Date Reported** Oct 04, 2019

### Methodology:

Asbestos Fibre  
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*

Unknown Mineral  
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*

Subsampling Soil  
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*

Bonded asbestos-  
 containing material  
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** BROOKTON MEMORIAL HALL  
**Project ID** RC CONSULTING  
**Date Sampled** Oct 03, 2019  
**Report** 680554-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
PROJECTOR WALL	19-Oc05557	Oct 03, 2019	Approximate Sample 2g / 25x15x5mm Sample consisted of: Grey compressed fibre cement material	Chrysotile and amosite asbestos detected.
PROJECTOR CEILING	19-Oc05558	Oct 03, 2019	Approximate Sample 1g / 30x20x3mm Sample consisted of: Grey compressed fibre cement material	Chrysotile and amosite asbestos detected.
PROJECTOR LINO	19-Oc05559	Oct 03, 2019	Approximate Sample 3g / 85x62x2mm Sample consisted of: a) Black bituminous fibrous sheet b) Vinyl backing	No asbestos detected. Organic fibre detected.
STAIRWELL CEILING	19-Oc05560	Oct 03, 2019	Approximate Sample < 1g / 20x12x5mm Sample consisted of: Grey fibre cement material	No asbestos detected. Organic fibre detected.
STAIRWELL WALL	19-Oc05561	Oct 03, 2019	Approximate Sample 8g / 70x30x7mm Sample consisted of: White plaster material	No asbestos detected. Organic fibre detected. No respirable fibres detected.
ENTRY LINO	19-Oc05562	Oct 03, 2019	Approximate Sample 2g / 60x20x2mm Sample consisted of: a) Brown flexible vinyl sheet b) Yellow adhesive	No asbestos detected. Synthetic mineral fibre detected. Organic fibre detected.
EQUIPMENT ROOM WALL	19-Oc05563	Oct 03, 2019	Approximate Sample 24g / 120x30x4mm Sample consisted of: Grey compressed fibre cement material	Chrysotile and amosite asbestos detected.
CABLE END	19-Oc05564	Oct 03, 2019	Approximate Sample < 1g / 30x15x3mm Sample consisted of: Grey compressed fibre cement material	Chrysotile and amosite asbestos detected.



Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
EQUIPMENT ROOM CEILING	19-Oc05565	Oct 03, 2019	Approximate Sample < 1g / 80x15x2mm Sample consisted of: a) Organic fibre bundles b) Cement backing/coating	No asbestos detected. Organic fibre detected.
MAIN HALL WALL	19-Oc05566	Oct 03, 2019	Approximate Sample 21g / 60x55x15mm Sample consisted of: White plaster board	No asbestos detected. Organic fibre detected. No respirable fibres detected.
CHANGE ROOM WALL	19-Oc05567	Oct 03, 2019	Approximate Sample < 1g / 20x10x2mm Sample consisted of: Grey fibre cement material	No asbestos detected. Organic fibre detected.

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

**Description**

Asbestos - LTM-ASB-8020

**Testing Site**

Perth

**Extracted**

Oct 03, 2019

**Holding Time**

Indefinite

**Company Name:** Occuhealth Pty Ltd  
**Address:** PO Box 605  
 Mandurah  
 WA 6210  
**Project Name:** BROOKTON MEMORIAL HALL  
**Project ID:** RC CONSULTING

**Order No.:**  
**Report #:** 680554  
**Phone:** 08 9537 5700  
**Fax:**

**Received:** Oct 3, 2019 12:37 PM  
**Due:** Oct 4, 2019  
**Priority:** 1 Day  
**Contact Name:** Ethan Norris

**Eurofins Analytical Services Manager : Robert Johnston**

Sample Detail						Asbestos Absence / Presence
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	PROJECTOR WALL	Oct 03, 2019		Building Materials	P19-Oc05557	X
2	PROJECTOR CEILING	Oct 03, 2019		Building Materials	P19-Oc05558	X
3	PROJECTOR LINO	Oct 03, 2019		Building Materials	P19-Oc05559	X
4	STAIRWELL CEILING	Oct 03, 2019		Building Materials	P19-Oc05560	X
5	STAIRWELL WALL	Oct 03, 2019		Building Materials	P19-Oc05561	X
6	ENTRY LINO	Oct 03, 2019		Building	P19-Oc05562	X

**Company Name:** Occuhealth Pty Ltd  
**Address:** PO Box 605  
 Mandurah  
 WA 6210  
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Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						X
				Materials		
7	EQUIPMENT ROOM WALL	Oct 03, 2019		Building Materials	P19-Oc05563	X
8	CABLE END	Oct 03, 2019		Building Materials	P19-Oc05564	X
9	EQUIPMENT ROOM CEILING	Oct 03, 2019		Building Materials	P19-Oc05565	X
10	MAIN HALL WALL	Oct 03, 2019		Building Materials	P19-Oc05566	X
11	CHANGE ROOM WALL	Oct 03, 2019		Building Materials	P19-Oc05567	X
Test Counts						11

## Internal Quality Control Review and Glossary

### General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
5. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

### Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

### Terms

<b>Dry</b>	Sample is dried by heating prior to analysis
<b>LOR</b>	Limit of Reporting
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>ISO</b>	International Standards Organisation
<b>AS</b>	Australian Standards
<b>WA DOH</b>	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
<b>NEPM</b>	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
<b>ACM</b>	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
<b>AF</b>	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to "non-bonded / friable".
<b>FA</b>	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
<b>Friable</b>	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
<b>Trace Analysis</b>	Analytical procedure used to detect the presence of respirable fibres in the matrix.

## Comments

### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

### Qualifier Codes/Comments

Code	Description
N/A	Not applicable

### Asbestos Counter/Identifier:

Rhys Thomas                      Senior Analyst-Asbestos (WA)

### Authorised by:

Matthew Deaves                      Senior Analyst-Asbestos (WA)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

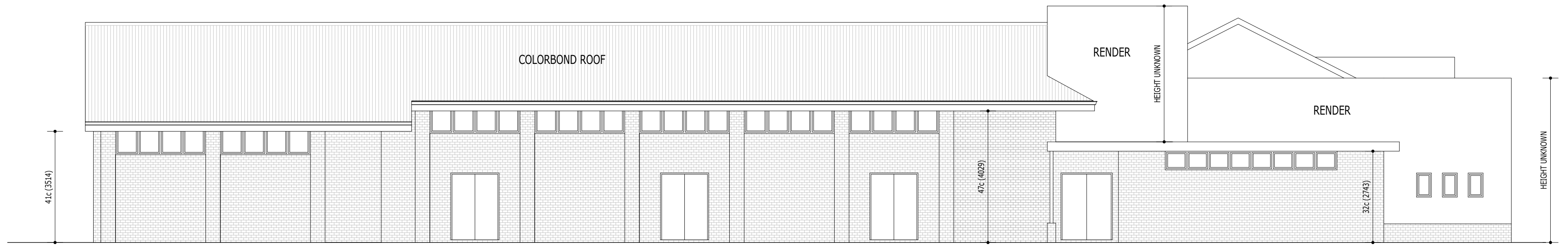
- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

