Structural Inspection

of

Church of St Luke
Berry Street
Liverpool
L1 4JA

for

Liverpool City Council

22nd May 2014
Project No Q48

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1.00 Executive Summary

From our visual inspection conducted late April and early May 2014 we would consider the structural condition of the church and its grounds as a whole, known as the “bombed out church”, to be in a reasonable condition.

Whilst there has been some stone failure since the last report undertaken in 2007, there has been relatively little further deterioration of the structure. What has deteriorated has been identified in this report and priorities assigned to the defects and their repairs. Those highlighted as priority 1 and highlighted in red in the appendix of this report relate primarily to:

1. The tower, which is exhibiting signs of masonry cracking due to a lack of roof and water entry is causing extensive corrosion of the embedded metal.
2. The stone tracery to the window in the Chancel immediately behind the south porch is badly weathered and close to collapse and needs to be stabilised.
3. Areas of stone parapet to the two vestries and to the west end of the Nave above the vestries has moved and is unstable.
4. Two rainwater pipes need to be replaced from the vestry roofs.
5. The stone which supported the Nave ridge member has moved and cracked and needs to be stabilised.
6. An area of yorkstone paving to the northwest podium level of the west end steps is missing and the adjacent stones are loose causing a trip hazard to the general public.

The order of cost associated with these immediate urgent works (red) is estimated as £133,308.00 plus vat.

The appendix to this report also contains an outline cost plan for each of the other priority criteria and these are summarised as:

Priority 2 – amber - remedial work to be planned and implemented in 1 to 5 years £232,806.00 plus vat

Priority 3 – green - remedial work to be planned and implemented in 5 to 10 years £101,189.00 plus vat.

Please note the assumptions and exclusions applied to these figures as described within the Budget Cost Plan appendix section.

2.00 Introduction and Brief

This report considers the structural condition and general defects observed during a visual non-intrusive inspection of the ruined church and its immediate surroundings over a number of days during late April 2014 and early May 2014.

This report responds to an instruction received from Liverpool City Council dated 22nd April 2014 and is referenced by Purchase Order No 3500324459 dated 6th May 2014.

The inspection and report are a structural assessment of the remaining structure, from ground level, with reference to previous reports commissioned by the Authority in 2007. The objectives of the brief were defined by the Authority as being:

- The preparation of a structural survey of the building and structures, boundary walls etc to ascertain the structural integrity of the property and the identification of any structural defects.
- A review of how the property currently performs in relation to Building Regulations and other legislation.
- Prepare a high level budget estimate for all recommended 'medium' (i.e. present – 5 years) and 'long' (i.e. 5 – 10 years) term repairs, remedial and planned maintenance actions and statutory requirements.

This report has been prepared for the sole use of Liverpool City Council and shall not be relied upon by any other third party. If this report is to be provided to other organisations outside of those engaged by the client at this time and in respect of this property, then permission to reproduce this report is to be obtained from Blackett-Ord Conservation Engineering Ltd.

3.00 Background & Context

Much is known about the Church of St Luke since it was hit by an incendiary device on the night of 5th May 1941. However, little printed historical information exists relating to the history of the church before this date.

The church ruin and the steps, railings, plinth, gates and piers of the church are listed under two separate entries. The ruined church was listed in 1952 as Grade II* and the perimeter features were added to the list in 1975 and are also Grade II*.

The former Anglican Church, which is deconsecrated, was built between 1811 and 1832 to designs prepared by John Foster (Snr), Senior Surveyor to Liverpool Corporation until 1824. Overseeing of the completion of the work and modifications to the design were undertaken by John Foster (Jnr). The foundation stone was laid in April 1811 and the church opened on 12th January 1831. Liverpool City Council originally acquired the land in 1791 with the intent of providing a building to benefit the developing community of the City, such as a ceremonial place of worship for the Corporation. This concert hall activity changed with the building of the Philharmonic Hall on Hope Street and the subsequent transfer to Anglican activity with amendments made to the church by William and John Audsley in 1864-1873. After much discussion following its War damage the City bought the church from the Church of England in 1968.

The Church of St. Luke occupies a prominent location at the head of Bold Street at the junction of Renshaw St, Leece St and Berry Streets. The site is within the Rodney Street Conservation Area and adjoins the Duke Street Conservation Area.

The building consists of a rectangular Nave that originally had two lines of internal aisle columns supporting the roof and defining the aisles. At the east end is a large Chancel and at the west end a square Tower with Vestries on each side at its

base. The Tower is approximately 42m high and accommodates a clock chamber and a bell-ringing chamber with a bell frame. The total length of the building is approximately 54m and it is 18m wide.

The surviving masonry is constructed of sandstone ashlar with common brick backing and has been open to the elements since the date of the bombing.

The site slopes from east to west with the eastern end having been excavated from the original bedrock. The western end was built up on a vaulted brickwork crypt beneath the vestries. The west tower is constructed above a broad flight of yorkstone steps and dominates the road junction at the head of Bold Street.

The bell-frame within the tower is inscribed within the casting “George Gillebrand Bell Hanger 1828” and it is believed to be the first cast iron bell frame made and installed within a church. The bells have subsequently been removed.

4.00 General Structural Inspection

Visual non-intrusive inspections of the structures from ground level were undertaken on 29th April, 01st May and 07th May 2014. Contained within the Appendix of this report is a schedule of the defects that have been prioritised in accordance with the following criteria:

Urgent / immediate	remedial work to be planned now and implemented quickly
Medium term	remedial work to be planned and implemented in 1 to 5 years
Long term	remedial work to be planned and implemented in 5 to 10 years

These have been tagged as red, amber and green to assist in identification as well as aiding their consolidation into the outline cost plan in the appendix.

