

# MADEIRA TERRACE

## Brief for Design Team Purposes



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WITH  
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ANNA CULLUM ASSOCIATES with GARBERS & JAMES gratefully acknowledge comment and collaborative input from BHCC Officers: Abigail Hone, Helen Gregory, Toni Manuel and Tobias Nugent, as well as Duncan Baker Brown, expert consultant in Circular Economy.

**General: Design Team (DT) Terms of Reference**

- (i) Note that this **Brief** is in Outline, to be developed by the commissioned Design Team, led by the Architect. The bulk of Brief Development work to be undertaken in RIBA Stage 1, however it should also be presented, reviewed and fixed at end of RIBA Stage 2 to ensure that it will reflect the Client's signed off Concept Design scheme.

- (ii) **RIBA Plan of Work 2019**: It should be noted that the RIBA Plan of Work has just been updated.

It is assumed that the appointed team will undertake duties in accordance with the revised plan, particularly with regard to the increased focus on Sustainability.

While the proposed form of construction procurement is to be finalised during the early stages of the project duties, it is currently assumed that the Design Team (DT) will produce prescriptive and comprehensive Technical Design information with a view to letting a Traditional form of Construction Contract.

- (iii) **BIM**: Once DT appointments are complete, early agreement concerning definition and implementation of the proposed 3D/BIM modelling level and protocol should be agreed. It is assumed that the Architect will be the leader and coordinator of that model until it is handed over to the Contractor.

## 1.0. Introduction and Background Overview

Brighton & Hove City Council (BHCC) intend to appoint a demonstrably inspiring, innovative and technically excellent Design Team to undertake duties to RIBA Stage 7 (with a break clause at Stage 4 that may be required for funding purposes) to both restore and regenerate nominally 30 out of the 151 arches that in total constitute Madeira Terrace (MT), Brighton. For Indicative Site / Location Plan of the project, refer Appendix B.

MT spans 865m along the eastern seafront in Brighton & Hove, and is thought to be one of the longest cast iron structures in the world. The initial, nominally 30 arch, project is called “**MT30 project**”. It is intended that 3 of the 30 will be fully restored in original material and historic detailing terms; these, as well as the remaining 27 may be able to take advantage of new technologies to improve structural and material performance, also offering longer term sustainability measures, subject to associated permissions. The 3 will be funded as the result of a vigorous and successful crowd funding campaign demonstrating the commitment and interest of the local community. A community Advisory Panel will be part of the BHCC Client body moving forward.

Historically the MT structure was designed and built in stages from 1890 onwards; opening to the east of Royal Crescent in 1890 and extending to the Aquarium 1927-1929.

- a unified cast iron and concrete covered structure, south facing, colonnaded **Promenade** at the shore level, supporting
- an intermediate **Deck**, with ornate sheltered seats; connected by substantial masonry staircases with cast iron balustrades to both the promenade at lower level and **Marine Parade** at the upper level

The 3 levels (Marine Parade, Deck and Promenade) work together as a 3 storey linear grandstand from which to view, not only the activity of the landscape and beach but also, a wide variety of cultural, social and sporting events. Many of these have become part of the heritage of the composition, e.g. the Veteran Car Rally, the oldest such car run in the world.

There is central architectural and visual focus in the Shelter Hall; a former cafe and waiting room composition that also gives internal access to the Madeira Lift which provides links to all 3 levels and was originally powered by water pressure.

The Terrace was constructed in front of the consolidated East Cliff (consolidation works from late 1820s), with an offset at the base of the cliff forming a gap in which the “Madeira Drive Green Wall”, of Japanese Spindle was planted and clearly shown in place on a woodcut print dated 1872. This Green Wall (GW), a Local Wildlife Site, is believed to be the oldest and largest of its kind in Europe. It is currently strongest towards the eastern end of the composition. For background and detailed references, refer Appendix A2.0.

Now, the majority of the whole structure is closed due to its dangerous state of disrepair. BHCC intend to embark on bringing it all back to life in a visionary manner, appropriate to the 21st Century, and with a sustainable future for the whole at the heart of its intention.

Priorities are to:

- restore the structure with its associated heritage, community and ecological value, respecting its historic significance and Grade 2 listing (likely to be raised to Grade 2\*)
- innovatively repurpose the Terrace (and Deck) in heritage, social and economic terms with a range of uses that should be complementary to the area and vision for this part of the seafront (see draft City Plan Part 2 (CPP2) Policy SSA5 Madeira Terrace and Madeira Drive). Refer Appendices A1.0. and A2.0.)

- encourage Public Pedestrian movement both from west to east along the Terrace and north to south travelling up and down through the levels of the structure, linking the local neighbourhood with the shore.

The MT30 project is seen as Phase 1 of the regeneration of the whole that is likely to be undertaken in a total of 5 phases over the coming years.

MT30 is highly significant as it will establish:

- the Concept of regeneration for the whole of the Terrace
- the material palette for the whole of the Terrace, the Deck and the associated public realm that will be transformed in the process.
- the concept for a coordinated approach to public realm and event space improvements, including the potential for multi-functional/ shared spaces; improved lighting, signage and wayfinding.

The precise range of 30 arches is not yet fixed; the Design Team (DT) will assist the Client, alongside other local stakeholders and consultees, to finally select and define those 30.

The MT30 project DT is required to optimise all functional, aspirational, business and community attributes in its project proposal. All associated works must comply with BHCC's intention to reduce carbon emissions to net zero by 2030, and all members of the DT will be expected to undertake duties to reflect best practice principles of circular economy.

It should be the aim of the DT to produce concepts that will inspire new creative local business ventures. It will be important to generate income from this project to bolster credibility, visibility and leverage for the further phases' funding.

The estimated construction budget is £2.8m, including a specific allowance of nominally £0.5m for technologically sustainable initiatives.