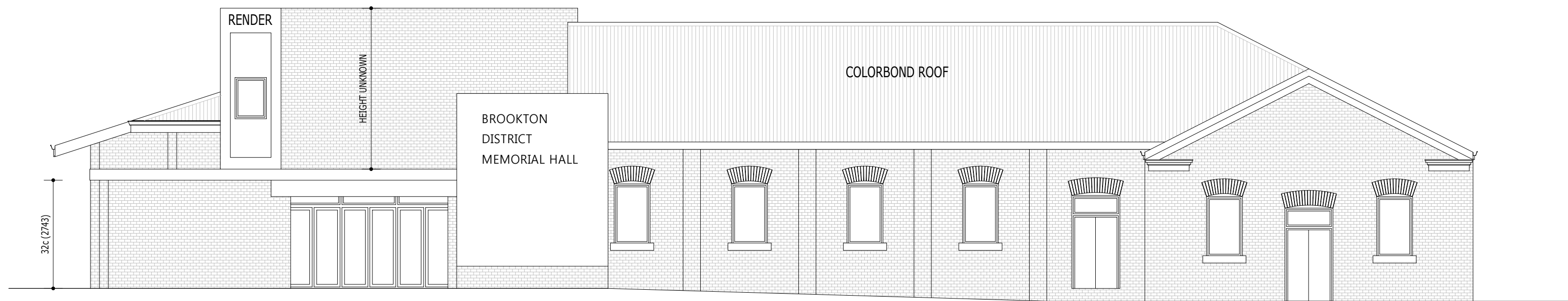
Measurement uncertainty of test data is available on request or please [click here](#).

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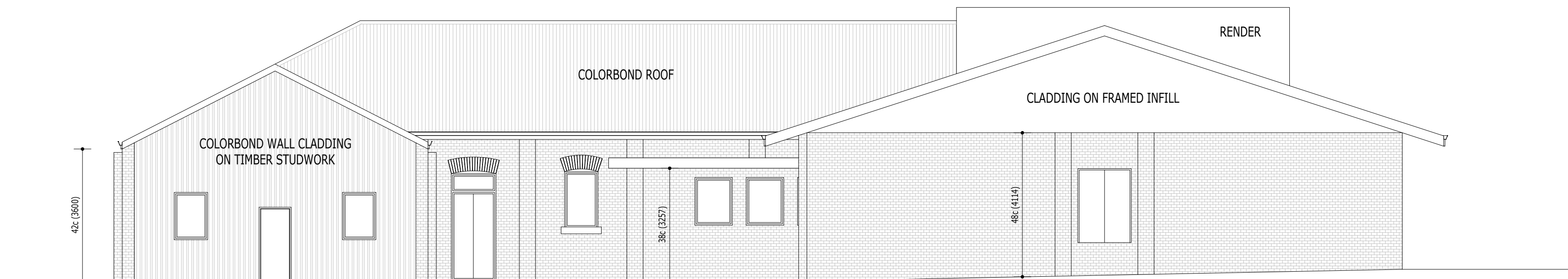
**WEST ELEVATION (WHITE ST)**



