

THE GARDEN BRIDGE DESIGN CRITIQUE 21 05 2016

I wish to be clear.

Neither the Greater London Authority (GLA) nor Transport for London (TfL) have promoted the need for a pedestrian bridge in the location chosen by the Garden Bridge Trust. It is evident to everyone with any understanding of London that a bridge here has never been on anyone's radar as a transport priority, because there is no need for one. If there were, a proper and thorough TfL design brief would have been prepared long ago.

Even Boris Johnson had confessed to civil engineers he *'wasn't really sure what it was for', other than making 'a wonderful environment for a crafty cigarette or a romantic assignation'*. Nevertheless, the Garden Bridge Trust states on its website: 'The Bridge will provide a vital new route between north and south London'.

It is not vital.

What **has** been discussed for decades is the need for an increased capacity crossing the Thames in East London. There are 34 bridges across the Thames in Greater London, comparing very favourably with the 37 across the Seine in Paris. However, there is only **one** east of Tower Bridge, at Dartford on the M25 – on the periphery of London. Cross-Thames links in east London are the real issue as London's population expands east.

TfL should be fully focused on cutting traffic levels and boosting public transport, walking and cycling, and the GLA in funding and improving existing green spaces throughout the city, including enhancing riverside walks.

What is the Garden Bridge Trust actually presenting to us?



SLIDE IR 1 image Arup/ Heatherwick Studio

The Garden Bridge is a classic exercise in celebrity hype and hubris.

The Garden Bridge was first announced as costing £60 million, all of it privately funded. Now it would cost £175m – of which £60m would come from the public purse - and cost about £3.5m a year to maintain.

The Garden Bridge Trust's marketing strategy is based on one self-contradictory proposition alone – the bridge is supposed to be an oasis of calm in the heart of the capital **and** a visitor attraction enhancing London's global appeal **and** a quick, useful commuter route.

If it were built it will be adding pedestrian traffic to an already overcrowded area that sees 25 million-people a year – about 70,000 a day on average - and offers a wide range of existing visitor attractions. On the North Bank is Somerset House, with access directly off Waterloo Bridge onto a public terrace overlooking the river, in one of the most expensive areas of London, and next to Covent Garden. On the South Bank are the Thames Riverside Walk, the London Eye, the Festival Hall, the Hayward Gallery, BFI Imax, BFI Cinemas, the National Theatre, the Oxo Tower, Tate Modern, and Shakespeare's Globe.

And there is a tranquil place - Bernie Spain Gardens, right by the Thames.

A bridge and a garden?

I will quote from The FT article by Ed Heathcote:

“There are bridges. And there are gardens. You might find bridges in gardens. But you do not find gardens on bridges. There is a reason. They are two entirely different things.”

He goes on to say in his article why he believes the London Garden Bridge is wrong in virtually every way. The article is worth reading.

<http://www.ft.com/cms/s/0/23dcacfc-ca8b-11e5-be0b-b7ece4e953a0.html>

A bridge is to connect people to places.

On foot, pram, bicycle, in a private or public vehicle.

Writing about bridge design as a form of architecture, Sir Ove Arup said: *‘When everything thus comes naturally, there will be the greatest possible unity between architecture and structure – they will in fact be one and the same thing, which is as it should be.’*

I suspect that the design of The Garden Bridge became more immense – bulky and expensive – because the arching form of the supports has to carry additional loading from the landscape. They had to become deeper and thicker, and then had to be moved apart in order to maintain navigation clearance. So the span is much longer than originally envisaged.

To overcome this bulkiness the lines of the structure are expressed, and to protect and give the structure an aesthetic appeal, cupronickel cladding panels are added. The Millennium Bridge was a structurally audacious bridge – the architect wanting it to appear thin, unobtrusive, and not take away the wonderful views across and up and down river. The engineers sought answers and it resulted in a lot of the cost and construction disappearing into the ground with huge long anchors – at the St Paul’s end particularly, alongside the City of London School. Inconvenient and expensive yet despite wobbling and requiring a million pounds or so more to stabilise – it was still completed for £22m. At 325m long that means it cost about £67,000 per linear metre.