## 2.0. Client Vision

*Note : BHCC's overall Vision is for the complete Madeira Terrace composition to be restored and creatively re-purposed. The financial reality is that this will be realised in stages of which the MT30 project is the first of nominally 5.*

### 2.1. Vision for the Regeneration of the Whole Madeira Terrace 'Linear Grandstand' composition

It is BHCC's intention:

- to restore and repurpose this iconic feat of Victorian architecture and engineering, deemed to be the longest cast iron structure in the world; adding relevance and purpose to its stunning structure for the enjoyment and benefit of generations to come.
- to create a re-invigorated and regenerated area of the seafront, showcasing workspaces for creative industries to flourish in the context of a grandstand viewing platform for the city's rich tapestry of events. Such spaces might either inhabit the Terrace or be located within the curtilage of the project.
- to completely re-activate the area and inspire all ages; Brighton residents and visitors alike will participate in a wide variety of social/leisure, cultural and business activities, prioritising those with clear health and wellbeing benefits for all.
- to restore and encourage public engagement and movement from west to east and vice-versa along the scheme, and north south through and across the scheme, providing a complete "weave" of accessible routes that join up significant public "desire lines"; all coordinated to bring the whole area to life across the 3 levels of Terrace, Deck and Marine Parade.
- to integrate the Design Team's analysis of the available public transport facilities and BHCC's upcoming strategies and policies in this regard for the upcoming decades, reducing the dominance of vehicles which currently visually and physically sever the local Brighton neighbourhood from the shore.
- to recognise the particular relationship and connection between the MT30 programme content and the area's ongoing role as the city's premier events space and the beach.
- to design and develop a scheme that wholly supports BHCC's stated policy to achieve Net Zero Carbon emissions by 2030 and is resilient to the effects of climate change in its seafront location
- to ensure that all component parts of the scheme endeavour to follow best Circular Economic principles wherever possible.

### 2.2. Vision for MT30 Project

In this first phase it is the intention to:

- pilot all principles for the overall Vision, as above
- include 3 No. Arches of the Terrace that are restored historically accurately, and for the nom. 30 as a whole, integrate innovative technological solutions that can improve the design life of the composition relative to the original detailing eg. generating new structural deck solutions for carrying contemporary Events and Operations, as well as generating requisite water and energy in a sustainable manner
- fully address the need to achieve Net Carbon Zero by 2030 and incorporate Circular Economy driven solutions
- provide creative responsive programme elements that will provide Cultural and Social events as well as places of Work and income generation. so that all can be Evaluated and optimised in future phases to ensure that BHCC's complete Vision remains on track.

### 2.3. **Design Team Working to include Community Engagement**

It has been clearly demonstrated that local communities are passionate about the restoration and regeneration of Madeira Terrace. There has been a significant crowdfunding campaign that, upon writing, has generated more than £460k with over 2000 backers. Further there are volunteer forces that regularly tend the Green Wall. (refer 5.1.2. below)

As a result, BHCC have supported and facilitated the formation of the Madeira Terrace Restoration Advisory Panel representing the following local stakeholders

- Resident groups
- Event organisers
- Businesses
- Tourism
- and Conservation (built and natural environment)

The appointed Design Team will be expected to work alongside BHCC in engaging with this Panel as a significant part of the Client group. (refer Appendix A5.0.)

More formally, and within BHCC itself, MT30 proposals will be presented to BHCC's Tourism Equalities Community and Culture Committee, be taken through all usual Planning and Listed Building Consent processes.



### 3.0. Sustainability and Circular Economy; Whole Life Carbon Assessment and Whole Life Costings

Not only has BHCC stated the intention for the city to become net carbon neutral by 2030, but it has also placed the principles of Circular Economy (*viz. extracting maximum value from resources whilst in use; recover and regenerate products and materials*) as a focus point in the city's current Economic Strategy.

Further, specific pledges have been made regarding the MT30 project that include, but are not limited to:

- harnessing existing natural resources to provide power and water for all social, leisure and business functions
- integrating new systems to guarantee requisite energy generation for the whole
- incorporating SuDS
- understanding how much of the existing can be used/restored to achieve requisite crowd loading for Brighton's Events, both now and in the coming decades
- planning the composition to optimise connections to public transport, also improving accessible pedestrian and cycle routes along and through the scheme
- exploring optional and innovative initiatives for re-purposing the functions and activities within and surrounding the Terrace arches. Suggestions to date that could generate sustainable employment and public income have included:
  - cafes, bars and restaurants
  - small local retail units
  - culture space including arts and museum
  - outdoor sports centres
  - workshops / business incubator schemes

#### 3.1. Circular Economy

What is a circular economy?

The Ellen MacArthur Foundation defines Circular Economy as

*“Looking beyond the current take-make-waste extractive industrial model, a circular economy aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles:*

- *Design out waste and pollution*
- *Keep products and materials in use*
- *Regenerate natural systems“*

For suggested Circular Economy References, refer Appendix A6.0.