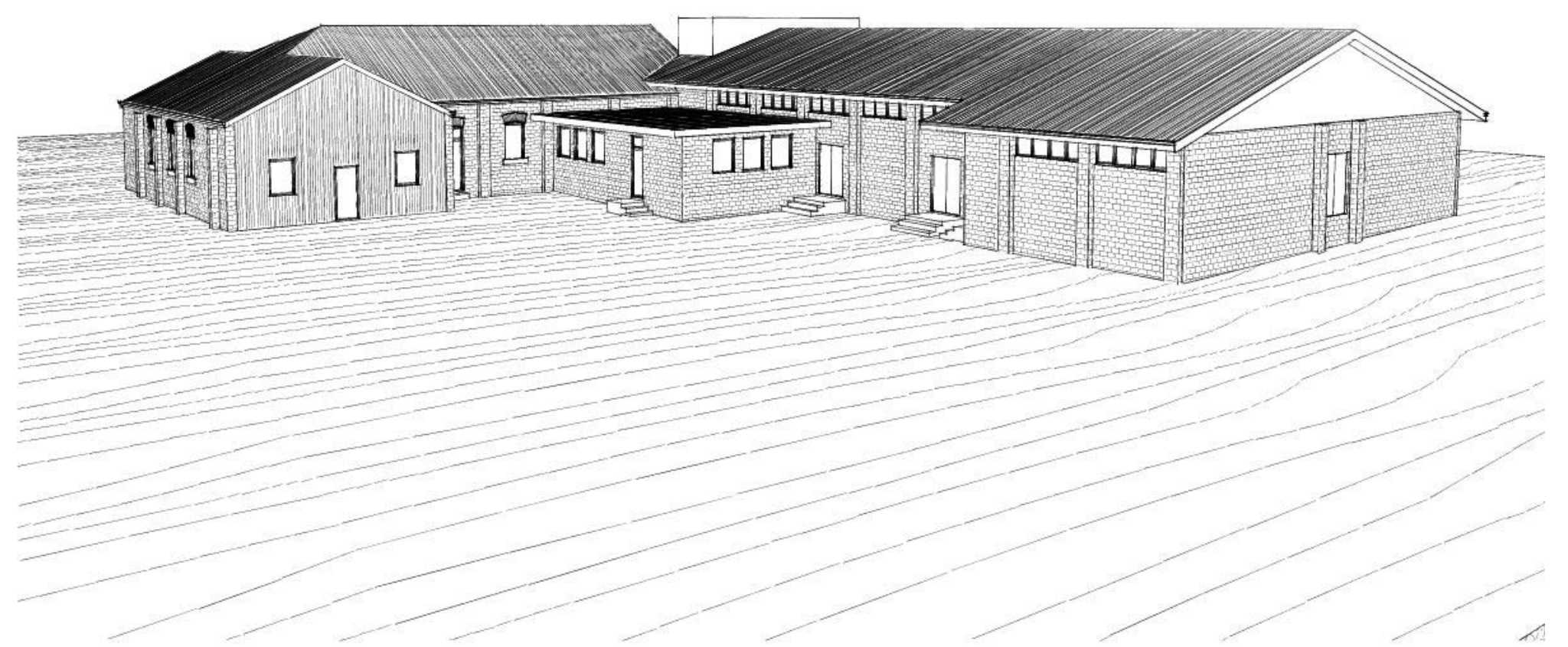
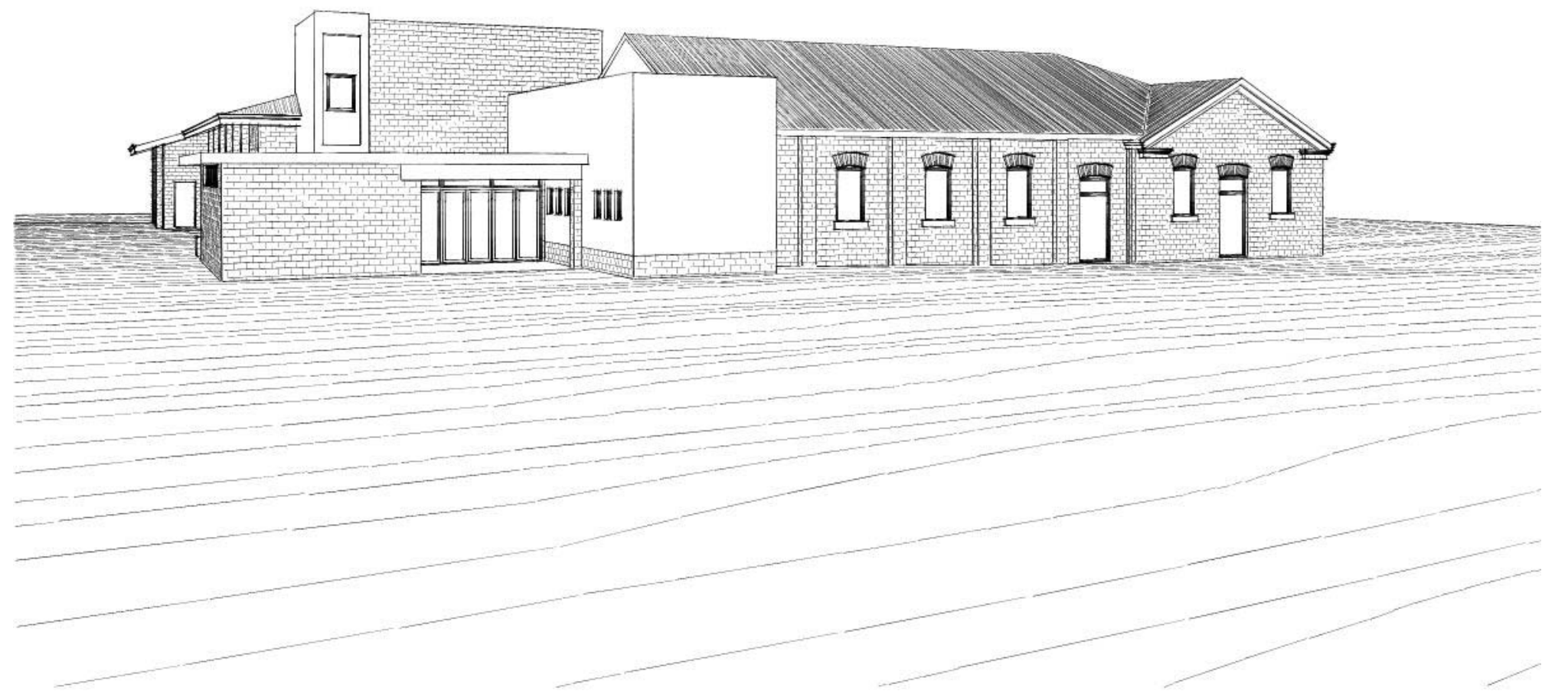
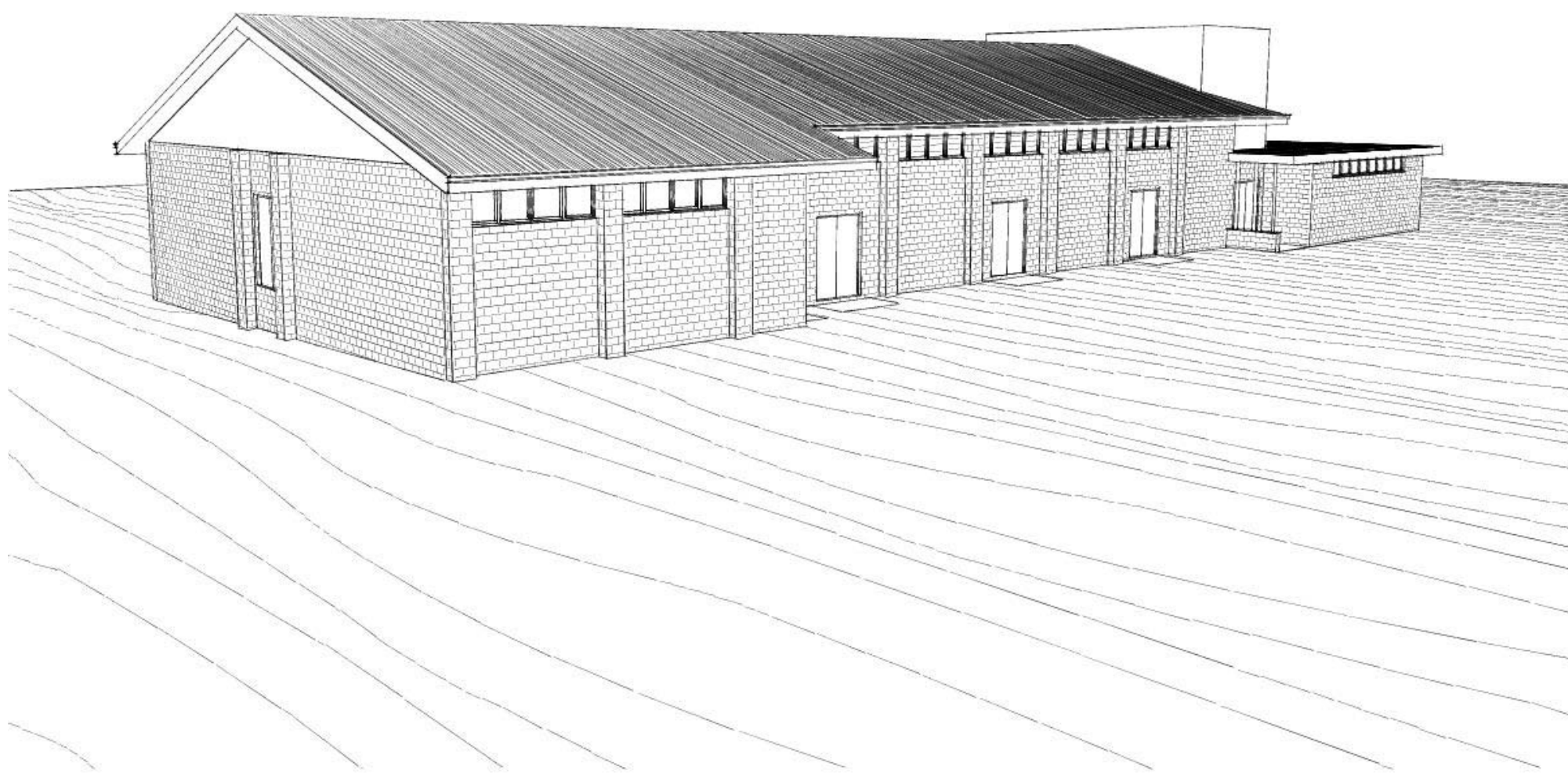
**SOUTH ELEVATION (WHITTINGTON ST)**