If it is only for pedestrians then, in this location, a generously wide bridge - say 7-8m wide - should cost no more than £30-35m. That is under £100,000 per linear metre.

So why is the Garden Bridge costing £175m?

Because accommodating the plants and trees costs £140m! This is the only reason.

It is not an accident that there are no bridges planted with trees. Most people are sensible and plant trees in the ground, not in gigantic pots dropped into the river Thames.



Slide IR 2 High Line 1990s Slide IR 3 HL in NY 2015 Slide IR 4 The Promenade Plantée, Paris 1990

The High Line in New York, to which the Garden Bridge is always compared by the Garden Bridge Trust, is not a bridge. It was the transformation of a disused railway viaduct in a run-down area, as was the landscaped Viaduc des Arts from the Gare de

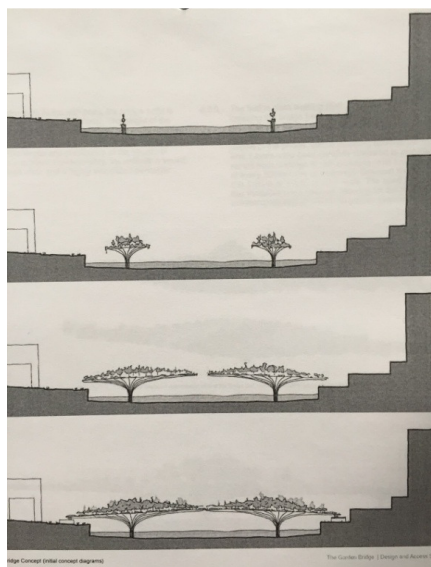
Lyons to La Bastille – part of the 4.2mile Promenade Plantée in Paris, and which inspired the High Line.

The obvious difference – both were regeneration projects of redundant rail infrastructure. The HL is the conversion of such an infrastructure in a relatively poor, peripheral location from which to look at NY from a different perspective. It was genuine urban regeneration. The GB is the creation of an additional, unnecessary tourist attraction in an already wealthy central location.

The vast majority of visitors to the HL have no particular interest in gardens. The HL simply offers the opportunity to enjoy the sights and sounds of the city from a different perspective – an uninterrupted one and a half mile stroll that affords a unique perspective on the city, in a pleasant, car free environment. That's the High Line experience, in a nutshell. I think London already has that. We've had it since before a High Line ever existed: it's called the South Bank.

The South Bank is one of the world's great urban promenades – and could be invested in to take it right through to the Thames Barrier. The Garden Bridge will potentially destroy it by wrecking views, felling many 30 year-old mature trees and creating a very congested pinch point -- similar to County Hall -- right in the middle of the experience. I would have thought no one would want this to happen.

The landscaped HL and Paris infrastructures were designed to carry heavy and dynamic loads and do not have large spans. Crossing the Thames means large spans. Today, the PLA navigation clearance requirement at this location does not suggest an arched solution - which is essentially what has been proposed.