### 3.2. Circular Economy in the Construction Industry - some definitions / ambitions

Here are some of the core guiding principles:

- Design **Buildings as Material Banks** for the future – in other words design buildings so that they can be de-constructed instead of being demolished
- Create **Material Passports** - Using BIM technology, introduce further information to the specification confirming the provenance of the material, the component, the system etc., and crucially, confirm its ability to be reused or recycled.
- Ensure that the supply chain of existing, re-used, and new materials and components, is whenever possible locally supplied, from sustainable, ethical, non-toxic sources, to reduce the negative **Ecological Footprint** of the MT30 Project.
- Practitioners and Contractors should first consider strategies that **REDUCE** the amount of resources consumed to enable the MT30 Project, then consider **REUSING** existing material (buildings, materials, etc.) on site or supplied within the region, and only then consider **RECYCLING** on-site material (or other locally sourced).
- Practitioners should undertake a **Resource Mapping** exercise at the beginning of the MT30 Project in order to ascertain the ability of the local region to supply second-hand or new material, components, technologies, services, labour, etc.
- Ensure the building and the building programme (what goes on it the building) support other **Closed-Loop Systems** such a rainwater harvesting, renewable energy, locally-grown zero waste food production
- Put into action strategies to **Design Out Waste** and enable **Zero Waste** on site and whenever possible throughout the MT30 supply chain
- Ensure that the principles of the Circular Economy are adhered to throughout the Design, Construction, Occupation, Maintenance, Adaption and ultimate De-Construction of the Project.
- Consider innovative procurement options. An example of this is a Philips Lighting ‘**Lease Lux**’ initiative whereby the building owner leases light fittings from Philips (or other suppliers) who are duty-bound to maintain or replace said light fittings whilst guaranteeing appropriate levels of task lighting lux levels.

#### 4.0. Design Life

Overall it is vital that the Design Team recommend solutions to the Client that will result in minimising physical maintenance and associated costs. Clearly material solutions in such an exposed marine environment must be exceptionally robust.

It is anticipated that 60 years should be the minimum requirement for the Design Life (DL) associated with the structural design of the complex. This will drive not only the nature of the structural elements themselves, but also the associated

- public safety
- serviceability, including maintenance access and procedures
- robustness, reliability and durability
- fire protection
- material quality and appearance

This 60 year design life applies to all **Principal Elements** that would be extremely challenging to replace without significantly impacting the operation of the facility.

**Secondary Elements** such as all inserts and installations proposed for the active regeneration programming should be designed to assume a cycle of maintenance and replacement that would be complementary to the 60 year cycle e.g. in cycles of 30, 20, 10 ...years etc.

It is the replacement of secondary elements that will also support a flexible and responsive approach to future proofing, ensuring that the facility remains fit for purpose throughout its lifespan. It could well be that it is these elements offer particular additional opportunity for showcasing solutions created out of Circular Economic concepts.

This approach must also be adopted for the detailed design of the associated **Building Services (BS)** installations. BS technologies change quite quickly, and it is important to design in a manner that will allow the facility to adapt and remain “state of the art”.

Maintaining a design using simplicity, generosity and a degree of redundancy in both building and systems configurations will support this aim.

Ready access for maintenance, replacement and repair is key to the success of such a coordinated strategy. All consultants responsible for the detailed design to ensue must be aware of:

- Material Specifications and quality
- The degree of environmental and dynamic exposure; wear and tear
- Client expectations and requirements with reference to the period of time before first major maintenance.

#### **Fit Out of internal facilities provided:**

It could well be that the incoming operators and tenants of business units will be responsible for their own fit-out. However, there may also be facilities retained by BHCC e.g. public toilets etc? tbc. This to be discussed and agreed with Client and across the whole DT during Brief Development.

An overall minimum DL of 20 years for fixtures and fittings are suggested as a starting point. As detailed design develops, it will be important to identify the more dynamic products or elements that may degrade more quickly over time. This will inform a coordinated maintenance, repair and replacement programme that will become part of each Building’s and the overall scheme Manual.

## **5.0. Restoration : Heritage Structures and the Architecture of the Composition**

### **5.1. Background Context**

#### 5.1.1. Physical Structure

The 2km stretch of Madeira Drive including Madeira Terrace and the surrounding seafront is a unique part of Brighton & Hove's seafront, linking the Palace Pier to Brighton Marina and the Black Rock site.

Madeira Terrace itself spans 865m of the eastern seafront in Brighton & Hove. The Terrace was originally constructed as a seafront promenade and is thought to be one of the longest **cast iron** structures in the world. The structure is currently grade 2 Listed with application to raise the Listing to Grade 2\* currently in progress.

Refer Appendix A for details / link information on listing description and upgrade status.

Pieces of the structure have become unsafe or are failing and a clear zone of 4m has been barricaded off in front of the structure to protect the public in the event of 'catastrophic collapse'.

It is now necessary in the restoration of MT to, as far as reasonably possible, design out the issues which have led to the difficulty and complexity of ongoing maintenance. Most significantly an inflexible concrete deck encased steel beams which have corroded through water ingress. This has affected all parts of the structure from the balustrade connections, to the body of the Deck itself as well as connections into the cliff. Other structures affected include substantial staircases and masonry piers.

#### 5.1.2. Landscape / Green Wall (GW)

The whole composition originally read as a form of hanging marine cliff landscape joining the upper neighbourhood to the shore.

The historic Green Wall (GW) sitting at the back of the Terrace sheltered promenade is believed to be the oldest and largest of its kind in Europe, predating the construction of the Terrace. The GW is part of the Kemptown Registered Park and Garden Conservation Area and, through the CPP2, will be designated a Local Wildlife Site (BH77 Madeira Drive Green Wall). Refer Appendix 2.0.) The Conservation Area is classed as 'at risk' by Historic England.

Refer Appendix A2.0. for details / link information.

The GW was originally planted in Japanese Spindle along a nominally 1200m length from Duke's Mound in the east, to the aquarium in the west. The plants grew up to 600mm a year and some are now 18m tall.

The GW has naturally dwindled in some parts and thrived in others. It has evolved to support over 100 different kinds of flowering plants and is now regularly attended by groups of volunteers from Brighton & Hove Building Green and Portslade Green Gym.

Proposals for the GW are another important aspect of the Community Engagement work that the Design Team will be expected to include and coordinate.

### **5.2. Restoration of the Heritage Structure**

#### 5.2.1. General

Restoration of the structure of the Terrace must create a safe, robust, long-lasting and low maintenance backdrop and framework that can support dynamic regeneration of the edifice and the area.

