

# ARCHWAY BRIDGE ANTI-SUICIDE MEASURES

A design report prepared by David Richmond on behalf of the Highgate Society - November 2018

## Introduction

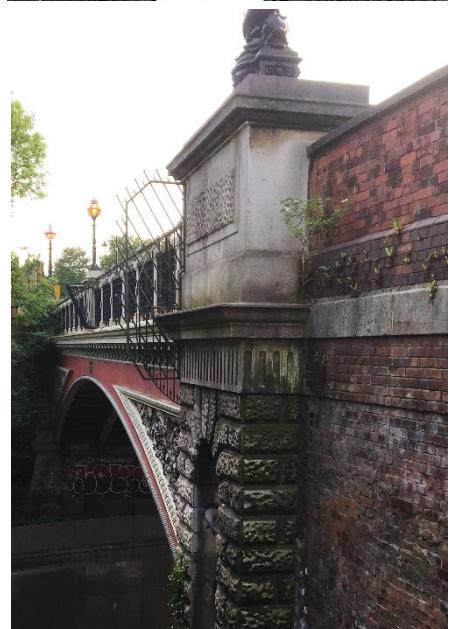
The Highgate Society, CAAC and Highgate Neighbourhood Forum were invited in September by Haringey to a meeting to discuss the anti-suicide measures being put forward by Haringey engineers. This meeting was only one day before the proposals were put before Islington Council, who, largely because of the pressing need for these measures, approved the plans. Haringey Council followed suit within a few days. It was clear from our meeting that the scheme was a fait-accompli but nevertheless we raised our very real concerns at the visual harm this would do to this valuable heritage asset. Similar concerns were apparently expressed by the Islington Councillors but not having a better alternative felt they had no option but to approve it. We feel there is a much better option available.

## Appraisal of the existing suicide measures

The existing measures which have been in place for many years consist of mesh to the inner



face of balustrade panels to prevent toe holds, spikes to the top rail and rotating spikes on an additional rail above that. The upper row of spikes do still rotate but only with effort rather than freely and are not really sharp enough or long enough to put off the determined jumper. That said the balustrade with its spikes is not the weakest link. The two end piers and the middle pier are protected by spiked fan screens on the outside of the bridge in theory designed to stop anybody walking along the outer face of the balustrade or jumping from the central pier. It is evident from the number of suicides that these preventative measures are not working. From video evidence of suicides it is apparent that the usual approach is to climb up onto the end wall which is fairly easy and from there step up onto the end plinth where the lamp standard provides a good solid hand hold. By climbing over this end plinth they by-pass the first fan screen on the outside. From there they descend onto the outer ledge of the bridge where there is a reasonably wide and level foot hold and the parapet provides a good handhold between the spikes. On the spiked fan screen, the spikes are too short and the edge of the screen has a steel rail to help support the spikes but which inadvertently provides a good handhold to allow the determined jumper to swing past it. Once past the spiked fan screen it is fairly easy with good foot and hand holds to edge across to the central section of the bridge over the roadway. The other more direct approach is to climb onto the central pier, again using the lamppost as a



steady hand hold and either just jump outwards past the fan screen below or lower oneself, with some difficulty onto the outside ledge before jumping.

## **Appraisal of the current proposals**

The approach taken by Haringey Engineers and their consultants has been to erect a barrier tall enough and strong enough to prevent access to the balustrading and the piers and to continue this at both ends beyond the piers so they can no longer be seen other than through this hideous fence. Where the fence crosses the abutment walls it is even taller and then finishes with a spiked fan screen of fine mesh. At first glance this appears to be a belt and braces foolproof solution but is an appallingly ugly addition to this grade II listed bridge. The actual appearance of the security fence as it would be seen on the bridge was never presented to the public or the planning committees of Haringey or Islington councils. We have prepared two accurate photo montages of what is proposed.