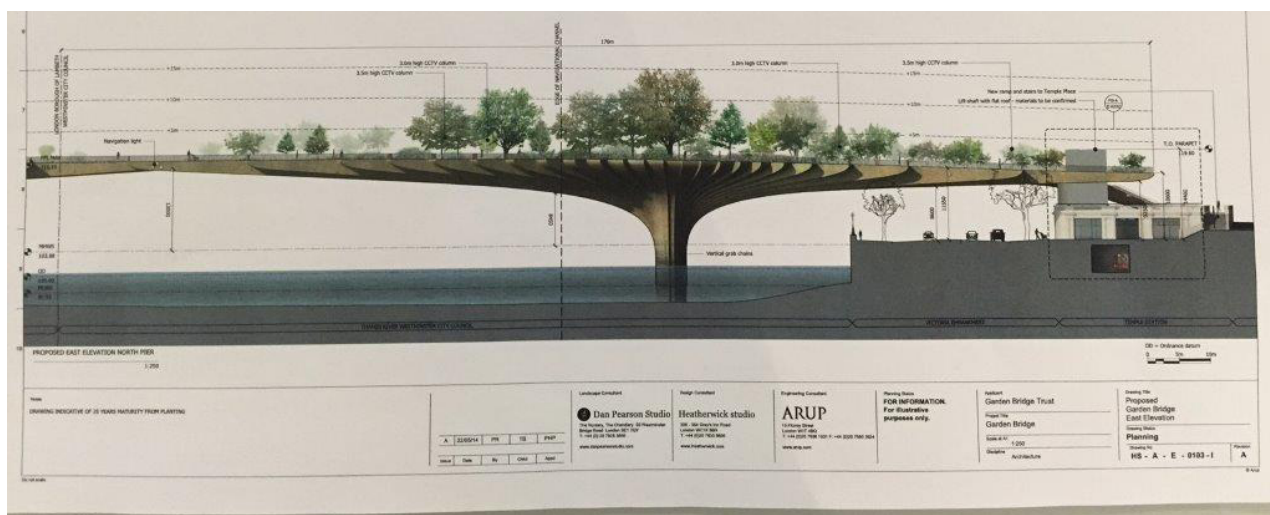


SLIDE IR 5 GB Concept drawing from the Planning Application

The proposed bridge is essentially two gigantic flower pots—described as “two ‘planters’ which are filled with horticultural content” as stated in the Planning Application Design and Access Statement – (1/3 para. 4.2 The Bridge).

This suggests material and manure to cultivate fruits, vegetables, flowers, or ornamental plants – maybe some contained in modest pots. However, these are ‘tree containers’ masquerading as gigantic flower pots and they curve outwards before straightening to meet in the middle. This means their placement in the river has to be further apart in order to maintain the navigation air draught above high tide.

In turn as they move further apart, the curved parts become deeper until **eventually** there is a solution to the shape of the tree containers that allows navigation.



SLIDE IR 6 Planning Application, Garden Bridge East Elevation – north side, Victoria Embankment

I would have thought that people designing a bridge would begin with the navigation channel constraint, rather than dealing with it as an afterthought.

The PLA navigation channel width is 121m, so instead of the bridge supports being, say, 125m apart, they are over 160m apart because of their shape. This shape is only there to provide sufficient soil depth for horticulture. I would suggest that it is a structure for arboriculture rather than horticulture, and the structure is now massive to support these spans to the centre.



SLIDE IR 1: 2013 and GB web site banner in 2016 SLIDE IR 7 Planning Application cover 2014

As a result, the bridge is no longer visually balanced, and the renderings that were published and still appear as the key image on the first page of the GB website (image left) are now deceptive. The north 'planter' is within 26m of Victoria Embankment, in among the boats and is no longer seen clearly within the river (image right) The space between 'planter' and North river embankment is clearly reduced to a strip, whereas the south 'planter' is about 84m away from the South Bank. That is – clearly in the river.



SLIDE IR 8 © ARUP North Bank – Victoria Embankment showing close position of the north 'planter' to embankment



SLIDE IR 1 image Arup/ Heatherwick Studio

Is there not a deliberate visual illusion here? Look at the reflection and the position of the tree planter (left side of image) near Victoria Embankment in the GB rendered image.

It's to help show the bridge's tree planters as if they are more or less equidistant from each bank, and for them to appear to sit almost symmetrically in the river. They do not.



2014 SLIDE IR 9 The new profile across the Thames with north 'planter' very close to embankment

The Bridge is described in the Planning Application Design and Access Statement as 'A new Iconic Form'.

Heathcote in the FT described it as *"a pseudo-organic design (it has a striated coarseness of something fabricated on a 3D printer) to the bum fluff foliage poking out from it in optimistic renderings, everything about this scheme suggests a sweatily nervous attempt to brand itself a "visionary project".*

"But that vision is not to achieve any purpose beyond its own existence."



SLIDE IR 10 © ARUP showing a few tourists on the Garden Bridge

It is a leisure destination masquerading as a bridge, bringing with it an estimated annual maintenance bill of £3.5m. (Equivalent to the construction cost of 35-40 homes/annum)

How a bridge **lands** as part of the urban infrastructure and architecture is a very important aspect of its design. It is about landscape and urban design. Usually a bridge flows on as a bridge or settles naturally as a street between buildings.

This continuity does not occur at either end of the GB, which is why I would describe the landings as ‘clunky’ – clumsy, awkward, and jarring, as the striped metal underbelly attempts a landing.

