THE REVOLVING ROOM

A Room for London, Queen Elisabeth Hall, Southbank

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Choose your view

The site for the Room for London on the roof of the Queen Elizabeth Hall commands an exceptional view of the north bank of the river Thames in central London, stretching from Westminster to the City. Rather than simply presenting this panoramic view, our Room for London has a single viewing wall that frames a particular segment of the view. The occupants can physically rotate the room through 360 degrees to the view of their choice by means of a wind-handle inside the living space. This interactive device allows their modest cabin to undergo dramatic changes of outlook in relation to the sweeping view of the river, or for sun-loving occupants, to track the sun from dawn til dusk towards the south.

The idea of a rotating personal room is not a new one; rotating summer houses were popular in the early C20th and could be bought from catalogues. At our Kielder Observatory in Northumberland, visitors rotate the telescope enclosures by hand and find this experience every bit as compelling as looking at the stars through the telescopes. As the turret rotates, a different slice of landscape or starscape becomes visible in the viewing slot and the feel of the turret interior is transformed.

Rotating Summer House - Kent

Kielder Observatory turret exterior

Kielder Observatory view from turret

Moving Monuments

The Rotating Room will join a number of iconic examples of ‘moving architecture’ associated with the river Thames. Looming behind the QEH and now a permanent feature on the riverscape, the London Eye is a mobile viewing platform based on the ferris wheel, rotating in the vertical plane rather than the horizontal. At Tower Bridge, the occasional raising of the central bridge arms allows large ships to access to London’s inner basin. Further downstream, the deployment of the Thames Barrier prevents potentially disastrous flood tides inundating the city. In the West End, the rotating restaurant at the top of the Telecom Tower is likely to be re-opened. In each of these London landmarks the moving architecture is rendered visible and spectacular; the form of the Rotating Room will make changes to its orientation legible for Londoners to enjoy.

BT Tower

London Eye

Gilded heights

The Rotating Room will be finished in gold anodised aluminium, taking on the appearance of a precious box temporarily placed on top of the dark geological mass of the QEH. We know from Caruso St John’s Nottingham Contemporary how effective a bright metallic finish can be when contrasted with a dour concrete backdrop. The Rotating Room should appear alien and temporary, and at the same time gorgeous and celebratory in the Olympic year. For one year it will be part of the tradition of golden highlights on London’s riverside architecture: the Big Ben clocktower, the orb and cross on St Pauls, the golden flames of the Monument.