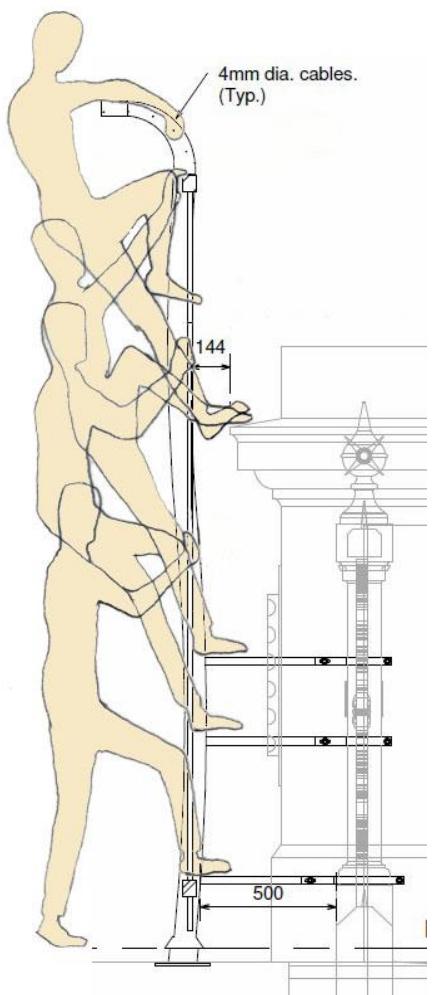
This image is copyright David Richmond Nov 2018

We presume that all can agree this looks more suited to a high security prison than to a grade II listed structure in a conservation area.

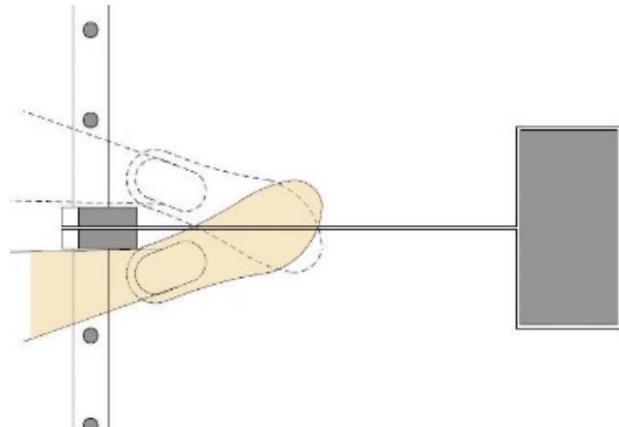
The first image below is as it would be seen silhouetted against the sky from the Archway Road, a far more realistic image than the one that was used to “sell” the scheme to the planning committees, second image below.



Despite the engineering led approach to this proposal there are still some possible weaknesses in the design. The vertical bars are spaced 100mm apart and are now thick enough at 20mm diameter not to bend in their height. The main support columns are fixed down onto the surface of the bridge and braced, to give them better support, using steel ‘saddle brackets’ fixed back onto the bridge balusters.



By putting one's feet between the bars and onto the bracing straps it would be possible to lift oneself up approx 1.1m above pavement level which would put the top rail of the fence within reach. From the top strap it would also be possible to get one's foot onto the edge of the plinth, getting you even higher. The vertical bars provide plenty of steady hand holds. We are not suggesting that this is then an easy way to get over the fence, particularly because of the overhanging wires but it is clear that the fence is only as good as its weakest link and we feel that these unintentional steps are a significant weakness.



The top of the fence is also within reach when one stands on the abutment walls at either end but at least here some vicious looking spikes have been added to the top edge of the fan screen. The spikes increase the security but hideously detract from the beauty of the lamp standards, see before and after images below.



Historic England and the conservation officers have apparently accepted this design which can only be on the basis that it can be removed in the future without any damage to the original listed structure. The only problem is why would it ever be removed, so we will probably all be living in the oppressive shadow of this monstrosity for generations.

### Alternative Proposal

Having been assured by Stephen Kelly 4 or 5 years ago that professional design input would be a necessary part of this project, we now realise that there has been none and now feel that the only alternative was to undertake our own independent study.