### 5.2.2. The Arches and Deck

Restoration of the full Terrace is anticipated in phases as further funding opportunities arise. This first design phase will focus on 30 of the 151 arches, acting as catalyst for regeneration of the remaining 121 arches. Three of the 30 arches will be funded by Crowd Funding monies with the specific requirement of restoring these 3 arches to their original material construction, possibly within a new strengthened structure. These 3 arches could be used for heritage led learning and interpretation.

### 5.2.3. Deck and Balustrades

Innovative design solutions for the deck are a priority. The deck structure needs to comply not only with current standards for crowd loading but also with future proofing in mind as appropriate. It must of course retain its unique heritage detailing as befits its listing and onward permissions process.

The Design Team is expected to respond to the opportunity to create a deck which takes advantage of new technologies to respond to a changing climate and demanding urban environment. These can incorporate Building Services systems as well, refer 10.0., below.

The Design Team is asked to provide a costed Options Analysis for replacement deck materials and systems. This should include assessment of (jumping) crowd loading, lightweight maintenance vehicles and pop up structures to support Events.

A balustrade will be required which meets regulation height and is compliant with crowd loading requirements (viz. 1150mm or 1400mm if cycle accessible). The historic detailing of the Seafront railing must be respected.

Balustrade solutions with easily accessible maintenance features are required; the existing balustrade is currently embedded in the concrete deck, causing corrosion and increasing maintenance complexity.

The DT will need to advise and agree with the Client the crowd loading figures that can be provided, but it should be noted that, here below, are some of the most populous events in the area, that of course includes all 3 levels, but will clearly impact the Deck :

- Brighton Marathon - 40-50K.
- British Heart Foundation Bike Ride - 30-40K
- Burning of the Clocks - 20K
- The Speed Trial event is already identified as having a capacity limit. In this case the beach is closed and there is contained crowd management. This capacity is limited to 5K

Most events are assessed for capacity through risk assessment on the day of the event and can be restricted if required.

### 5.2.4. Staircases and Madeira Lift

The existing staircases that link Marine Parade, the deck structure, the Terrace and Madeira Drive must be renovated and incorporated.

The Design Team must show how they will continue to perform in terms of linked access and escape in the case of any emergency at Events.

Dependent on the selected tranche of 30 arches for the project, the Madeira Lift may also be used.

Access to the Madeira Lift is not ideal. It is only partially visible to the public and not open all the year round.

Overall proposals for accessible public circulation must be provided. This could extend to include alternative proposals for additional lift/s; even the consideration of lift/s as part of a new more playful leisure based installation.

#### 5.2.5. Restoration Methodologies

The Design Team will need to develop a coordinated methodology for an upcoming Contractor to finalise. Any items requiring dismantling will require careful organisation, labelling, assessment and storage.

Item labelling will need to include each individual piece of structure being catalogued and assessed for structural integrity, then labelled and set aside for repair/restoration, re-use on site or elsewhere, or disposal. A clear enabling works sequence with plans identifying sections to be removed highlighting potential hazards, relative timings and propping arrangements will be required as part of the DT's Risk Registers.

Questions to be considered include, but are not limited to:

- What is the Part name, location, original arch from which cast iron part was dismantled?
- Which patterns already exist, and can they be used to cast new/replacement parts?
- Which patterns need re-creating?
- What is a sound method statement approach for how to assess cast ironwork?
- How will the cast ironwork be dismantled, assessed repaired, re-cast and re-instated?
- Pattern designs will be owned by BHCC for the ongoing projects; how does this work? Where is it recommended they be stored?
- How is a classification system developed that clearly defines whether to use, repair/ restore or replace, including tracking elements that are re-used either on site or elsewhere?
- If being retained where is the finally proposed location?

Such clear zoning methodology and approach will also apply to the Green Wall with a view to maximising conservation of the highest quality areas. The integration of the GW within the physically built structure and new proposals will be a core design matter to be addressed.

#### 5.2.6. Protective and Decorative Paints & Cast Iron finishes

Beyond the cast iron structure and components themselves, there is the finish of all elements to consider.

The Design Team will be required to generate a paint analysis of the historic paint colours. What will be the recommendation for paint colours and paint type on restored and replaced cast iron?

Are there optional paint systems available and which are most effective on cast iron? Are there optional coating treatments that can minimise painting maintenance and corrosion? Must there be

coatings systems at all? All options to be presented in terms of heritage; contemporary aesthetics; best performance; capital costs and minimising maintenance.

## **6.0. Accessibility : Function and Landscape in the Public Domain**

### **6.1. Accessibility**

Accessibility for all is key to the overall design in the regeneration aspect of this project.

The current closure of the MT structure contributes to the neighbourhood's severance from the coastal promenade along Madeira Drive and the beach and shoreline beyond.

The Design Team are asked to show significant improvement to community access :

- concepts should encourage East-West, and vice versa, people movement as well as North-South connections through and across the "grandstand" assembly.
- How can restored staircases, the western ramp and Madeira Lift act in tandem with other new build proposals to ensure fully democratic and safe access to users?

A fully accessible weave of routes through the area, that can join up transport systems and community desire lines is needed.

Comprehensive accessibility must be embedded in the nature of new programme provision and should address accessibility for all in the following realms:

- physical provision for those less bodily able, also including wheelchair users and families with child buggies etc.
- cultural provision responding to the diverse languages and customs of visiting and resident visitors.
- intellectual awareness in provision for those with special needs in legibility and cognition, including those with autism spectrum disorders.

