



STAGE ONE

Three Yorkshire Roses

Operation and Maintenance Summary

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1. Executive Summary

1.1. Introduction

This document describes the key operation and maintenance requirements for the Roses structures over their design life. A full Operation and Maintenance Manual will be provided at handover stage following completion of fabrication, installation and commissioning of the structures.

1.2. Design and Development

Stage One Creative Services (SOCS) were approached to develop a design for Barnsley Metropolitan Borough Council as part of the Seam Digital Campus. This design features three steel sculptures – 2x 12m and 1x 15m tall. There will be integrated lighting and audio which can be programmed to client requirements for general ambiance and special events.

The location of the project is in the existing Lower Seam Car Park, Barnsley which is being rejuvenated into an urban park, with the sculptures as a highlight.

The SOCS scope and specifications can be found in the original tender submission pack document *Scope of works and specification Version 1*.

1.3. Documentation

This O&M summary should be read in conjunction with the items contained in the Design Phase *ROS0825 -Stage One Project Plan*.

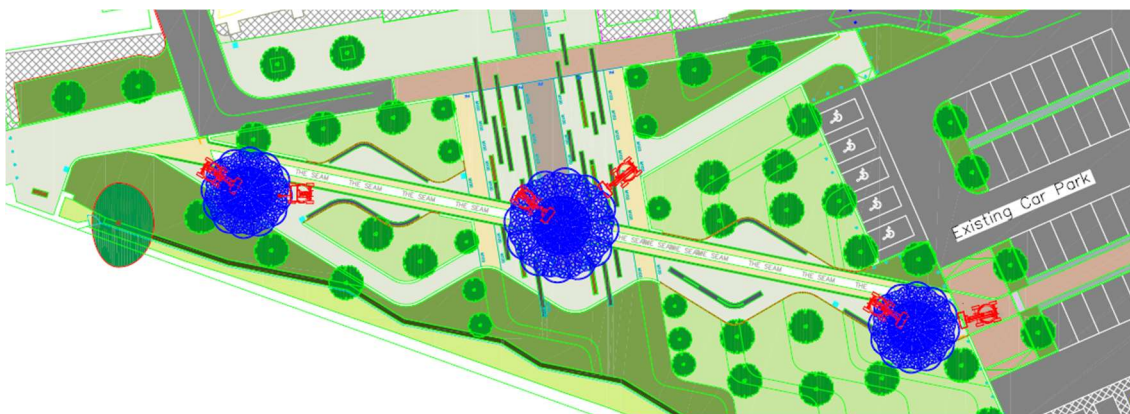
2. Routine Maintenance

2.1. Access Equipment

A cherry picker is required to assess the exterior of the structures and to access the interior of the roses. The recommended specification for the cherry picker is to be confirmed during the test build.