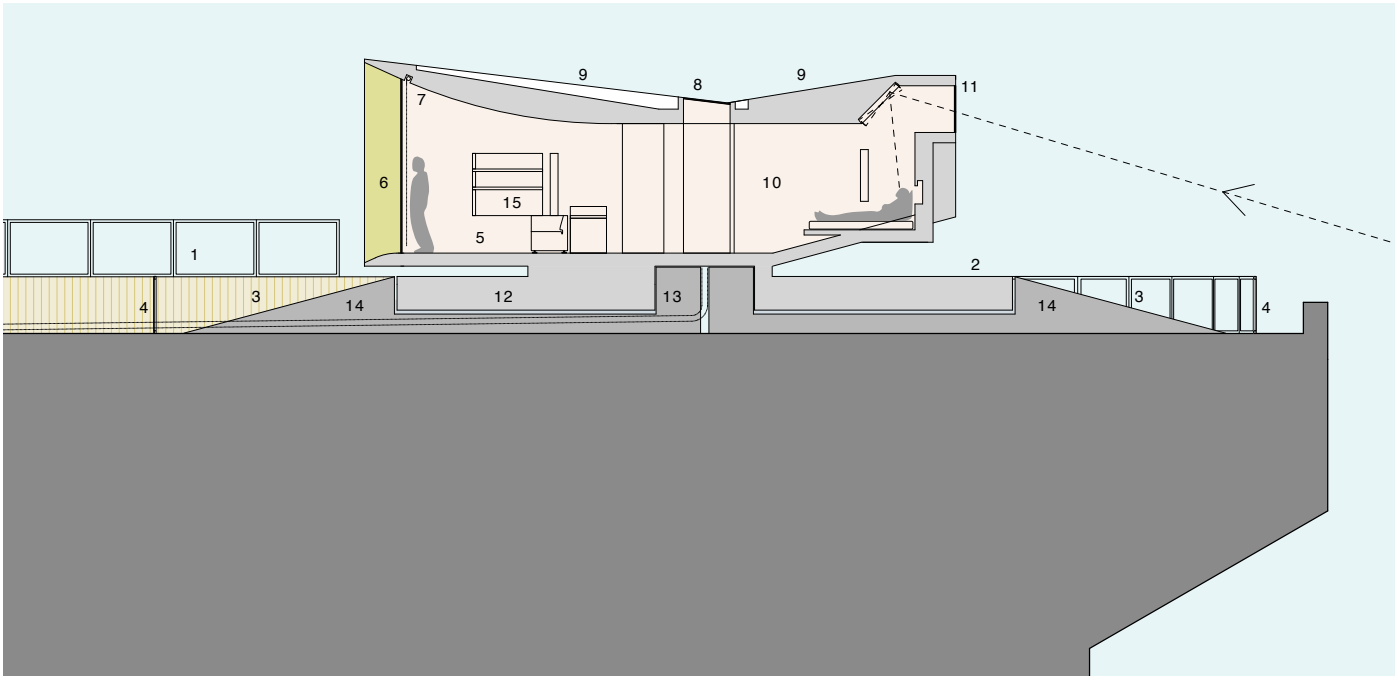
Monument

Nottingham Contemporary

The Architecture of Looking

The Rotating Room will be a comfortable and self-contained cabin. Its circular deck will rotate with it, to provide a suntrap or viewing platform according to orientation. The interior will have one glazed wall, so that the occupants have to undertaking the physical ritual of winding the room round to see other parts of the view. Unlike a panorama, in which the viewer is overwhelmed by the wow factor of the view, the occupants choose their view and in doing so, look critically at what is before them. They don't just 'see' London, they start to look and identify facades, spires, bridges, boats, towers and domes. Like an C17th painter, they can frame their own view to picturesque, educational or voyeuristic effect. When lying on their bed, they can view the city through a built-in periscope with an adjustable mirror to allow them to look at the river or architecture. In the sitting room there will be no TV, but a monitor will allow them to see performances in the QEH or National Theatre in real time.

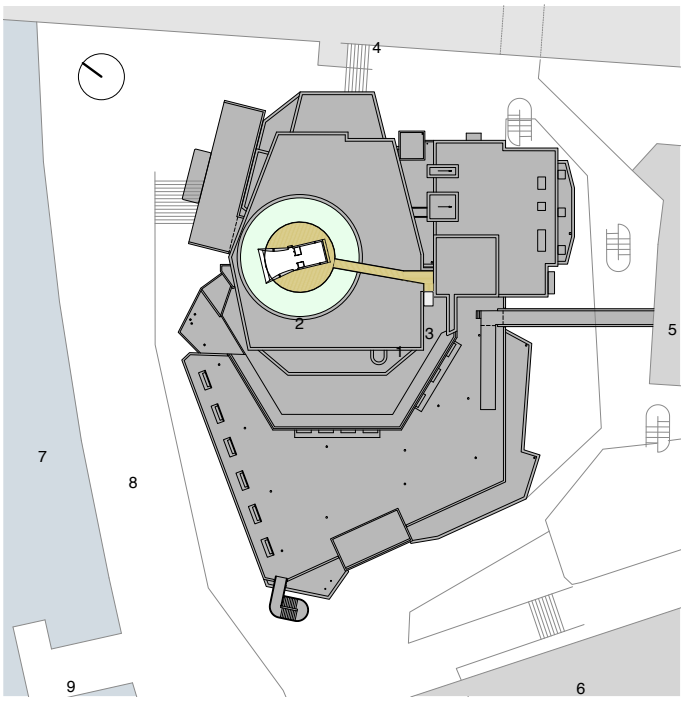
Section



Key for Section

1 Elevated approach deck
2 Rotating terrace
3 Sloping apron with astroturf
4 Balustrade
5 Sitting Area
6 Picture window
7 Blind
8 Rooflight
9 Photovoltaic & solar thermal panels
10 Bedroom
11 Periscopic window
12 Floating turntable
13 Fixed core
14 Load spreading tray with water
15 Shelves