(refer 6.3 and 7.0, below)

### **6.2 People and Traffic Movement**

The Design Team (DT) are asked to study the nature of

- Pedestrian movement (community/neighbourhood and visitors)
- Vehicle parking
- Traffic movement (including cycles)
- Public transport

Note that:

- the nearby Brighton Pier attracted 4.6 million visitors in 2018 so it is anticipated that 30 restored arches can capitalise on this existing audience.
- Pedestrians must clearly be prioritised over vehicles with easy movement from E-W and N-S, as above.
- It is a principal aim to link the local neighbourhood with the shore.
- DT is required to analyse public transport facilities and BHCC's upcoming strategies and policies in this regard for the upcoming decades, reducing the dominance of vehicles which currently visually and physically sever this area of Brighton from the shore.

- DT is asked to advise the Client on how, in principle, Hostile Vehicle Mitigation (HVM) could be achieved if considered necessary in future (refer also 6.5.2, below)

### 6.3. New Content Programming and Events

Overall, it is the intention of BHCC to commission a DT that will generate innovative flexible and responsive ideas for programming the whole that will:

- provide new social/leisure, cultural and business opportunities
- develop solutions that can remain flexible, relevant and responsive over time, providing BHCC with a sustainable model in terms of public service provision, maintenance of the fabric and generation of revenue income by creating a vibrant Eastern Seafront through this scheme, using best practice principles of Circular Economics.

MT itself was a continuously open promenade historically, enjoying shelter, sea views, the Green Wall and providing the structure for the 3 storey Events Grandstand.

All such heritage elements must remain at least in significant part; however new ideas for content may inhabit parts of the whole, tapping into a newly designed and embedded 21st Century infrastructure accordingly.

Whether one-off Events; a cultural centre; general public facilities or new workshops, social and cultural businesses, ALL will require fully up to date servicing in terms of Energy, Water, Drainage and Communications. External lighting will be particularly important to both enhance all proposals and respond to prestigious Events but also to contribute to public safety, refer 10.0. below.

How can such an exciting new programme be contemporarily housed? What could those units look like materially and how closely are they integrated into the arches themselves or within the curtilage of the scheme?

Having presented the Vision of the whole regeneration of MT the Design Team are then asked to distil, optimise and realise solutions and a scheme for the first tranche of the whole “MT30”, with a proposal for content accordingly.

It will also fall to the Design Team to provide Optional Analyses to decide which 30 arches should be the first to tackle. Community and stakeholder negotiation and engagement will play a part in that selection, as will the technical condition and strategies as to how best locate the 30 in the whole composition for maximum connectivity and use. Could it even be that the 3 community funded arches are separately located from the other 27?

### 6.4. Landscaping

The Terrace was constructed in front of the consolidated East Cliff and Green Wall, refer 5.1.2. above.

Presenting a material palette for both the Hard Landscape and Soft Landscape planting, as well as the (low or zero energy) associated public lighting scheme will be core to deliverables.

It is hoped that the MT30 phase 1 of the scheme will specifically involve part of the (eastern) Green Wall (GW). The strategy for the wider GW conservation and enhancement must be presented as part of the whole regeneration Concept.

The social/leisure, cultural and business “weave” of activities will be bound together with a matrix which as a whole constitutes the Landscape scheme.



Innovative Sustainability requirements and the nature of Coastal Environments set the complex dynamic context for this work.

The Design Team (DT) are asked to consider the potential for planting at all 3 levels for a number of reasons.

- for public enjoyment, health and wellbeing
- to assist in management of people and vehicle flow
- to improve the carbon footprint of new development
- create potential for food growing/climate change resilience (shelter/shade)/Circular Economy principles

Note that the public realm along Madeira Drive has a tired and inconsistent look. There is minimal street furniture, shelter from the elements or appropriate facilities to encourage the use of Madeira Drive.

The DT should consider the middle deck in terms of its potential as a linear high level park (refer High Line project NYC etc.)

Questions posed include, but are not limited to :

- What sort of configuration of public realm is required to enable safe and unimpeded public access to restored arches at ground level? How will this tie in with existing use of public realm to east & west?
- How can service vehicles to all units and for general public domain cleaning and maintenance, accessible parking and other vehicle requirements be incorporated?
- How is Emergency Access provided?
- How is a SuDS scheme achieved?
- How is a Resource (formerly Waste) Management scheme integrated? (refer 11.0. below)
- Overall how does the public realm also retain its heritage qualities?

## 6.5. Public Safety

Local community groups and businesses have expressed a strong desire to need to feel safe in the area and to be able to routinely enjoy the Terrace and Deck and the Parade above in a leisurely and relaxed way. They do not currently have this freedom.

The landscape scheme and associated external lighting with clear open accessibility needs to help create this feeling of public safety and transform the nature of the area.

### 6.5.1. Fire - fighting and evacuation

Note that although many of the spaces in the scheme will be external, there can still be an issue of needing to evacuate people safely.

A comprehensive escape strategy for all area visitors and staff, including for wheelchair users, must be provided throughout.

Ensure that all spaces, external or internal, can accommodate fire fighters in accordance with legislation and building regulations.

Ensure fire-fighters are not obstructed as they are coming in to fight a fire

The Design Team must agree designated fire entry points throughout the scheme with the local Fire Service accordingly. Assume a comprehensive external fire fighting vehicle route of 4m clear width throughout; details to be agreed.

#### **6.5.2. Vehicles safety in public domain**

It could be that, if vehicles become restricted in any way that some vehicle denial systems are required. These can both prevent unwanted vehicles from using the landscape, and protect the public from injury in an area where they no longer expect vehicles. (refer also 6.2. above).

This could be achieved for instance through use of furniture, landscape, bins, gravel traps, alternate cambers, planters or trees to narrow access routes to large vehicles. Any system needs to complement DDA requirements, and not obstruct genuine access routes.

Anti-ram raid systems are not considered a high priority, although vehicle slowing systems in line with sound urban design practice should be considered close to any defined or agreed sensitive areas.