The building is considered structurally to be in a reasonable state of repair. Many of the defects have been recorded in previous reports and whilst some have deteriorated further only very few catastrophic events have occurred in the intervening seven year period. This has included the loss of laminated stone faces and the loss of a piece of cornice masonry from above the porch on the north elevation at the junction of the Chancel and the Nave.

Maintenance works to the structure seem also to have been implemented, including the provision of a new roof over the north Vestry, pointing of the parapet wall to both the north and south Vestries, pointing of the brick Chancel arch and the removal of vegetation that frequently grows at the head of the main walls behind the parapet.

The grounds and perimeter fences are again considered to be in reasonable structural condition with only minor work elements identified in the schedules to prolong the life of the structures and maintain the site security.

In addition to the remedial work liabilities identified in this report there are activities that owners of the property will need to undertake on a cyclic basis to conform to best practice and in some cases legislation. These include:

- Electrical testing — 3 yearly
- Grounds maintenance (internal and external) — throughout the year
- Maintenance inspection — annually
- Condition survey — 5 yearly
- Checking of wire ties — 5 yearly
- Painting of metalwork — 10 yearly
- Site security — throughout the year

5.00 Structural Observations – Priority 1

During the course of our inspection there are defects which we feel need urgent consideration to prevent failure or more significant structural deterioration. These have been given a priority of 1 and highlighted in red. To summarise these and our thoughts behind the urgent nature of the works we have added the following narratives.

The stone tracery that forms the window behind the south porch in the Chancel wall is exhibiting significantly more deterioration of the stone tracery and mullions than any other remaining window structure. It is possible that the stone in this area was the most badly affected by the heat from the intense fire and as such contained heat generated fractures that over time have allowed more water penetration and corrosion of the embedded metalwork which forms the connections between the various stone components.

The main perimeter walls to the Nave and the Chancel have a freestanding parapet with a perforated stone detail. These in the past have been restrained with the introduction of a metal strap that is taken back to the primary pinnacles ensuring that they all act together under wind loading. From ground level the condition of the strap and the fixings appear to be showing signs of deterioration and therefore remedial works have been identified as a priority. The first step would be to view these at close quarters and determine the nature of remedial works that are needed. This could include re-painting and replacement of corroded fixings. At the same time the stainless steel ties around the pinnacles should also be inspected and adjusted as necessary to ensure they are performing their function of restraining the stone.

The rainwater pipes to the North and South Vestry are not performing. The North Vestry down pipe appears to be blocked and has split. The south Vestry down pipe has been missing for a number of years and should be replaced. The prolonged saturation of the stone is causing considerable damage and as such their replacement is considered a high priority to prevent further consequential damage.

There is evidence around the bell-ringing chamber window heads on each of the four elevations of the tower that movement is occurring. Whilst this might be relatively recent it is felt that this is due to the lack of a roof at the top of the tower and water penetration into the stone and brick structure from both sides. The bell ringing timber floor is deteriorating rapidly and it is possible that corrosion to the metal bell frame is contributing to the cracks by corrosion expansion within the wall. To prevent further damage to the tower structure, timber floors and the bell frame a new roof should be provided over the tower with an effective rainwater discharge system.

Careful consideration will be required as to the future of the bell frame. It is obviously of historic value and its retention will be of primary concern. The frame is believed to be in a poor condition and will require treatment to stop any further corrosion. This may require the dismantling of the frame and

blast cleaning prior to corrosion treatment. At this time it may be subject to investigation by a qualified metallurgist to test if the frame is in a suitable condition to be reinstalled. The clock mechanism is between the bell ringing floor and the bell frame and may also be affected by water penetration. A high priority should be given to removing this to a safe place whilst work is undertaken to consolidate the structure of the tower. If work is not considered as a priority it is believed that the structural integrity of the tower will be lost very quickly resulting in significant loss and increased danger to the general public.

Where the east face of the tower joins with the Nave walls there are two areas of stone crenulated parapet that have a number of open joints. The stability of these stones has been compromised and the metal embedded within the construction may have begun to corrode and expand. These two areas should be taken down and rebuilt.

Also on the east face of the tower there are stones that previously supported the ridge of the main nave roof. From ground level it appears that these large stones are beginning to move and there are open joints. These need to be grouted and stitched into position and the joints repointed.

Finally, the site has an electrical supply that terminates at a switchboard within the crypt beneath the North Vestry. The condition of this installation is not known, but the crypt is not waterproof and the humidity levels are quite high. A qualified electrician as a matter of priority should inspect the installation. It is also noted that the site does not appear to have a permanent water supply and therefore has no welfare facilities. Water is currently collected in plastic butts within the crypt from known points of leakage when it rains.

6.00 Schedule of Defects

Schedule of Defects – prepared by area to assist with identification

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	TOWER	NORTH	SOUTH	EAST	WEST
VIEW:	INTERNAL	**EXTERNAL**		**ENVIRONS**			
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME		CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
	West End Steps			
1	The yorkstone steps at the west end of the building	The steps are loose in places and the nosings are weathered and in places fractured. Many open joints.	Rake out joints and remove any loose material. Take up and re-bed loose stones. Apply indent stone repairs to damaged nosings	2
2	The cast grilles and steel cover plates	The cast grilles have openings which are too large for health and safety. The metal plates are too thin and loosely fitted.	Replace all grilles and plates with new covers to current standards.	3
3	North lower podium level	There is an area of missing flags / paving together with displaced paving which are causing a trip hazard.	Take up replace and re-bed yorkstone paving slabs	1
	Internal North and South Steps			
1	Two sets of stone steps at the east end of the garden area	General open joints to steps, missing and dislodged coping stones and missing handrails	Rake out joints and repoint, re-bed loose steps, replace copings and replace metal hand railing to each side	3
	Perimeter Fence			
1	Various types of cast and wrought fence to the perimeter of the site and to some internal areas	Various areas of damage and repair. Some areas to the east elevation appear to have further damage since repair. Poor overall condition.	Blast clean, repair and repaint all perimeter railings.	3
	Stone Piers and Pinnacles			