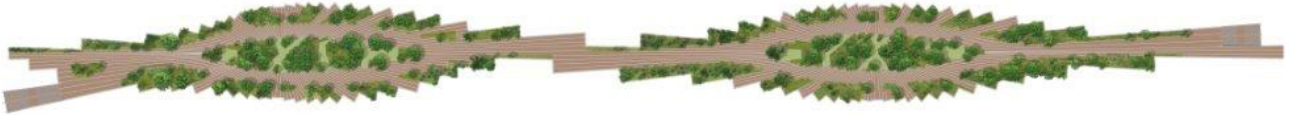
There is a suggestion that it aligns centrally with Arundel Street on the north bank, but surely then it should have continued past Temple Station and landed in the middle of Arundel Street – having been reduced from 6m to 4m (width of the Millennium Bridge deck) as a result of people leaving the bridge at Temple Station - and continued on as central pavement terminating at Aldwych. This would have really made a connection to Aldwych and Theatreland.

On the South Bank the landing design is highly controversial. It has sprouted a large Garden Maintenance building along with branded memorabilia retail shop(s), and a few toilets (apparently only 6 cubicles and 3 urinals). It will land people perpendicular to the already overcrowded east – west flow of the South Bank.



SLIDE IR 11 Millennium Bridge crowds

The Millennium Bridge has none of these, and was a bridge that opened up the logical connection from St Paul’s Cathedral to Tate Modern and The Globe. It can now look like this at peak tourist periods. Why add trees?!



SLIDE IR 12 The plan showing landscaped and deck areas the bridge

The landscaping of the Garden Bridge covers about 2,700m² – just over a third of a football pitch - of a total of 6,000m² of deck and walkways.

How wide are the paths? The documents state 6m. Most appear less than this, though the paths double around the trees. An educated guess is that there are about 2000m² of paths, and this would accommodate 2000 people (1m² / person) – and all feeling that this is not exactly a calm oasis or garden!

The bridge is clad in cupronickel, also known as ‘hotel silver’. This has good salt resistance - except the Thames is no longer very saline by the time it reaches here. Its funding is provided by Glencore , a multinational commodity trading and mining company which must repeatedly defend itself over reported accusations of tax evasion, involvement in environmental damage and human rights abuses, and this raises the question of *transparency*.

What would they get from the project in return? We are not told. This applies to all of the corporate sponsors, but it is particularly troubling for those that are ethically 'questionable'. Will London’s reputation and the bridge be tarnished as a result of who the donors are? This is happening at a time when public organisations like Tate and the British Museum and other institutions are being criticised for accepting money from the likes of BP and tobacco companies.

We should know what is happening – the bridge would be front-end funded by us, the public taxpayers. (Note: Charities can legally conceal this information - any concerns can be addressed to the Charity Commissioners)

What is a garden?

I believe it is a peaceful place in which to enjoy nature.

I fail to grasp the rationale behind the idea that the GB must be planted with 15m high trees which would destroy listed views. Trees impact on the structure, the structure gets bigger and higher, the bridge costs escalate and one other result is that the design cannot provide full ramp access at either end. The GB planning application states that this is because of the navigation channel clearance requirements. It is not. It is the

height of the bridge resulting from the chosen form and deriving from the desire for trees. Not enough land is available to allow a statutory inclined ramp. Lifts are required.

I have also found it difficult to identify what tree species would be used. Will they survive even if tethered? Or will they be discarded in a design change later? And what would this huge bridge look like without them if they don't thrive?

Security and Safety

The Paris attacks made tourist numbers drop in London. However, the whole of the Southbank itself had over 25 million visitors. This is a vast number of people, averaging around 70,000 a day and peaking probably in the order of 200,000. What counter-terrorism strategy will be imposed? We do not know.

Are we to understand that the Garden Bridge would represent a terrorist target?

The problem of security is not only capacity. Probably also of concern to the MET Police is that people may try to hide among the plants and surely the garden would offer wonderful possibilities for miscreant behaviour. Lighting levels will have to be high.