## **7.0. Innovation : Creative Re-use and Public Revenue Generation**

The MT30 project DT is required to optimise all functional, aspirational, business and community attributes in its project proposal. It must be the aim of the DT to produce concepts that will inspire new creative local business ventures. It will be important to generate income from this project to bolster credibility, visibility and leverage for the further phases' funding.

BHCC are looking for the DT's design recommendation for the development of permanent, but perhaps moveable volumetric pods that are capable of being re-programmed within or around the Arches, as well as for temporary pop-ups.

Careful and sensitive design of habitable and serviceable spaces either within the arches or MT's curtilage is required in conjunction with enhancing and developing the Green Wall and biodiversity of the area.

Preserving the 'linearity' of the Terrace and its use as a 'grandstand' for events are considered heritage priorities. Discussions between the Council and Historic England regarding deck materials have clarified that a like for like replacement of the deck material is considered secondary to the Social Heritage function of the deck as a public promenade and viewing platform for events held on Madeira Drive. It is also assumed that this attitude may assist in the identification and optimisation of materials in terms of minimal ongoing maintenance.

Beyond creating innovative solutions for the Terrace middle shelf or 'deck' to restore the function of supporting crowds, further considerations could include; opportunities to bring natural light down to ground level; power generation for both day to day functions as well as Events and the possible nature of units for pop up commercial use.

## 8.0. Specific Architectural Requirements & Deliverables

It will be the job of the Architect not only to Lead and orchestrate the coordination of the whole Concept Proposal for regeneration, but also to safeguard the Heritage that is broadly three-fold in nature :

- Social - The social value of Madeira Terrace is as of much significance as the linearity of the structure itself. This strong public value is demonstrated by its many years as a 'linear grandstand for high profile public events on Madeira Drive until in 2012 most of the Madeira Terrace structure was closed to the public for safety reasons.
- Historical Architectural composition and detail, refer 5.0. above.
- Landscape / Green Wall refer 5.1.2. above.

It is expected that, in fulfilling all requirements for City approvals as well as final delivery and handover to the Client, the Architect will be responsible for core pieces of documentation including, but not limited to:

- Heritage Statement of Significance providing the foundation for a developing Conservation Management Plan
- Design and Access Statement
- Sustainability Statement
- Access and Maintenance Strategy
- Fire Strategy
- Architectural Risk Registers
- etc.

The final deliverables list will be agreed with the wider Consultant team and stakeholders during the development of this Brief.

Note : The Landscape Architect is asked to lead on Environmental Impact Assessment, including consideration of Flood Risk.

It is anticipated that the Architect will be the keeper of the 3D/BIM model.

Note that upon writing a Point Cloud Survey is in the process of being commissioned to provide data output and web interface for the whole site with associated 2D drawings generated at 1:50 incorporating points at +/-5mm

Refer to Appendix A for an outline of currently available reference, resource and survey materials.

The Architect's duties involving the Client body will include :

- Carrying out the Pre-Application process and presenting proposals to relevant members of the Planning Committee and Ward Members.
- Presenting proposals to the Design Review Panel and Conservation Advisory Group.

A BHCC Project Delivery Team have been identified. The strategic decision-making body for the MT30 project is the Strategic Delivery Board which has representation from cross-party councillors and senior council officers. A Project Board requested by officers at the Policy & Resource was given approval to proceed. The full Board membership is tbc and will include councillors from the 3 main political parties in the city. There is also the delivery of Community Stakeholder engagement work, refer 2.3. above.

## **9.0. Specific Structural Engineering Requirements & Deliverables**

Referring to 5.0, above

Whilst the Principal Structural duties will be to support:

- the restoration of the structure
- solutions to address contemporary events and operations loadings on the Deck
- solutions for new build insertions and additions coordinated with new energy / sustainability agenda,

it will be vitally important to develop and propose the methodology for dealing with all original elements. Clear actions to deal with include the definition of

- elements that can be fully re-used
- elements that can be repaired
- elements that must be replaced. Refer 5.2.5, above.

As part of the wider Design Team's overall Circular Economy thinking, could elements that are no longer serviceable in the restored heritage context be used elsewhere?  
e.g. within new build programme elements being proposed by the DT?

The Structural Engineer must feed into the coordinated set of Risk Registers and it should be noted that all works should be checked with the local authority with reference to crowd loading as well as any impact on the support for A259 / Marine Parade above.

It should be assumed that the SE will also be required to provide on-site engineering duties during the times when detailed decisions are being made in terms of methodologies and judgements relating to retain; repair; re-use; relocate etc. (refer 5.2. above)

## 10.0. Specific Building Services Engineering Requirements & Deliverables

### 10.1. General, Net Zero Carbon systems

Whether one-off events; a cultural centre; public facilities or new workshops and businesses, ALL will require fully up to date servicing in terms of Energy, Water and Drainage and Communications. External Lighting will be particularly important to both enhance all proposals and respond to prestigious Events but also to contribute to public safety.

The Design Team is asked to add layers of 21st Century innovation and functionality to be realised within the bounds of the associated Planning and Listed Building Consents associated with a Grade 2\* edifice. Matters to be considered include for example:

- can new technologies supplement the historic form in a fully complementary and sustainable manner to outperform the historic detailing limitations of the past?
- how can embedded technologies also increase the performance and sustainable future for the Composition as a whole from an Energy and requirement to be Carbon Neutral perspective?
- what sources of services are in close proximity to MT?  
How can connections to power/water be made safely for flexible future use of both the permanent new build facilities as well as connections for pop ups?

### 10.2. Mechanical

In terms of heating, cooling and ventilation, systems are most likely to be needed in many of the newly built volumetric installations. These may well need to be fully closed at times, not least for security overnight. Dependent on the incoming functions, HVAC installations may be necessary tbc.

Mechanical engineers will therefore be asked to propose a flexible and modular approach that could be variously configured to support the range of functions proposed.