1	There are sixteen stone piers in the perimeter boundary fence with pinnacle details.	Many of the stone joints are open, but no significant movement was evident. Stone embellishments and finials are missing to most pinnacles.	Rake out and repoint joints. Carve and replace missing finials	3
	Retaining Walls			
1	Due to the levels of the gardens and the adjacent streets, the wall to the east is a retaining wall.	Isolated open joints but no real evidence of movement	Local rake out and repoint stone joints.	3
	Gates			
1	Two pairs located on the north and south boundaries.	Cast iron gates, painted with numerous broken features and general corrosion. Only two sets of gates in regular use, one on the north and one on the south side	Blast clean, repair and repaint.	3
	Paving			
1	General yorkstone paved surfaces	Some unevenness and open joints. Paving can pose a slip hazard when wet.	Localise repair and re-point with general jetting to remove moss etc.	2
2	General yorkstone paved surfaces	The formal drainage to the paved areas does not appear to be taking water away leading to local areas of pooling	Clean out all paving gullies	2
	General			
1	General compliance with DDA – external areas	A DDA audit was undertaken for the Authority dated July 2004	Items of improvement and compliance were identified but none appear to have been implemented.	3

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	**CHANCEL**	TOWER	NORTH **SOUTH** EAST WEST		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	All five pinnacles on top of the external buttresses have been restrained with ties	These ties have not been checked since their installation	Access all ties and tighten those that are loose.	2
2	The two central columns at the head of the buttresses have a considerable amount of original stone missing	The erosion of the stone is more pronounced on the northern face and may be due to a combination of weathering and original heat damage	Vertical stainless steel straps to be inserted to ensure that the individual stone units act as one whole	2
3	The first three upper columns above the buttresses have stone missing at the balustrade level.	The weather eroded stone has reduced the bearing are of the column and is leading to instability	Vertical stainless steel straps to be inserted to ensure that the individual stone units act as one whole	2
4	East end of Chancel elevation	Ivy growth up wall and through window opening	Cut back and treat with a herbicide	2
5	Each of the stone arch cornices are showing evidence of stone lamination and erosion	The laminated stone is loose and vulnerable to freeze thaw cycles leading ultimately to loss of material	Remove loose laminated material	2
6	Stone work face at plinth level below window sills	General weathering and some lamination of the sandstone face	Remove loose laminated material	2
7	Steel straps have been previously inserted to tie the balustrade back to the buttresses	Evidence of localised breakdown of the surface finish and corrosion of some of the fixings.	Replace corroded fixings	1
8	Coping to the entrance porch has broken down and metal fixing cramps are visible	Corrosion of metal craps is leading to spalling of the stonework	Remove visible cramps and ensure remaining joints are intact	2
9	The stone tracery forming the window above the porch	General weather erosion, loss of joint material and corrosion of embedded metal dowels is extensive to this window	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained. Some stone replacement is required and repointing is needed before collapse occurs	1

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	**CHANCEL**	TOWER	NORTH SOUTH **EAST** WEST		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Both pinnacles on top of the external buttresses have been restrained with ties	These ties have not been checked since their installation	Access all ties and tighten those that are loose.	2
2	Stone work face at plinth level below window sills	General weathering and some lamination of the sandstone face	Remove loose laminated material	2
3	Steel straps have been previously inserted to tie the balustrade back to the buttresses	Evidence of localised breakdown of the surface finish and corrosion of some of the fixings.	Replace corroded fixings	1
4	The stone tracery forming the windows is exhibiting erosion of the stone at many of its joints	General weather erosion, loss of joint material and corrosion of embedded metal dowels is evident	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained and the joints should therefore be repointed.	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	**CHANCEL**	TOWER	**NORTH** SOUTH EAST WEST		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	All five pinnacles on top of the external buttresses have been restrained with ties	These ties have not been checked since their installation	Access all ties and tighten those that are loose.	2
2	Stone work face at plinth level below window sills	General weathering and some lamination of the sandstone face	Remove loose laminated material	2
3	Steel straps have been previously inserted to tie the balustrade back to the buttresses	Evidence of localised breakdown of the surface finish and corrosion of some of the fixings.	Replace corroded fixings	1
4	The stone tracery forming the windows is exhibiting erosion of the stone at many of its joints	General weather erosion, loss of joint material and corrosion of embedded metal dowels	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained and the joints should therefore be repointed.	2
5	The vertical dressed stone around the arch of the window heads	Vegetation is beginning to grow from some of the bed joints	Remove vegetation and treat the embedded root with herbicide	2
6	Coping to the entrance porch has broken down and metal fixing cramps are visible	Corrosion of metal craps is leading to spalling of the stonework	Remove visible cramps and ensure remaining joints are intact	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	**NAVE**	CHANCEL	TOWER	NORTH **SOUTH** EAST WEST		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	The stone tracery forming the windows is exhibiting erosion of the stone at many of its joints. (the worst window is the first one from the west)	General weather erosion, loss of joint material and corrosion of embedded metal dowels	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained by repointing.	2
2	Stone work face at plinth level below window sills	General weathering and some lamination of the sandstone face	Remove loose laminated material	2
3	The stonework above and around the heads of all the arched windows is badly eroded. Joints are also weathered	Loss of face stone work – weathered surface retreating and joints failing	Remove loose laminated material	2
4	The stonework around the arched windows is laminating around the joint areas	Moisture has penetrated the joint and immediate stone work resulting in lamination of the surface of the stone	Remove loose stone and repoint	2
5	The third pinnacle from the west end has significant erosion around the joint at the crenulations level	Loss of section due to weathering causing potential local instability in the bearing of the stone column	Replace missing stonework	2