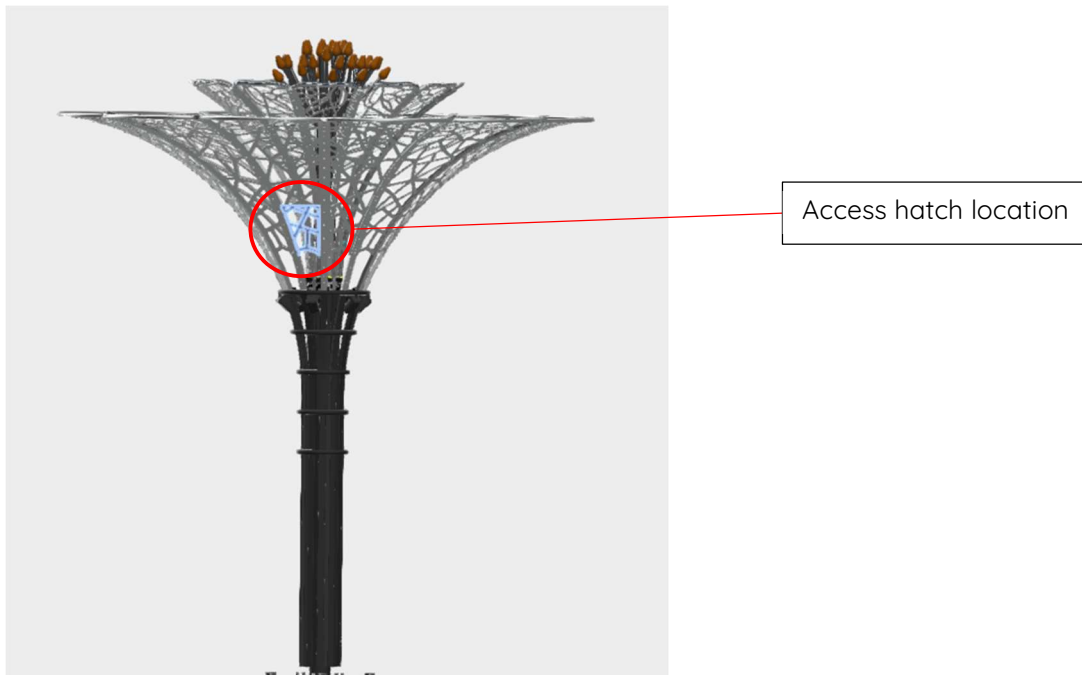
2.2. Site Access Route

The access route and locations where the cherry picker is required to be located to undertake the high-level maintenance access is to be confirmed however safe access is expected to be available around the structures.



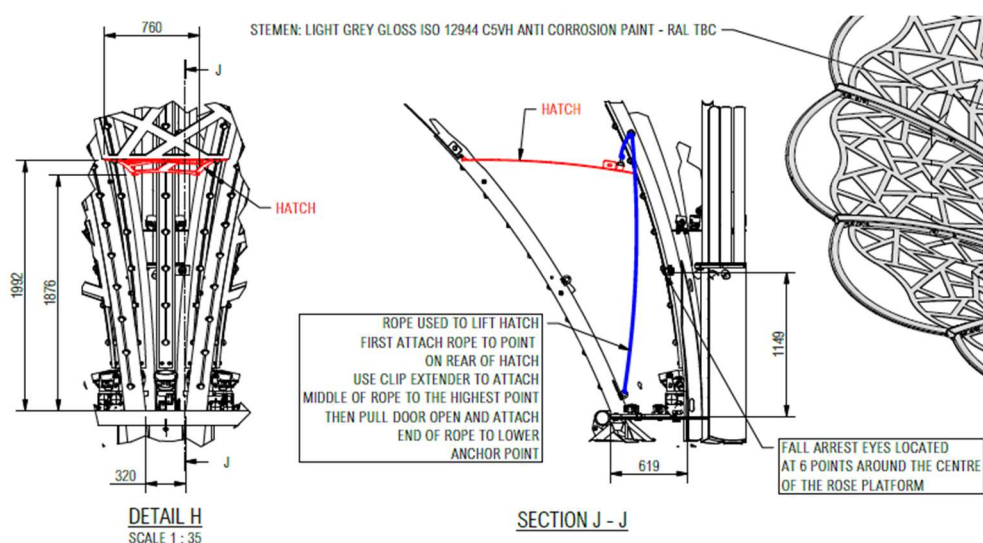
2.3. Inner Structure Access

Access to the inner structure area is gained through an access hatch by using a cherry picker which should be manoeuvred so it is as close as possible to the hatch.

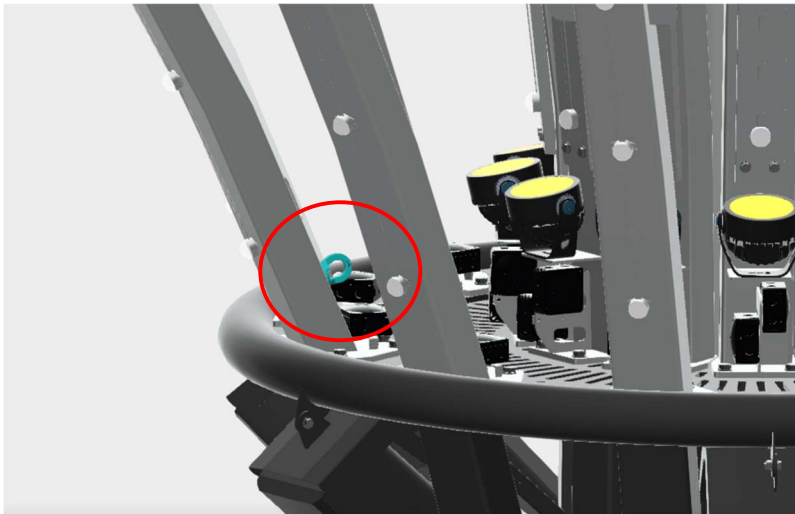


This hatch is held closed with bolts which, once removed, allows the hatch to swing open inwards. A rigging clip extender can be used to pass a rope and carabiner through the fretwork and attach onto the structure and the hatch door. Fall arrest eyes are provided within the structure.