### 10.3. Electrical

Innovative energy generating systems are more likely to produce electrical energy, viz. photovoltaic; solar; wind or water based technologies.

In this case the Client wants to see proposals that can generate the power required for all new programmatic facilities and the Events that will take place in this newly regenerated Terrace.

#### 10.3.1. General

Questions raised include, but are not limited to:

- What is the potential of the deck for energy generation? could solar or photovoltaic arrays supply energy to Terrace tenants for instance?
- How can the electrical design to the deck area work for servicing & pop ups/public events?
- What is the potential of the deck to be heated to melt snow/ice?
- How can power connections for volumetric pods be made?

#### 10.3.2. Lighting

The assumption is that any sustainable lighting design will incorporate LED lighting. How can such a new installation be configured alongside the existing public lighting sources?

- What lighting installations would best display the unique/iconic structure on a day to day basis?

It will be necessary to develop solutions for lighting the Whole Terrace, Deck and associated levels without creating visual distraction to the enhancement of the arches at the Madeira Drive level. All must combine harmoniously.

### 10.3.3. Communications

It is expected that the whole of the public area might be provided with a BHCC wi-fi service, tbc.

Otherwise the individually tenanted units will undoubtedly need to be provided with the most robust and highest bandwidth available at the point of installation, always with regard to future proofing. This will be particularly important as BHCC may want to attract innovative and creative industries and workshops.

Such provision may require associated hard cabling and possibly some form of central rack room provision. tbc.

### 10.3.4. Fire Systems and Security Alarms

#### 10.3.4.1. Fire Detection (FD) and other Emergency Services

Beyond ensuring Means of Escape are fully provided for within the basic planning of the scheme, both overall and including pod-like installations or individual new build facilities, there should also be associated FD and alarm systems.

It will be important for individuals to know not only that there is an issue in their own unit, but also when there might be an issue close by.

The Design Team will propose a strategy that coordinates all mutual interests accordingly.

Consider the need for varying sorts of alarm to ensure that hard of hearing or visually impaired etc. are also alerted, eg. flashing lights may be required in some areas to signal fire evacuation to staff and visitors who are hard of hearing.

#### 10.3.4.2. Security Systems and Alarms Basic security principles which are successful and should be carried forward are

- 24 hour accessible integrated systems
- systems which work towards the most appropriate technology (e.g., suited lock system may not always be appropriate
- security systems which are based heavily on movement sensors
- a hierarchical approach, of red, amber and green areas, where components of previously identified and agreed assemblies and installations within the complex collectively meet the requisite standard of security specification, across a hierarchy of prioritised areas, to be agreed.
- consider possible support using radio systems on the site; eg. will outside Security contractors oversee the whole?

Once the strategy is established the component parts or hardware are likely to include:

- a CCTV system compatible with the rest of the city's coverage and monitoring.
- **System Hardware:** All control hardware & equipment associated with the various security systems are to be located in secure rooms/locations. Access to these secure rooms is to be regulated through the use of access control.
- **Back-up Power:**(i.e. local batteries/UPSs), is to be considered to some or all of the security systems to ensure the security systems remain fully in operation for 24 hours. In the event of the loss of mains power consider the need for generator/s.
- **Monitoring:**Consider whether there is a need for central monitoring of the security systems, (permanently staffed, 24hrs/day), located remotely (i.e. not on the MT site itself). Otherwise provide a secure location on the site for a security control room, and from which the various overall and individual site security systems could be locally monitored.

All of this will combine towards creating the public safety that is required (refer 6.5. above).

#### 10.4. **Public Health**

Public Health installations will partly depend on the extent for proposals for general public WC provision. Clearly whatever is provided must be fully accessible. It will be a matter for the team to decide on most appropriate provision for

- General Public
- members of Staff in newly built facilities/businesses. Can legislatively required provision be fully planned within relatively limited volumetric build "pods"?

As the Client wants to prioritise Health & Wellbeing, there could be more sports or beach/leisure businesses or provision within units to be let. Might these need to include further sanitary or changing accommodation?

In any event an appropriate modular and flexible infrastructure that can deliver water supply; including potable and drainage to the scheme will be required.

Matters to be agreed and designed will include:

- Drainage of the deck and the retaining wall to the north of the deck, incorporating use of water capture
- How does the DT design for water running down face of wall to deck? How will water drain from the deck? How will this be managed and maintained? Can water collected be used? How?
- Can existing cast iron pillar drainage work with inner steel liners fitted to existing cast iron pillars or is total redesign required?
- How will fresh and foul water from potential commercial units be accessed/serviced?
- What is the potential of the overall "grandstand" structure for rainwater harvesting?

An outline of management/maintenance regime required for all drainage elements will be required in the scheme's Maintenance Manual.

##### 10.4.1. Sanitation

In all relevant provision proposed, the DT must present



- the extent to which shared or individual/bespoke accessible facilities can be provided
- the associated foul drainage infrastructure
- the extent that a grey water scheme can supply flushing etc. requirements.

#### 10.4.2. Surface Water Drainage & Rainwater Harvesting

The rainwater drainage of both the restored heritage structure and any new build installations must be coordinated with an overall SuDS scheme. Overall the DT must present:

- How is all surface water drainage managed for the deck, retaining wall and elsewhere? How will this be managed and maintained? Can water collected be used? How? Refer above.

It is assumed that Rainwater Harvesting could be used for both grey water flushing and any required Landscape irrigation.

### **11.0. Resource (formerly Waste) Management**

The newly regenerated MT30 project could generate large and varying amounts of waste resource, depending on whether the area is operating day to day, or in major Events mode.

In both cases the Design Team must plan a strategic approach, and in all cases prioritise re-use or recycling of refuse.