ST LUKE'S CHURCH LIVERPOOL

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ELEVATION:	**NAVE**	CHANCEL	TOWER	**NORTH** SOUTH EAST WEST		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	The stone tracery forming the windows is exhibiting erosion of the stone at many of its joints	General weather erosion, loss of joint material and corrosion of embedded metal dowels	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	2
2	Stone work face at plinth level below window sills	General weathering and some lamination of the sandstone face	Remove loose laminated material	2
3	Adjacent the porch at cornice level	Part of the stone cornice has fractured and fallen off in early 2014. Embedded dowel has corroded and expanded causing the stone to fracture	Cut out remaining stone and insert new stone indent	1

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	**CHANCEL**	TOWER	**NORTH** SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Steel straps have been previously inserted to tie the balustrade back to the buttresses	Evidence of localised breakdown of the surface finish and corrosion of some of the fixings.	Check and replace corroded fixings	1
2	The stone tracery forming the windows is exhibiting erosion of the stone at many of its joints	General weather erosion, loss of joint material and corrosion of embedded metal dowels	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	2
3	At gutter level below the balustrade the brick ledge is allowing vegetation to grow freely	Recent work has been undertaken to remove vegetation and to treat roots	None	
4	Voids in brickwork generally across the elevation	Charred timber inserts have resulted in voids within the brickwork	Remove any remaining debris and infill with brickwork	2
5	Loose material at window sill level	Sill stones and brick in varying condition and loose	Remove all loose material and consider creating slate sill to shed water off brickwork.	3

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	**CHANCEL**	TOWER	NORTH SOUTH **EAST** WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Steel straps have been previously inserted to tie the balustrade back to the buttresses	Evidence of localised breakdown of the surface finish and corrosion of some of the fixings.	Check and replace corroded fixings	1
2	The stone tracery forming the windows is exhibiting erosion of the stone at many of its joints	General weather erosion, loss of joint material and corrosion of embedded metal dowels	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	2
3	At gutter level below the balustrade the brick ledge is allowing vegetation to grow freely	Recent work has been undertaken to remove vegetation and to treat roots	None	
4	Voids in brickwork generally across the elevation	Charred timber inserts have resulted in voids within the brickwork	Remove any remaining debris and infill with brickwork	2
5	Loose material at window sill level	Sill stones and brick in varying condition and loose	Remove all loose material and consider creating slate sill to shed water off brickwork.	3

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ELEVATION:	NAVE	**CHANCEL**	TOWER	NORTH **SOUTH** EAST WEST		
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FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Steel straps have been previously inserted to tie the balustrade back to the buttresses	Evidence of localised breakdown of the surface finish and corrosion of some of the fixings.	Check and replace corroded fixings	1
2	The stone tracery forming the window into the south porch is exhibiting erosion of the stone at many of its joints	General weather erosion, loss of joint material and corrosion of embedded metal dowels	Replace all missing stone, repair loose stone and re-point in a lime mortar all joints to protect the embedded metal	1
3	The two central columns at the head of the buttresses have a considerable amount of original stone missing	The erosion of the stone is more pronounced on the northern face and may be due to a combination of weathering and original heat damage	Vertical stainless steel straps to be inserted to ensure that the individual stone units act as one whole	2
4	At gutter level below the balustrade the brick ledge is allowing vegetation to grow freely	Recent work has been undertaken to remove vegetation and to treat roots	None	
5	Voids in brickwork generally across the elevation	Charred timber inserts have resulted in voids within the brickwork	Remove any remaining debris and infill with brickwork	2
6	Loose material at window sill level	Sill stones and brick in varying condition and loose	Remove all loose material and consider creating slate sill to shed water off brickwork.	3

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ELEVATION:	NAVE	**CHANCEL**	TOWER	NORTH SOUTH EAST **WEST**		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Voids in brickwork generally across the elevation	Charred timber inserts have resulted in voids within the brickwork	Remove any remaining debris and infill with brickwork	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	**CHANCEL**	TOWER	NORTH SOUTH EAST WEST		
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REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Yorkstone paving	Uneven and cracked. Not safe to access and not DDA compliant. – old heating duct and unprotected pond in center.	Restrict pedestrian access to a new raised level timber boardwalk to allow safe access to defined areas for interpretation.	3
2	Soil / Planted areas	Knotweed has been evident in the past and it is unclear if this has been dealt with in accordance with environmental guidance	Specialist treatment required and relay surface with a suitable dressing	3
3	Flood Lighting	There are various installations within the space with free trailing cables	Status of electrical installation not known – testing and inspection required.	2
4	Independent freestanding structures	There is a stage and lighting gantry area	Dismantle and remove	2

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VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	The stone tracery forming the windows is exhibiting erosion of the stone at many of its joints	General weather erosion, loss of joint material and corrosion of embedded metal dowels	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	2
2	Voids in brickwork generally across the elevation	Charred timber inserts have resulted in voids within the brickwork	Remove any remaining debris and infill with brickwork	2
3	Loose material at window cill level	Sill stones and brick in varying condition and loose	Remove all loose material and consider creating slate sill to shed water off brickwork.	3

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STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	**NAVE**	CHANCEL	TOWER	NORTH SOUTH **EAST** WEST		
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FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Voids in brickwork generally across the elevation	Charred timber inserts have resulted in voids within the brickwork	Remove any remaining debris and infill with brickwork	2

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ELEVATION:	**NAVE**	CHANCEL	TOWER	NORTH **SOUTH** EAST WEST		
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2	Voids in brickwork generally across the elevation	Charred timber inserts have resulted in voids within the brickwork	Remove any remaining debris and infill with brickwork	2
3	Loose material at window cill level	Sill stones and brick in varying condition and loose	Remove all loose material and consider creating slate sill to shed water off brickwork.	3