**EAST ELEVATION**



**NORTH ELEVATION**



# EXISTING ELEVATIONS OF BROOKTON TOWN HALL



TAKE-OFF DRAWINGS ONLY.  
NOT TO BE USED FOR CONSTRUCTION

# EXISTING FLOOR PLAN OF BROOKTON TOWN HALL





# MGA

MC GARRY ASSOCIATES

RC CONSULTING ENGINEERS

BROOKTON TOWN HALL

Estimate 4

28 November 2019

MGA19043

McGarry Associates  
Units 3 & 4, 18 Blackly Row  
Cockburn Central 6164

Tel: 9414-9144

ABN: 18 159 217 955

[www.mcgarryassociates.com.au](http://www.mcgarryassociates.com.au)

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## Brookton Town Hall

### 1. Executive Summary

McGarry Associates [MGA] has been commissioned by RC Consulting Engineers to provide a preliminary cost estimate for inclusion in a feasibility study comparing remedial works with the demolition and re-construction of the Brookton Town Hall

The preliminary cost estimate for the demolition and re-construction of the Brookton Town Hall is \$4,525,000 excluding GST as summarised in the following table:

Contractor's Preliminaries	\$307,547
Building Works	\$2,696,010
External Works	\$70,300
Future General Maintenance	\$50,000
Client Costs	\$1,401,144
Subtotal	<u>\$4,525,000</u>
GST	Excluded
Total	<u><u>\$4,525,000</u></u>

The preliminary cost estimate for the restoration of the Brookton Town Hall is \$617,000 excluding GST as summarised in the following table:

Contractor's Preliminaries	\$37,826
General Maintenance	\$171,209
Future General Maintenance	\$100,000
Structural Maintenance	\$173,053
Client Costs	\$134,913
Subtotal	<u>\$617,000</u>
GST	Excluded
Total	<u><u>\$617,000</u></u>

## Brookton Town Hall

## 2. Introduction

McGarry Associates [MGA] has been commissioned by RC Consulting Engineers to provide a preliminary cost estimate for inclusion in a feasibility study comparing remedial works to the Brookton Town Hall with the demolition and re-construction of the structure with a similar footprint utilising current building materials.

The existing Brookton Town Hall is currently in a state of disrepair and presents hazards to occupants.

## 3. Preliminary Cost Estimate Methodology

Quantities were measured and separately itemised [where possible and available from the information provided by RC Consulting Engineers on 31 October 2019] within the preliminary cost estimate and appropriate rates and prices applied.

Rates and prices have been built-up on a first principles basis or sourced from historical rates or Rawlinsons Australian Construction Handbook 2019.

Rates and prices built-up on a first principles basis have a 12% Contractor's margin added. Rates and prices sourced from historical rates or Rawlinsons Australian Construction Handbook 2019 have a 10% locality factor added.

Client costs comprise 4% for design costs, 4% for engineering costs, 2% for procurement facilitation, 4% for construction management costs, 2.5% for project management costs and a 25% contingency allowance, reflecting the preliminary level of design on which this preliminary cost estimate is based.

## 4. Qualifications, Assumptions and Clarifications

The preliminary cost estimate is subject to the following:

- The works will be undertaken in one only construction contract.
- The Contractor and its white collar staff are Perth based. The Contractor's white collar staff will be mobilised to and accommodated in Brookton.
- The Contractor's blue collar workforce and subcontractors are south west region based. Mobilisation and accommodation costs of the Contractor's blue collar workforce and subcontractors have therefore been excluded from the preliminary cost estimate.

The preliminary cost estimate is based on the following standard of construction:

- Building rubble generated by the demolition works will be transported to the Shire of Brookton waste facility. Tip fees have been excluded.
- Removal of asbestos to all areas as identified in Occuhealth Asbestos Survey.
- Concrete reinforcement ratios have been extrapolated from historical projects.
- A structural steel ratio of 45 kg/m<sup>2</sup> has been used to quantity steel columns, beams, bracing and the like. This ratio has been extrapolated from historical projects.
- Basic standard of benches and shelving.
- Commercial grade aluminium framed windows.
- Sheet metal roofing fixed to steel purlins.
- Ceiling tiles fixed to exposed tee grid with shadow line wall angle [no cornices].
- Wall tiles to wet area only [P.C. \$40.00/m<sup>2</sup>].
- Vinyl sheet flooring throughout, including wet areas.
- Basic standard electrical light and power, data and telephony communications, fire alarm system and security system.



## Brookton Town Hall

- Medium standard air-conditioning throughout, except for wet areas.
- Ventilation to wet areas.
- No changes to existing external services. It is assumed that all incoming / outgoing service alignments and capacities are unchanged and will be re-used without alteration. The estimate does however include the supplied cost for the new street drainage and soakwells as per the quote provided.
- No changes to external paved areas, landscaping and the like. The estimate does however include provisional sum amounts for reinstating paved areas and landscaping within a 1.0m wide strip around the building footprints.
- Stage area concrete ground slab laid on imported fill.
- Mezzanine floor [concrete] over foyer area only.
- External walls - cavity brick wall, external leaf face brickwork, internal leaf common brickwork with hardwall plaster, wide cavity to accommodate structural steel columns.
- Attached external piers have been excluded.
- Internal walls – single leaf common brickwork with hardwall plaster both sides.
- Domestic grade kitchen fitout.

The preliminary cost estimate for the restoration works is based on the following:

- New storm water connections to all down pipes and new street drainage and soakwells.
- Removal of asbestos to the projector room wall and ceilings only.
- Paint all retained asbestos.
- Termite inspection, Termite management plan and termite treatment to the perimeter of the building.
- Re bedding, re pointing and all associated works required to the external brick work as per the quote provided.
- Removal of existing roof sheeting, gutters and downpipes, replace or install new tie downs and installation of new roof sheeting, gutters and downpipes as per the quote provided.
- Monitoring of all cracks for the next 12 to 18 months.
- Provisional sum allowance for replacement of corroded reinforcement.
- Removal and re-mortared back in to place the bricks to the main hall along the high level crack line.
- General maintenance.