Site Plan



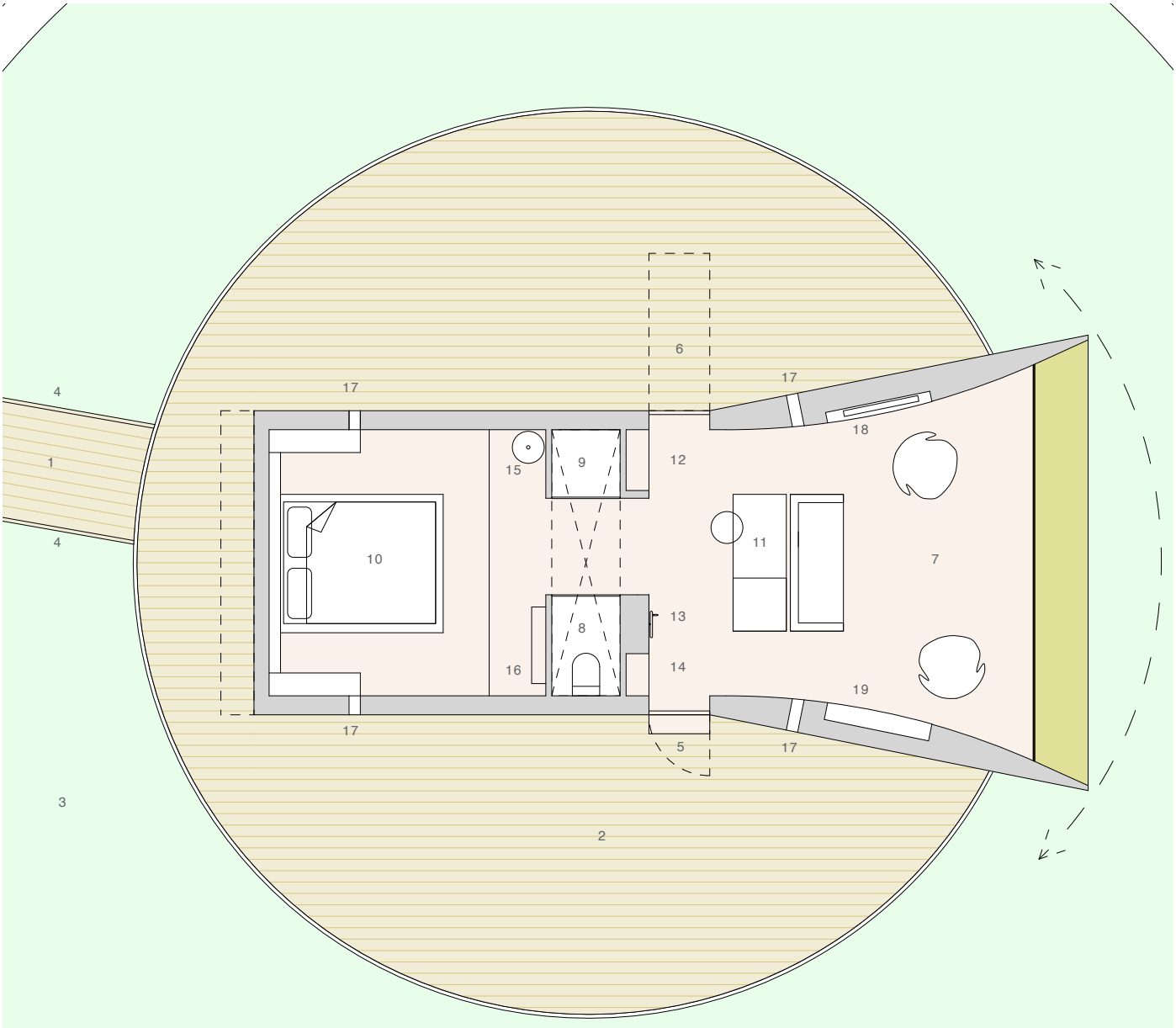
Key for Site Plan

1 Queen Elisabeth Hall
2 The Revolving Room
3 Lift for access to RR
4 Waterloo Bridge
5 The Hayward
6 Royal Festival Hall
7 River Thames
8 Festival Riverside
9 Festival Pier

Key for Detailed Plan

1 Elevated approach walkway
2 Rotating terrace
3 Sloping apron with astroturf
4 Balustrade
5 Entrance
6 Combined doorway/ramp
7 Sitting area
8 Toilet
9 Shower
10 Bedroom
11 Desk & minibar
12 Coats
13 Winding handle
14 Storage
15 Basin
16 Clothing rails
17 Ventilation slots
18 Monitor
19 Bookshelves

Detailed Plan



Construction

The Rotating Room sits on a circular floating platform located in a shallow tank; this reduces friction and provides ballast against wind uplift; the tank itself spreads the load of the entire installation. A toothed band attached to the static core allows the structure to be rotated by means of a rack and pinion mechanism connected to a manual handle in the cabin. The services are located at the point of rotation with a ball-bearing sleeved joint for the soil pipe and flexible connections for the electrical and water services. The room is levelled on its floatation platform by means of a balancing tank located behind the sleeping area.