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REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	The stone tracery forming the windows is exhibiting erosion of the stone at many of its joints	General weather erosion, loss of joint material and corrosion of embedded metal dowels	The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	2
2	Loose material at window cill level	Sill stones and brick in varying condition and loose	Remove all loose material and consider creating slate sill to shed water off brickwork.	3
3	Base of tower	Large pieces of charred timber either side of original church entrance arch	Pin back to the stonework with stainless steel dowels	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	**NAVE**	CHANCEL	TOWER	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	**GROUND**	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Yorkstone paving	Uneven and cracked. Not safe to access and not DDA compliant. – old heating duct and unprotected pond in center.	Restrict pedestrian access to a new raised level timber boardwalk to allow safe access to defined areas for interpretation.	3
2	Soil / Planted areas	Knotweed has been evident in the past and it is unclear if this has been dealt with in accordance with environmental guidance	Specialist treatment required and relay surface with a suitable dressing	3
3	Flood Lighting	There are various installations within the space with free trailing cables	Status of electrical installation not known – testing and inspection required.	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	**NORTH** SOUTH EAST WEST		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	General areas of sandstone face weathering	Face of sandstone weathering from rain, pollution and cyclic conditions	Laminated loose stone to be removed	2
2	Crenulations to north vestry elevation	Loose stone, out of vertical and general laminations	Take done and rebuild the stone crenulations to the flat roof parapet	2
3	Pinnacles to north vestry	Metal restraint straps corroding	Clean and prime metal straps and replace fixings	2
4	The rainwater pipe from the north vestry flat roof	The metal rainwater pipe is split suggesting it is blocked and corroding internally	Replace the rainwater goods	1
5	The bell ringing chamber arched window	Central mullion is missing and there is damaged and fractured tracery	Replace all missing stone, repair loose stone and re-point in a lime mortar all joints to protect the embedded metal	1
6	Around clock face, and up through the arched window	There is a vertical crack which follows the masonry joints up the centre of the tower which might be caused by corrosion expansion of the bell-frame	Consider inserting Cintec through ties to stitch the masonry together as well as addressing the corrosion to the bell frame indicated on other defects associated with replacing the missing tower roof.	1

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH **EAST** WEST		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	General areas of sandstone face weathering	Face of sandstone weathering from rain, pollution and cyclic conditions	Laminated loose stone to be removed	2
2	Crack above false arched window	Crack through joints and stone – minor and of long standing, possibly as a result of bell ring induced vibration.	Point joints and inject cracks through stone with a lime based grout applied under atmospheric head.	2
3	Erosion of the two stone corners around the original roof line	Local loss of support to remaining stone and feature pillars	Cut out eroded areas and insert new stone to original profile	2
4	At the intersection of the original Nave roof ridge	The stone which supported the original ridge line appears to have moved and joints have opened up	Point joints and inject cracks through stone with a lime based grout applied under atmospheric head.	1
5	Crenulations to the left and right hand sides of the tower and vestries.	The stone forming the crenulations appears to have moved and daylight can be viewed through the open joints	Stone to be taken down locally and rebuilt	1
6	The clock face	The clock face is missing and only the metal frame remains	Replicate the clock face and reinstate	3

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH **SOUTH** EAST WEST		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	General areas of sandstone face weathering	Face of sandstone weathering from rain, pollution and cyclic conditions	Laminated loose stone to be removed	2
2	To the left hand side of the louvers	Opening up of stone joints at the belfry level – ringing floor – expansion of embedded metal	Re-point with a lime rich masonry mortar	2
3	To the right hand side of the louvers	Opening up of stone joints at the belfry level – ringing – expansion of embedded metal	Re-point with a lime rich masonry mortar	2
4	Southern elevation of south vestry	Missing rainwater goods	Replace rainwater goods	1
5	Southern elevation of south vestry	Movement at junction of crenulations and pinnacles. Parapet is leaning outwards and joints appear to have been repaired	Rebuild the stone parapet to ensure all defects are addressed	2
6	High level arched opening	Louvers missing from high level arched opening	Replace and secure all louvers	2
7	Bell ring chamber arched window	The tracery is in a poor condition with stone missing. The left hand mullion base is cracked revealing the embedded metalwork. Stone cracking and mortar joints open	Replace all missing stone, repair loose stone and re-point in a lime mortar all joints to protect the embedded metal	1

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH EAST **WEST**		
VIEW:	INTERNAL	**EXTERNAL**		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	General areas of sandstone face weathering	Face of sandstone weathering from rain, pollution and cyclic conditions – some areas of lamination	Laminated loose stone to be removed	2
2	Pinnacles to south vestry	Metal restraint straps corroding	Clean and prime metal straps and replace fixings	2
3	North and south vestry west elevation arched windows	Erosion of tracery joints	Re-point joints in a lime masonry mortar to protect the embedded metal	2
4	Bell ring chamber arched window	The tracery is in a poor condition with stone missing from the right hand mullion. Stone cracking and mortar joints open	Replace all missing stone, repair loose stone and re-point in a lime mortar all joints to protect the embedded metal	1
5	Main entrance arch	Stone joints in the arch are weathered and open	Rake out and repoint joints in the arch stonework	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		**VESTRY**
FLOOR:	**GROUND**	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
	Main Entrance			
1	Yorkstone paved floor	Generally sound but in need of cleaning	Steam and light detergent clean of the paved floor and repair of any pointing	3
	North Vestry			
1	Yorkstone paved floor	Generally sound but in need of cleaning	Steam and light detergent clean of the paved floor and repair of any pointing	3
	South Vestry			
1	Yorkstone paved floor	Generally sound but in need of cleaning	Steam and light detergent clean of the paved floor and repair of any pointing	3