BHCC employs a Resource Manager instead of a Waste Manager. This is significant. BHCC and the University of Brighton, together with over 35 other partners built Europe's first permanent public building (constructed to PassivHaus standards) made from so-called 'waste'. Known as 'The Waste House', this two storey building on the Grand Parade campus of the University of Brighton has Full Planning and Building Regulations approvals. The MT30 Project Design Team will liaise with the BHCC Resource Manager to ascertain the most effective and best practice in 'Resource Management' – and bear in mind there is no such thing as waste, rather stuff in the wrong place.

Frequent smaller scale waste collection in such a prominent public area requires specific and detailed focus.

All waste management provision must anticipate more onerous upcoming legislation relative to separation, recycling and environmental sustainability

Waste management across the site must support waste streaming and recycling. Assume the following minimum degree of separation will be required, with associated shredding and compacting where possible :

- Paper
- Cardboard
- Glass
- Metal
- Plastics
- Hazardous (including some Cleaning stores, or particular processes required by incoming tenants)
- Food Waste

Note that Foodstuff waste, particularly if confined to an enclosed / interior area of a tenanted unit may need to be chilled until collection is possible.

High pressure clean-out must be available for all waste areas, whether common or individual.

All proposals to be confirmed in principle with the Client and City Public Health authorities.

## **12.0. Cost Consultancy**

The Client will require all proposals to be presented in terms of:

### **12.1. Capital Costs**

The construction budget for MT30 is £2.8M, that includes a nominal £0.5M towards sustainability measures.

### **12.2. Running Costs and Income Generation**

BHCC will need to know that proposals can be sustainable in terms of their ongoing responsibilities for maintenance and longer term renewal etc. being offset by the potential income generated.

The Cost Consultant will author the detailed Project Business Plan (PBP) pertaining to MT30, to include a projected strategy defining the wider Whole Vision Project Business Plan in outline. The Cost Consultant will liaise with BHCC's development, regeneration and finance departments accordingly, to ensure that the PBP satisfactorily complements the overall Business Case for the MT30 project.

### **12.3. Carbon Footprint**

The team as a whole are required to work in support of being able to fully report the "carbon footprint cost to the environment" and that the scheme can be proven to achieve net carbon zero emissions by 2030, and this must form part of the "cost" reporting to the Client accordingly. The Design Team is required to report on the estimated Whole Life Carbon Assessment of both the MT30 project, as well as the projected Whole Vision scheme.

### **12.4. Whole Life Costs and Circular Economy**

The proposals are to be demonstrated cost-wise across the Whole Design Life of the composition, refer 4.0. above.

A cost model is to be developed that will illustrate and quantify the extent to which materials are re-used or recycled from elsewhere and contrasted with a base model that would be generated by a fully new build solution that might ignore the requirement to re-use or recycle.

## Appendix A

Reference Materials and Survey information that will be made available to the Design Team.

### A1.0. Listing

<https://services.historicengland.org.uk/webfiles/GetFiles.aspx?av=53E17C62-D533-4757-AC3D-BC703F468589&cn=F7CF3C10-FD7F-442E-9E61-760A6DA8CBBB>

### A2.0. Green Wall

A2.1. <https://building-green.org.uk/maddy-2/>

A2.2. Relevant City Plan Part 1 Policies are CP10 Biodiversity and DM37 Green Infrastructure and Nature Conservation in the draft City Plan part 2 (ref. CPP2; SSA5 Madeira Terrace and Madeira Drive)

A2.3. Refer Brighton & Hove Local Wildlife Sites Review 2017 (published 2018)

### A3.0. Survey Materials - Generically there exists:

A3.1. A substantial “Keep Archive” set of original “Borough of Brighton - Madeira Road Improvements” scheme drawings and Construction Drawing details

A3.2. Contemporary 2D survey set held by the Client.

A3.3. An upcoming 3D / Point Cloud Survey for import / use in MT30 phase, and subsequent phase, use in BIM model (yet to be completed upon writing.)

A3.4. Special (structural) Inspections : a series dating from 1977 to present day, including details of current temporary protection and Security Fence works.

### A4.0. BHCC Strategic Documents

A4.1. Brighton & Hove Seafront Investment Plan 2016 - 2021

A4.2. Madeira Drive Regeneration Framework April 2017

A4.3. Note: BHCC already hold a draft Heritage Statement (2016), preceding a formal Statement of Significance still to be compiled. This will be made available to the Design Team, with a range of further preliminary studies that will provide further detailed background.

A4.4. Adopted City Plan Part 1 (strategic city wide policies - seafront, urban design, public streets and places and heritage and biodiversity)

A4.5. Draft City Plan Part 2 (strategic site allocation for Madeira Terrace and Drive and detailed development management policies on conservation areas and listed buildings, development on the seafront, sustainable drainage, green infrastructure and nature conservation etc.).

**A5.0. Community Engagement:**

Term of Reference for the Madeira Terrace Restoration Advisory Panel.

**A6.0. Circular Economy References:**

- Cheshire, D. *Building Revolutions: Applying the Circular Economy to the Built Environment* RIBA Publishing, London, 2016
- MI-ROG White paper No.2 *Measuring circular economy performance - suggestions for infrastructure organisations* 2018
- Sturgis, S., *Embodied and whole Life Carbon Assessment for Architects* RIBA 2018
- Sturgis, S., *Targeting Zero: Embodied and Whole Life Carbon Explained* RIBA Publishing 2017
- Stahel, W. R., *The Circular Economy; a user's guide*, Routledge, 2019, London & New York
- UK Green Building Council *Circular Economy Guidance for Construction Clients* April '19
- UK Green Building Council *Net Zero Carbon Buildings A Framework Definition* April '19
- UK Green Building Council *Practical how-to guide: Building Circular Economy Thinking into your projects* 2016

## **Appendix B**

### **Indicative Site / Location Plan**