This allows the maintenance team to pull open the door and tie the rope off to keep the hatch open for easy access.

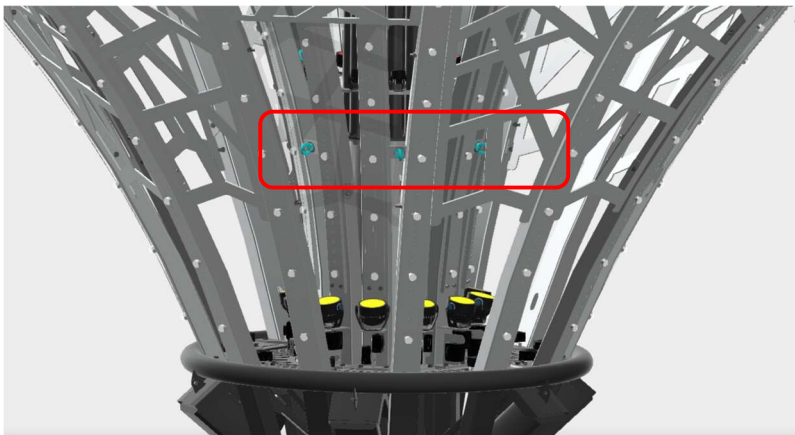


The maintenance team member then clips their fall restraint harness onto the bottom fall arrest eye and unclips from the cherry picker. They then climb up and out of the cherry picker and onto the access platform, latching onto one of the central fall arrest eyes.

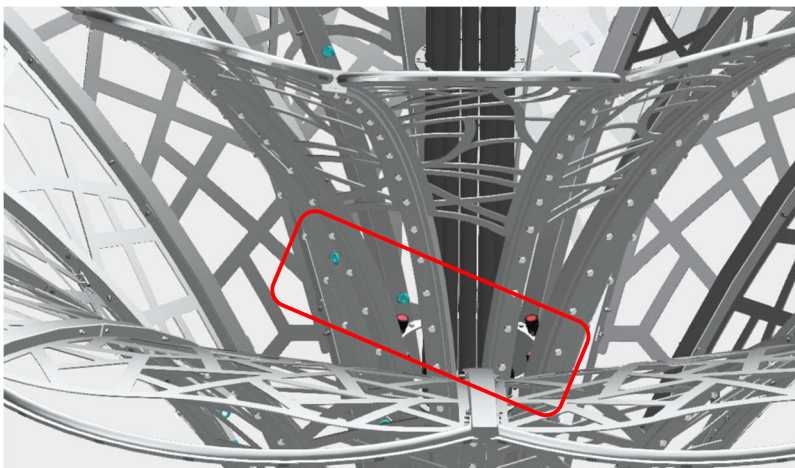


They can then untie the hatch retaining rope, so the hatch shuts behind them and then clip to one of the high level eyes and unclip from the bottom fall arrest eye and.

There is a series of 6 high-level fall arrest eyes around the inner petals which allow the maintenance team member to move around the access platform and remain clipped onto the structure.



Access to the central petals is via a designated gap in the inner petals where additional fall arrest eyes are located for attaching to. These allow access to the inside of the middle petals for bolt and paint checks etc.





A minimum of two IRATA level 3 riggers are required for the access procedure one of whom must stay in the cherry picker basket to carry out the rescue plan if required. A non IRATA level 3 qualified person can also access the inner area but only if accompanied by an IRATA level 3 rigger.

For egress, the access procedure is followed in reverse to exit the structure. Once the rope hinge is removed, the hatch can be re-bolted shut and verified.

3. Maintenance

3.1. Maintenance Schedule

The following routine maintenance schedule is recommended for the structures.