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	**FIRST**	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Original intermediate chamber floor missing	Charred remains of primary floor beams and sockets for floor joists in walls	To assist with the stability of the tower as a whole insert new floor structure or braced perimeter frame	2
2	On all internal elevations where the floor structure was embedded within the walls	Open holes and loose brick and stone	Rebuild and infill all holes with brick in a lime mortar.	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	**SECOND**	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Original ringing chamber floor missing	Primary timber beams and floor joists missing.	To assist with the stability of the tower as a whole insert new floor structure or braced perimeter frame	2
2	On all internal elevations where the floor structure was embedded within the walls	Open holes and loose brick and stone	Rebuild and infill all holes with brick in a lime mortar.	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	**BELL FRAME**	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
	The area was inaccessible so was not inspected. Remedial works are assumed to remain as last recorded in 2007. Note: the bells have been removed.			
1	Original George Gillibrand 1828 cast iron bell frame	Wedged in position having lost supporting beams, Evidence of corrosion, delaminating and possible parent metal loss	Insert new support structure under and clean and prepare bell frame for localised repair and priming	2
2	General mortar erosion to all internal elevations of stonework	Joints reseeding approximately 10mm due to weathering / water penetration and pollution	Rake out to sound and re-point with a lime rich masonry mortar	2
3	North elevation of stonework	Reveals around louvers cracked joints and stone	Point joints and inject cracks through stone with a lime based grout applied under atmospheric head.	2
4	There is no roof to the tower so the bell-frame is open to the elements	Roof not inspected, but assumed to be still missing (as reported in 2007) - allowance made for total replacement	Replace roof structure, finishes and rainwater system to ensure the restraint of the tower is in place and water is kept out of the structure and bell-frame below.	1
	Note: On the external elevation of the tower it is recorded that there are cracks in the north elevation masonry		The corrosion of the bell-frame may be causing movement in the stonework. Consider inserting the missing roof above as a priority and carrying out remedial works to bell-frame. Introduce new Cintec through ties in the masonry to stitch the walls together	1

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	**CLOCK**	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
	The area was inaccessible so was not inspected. Remedial works are assumed to remain as last recorded in 2007.			
1	Southern elevation of stonework	Cracked joints and stone	Point joints and inject cracks through stone with a lime based grout applied under atmospheric head pressure.	2
2	General mortar erosion to all internal elevations of stonework	Joints weathered approximately 10mm due to weathering / water penetration and pollution	Rake out to sound and re-point with a lime rich masonry mortar	2
3	Existing timber floor – effectively acting as low level roof	Areas of wet rot to primary, secondary and board timbers	Cut out and replace damaged timbers. Replace rainwater system	2
4	In 2006 it was noted that the clock mechanism was in place. It is not known if this is still the case as access was not possible.		This mechanism (possibly a replacement) may have originally come from the Hydraulic Pumping Station at Toxteth Dock and therefore could have significant historic importance. Remove the clock mechanism to storage and safe keeping	1

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	**ROOF**

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
1	Roof level just below stone crenulations	Roof not inspected, but assumed to be still missing (as reported in 2007) - allowance made for total replacement	Replace roof structure, finishes and rainwater system to ensure the restraint of the tower is in place and water is kept out of the structure and bell-frame below.	1
2	Access to the top of the tower is not currently possible	Access to the bell ringing chamber floor is by way of a stone spiral staircase but there is no access beyond the clock floor to the upper bell frame or roof level	Install a galvanized vertical ladder with hoops and safety line to the inside face of the tower wall. Including the provision of access platform rest landings, top platform and hatch to the new roof level	1

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	**TOWER**	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	**CRYPT**

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
	Under North Vestry and Steps			
1	Brick and stone arched crypt – main electrical switchboard	Water entry from above	Clean out and check out electrical supply integrity	1
2	Within the main area	Water is being collected and stored within open large buckets	Replace covers / ventilation and tank to prevent water entry	3
	Link Corridor under Main Steps			
1	Stone arched and walled corridor link	Water entry from above – sharps and vermin hazard from open grilles above	Clean out and replace ventilation grille	2
	Under South Vestry and Steps			
1	Brick and stone arched crypt	Water entry from above – vermin hazard	Clean out	2

ST LUKE'S CHURCH LIVERPOOL

STRUCTURAL INSPECTION – SCHEDULE OF DEFECTS

ELEVATION:	NAVE	CHANCEL	TOWER	NORTH SOUTH EAST WEST		
VIEW:	**INTERNAL**	EXTERNAL		ENVIRONS		**VESTRY**
FLOOR:	GROUND	FIRST	SECOND	BELL FRAME	CLOCK	ROOF

REF	LOCATION	VISUAL DEFECT	REMEDIAL WORK	PRIORITY
	North Vestry			
1	Existing flat roof	No defects were observed from beneath. The roof appears to have been replaced in recent years	No current action needed.	
2	Main internal wall elevations	Missing floor has left horizontal slots in the walls causing potential local instability	Replace / infill all missing brickwork / voids at original floor level to reinstate wall stability	3
3	Missing floor / stair to original organ gallery	Missing	No action	
4	The stone roof parapet (crenulations)	These are out of vertical and are leaning outwards. Dowels may have corroded. Stone is very wet and there is evidence of surface lamination.	There is evidence that the open joints have been pointed but the stone remains out of vertical and should be taken down and rebuilt to ensure all defects are addressed.	2
	South Vestry (access not possible – assume same as north vestry)			
1	Existing flat roof	Finishes missing and timber decaying from wet rot	Replace the roof timbers, finishes and rainwater system	2
2	Main internal wall elevations	Missing floor has left horizontal slots in the walls causing potential local instability	Replace / infill all missing brickwork / voids at original floor level to reinstate wall stability	3
3	Missing floor / stair to original organ gallery	Missing	No action	
4	The stone roof parapet (crenulations)	These are out of vertical and are leaning outwards. Dowels may have corroded. Stone is very wet and there is evidence of surface lamination.	The stone is out of vertical and should be taken down and rebuilt to ensure all defects are addressed.	2

7.00 Outline Cost Plan

ST LUKES CHURCH

BUDGET COST ESTIMATE OF 20 MAY 2014

REPAIR WORKS TO ST LUKES CHURCH, LIVERPOOL

THE BUDGET ESTIMATE IS BASED ON THE FOLLOWING

Structural Inspection Report as prepared by Blackett-Ord Conservation Engineering dated May 2014.