However, can lighting cover this risk? Security / safety inspections will be a regular feature of the bridge,

And presumably the brighter the lighting for security (and also for surveillance cameras), the more the bridge will become a beacon and less and less the tranquil oasis as presented by the Garden Bridge Trust in defiance of the most basic logic.

Would this make the bridge enjoyable to cross? Safety issues will ensure that it will be inaccessible late at night. It is not an open bridge to enjoy.

If the design were as audacious and inventive as the Eiffel Tower was in its time, there may have been a stronger case, but I have found no invention or audacity other than the colossal marketing hype and a design that has now grown too big and visually unbalanced in the river.

Cities are created by acts of willpower, and we have to show ours – and be sure that what we are saying makes sense for a future London where resources will become scarcer while the population continues to grow.

This 'Hybridge' is inconsiderate to the surrounding city, to the views from elsewhere of special landmarks, and to the spaces around its landings. It is over-scaled, now out of proportion, and its tree containers are placed awkwardly in the river. Flawed as it is, its serrated form with its shiny underbelly nevertheless shouts 'look at me'!

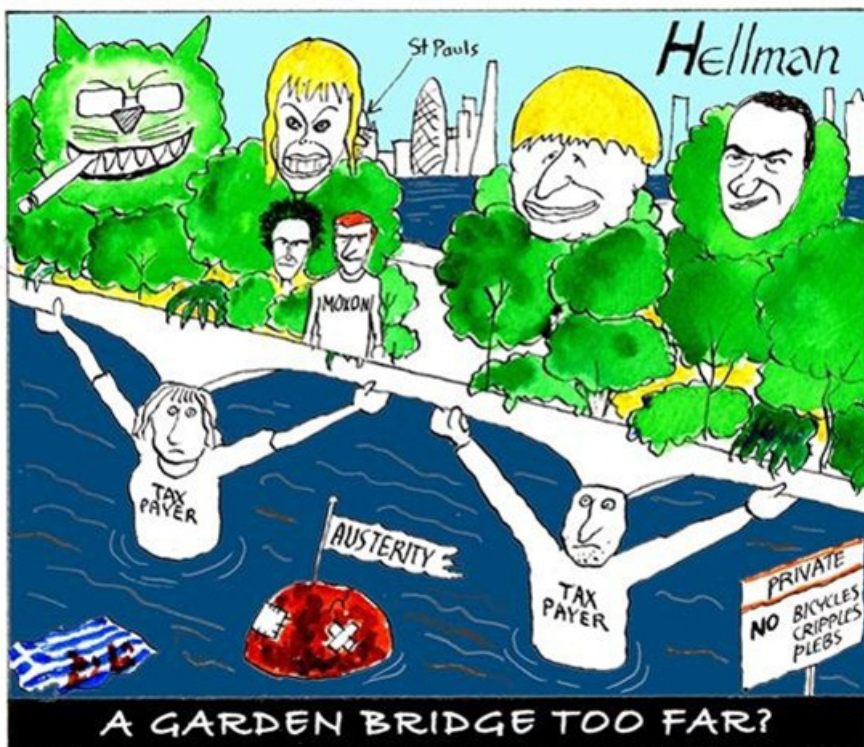
We cannot and should not be expected to support this vain folly – which we know already will not be accessible 24 hours a day, and would probably end up as London's first Oyster/swipe bridge because of bottlenecks and overcrowding at both ends and in the middle – incidentally making it useless as a quick commuter route.

It is a dangerous folly for London at many levels.

As Oliver Wainright's headline in the Guardian reported: **'London's Garden Bridge: 'It feels like we're trying to pull off a crime' (Thomas Heatherwick)'**

Take one vogueish designer, one national treasure and one icon-hungry mayor and what do you get? - A floating 'forest' across the Thames.

But can anyone actually say what the £175m garden bridge is for?



SLIDE IR 13 © HELLMAN cartoon

And a message for our new mayor Sadiq Khan:

Please do not fall for the proverbial image 'throwing good money after bad or 'in for a penny, in for a pound'. If £10m of public money has been spent so far – it's not too late by any stretch of the imagination to cut out now and avoid wasting another £50m of public funds, and the annual maintenance costs into the future.

You are surely wiser than to fall for that 'SUNK COST FALLACY'.

You should use your powers to demonstrate wisdom.

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