## 5. Exclusions

The preliminary cost estimate excludes the following:

- Tip fees.
- Allowances for remedial works resulting from the Termite inspection.
- Allowances for removal, disposal and replacement of contaminated ground materials.
- Bulk earthworks.
- Works beyond 1.0m from the building footprint.
- Modifications to external services, paved surfaces and landscaping.
- Anti-graffiti coatings.
- Civil stormwater drainage.
- Commercial kitchen fit-out.
- Gas reticulation.
- Fire sprinkler system.
- IT equipment, PC's and computing peripherals.
- Audio visual and public address systems.
- Distributed antenna system.
- Building management system.

## Brookton Town Hall

- Allowances for accelerated construction periods and allowance for multiple construction contracts or design contracts.
- Holding costs and interest charges.
- Time extension costs.
- Shire of Brookton costs.
- Escalation from the date of this estimate to the date of tender.
- Legal fees.
- Environmental issues.
- Aboriginal heritage, cultural and native title issues.
- Land and property acquisitions.
- Loss of business claims.
- GST.
- Items included in the preliminary cost estimate details marked as "EXC."

## 6. Preliminary Cost Estimate Summary

The preliminary cost estimate summary - demolition and re-construction is attached at Appendix A.

The preliminary cost estimate summary - restoration is attached at Appendix B.

Brookton Town Hall

## **Appendix A - Preliminary Cost Estimate Summary – Demolition and Re-construction**

Ref	Description	Unit	Quantity	Rate	Price
	<b>RC CONSULTING ENGINEERS</b>				
	<b>BROOKTON TOWN HALL</b>				
	<b>REBUILD</b>				
	<b>ESTIMATE 4</b>				
	<b>PRELIMINARIES</b>				
	<b>PRELIMINARIES</b>				
1	Contractor's preliminaries	Item	1	\$307,547.15	\$307,547.15
	<b>Total for PRELIMINARIES</b>				<b>\$307,547.15</b>
	<b>Total for PRELIMINARIES</b>				<b>\$307,547.15</b>
	<b>BROOKTON TOWN HALL</b>				
	<b>DEMOLITION</b>				
2	Demolition of the existing town hall building	m2	1,053	\$76.63	\$80,691.39
3	Removal of asbestos as identified in Occuhealth report dated 8 October 2019 to the walls, ceiling and linoleum in the Projector Room, east wall and ceiling in the stairwell, wall and ceiling of the Equipment Room, Kitchen area and south wall of the Main Hall. [Estimated quantity 56 - 256 m2]	m2	206	\$73.40	\$15,120.40
4	Tip fees	None			EXC
	<b>Total for DEMOLITION</b>				<b>\$95,811.79</b>
	<b>EARTHWORKS</b>				
5	Retaining wall footing excavation	m3	15	\$41.37	\$620.55
6	Imported fill	m3	160	\$17.55	\$2,808.00
7	Strip footing excavation	m3	75	\$41.37	\$3,102.75
8	Pad footing excavation	m3	20	\$42.99	\$859.80
9	Ground slab preparation comprising levelling, trimming and compacting subgrade, 0.2mm polythene WPM and anti-termite treatment	m2	993	\$12.72	\$12,630.96
	<b>Total for EARTHWORKS</b>				<b>\$20,022.06</b>
	<b>CONCRETE</b>				
10	Retaining wall footing, size 500mm x 300mm including reinforcement [50 kg/m3]	m3	8	\$550.11	\$4,400.88
11	Retaining wall, 200mm thick including reinforcement [125 kg/m3]	m2	50	\$426.94	\$21,347.00
12	Strip footing, size 500mm x 300mm including reinforcement [50 kg/m3]	m3	63	\$474.03	\$29,863.89
13	Pad footing, size 800 x 800 x 300 including reinforcement [75 kg/m3]	m3	16	\$576.54	\$9,224.64
14	Ground slab, 100mm thick including SL82 reinforcing mesh	m2	993	\$89.36	\$88,734.48
15	First floor slab, 200mm thick including reinforcing bars	m2	60	\$316.31	\$18,978.60
16	Concrete steps to entry doors	No	4	\$679.86	\$2,719.44

Ref	Description	Unit	Quantity	Rate	Price
17	Concrete stairs to the stage	No	2	\$830.78	\$1,661.56
	<b>Total for CONCRETE</b>				<b>\$176,930.49</b>
	<b>STRUCTURAL STEEL</b>				
18	Steel framing comprising columns, beams, bracing, etc [45 kg/m2]	t	47	\$8,482.60	\$401,820.76
19	Steel roof purlins, Z15019	m2	1,228	\$62.25	\$76,443.00
	<b>Total for STRUCTURAL STEEL</b>				<b>\$478,263.76</b>
	<b>METALWORK</b>				
	<u>FITMENTS</u>				
20	Mirror 1200mm high with S.S. frame	m	4	\$353.35	\$1,413.40
21	Bradley 740 tilt mirror, surface mounted with S.S. frame, size 450mm x 750mm	No	1	\$571.77	\$571.77
22	Toilet roll holder, Mizu Drift brushed chrome	No	6	\$86.54	\$519.24
23	Grab rail, Caroma Virtu Comfort, 960mm x 600mm - 90 deg vertical	No	6	\$412.80	\$2,476.80
24	Paper towel dispenser, surface mounted S.S.	No	3	\$151.06	\$453.18
25	Soap dispenser, surface mounted S.S.	No	5	\$211.48	\$1,057.40
26	Allowance for signage	Item	1	\$3,205.00	\$3,205.00
27	Allowance for miscellaneous fitments	Item	1	\$11,620.00	\$11,620.00
	<u>FIRE PROTECTION AND SAFETY</u>				
28	Fire extinguisher, wall mounted dry chemical, 9kg	No	6	\$185.92	\$1,115.52
29	Fire blanket	No	2	\$128.46	\$256.92
30	First aid box	No	2	\$304.48	\$608.96
	<b>Total for METALWORK</b>				<b>\$23,298.19</b>
	<b>BRICKWORK AND BLOCKWORK</b>				
	<u>EXTERNAL WALL</u>				
31	Face brickwork in leaf of cavity wall, standard bricks 230 x 110 x 76mm	m2	903	\$138.86	\$125,390.58
32	Common brickwork in leaf of cavity wall, standard bricks 230 x 110 x 76mm, plastering and painting	m2	903	\$174.36	\$157,447.08
33	External cement render including painting	m2	123	\$62.46	\$7,682.58
34	Galvanised sheet steel ant capping to 110mm wall	m	392	\$7.84	\$3,073.28
35	Galvanised steel angle lintel	m	239	\$82.27	\$19,662.53
36	Brick-on-edge sill set sloping	m	163	\$32.77	\$5,341.51
37	9mm wide control joint	m	165	\$23.70	\$3,910.50
38	110mm wide horizontal damp proof course	m	392	\$0.29	\$113.68
39	Anti-Graffiti	None			EXC
	<u>INTERNAL WALL</u>				
40	Common brickwork in single leaf, standard bricks 230 x 110 x 76mm including plastering and painting	m2	405	\$224.38	\$90,873.90
41	Galvanised sheet steel ant capping to 110mm wall	m	121	\$7.84	\$948.64
42	Galvanised steel angle lintel	m	22	\$82.27	\$1,809.94
43	110mm wide horizontal damp proof course	m	121	\$0.29	\$35.09
	<b>Total for BRICKWORK AND BLOCKWORK</b>				<b>\$416,289.31</b>