ASSUMPTIONS AND EXCLUSIONS

1 Cost are based on works being undertaken during 4th quarter 2014, and there is no allowance for future inflation beyond this date.

2 No dimensioned survey drawing were available and where possible estimates are based on site measurement.

3 The budget costs have been prepared using the descriptions given in the Structural Inspection Report.

4 We have assumed that all priority 1 works will be undertaken at the same time in one contract.

5 We have assumed that the Priority 1 works are likely to occur at a separate time from the lower priority works.

6 No costs are included for works associated with Statutory Authority infrastructure, connection and metering.

7 No costs are included for dealing with contaminate or environmentally hazardous material

8 The costs exclude all Local Authority or any other fees and charges

9 The costs exclude all professional fees

10 The costs exclude VAT

11 No access on the site was available when preparing the budget costs

Item	Location Works Item	Cost
PRIORITY 1		
1.	West End Steps Take up replace and re-bed yorkstone paving slabs	450
2.	Chancel South Replace corroded fixings	7,000
3.	Chancel South The embedded metal needs to be protected to ensure the integrity of the tracery is maintained. Some stone replacement is required and repointing is needed before collapse occurs	11,000
4.	Chancel East Replace corroded fixings	6,000
5.	Chancel North Replace corroded fixings	7,000
6.	Nave North Cut out remaining stone and insert new stone indent	750

7.	Tower North Replace the rainwater goods	2,000
8.	Tower North Replace all missing stone, repair loose stone and re-point in a lime mortar all joints to protect the embedded metal	7,000
9.	Tower North Consider inserting Cintec through ties to stitch the masonry together as well as addressing the corrosion to the bell frame indicated on other defects associated with replacing the missing tower roof.	5,000
10.	Tower East Point joints and inject cracks through stone with a lime based grout applied under atmospheric head.	3,000
11.	Tower East Stone to be taken down locally and rebuilt	4,500
12.	Tower South Replace rainwater goods	2,000
13.	Tower South Replace all missing stone, repair loose stone and re-point in a lime mortar all joints to protect the embedded metal	8,000
14.	Tower West Replace all missing stone, repair loose stone and re-point in a lime mortar all joints to protect the embedded metal	8,000
15.	Chancel North Check and replace corroded fixings	5,000
16.	Tower Replace roof structure, finishes and rainwater system to ensure the restraint of the tower is in place and water is kept out of the structure and bell-frame below. Introduce new Cintec through ties in the masonry to stitch the walls together	20,000
18.	Tower This mechanism (possibly a replacement) may have originally come from the Hydraulic Pumping Station at Toxteth Dock and therefore could have significant historic importance. Remove the clock mechanism to storage and safe keeping	1,000
19.	Tower Replace roof structure, finishes and rainwater system to ensure the restraint of the tower is in place and water is kept out of the structure and bell-frame below.	0
20.	Chancel East Check and replace corroded fixings	1,600
21.	Chancel South Check and replace corroded fixings	5,000
22.	Chancel South Replace all missing stone, repair loose stone and re-point in a lime mortar all joints to protect the embedded metal	5,600
23.	Crypt Clean out and check out electrical supply integrity	500
	Works Estimate	110,400
	Contingency	5,520
	Preliminaries	17,388
	PRIORITY 1 ESTIMATE OF CONSTRUCTION COST	**133,308**

PRIORITY 2

1.	West End Steps Rake out joints and remove any loose material. Take up and re-bed loose stones. Apply indent stone repairs to damaged nosings	10,000
2.	Paving Localise repair and re-point with general jetting to remove moss etc.	3,000
3.	Paving Clean out all paving gullies	500
4.	Chancel South Access all ties and tighten those that are loose.	8,750
5.	Chancel South Vertical stainless steel straps to be inserted to ensure that the individual stone units act as one whole	1,500
6.	Chancel South Vertical stainless steel straps to be inserted to ensure that the individual stone units act as one whole	1,500
7.	Chancel South Cut back and treat with a herbicide	100
8.	Chancel South Remove loose laminated material	500
9.	Chancel South Remove loose laminated material 500	
10.	Chancel South Remove visible cramps and ensure remaining joints are intact	500
11.	Chancel East Access all ties and tighten those that are loose.	4,500
12.	Chancel East Remove loose laminated material	200
13.	Chancel East The embedded metal needs to be protected to ensure the integrity of the tracery is maintained and the joints should therefore be repointed.	2,000
14.	Chancel North Access all ties and tighten those that are loose.	8,750
15.	Chancel North Remove loose laminated material	500
16.	Chancel North The embedded metal needs to be protected to ensure the integrity of the tracery is maintained and the joints should therefore be repointed.	2,000
17.	Chancel North Remove vegetation and treat the embedded root with herbicide	100
18.	Chancel North Remove visible cramps and ensure remaining joints are intact	500
	19. Nave South The embedded metal needs to be protected to ensure the integrity of the tracery is maintained by repointing.	10,000
20.	Nave South Remove loose laminated material	500
21.	Nave South Remove loose laminated material	750
22.	Nave South Remove loose stone and repoint	1,000
23.	Nave South Replace missing stonework	500
24.	Nave North The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	10,000
25.	Nave North Remove loose laminated material	500
26.	Tower North Laminated loose stone to be removed	6,000
27.	Tower North Take done and rebuild the stone crenulations to the flat roof parapet	4,500
28.	Tower North Clean and prime metal straps and replace fixings	2,000
29.	Tower East Laminated loose stone to be removed	6,000