Part	Maintenance Work	Party	6 Months	Ann-ually	4 Yearly	10 Yearly	Notes
Access hatch	Assessment of fixings	Stage One		✓			Visual check and lubrication where necessary.
Connection points	Visual assessment of fixings, torque settings on fixings	Stage One		✓			Use Designated tooling
Paint surfaces - damage	Check for conformity	Stage One		✓			As per manufacturer's specifications. To maintain C5VH coating.
Paint surfaces - cleaning	Clean the structures and the lighting fixtures thoroughly	Third party Rigging Company	✓				As per manufacturer's specifications. To maintain C5VH coating.
Lighting & Sound	Full rig check and specialist cleaning of fixtures	DZA		✓			As per manufacturer's specifications
Lighting	Replacement	DZA			✓		Linear LED
Lighting & Sound	Replacement				✓		Control
Lighting & Sound	Replacement					✓	Anolis Calumma XS MC Anolis Calumma S MC Enttec Smart PXL-40P Anolis Lyrae XS FIX MC Anolis Lyrae M MC
Sound	Replacement	DZA				✓	EVID-S8.2 Speakers



3.2. Maintenance Details

Ref	Element	Qty	Maintenance Assumptions Made	Notes and Amendments
MO - 1	Structure	1	<p>An annual inspection of bolted connections and visual inspection of the paint finish with minor touch ups to the paint system if required.</p> <p>If the paint system sustains damage through vandalism or through any other such unpredictable factors these damages will have to be priced as necessary to be rectified on a as needs basis.</p> <p>Access methodology is to be further developed during the test build.</p> <p>Stage One and DZA will carry out the annual inspection at an agreed time and in a coordinated manner, with the date of the first inspection to be agreed between Stage One, DZA and Barnsley Council once the installation has been completed.</p> <p>Paint manufacturer literature states that an annual full clean of the paint system is advised.</p> <p>Recommended access strategy for sculpture cleaning services to be the same as Stage One and DZA strategy which will be determined in the design phase.</p>	<p>A figure has been provided in the design phase <i>Appendix 6 Costs</i>. This figure will require an annual review to accommodate inflation or any changes in associated costs.</p> <p>BMBC are to directly contract sculpture cleaning and wash down services and works to be carried out as recommended by paint manufacturers guidelines.</p>
MO - 2	Lighting and controls	1	<p>ANNUAL MAINTENANCE & Clean all fixture lenses to be carried out at a coordinated time on site between Stage One and DZA with Stage One to provide plant and means of access.</p> <p>Review installation</p> <p>Test all functionalities</p> <p>Excludes provision of plant</p>	<p>Emergency call out contact and response cost to be determined and BMBC to Directly appoint DZA for this scope of works where outside of the annual inspection plant will be supplied by others</p>



Ref	Element	Qty	Maintenance Assumptions Made	Notes and Amendments
MO - 3	Sound and controls	1	ANNUAL MAINTENANCE & Clean all speakers to be carried out at a coordinated time on site between Stage One and DZA with Stage One to provide plant and means of access. Review installation Clean all speakers Vacuum all equipment fans Test all functionalities	Emergency call out/ response contact to be determined and BMBC to Directly appoint DZA for this scope of works where outside of the annual inspection plant will be supplied by others.

3.3. Maintenance Costs

Part	Maintenance Work	Party	Frequency	Cost	Notes
Access hatch	Assessment of fixings	Stage One	Annually	£11,882.31	First Year cost. Subsequent years at rates prevailing at the time of inspection.
Connection points	Visual assessment of fixings, torque settings on fixings				
Paint surfaces - damage	Check for conformity				
Paint surfaces - cleaning	Clean the structures and the lighting fixtures thoroughly	Third party Rigging Company	6 monthly	TBC	BMBC to contract directly with cleaning company.
Lighting & Sound	Full rig check and specialist cleaning of fixtures	DZA	Annually	£4,245.17	First Year cost. Subsequent years at rates prevailing at the time of inspection.
Lighting	Replacement	DZA	4 Yearly	Unknown*	Linear LED
Lighting & Sound	Replacement	DZA	4 Yearly	Unknown*	Control
Lighting & Sound	Replacement	DZA	10 Yearly	Unknown*	Anolis Calumma XS MC Anolis Calumma S MC Enttec Smart PXL-40P Anolis Lyrae XS FIX MC Anolis Lyrae M MC
Sound	Replacement	DZA		Unknown*	EVID-S8.2 Speakers

* Cost at rates prevailing at the time of replacement.