Ref	Description	Unit	Quantity	Rate	Price
<b>CARPENTRY</b>					
	<u>EXTERNAL WALL</u>				
44	Colorbond custom Orb wall cladding including moisture barrier and furring channels	m2	49	\$125.55	\$6,151.95
<b>Total for CARPENTRY</b>					<b>\$6,151.95</b>
<b>JOINERY</b>					
	<u>STORAGE RACKING AND JOINERY</u>				
45	Shelving unit fixed to wall, 2400mm high	m	8	\$438.98	\$3,511.84
46	Vanity benchtop for bathrooms	m	5	\$1,620.99	\$8,104.95
47	Allowance for miscellaneous joinery	Item	1	\$11,620.00	\$11,620.00
	<u>KITCHEN SHELVING AND BENCHWORK</u>				
48	600mm wide stainless steel benches with 2 shelves under	m	16	\$1,859.20	\$29,747.20
49	Two tier shelves over benches	m	10	\$697.20	\$6,972.00
50	Allowance for miscellaneous kitchen shelving / benches	Item	1	\$11,620.00	\$11,620.00
<b>Total for JOINERY</b>					<b>\$71,575.99</b>
<b>WINDOWS AND DOORS</b>					
	<u>WINDOWS</u>				
51	Commercial grade powdercoat finish aluminium framed single 6mm thick clear glazed fixed window	m2	30	\$603.37	\$18,101.10
52	Commercial grade powdercoat finish aluminium framed single 6mm thick clear glazed window with operable "View Through" roller blinds	m2	27	\$879.92	\$23,757.84
	<u>EXTERNAL DOORS</u>				
53	Single door including frame, hardware and painting	No	5	\$1,335.73	\$6,678.65
54	Double door including frame, hardware and painting	No	9	\$2,044.22	\$18,397.98
55	Double door with single 6mm thick clear glazing including frame, hardware and painting	No	4	\$5,205.76	\$20,823.04
	<u>INTERNAL DOORS</u>				
56	Single door including frame, hardware and painting	No	5	\$929.65	\$4,648.25
57	Single door including frame, hardware and painting [toilets]	No	3	\$1,898.41	\$5,695.23
58	Single door including frame, hardware and painting [Disabled toilet]	No	1	\$1,724.08	\$1,724.08
59	Double door including frame, hardware and painting	No	6	\$2,084.33	\$12,505.98
<b>Total for WINDOWS AND DOORS</b>					<b>\$112,332.15</b>
<b>PARTITIONS</b>					
	<u>INTERNAL WALLS</u>				
60	Skirting duct, 150mm high x 35mm (3 channel)	m	342	\$67.11	\$22,951.62
	<u>TOILET PARTITIONS</u>				
61	Laminate faced particle board, floor mounted toilet partition, 1800mm long x 1800mm high	No	5	\$978.87	\$4,894.35
62	Laminate faced particle board single door 600mm wide including hardware	No	5	\$569.38	\$2,846.90



Ref	Description	Unit	Quantity	Rate	Price
63	Laminate faced particle board door jamb, 150mm wide x 1800mm high	No	2	\$499.66	\$999.32
64	Laminate faced particle board door jamb, 300mm wide x 1800mm high	No	3	\$528.71	\$1,586.13
65	Urinal partition 600mm wide x 1800mm high	No	1	\$871.36	\$871.36
<b>Total for PARTITIONS</b>					<b>\$34,149.68</b>
<b>ROOFING</b>					
66	Colorbond XRW Custom Orb roof sheeting including moisture barrier and insulation blanket	m2	1,228	\$80.12	\$98,387.36
67	Fibre cement eaves lining including furring channels and painting	m2	109	\$103.77	\$11,310.93
68	Colorbond ridge capping, 500mm girth	m	69	\$72.86	\$5,027.34
69	Colorbond flashing, 250mm girth	m	44	\$52.29	\$2,300.76
70	Colorbond eaves gutter	m	99	\$75.43	\$7,467.57
71	Colorbond downpipe, 100mm dia	m	72	\$83.97	\$6,045.84
72	Roof anchor system, static line fixed along ridge line	No	1	\$33,273.87	\$33,273.87
<b>Total for ROOFING</b>					<b>\$163,813.67</b>
<b>CEILINGS</b>					
73	Armstrong Ceilings Ultima - 1200mm x 600mm ceiling tiles including exposed tee grid, shadow line wall angle and insulation	m2	886	\$96.50	\$85,499.00
74	Armstrong Ceilings Optra - 1200mm x 600mm ceiling tiles to wet areas including exposed tee grid, shadow line wall angle and insulation	m2	51	\$96.50	\$4,921.50
75	Fibre cement ceiling lining including furring channels and painting	m2	48	\$103.77	\$4,980.96
<b>Total for CEILINGS</b>					<b>\$95,401.46</b>
<b>TILING</b>					
<u>WALL TILES</u>					
76	Ceramic wall tiles to wet areas [P.C. \$40.00/m2]	m2	132	\$134.50	\$17,754.00
<b>Total for TILING</b>					<b>\$17,754.00</b>
<b>RESILIENT FINISHES</b>					
<u>FLOOR FINISHES</u>					
<u>Vinyl Flooring</u>					
77	Accolade Plus/safe	m2	817	\$91.10	\$74,428.70
78	Floor finish R12, Non-Slip	m2	119	\$121.43	\$14,450.17
79	Recessed mat [Birrus tough scrape]	No	4	\$1,808.07	\$7,232.28
<b>Total for RESILIENT FINISHES</b>					<b>\$96,111.15</b>
<b>SANITARY PLUMBING AND DRAINAGE</b>					
<u>SANITARY FIXTURES</u>					
80	WC, Caroma Urbane wall faced toilet with dual flush cistern	No	5	\$2,846.90	\$14,234.50
81	WC, Caroma care 100 V2 with backrest and dual flush cistern [disabled]	No	1	\$4,415.60	\$4,415.60