The problem was looked at in 2001 by Robert Dearman on behalf of the Hornsey Lane Association. The suggestions made by Robert Dearman, which went as far as a working mock-up at the BRE in 2007, should have been the starting point for the subsequent efforts to find a solution but it appears that they were not considered. Even with that scheme the major problem that was still not resolved was the circumvention of the barrier at the middle and end piers. Our proposal deals positively with the middle pier and completely leaves the end piers out of the equation, thus increasing security, reducing costs and having substantially less visual impact. We started by reviewing hundreds of different designs from around the world and by discarding any that were not 100% effective, we noticed a pattern emerge. There were some very effective barriers that do bear a resemblance to the one currently proposed, but their appearance was such that we discarded those too:-



That then left several that have proved to be 100% effective at preventing suicides and look a lot less forbidding:-





The stainless steel mesh and polycarbonate seen in these examples both allow fairly clear vision and the inward curve makes the barrier impossible to climb. Whilst the mesh appears to offer finger holds, in reality the wire is too sharp to carry one's body weight by the fingers alone. This has been proven by the use of this same mesh on dozens of high bridges in Switzerland. The illustrations above show the Grafton Bridge in New Zealand which was a suicide hot spot before this barrier was introduced. The curved polycarbonate prevents climbing and circumvention at the ends is prevented by carrying the polycarbonate down to cover the bottom ledge in the end panel, see right image above. This neatly prevents access along the outside of the bridge from the ends, there being no hand or foot holds for the width of the last panel, approx. 2m. You will notice that the last panel has been graffitied and this would be less of an issue with a fine mesh instead of the polycarbonate.

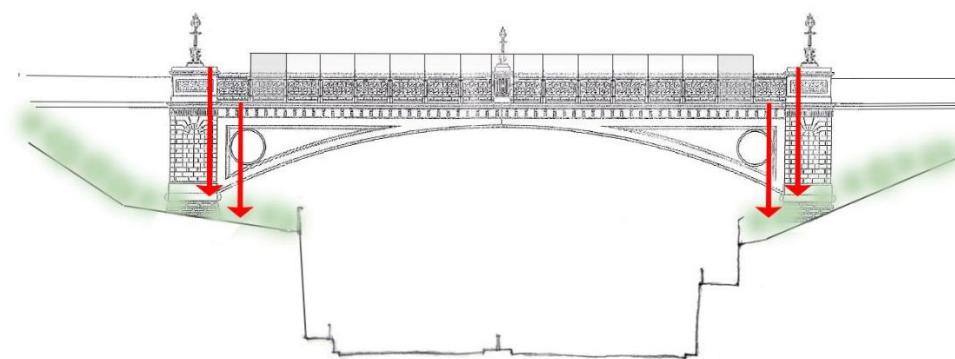
If the same principle was applied to the Archway Bridge it could look like this:-



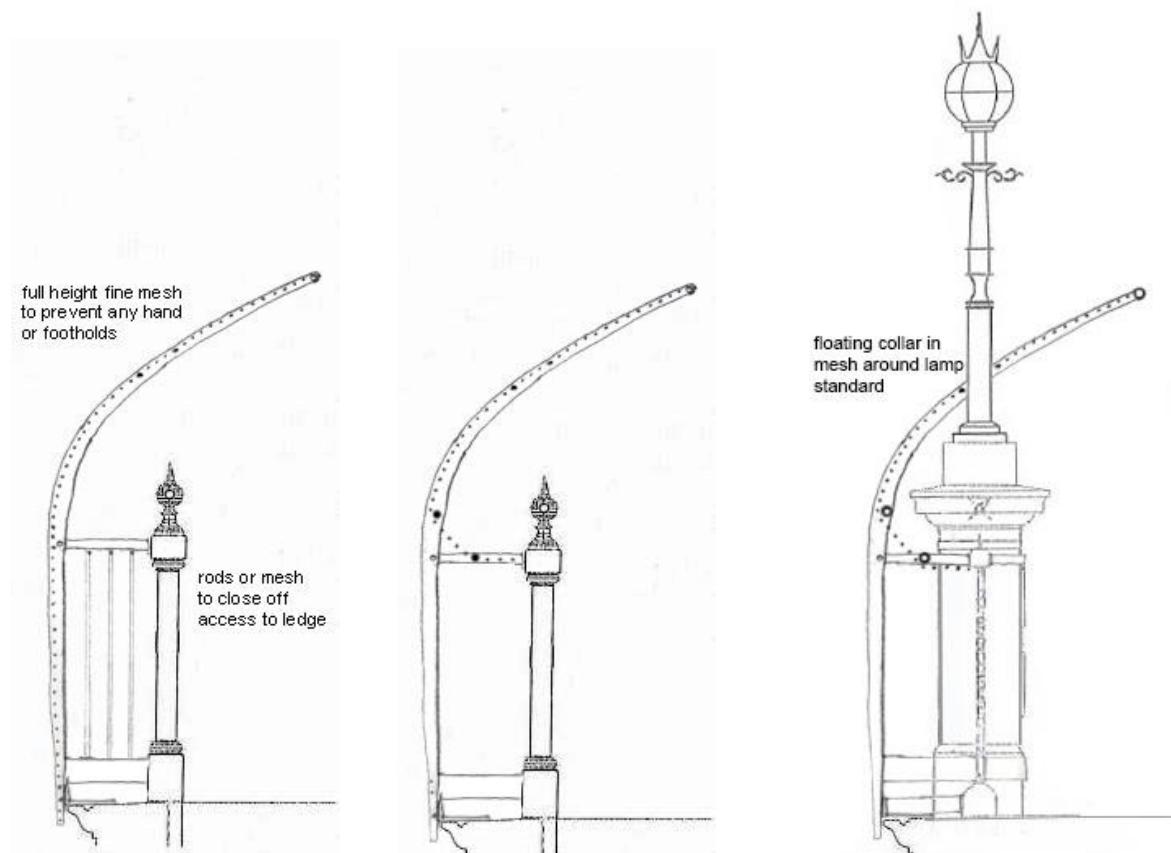
The end piers are completely open to be seen, as is the balustrade. The existing mesh panels attached to the balustrade can be removed so that the scrolled ironwork panels can be appreciated. In doing so, the footholds revealed would still not allow the fence to be climbed because of the overhang. Anyone climbing the end abutment walls to get onto the end pier and then down onto the outside ledge could get no further than the end mesh panel because it covers all foot and hand holds in exactly the same way as on the Grafton Bridge described earlier. These end panels are shown in darker grey in the image below.

