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THE PHARAOH PROJECT

Pettman Underpass

Pettman Crescent

Plumstead

Greenwich

London, SE28 0FE

## Overview

The Pettman Underpass is a blighted and neglected area, this project seeks to secure public funds to enable the restoration and improvement of the area to create entertainment and community space in addition to generating revenue that can be used to improve and expand the project over time.

## Goals

1. To erect a BioDome over the Pettman underpass.
2. To establish a Garden, erect a stage and retail spaces within the dome space.
3. Plumstead High-street Area Retailers Associations Organisations Homes Committee.To form a management committee of local businesses and interested parties to administer the ongoing use of the space for the public good.

## Specifications

The project must maintain public rights of way through the Pettman underpass hours a day whilst making it more hospitable and welcoming for through traffic be it by bike or by Foot.

The area under the Dome must be able to maintain its own microclimate in order to offer people and plants the opportunity to escape the inclement weather prevalent in the uk

The project must maintain open avenues for new partners or interest groups to make representations for use of the stage or public areas for specific events under the dome, accommodations must be made to support charitable causes with reduced rates and offer opportunities to as wide a range of the residents of Greenwich as practicable.

## Technical specifications

The Dome structure must be secured on four sides to the existing concrete structure of the Pettman Flyover.

Material structurally robust enough to withstand road vibrations, strong winds and human acts of Vandalism.

i} Steel supports may need to be used to reinforce the structure depending on the type of glazing material used. source:[http://www.wesellrsj.co.uk/product/parallel-flange-channels/RSJ / Universal Beams](http://www.wesellrsj.co.uk/product/parallel-flange-channels/RSJ/UniversalBeams) metres 45, dimensions 356 x 171 x 57 £96.33 per metre (£ 96.33)

Weight in Kg:  $2,565 = 1 \times £4,334.85 \times 12 = £52,018$  in supporting steal

Or

ii} wooden Beams interlaced to form a dome with glazing material sealed into the triangular lattice structure that could be formed.

### 3 options for glazing the structure, or a mixture of materials.

1. Polycarbonate - a plasticised structure stronger than glass for its weight
2. Toughened Safety Glass, extremely heavy and durable but expensive, this material is used to great effect in modern construction
3. Transparent solar panels, Developed to sit inside two sheets of toughened glass this option would allow the Dome to act as a Solar collector whilst fostering a micro climate within it, the most ambitious option, and the most expensive at around, UK Sterling, 250 a sq meter.

Assuming option 3  $1509 \times 250 = £377250$  for a transparent solar collector biodome

Dome Surface area

#### Area of the Dome @ R =15.5

r = radius C = base circumference V = volume A = curved surface area* B = base surface area K = total surface area $\pi = \text{pi} = 3.14159$ $\sqrt{\quad} = \text{square root}$	r = 15.5 m C = 97.3894 m V = 7799.27 m <sup>3</sup> A = 1509.54 m <sup>2</sup> B = 754.768 m <sup>2</sup> K = 2264.3 m <sup>2</sup>
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\*Above calculation is for a Circular Dome, if the design were to incorporate a flat face on the north east orientation, the surface area would be marginally reduced.

## Milestones

Application to the council for funding support in principle to undertake the project, or a proportion of the total funds for professional conveyancing procured through competitive tender so that plans can be developed, formalised and full funds can be secured through further finance be that; Offering Shares to the Public, enlisting local business support, Commercial Finance Other Government Funds.

The Agreement of a Lease for the area, with Royal Borough of Greenwich

The formation of a management committee of local Stakeholders to oversee feasibility of options, Review studies by architects and surveyors, contractors who bid with exact costings and construction methodologies to be employed.

Formation of a Timetable for Planning application -to- Construction

Gain Planning Approval

Connection to Utilities

Dome frame erection, and surrounding frame

The construction of internal space, structural support, retail space, public toilet, storage space.

Glazing.

Renewable power installation finalisation

The Final installation of Planters Plants and the establishment of an ecosystem.

Public inhabitation, occupation and frequentment

Costing estimate for most expensive option Glazing (400,000) + (60,000) + Labour (90,000), + Internal Retail Renovations and Garden (200,000), Legal and Sundry (50,000) = £800,000

### I. Future expansion of the retail space along the walkway and Embankment Ecosystem under a clear dome tunnel

The long term aim would be to prove viability of the dome space and fundraise for the renovation of the walkway and green bank stretching West, be that through bidding for CIL money from future developments seeking to benefit from their proximity to an Eco Garden, covered retail space and recreation space. Taking



advantage of the current geography to create shop units behind the retaining wall, turning the walkway into a line of shop fronts, and establishing staircases and sloped routes of access onto the reinforced turfed over shop roofs, all encased in a climate controlled dome full of suitable fauna and recreation facilities and spaces.

The creation of a 24 hour living underpass connecting Woolwich and Plumstead high streets. Managed by the population of the area for the benefit of its diverse communities. Stimulating information exchange, trade, entrepreneurship and tourism to the Plumstead area. Night entertainment in plumstead is difficult to licence because of proximity to homes, but an establishment or establishments under and the dome/tunnel operating 24 hours a day would be out of the way and yet provide a presence and humanise the area after dark. Maintaining the right of way whilst levying the funds to pay for its security. Breathing Life into a place where once there was none. Making plumstead stand out on the map of places to visit in London.

Costing estimates of this expanded option have not yet been undertaken but provisional plans exist.