Ref	Description	Unit	Quantity	Rate	Price
82	Hand basin, rectangular above counter porcelain with Caroma Luna basin mixer	No	4	\$3,137.40	\$12,549.60
83	Hand basin, rectangular above counter porcelain with Caroma pin lever care basin mixer	No	1	\$3,137.40	\$3,137.40
84	Urinal, Caroma Cube with urine sensing mechanism	No	2	\$5,229.00	\$10,458.00
85	Single bowl sink with single drainer with mixer tap and zip hydro tap	No	1	\$5,287.10	\$5,287.10
86	Cleaner's basin with mixer tap	No	1	\$3,718.40	\$3,718.40
87	Floor waste gully	No	5	\$848.26	\$4,241.30
88	Connection to appliances [dishwasher, hydro tap]	No	2	\$581.00	\$1,162.00
	<u>SANITARY PLUMBING</u>				
89	Soil, waste and vent pipework	Item			INC
90	Water supply, hot and cold	Item			INC
	<u>FIRE PROTECTION</u>				
91	Fire hose reel	No	2	\$1,533.84	\$3,067.68
	<u>GAS SUPPLY</u>				
92	Gas reticulation	None			EXC
	<b>Total for SANITARY PLUMBING AND DRAINAGE</b>				<b>\$62,271.58</b>
	<b>ELECTRICAL</b>				
	<u>LIGHT AND POWER</u>				
93	Lighting including circuits, cabling, cable carriers, fittings, switches, etc	m2	1,053	\$68.56	\$72,193.68
94	Power including mains, submains, switchboards, circuits, cabling, cable carriers, switches, etc	m2	1,053	\$83.37	\$87,788.61
95	Hand dryer, automatic wall mounted	No	3	\$1,016.75	\$3,050.25
	<u>COMMUNICATIONS</u>				
96	Communications systems [data, telephony] including circuits, cabling, cable carriers, etc	m2	1,053	\$33.12	\$34,875.36
97	Audio visual system	None			EXC
98	Public address system	None			EXC
	<u>FIRE PROTECTION</u>				
99	Fire protection including smoke and thermal detectors, circuits, cabling, cable carriers, etc	m2	1,053	\$22.66	\$23,860.98
	<u>SECURITY</u>				
100	Security systems including circuits, cabling, cable carriers, etc	m2	1,053	\$12.26	\$12,909.78
	<u>BUILDING MANAGEMENT SYSTEM</u>				
101	Building management system	None			EXC
	<b>Total for ELECTRICAL</b>				<b>\$234,678.66</b>
	<b>MECHANICAL</b>				
102	Air-conditioning	m2	955	\$597.85	\$570,946.75
103	Wet area ventilation	m2	51	\$84.19	\$4,293.69
104	Hot water system	Item	1	\$3,427.90	\$3,427.90
105	Ceiling fans	None			EXC

Ref	Description	Unit	Quantity	Rate	Price
	<b>Total for MECHANICAL</b>				<b>\$578,668.34</b>
	<b>LOOSE FURNITURE AND EQUIPMENT</b>				
	<u>LOOSE FURNITURE</u>				
106	Loose Furniture	None			EXC
	<u>LOOSE EQUIPMENT</u>				
107	Sanitary bin, free standing S.S.	No	3	\$761.11	\$2,283.33
108	Bin	No	3	\$761.11	\$2,283.33
109	Dishwasher, Bosch SMS66J101A	No	1	\$1,435.84	\$1,435.84
110	Refrigerator, Westinghouse WHE6060SA	No	1	\$2,849.89	\$2,849.89
111	Microwave, Panasonic NN-ST67JSQPQ	No	1	\$469.85	\$469.85
112	Coffee maker, Delonghi ESAM04110B	No	1	\$751.89	\$751.89
113	Free standing stove, four plates, grill and lower oven	No	1	\$2,411.15	\$2,411.15
	<b>Total for LOOSE FURNITURE AND EQUIPMENT</b>				<b>\$12,485.28</b>
	<b>GENERAL MAINTENANCE</b>				
114	General Maintenance allowance	Item	1	\$50,000.00	\$50,000.00
	<b>Total for GENERAL MAINTENANCE</b>				<b>\$50,000.00</b>
	<b>Total for BROOKTON TOWN HALL</b>				<b>\$2,746,009.51</b>
	<b>EXTERNAL WORKS</b>				
	<b>EARTHWORKS</b>				
115	Site preparation including bulk earthworks and formation of building pads				EXC
	<b>Total for EARTHWORKS</b>				<b>EXC</b>
	<b>SANITARY PLUMBING AND DRAINAGE</b>				
	<u>WATER SUPPLY</u>				
116	Assumed utilising existing service	None			EXC
	<u>FIRE PROTECTION</u>				
117	Assumed utilising existing service	None			EXC
	<u>GAS SUPPLY</u>				
118	Assumed utilising existing service	None			EXC
	<u>SEWER DRAINAGE</u>				
119	Assumed utilising existing service	None			EXC
	<b>Total for SANITARY PLUMBING AND DRAINAGE</b>				<b>EXC</b>
	<b>ELECTRICAL</b>				
120	Assumed utilising existing service	None			EXC
	<b>Total for ELECTRICAL</b>				<b>EXC</b>
	<b>SITEWORKS</b>				
	<u>PAVEMENTS</u>				
121	Provisional sum for making good existing pavement upon completion of the construction works	PSum	1	\$20,000.00	\$20,000.00
	<u>LANDSCAPING</u>				
122	Provisional sum for landscaping upon completion of the construction works	PSum	1	\$8,000.00	\$8,000.00
	<u>HYDRAULICS AND PLUMBING</u>				

Ref	Description	Unit	Quantity	Rate	Price
123	Soakwell with grated lid connected to downpipes via 90mm storm water pipe [16 No.]	Item	1	\$42,299.59	\$42,299.59
	<b>Total for SITEWORKS</b>				<b>\$70,299.59</b>
	<b>Total for EXTERNAL WORKS</b>				<b>\$70,299.59</b>
	<b>CLIENT COSTS</b>				
124	Design	Item	1	\$122,840.00	\$122,840.00
125	Engineering	Item	1	\$122,840.00	\$122,840.00
126	Procurement facilitation	Item	1	\$61,420.00	\$61,420.00
127	Construction management	Item	1	\$122,840.00	\$122,840.00
128	Project management	Item	1	\$76,775.00	\$76,775.00
129	Shire of Brookton costs				EXC
130	Contingencies	Item	1	\$894,428.75	\$894,428.75
131	Escalation to date of tender				EXC
	<b>Total for CLIENT COSTS</b>				<b>\$1,401,143.75</b>
	<b>Grand Total</b>				<b>\$4,525,000.00</b>