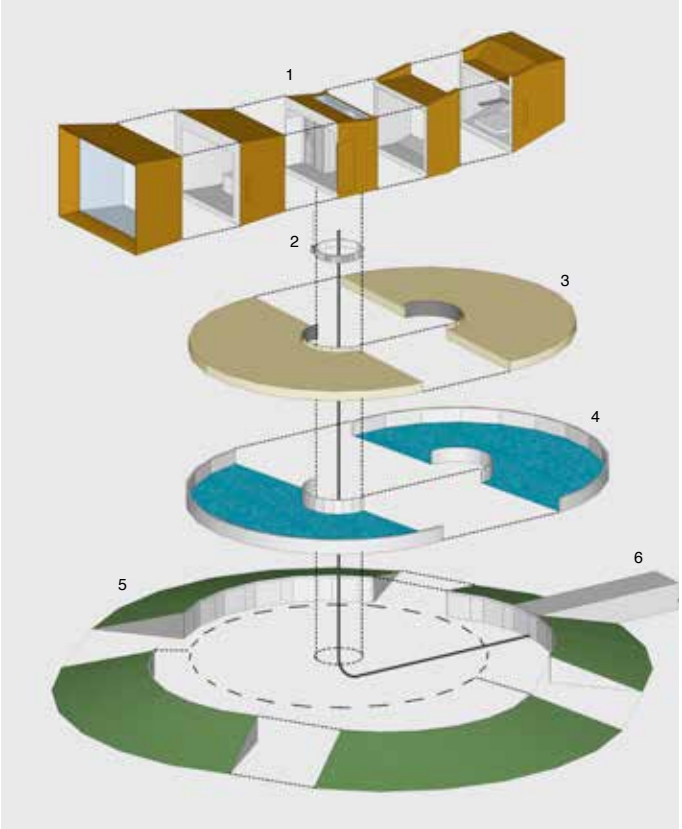
The deck and room are elevated above the QEH roof to maximise the visibility and views out; the ramp surrounding the deck allows the balustrading to be no higher than deck level. A raised walkway connects the raised deck and a new lift alongside the QEH service tower and houses the service connections. Disabled access to the Rotating Room is provided by a fold-down door on gas struts similar to that found on light aircraft.

Both the room and the deck and the floatation tank are of lightweight modular construction so that they are readily transportable by road and can easily be mounted/demounted. The sections can be craned in to position by a 40 tonne crane with a 40m reach occupying the west carriageway of Waterloo Bridge. The room segments are made of structural plywood utilising stressed-skin box sections; this also provides the spruce ply interior finish as befits a 'cabin'. The structure is insulated on the outside and finished with the golden anodised aluminium skin. The glazed wall, rooflight and periscopic window are all fitted with internal black out blinds.

The room is connected to the QEH services for electricity and cold water. There is a built-in hot water tank heated by a roof-mounted evacuated-tube solar thermal panel with electrical top-up. Space heating is by electric underfloor heating. Rooftop photo-voltaic panels offset some of the electrical load. All lighting is LED or fluorescent, including the external lighting that illuminates the room at night. Ventilation is by means of vent flaps in the side walls of the room with acoustic damping chambers.

The Rotating Room is fully de-mountable for relocation to a new site at the end of 2012.

Exploded Diagram for Assembly



Key for Exploded Diagram

1 Room segments
2 Rack and pinion
3 Rotating terrace
4 Load spreading tray with water
5 Sloping apron
6 Services

Participant CV-s

Charles Barclay Architects have wide-ranging experience in one-off house and flat projects, and are working on two primary schools in Islington. They are best known for their award-winning Kielder Observatory, finished in 2008. They have considerable experience in pre-fabricated timber construction and rotating architectural elements having designed the observatory's turrets with Michael Hadi Associates from scratch. CBA is a RIBA Chartered practice and holds sufficient PII for this project.

Michael Hadi Associates was established to provide a quality structural engineering design service to clients and architects. MHA have vast experience in engineering unique residential projects and in prefabricated systems. MHA have worked on three RIBA Award winning moving projects; Kieder Observatory, Sliding House and Classroom of the Future.

Kielder Observatory
designed by CBA

Classroom of Future
engineering by MHA