30.	Tower East Point joints and inject cracks through stone with a lime based grout applied under atmospheric head.	3,000
31.	Tower East Cut out eroded areas and insert new stone to original profile	2,000
32.	Tower South Laminated loose stone to be removed	6,000
33.	Tower South Re-point with a lime rich masonry mortar	500
34.	Tower South Re-point with a lime rich masonry mortar	500
35.	Tower South Rebuild the stone parapet to ensure all defects are addressed	4,500
36.	Tower South Replace and secure all louvers	4,000
37.	Tower West Laminated loose stone to be removed	6,000
38.	Tower West Clean and prime metal straps and replace fixings	1,500
39.	Tower West Re-point joints in a lime masonry mortar to protect the embedded metal	500
40.	Tower West Rake out and repoint joints in the arch stonework	300
41.	Chancel Status of electrical installation not known – testing and inspection required.	500
42.	Chancel Dismantle and remove	500
43.	Nave Status of electrical installation not known – testing and inspection required.	500
44.	Chancel North The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	8,000
45.	Chancel North Remove any remaining debris and infill with brickwork	2,000
46.	Tower To assist with the stability of the tower as a whole insert new floor structure or braced perimeter frame	2,500
47.	Tower Rebuild and infill all holes with brick in a lime mortar.	500
48.	Tower To assist with the stability of the tower as a whole insert new floor structure or braced perimeter frame	2,500
49.	Tower Rebuild and infill all holes with brick in a lime mortar.	500
50.	Tower Insert new support structure under and clean and prepare bell frame for localised repair and priming	4,000
51.	Tower Rake out to sound and re-point with a lime rich masonry mortar	8,000
52.	Tower Point joints and inject cracks through stone with a lime based grout applied under atmospheric head.	500
53.	Tower Point joints and inject cracks through stone with a lime based grout applied under atmospheric head pressure.	1,000
54.	Tower Rake out to sound and re-point with a lime rich masonry mortar	0
55.	Tower Cut out and replace damaged timbers. Replace rainwater system	2,000
56.	Nave South The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	8,000

57.	Nave South Remove any remaining debris and infill with brickwork	2,000
58.	Nave West The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	2,000
59.	Nave West Pin back to the stonework with stainless steel dowels	500
60.	Chancel East The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	1,600
61.	Chancel East Remove any remaining debris and infill with brickwork	1,000
62.	Chancel South Vertical stainless steel straps to be inserted to ensure that the individual stone units act as one whole	750
63.	Chancel South Remove any remaining debris and infill with brickwork	2,000
64.	Chancel West Remove any remaining debris and infill with brickwork	2,000
65.	Chancel North The embedded metal needs to be protected to ensure the integrity of the tracery is maintained.	0
66.	Chancel North Remove any remaining debris and infill with brickwork	0
67.	Nave East Remove any remaining debris and infill with brickwork	2,000
68.	Crypt Clean out and replace ventilation grille	500
69.	Crypt Clean out	500
70.	Vestry There is evidence that the open joints have been pointed but the stone remains out of vertical and should be taken down and rebuilt to ensure all defects are addressed.	5,500
71.	Vestry Replace the roof timbers, finishes and rainwater system	10,000
72.	Vestry The stone is out of vertical and should be taken down and rebuilt to ensure all defects are addressed.	5,500
	Works Estimate	192,800
	Contingency	9,640
	Preliminaries	30,366
	PRIORITY 2 ESTIMATE OF CONSTRUCTION COST	**232,806**

PRIORITY 3

1.	West End Steps Replace all grilles and plates with new covers to current standards	2,500
2.	Internal North and SoutRha Sktee opus t joints and repoint, re-bed loose steps, replace copings and replace metal hand railing to each side	16,000
3.	Perimeter Fence Blast clean, repair and repaint all perimeter railings.	10,700
4.	Stone Piers and Pinnacl Rake out and repoint joints. Carve and replace missing finials	16,800
5.	Retaining Walls Local rake out and repoint stone joints.	7,500
6.	Gates Blast clean, repair and repaint.	4,000
7.	General Access Items of improvement and compliance were identified but none appear to have been implemented.	0
8.	Tower East Replicate the clock face and reinstate	6,000
9.	Chancel Restrict pedestrian access to a new raised level timber boardwalk to allow safe access to defined areas for interpretation.	1,000
10.	Chancel Specialist treatment required and relay surface with a suitable dressing	5,000
11.	Nave Restrict pedestrian access to a new raised level timber boardwalk to allow safe access to defined areas for interpretation.	1,000
12.	Nave Specialist treatment required and relay surface with a suitable dressing	5,000
13.	Main Entrance Steam and light detergent clean of the paved floor and repair of any pointing	100
14.	North Vestry Steam and light detergent clean of the paved floor and repair of any pointing	100
15.	South Vestry Steam and light detergent clean of the paved floor and repair of any pointing	100
16.	Chancel North Remove all loose material and consider creating slate sill to shed water off brickwork.	1,500
17.	Nave South Remove all loose material and consider creating slate sill to shed water off brickwork.	1,500
18.	Nave West Remove all loose material and consider creating slate sill to shed water off brickwork.	600
19.	Chancel East Remove all loose material and consider creating slate sill to shed water off brickwork.	300
20.	Chancel South Remove all loose material and consider creating slate sill to shed water off brickwork.	1,500
21.	Chancel North Remove all loose material and consider creating slate sill to shed water off brickwork.	0

22.	Crypt Replace covers / ventilation grilles to prevent water entry		1,000
23.	Vestry Replace / infill all missing brickwork / voids at original floor level to reinstate wall stability		800
24.	Vestry Replace / infill all missing brickwork / voids at original floor level to reinstate wall stability		800
		Works Estimate	83,800
		Contingency	4,190
		Preliminaries	13,199
		PRIORITY 3 ESTIMATE OF CONSTRUCTION COST	**101,189**

A087455 May 2014

8.00 Selection of Photographs