Brookton Town Hall

## **Appendix B - Preliminary Cost Estimate Summary - Restoration**

Ref	Description	Unit	Quantity	Rate	Price
	<b>RC CONSULTING ENGINEERS</b>				
	<b>BROOKTON TOWN HALL</b>				
	<b>RESTORATION</b>				
	<b>ESTIMATE 4</b>				
	<b>PRELIMINARIES</b>				
1	Contractor's preliminaries	Item	1	\$37,825.86	\$37,825.86
	<b>Total for PRELIMINARIES</b>				<b>\$37,825.86</b>
	<b>BROOKTON TOWN HALL GENERAL MAINTENANCE</b>				
	<b>ROOFING AND ASBESTOS</b>				
2	Removal of asbestos as identified in Occuhealth report dated 8 October 2019 to the walls and ceiling in the Projector Room only	m2	75	\$56.01	\$4,200.75
3	Painting of retained asbestos areas	m2	131	\$12.39	\$1,623.09
4	Painted plasterboard to walls where the asbestos has been removed	m2	54	\$75.12	\$4,056.48
5	Painted plasterboard to ceilings where the asbestos has been removed	m2	21	\$79.42	\$1,667.82
6	Remove existing ceiling lining to the entry and replacement with painted plasterboard ceiling	m2	6	\$97.16	\$582.96
7	Removal and disposal of existing metal roof, gutters and downpipes and replacement with 50mm Anticon Insulation to underside of metal roof, Colorbond 0.42 corrugated roof sheeting and all necessary cappings, flashings, gutters and downpipes	Item	1	\$159,077.80	\$159,077.80
8	Option 1 : Reframe toilet block roof to 10 deg to 15 deg	RATE ONLY			
9	Option 2 : Reframe from entry roof to 10 deg to 15 deg	RATE ONLY			
10	General Maintenance allowance	Item	1	\$100,000.00	\$100,000.00
	<b>Total for ROOFING AND ASBESTOS</b>				<b>\$271,208.90</b>
	<b>Total for BROOKTON TOWN HALL GENERAL MAINTENANCE</b>				<b>\$271,208.90</b>
	<b>BROOKTON TOWN HALL STRUCTURAL MAINTENANCE</b>				
	<b>STORM WATER</b>				
11	Soakwell with grated lid connected to downpipe with 90mm stormwater pipe [16 No.]	Item	1	\$38,340.19	\$38,340.19
12	All plumbing underneath the building and around the perimeter of the building to be checked for any leaks and report anomalies [No allowance included for any remedial works that may be required] No Allowance for any remedial works that may be required	Item	1	\$1,138.42	\$1,138.42

Ref	Description	Unit	Quantity	Rate	Price
	<b>Total for STORM WATER</b>				<b>\$39,478.61</b>
	<b>BUILDING INSPECTIONS</b>				
13	Carry out a termite inspection throughout the entire hall structure and report any biological degradation of wooden members	Item	1	\$1,410.20	\$1,410.20
14	Carry out regular inspections for signs of movement or structural defects and report any anomalies	Item	1	\$3,076.80	\$3,076.80
15	Carry out regular inspections of the timber structural components and report any anomalies	Item	1	\$3,076.80	\$3,076.80
16	Implement a comprehensive termite management and timber treatment plan in accordance with any relevant Standards.	Item	1	\$5,220.30	\$5,220.30
	<b>Total for BUILDING INSPECTIONS</b>				<b>\$12,784.10</b>
	<b>BRICKWORK AND BLOCKWORK</b>				
17	<ul style="list-style-type: none"> <li>Grind out the mortar joints, wash clean and then re-point to match the surrounding areas.</li> <li>Rate includes items below.</li> <li>Excludes any remedial works required to corroded steel components discovered.</li> </ul>	m2	77	\$163.18	\$12,564.86
18	<ul style="list-style-type: none"> <li>Remove and raise air vents around the hall where they are below the ground/damp course level.</li> <li>Raise above the damp course.</li> </ul>	No	15		INC
19	New air vent in wall	No	5		INC
20	<ul style="list-style-type: none"> <li>Remove of existing 7 pairs of vents mid way up the west wall.</li> <li>Remove the cut bricks below and install full size bricks (14 no) and then replace the vents.</li> <li>Note that a perfect match may not be possible and will depend on the availability and source at the time of looking.</li> </ul>	No	7		INC
21	Repair the small nib wall near the entrance where the bricks are coming apart. Render over the top to match	Item	1		INC
22	Replacement of fretting brick around the east side of the building [Note that a perfect match may not be possible and will depend on the availability and source at the time of looking]	No	5		INC
23	Re-bedding loose bricks before re-pointing.	No	20		INC
24	Supply and installation of damp coursing.	m	188	\$192.30	\$36,152.40
25	Check all lintels for the extent of corrosion, treat with corrosion protection paint [Remove brickwork and extend the corrosion check and protection to the ends of the lintels] Refer RCCE Email dated 26th November 5.39pm	Item	1	\$45,880.22	\$45,880.22
26	Provisional sum for repairs to vertical crack in the north facing north east corner brick work Refer to RCCE email dated 27th November 10.24am	PSum	1	\$5,000.00	\$5,000.00



Ref	Description	Unit	Quantity	Rate	Price
27	Subject to the abovementioned crack investigation work all cracks should be immediately recorded in location and size and then monitored with crack gauges. Remedial works such as removing existing bricks down to the crack and reinstating then on new mortar bed can then commence. Refer ROCE email 27th November 11.16am	Item	1	\$18,932.58	\$18,932.58
<b>Total for BRICKWORK AND BLOCKWORK</b>					<b>\$118,530.06</b>
<b>ROOFING</b>					
28	Carry out inspection of the roof space for any missing or deficient tie downs and installation of new tie downs full length of main hall both sides at 600 centres	Item	1	\$2,259.97	\$2,259.97
29	Carry out inspection of the roof sheeting above the kitchen, brick work and the roof frame and report any anomalies	Item	1		INC
<b>Total for ROOFING</b>					<b>\$2,259.97</b>
<b>Total for BROOKTON TOWN HALL STRUCTURAL MAINTENANCE</b>					<b>\$173,052.74</b>
<b>CLIENT COSTS</b>					
30	Design	Item	1	\$6,920.00	\$6,920.00
31	Engineering	Item	1	\$6,920.00	\$6,920.00
32	Procurement facilitation	Item	1	\$3,460.00	\$3,460.00
33	Construction management	Item	1	\$13,680.00	\$13,680.00
34	Project management	Item	1	\$8,550.00	\$8,550.00
35	Shire of Brookton costs				EXC
36	Contingencies	Item	1	\$95,382.50	\$95,382.50
37	Escalation to date of tender				EXC
<b>Total for CLIENT COSTS</b>					<b>\$134,912.50</b>
<b>Grand Total</b>					<b>\$617,000.00</b>