4. Suggested Maintenance Suppliers

4.1. Access Equipment

Sunbelt Rentals

03304 331766

<https://www.sunbeltrentals.co.uk>

4.2. Cleaning

Rigging Strategies

07718 212416

<https://www.poleandcanvas.co.uk/bespoke>

5. List of Subcontractors

5.1. Structure

DZA – Lighting and Audio sub-contractors, supplying parts, installation and maintenance/support

Barnshaws – Rolling

National Tubes – Tube Cutting

Specialised Coatings – Paint

Premier galvanising – Galvanising

6. Health and Safety

6.1. Residual Hazards

Residual hazards are outlined in the Design Phase *Appendix 9 Design Risk Assessment*

6.2. Hazardous material

There are no hazardous materials used in the sculptures. Consideration of handling of materials is given in the material data sheets that are supplied within the risk assessment and method statement.

6.3. Maintenance

During the installation and reference should be made to the relevant risk assessments and method statements (RAMS). These should be adapted in reverse for any removal or dismantling.

TBC on final submittal.



7. Recommended Spares

Below is a list of recommended for reactive maintenance.

7.1. Lighting Spares

Quantity	Product	Unit Cost (ex VAT)	Total Cost (ex VAT)
1	Lyrae M MC RGBCW 45 degree optics	£1,955.44	£1,955.44
1	Anolis Lyrae XS FIX MC 12degree - Anti Slip	£1,304.18	£1,304.18
1	Calumma XS MC RGBCW 45 degree optic standard paint finish	£306.48	£306.48
1	Calumma S MC RGBCW 45 degree optics standard paint finish	£1,130.96	£1,130.96
1	E Box Remote	£1,843.22	£1,843.22
1	20% Spares, LED Neon Flex	£785.15	£785.15
6	Spares, Enttec Smart Pixel	£263.30	£1,579.78
		Total Lighting	£8,905.21

7.2. Audio Spares

Quantity	Product	Unit Cost (ex VAT)	Total Cost (ex VAT)
2	EVID s8.2T - Upgrade IP functions (Loudspeaker)	£1,524.05	£3,048.09
1	IPX 10:8 Amplifier	£16,265.98	£16,265.98
		Total Audio	£19,314.08

7.3. Storage of Spares

It is assumed that spares will be stored by BMBC and access provided when spares are required

7.4. Service Level Agreement for Reactive Maintenance

BMBC to determine their requirements for reactive maintenance so a cost can be provided.

8. Expected Lifespans

8.1. Design Life of Structures

25 years - subject to regular maintenance & inspections as per this document.

8.2. Paint

25 years (to the point of first major maintenance) - subject to regular maintenance including touch ups & inspections as per the manufacturer's recommendations.



8.3. Lighting

Lamp 90,000 hours (Approx 10 years if on 24-hours a day)- prolong life of all equipment by powering down fully

Linear LED 36,000 hours (Approx 4 years if on 24-hours a day) - prolong life of all equipment by powering down fully

Drivers 50,000 hours (Approx 5 years if on 24-hours a day) - prolong life of all equipment by powering down fully

8.4. Audio

Loudspeakers 10 years - prolong life by minimising extremely loud or bass-heavy sound designs.

Control 5 years - prolong life by protecting from water and extremes of temperature.

9. Warranties

9.1. Structures

1 year – see standard terms on Stage One issued quote

9.2. Paint

1 year - The paint system specified meets the manufacturer's conformity requirements for ISO 12944 C5VH if applied as per their specifications as proven in a NORSOK style inspection report. However, no warranty is provided for the paint performance.

9.3. Lighting

Anolis Equipment 5 years – The manufacturer's warranty will be passed onto BMBC. Warranty subject to return to base inspection by the manufacturer.

Linear LED 3 years - The manufacturer's warranty will be passed onto BMBC. Warranty subject to return to base inspection by the manufacturer.

OEM Equipment 2 years - The manufacturer's warranty will be passed onto BMBC. Warranty subject to return to base inspection by the manufacturer.

9.4. Audio

Loudspeakers 5 years – The manufacturer's warranty will be passed onto BMBC. Warranty subject to return to base inspection by the manufacturer.

Amplifiers & Interfaces 5 years – The manufacturer's warranty will be passed onto BMBC. Warranty subject to return to base inspection by the manufacturer.