Anyone falling or jumping from the pier or the ledge next to the pier would land on the sloping landscaped area, see image below. As this would be most unlikely to be fatal it is reasonable to assume that it would not be attempted. If it were, it is well away from the Archway Road.

The landscaping in the area adjacent to the bridge could also be deliberately softened with bushes and bark mulch.



The profile of the fence at the ends, in order to remove foot and hand holds would be as shown below left. The total height is identical to the current proposal.



Section through end panel

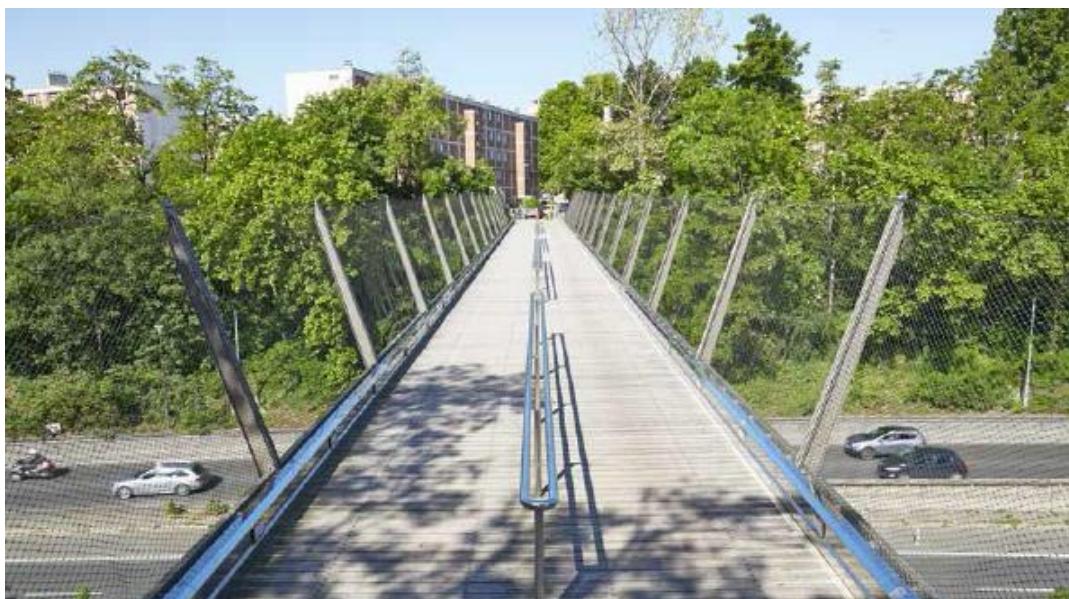
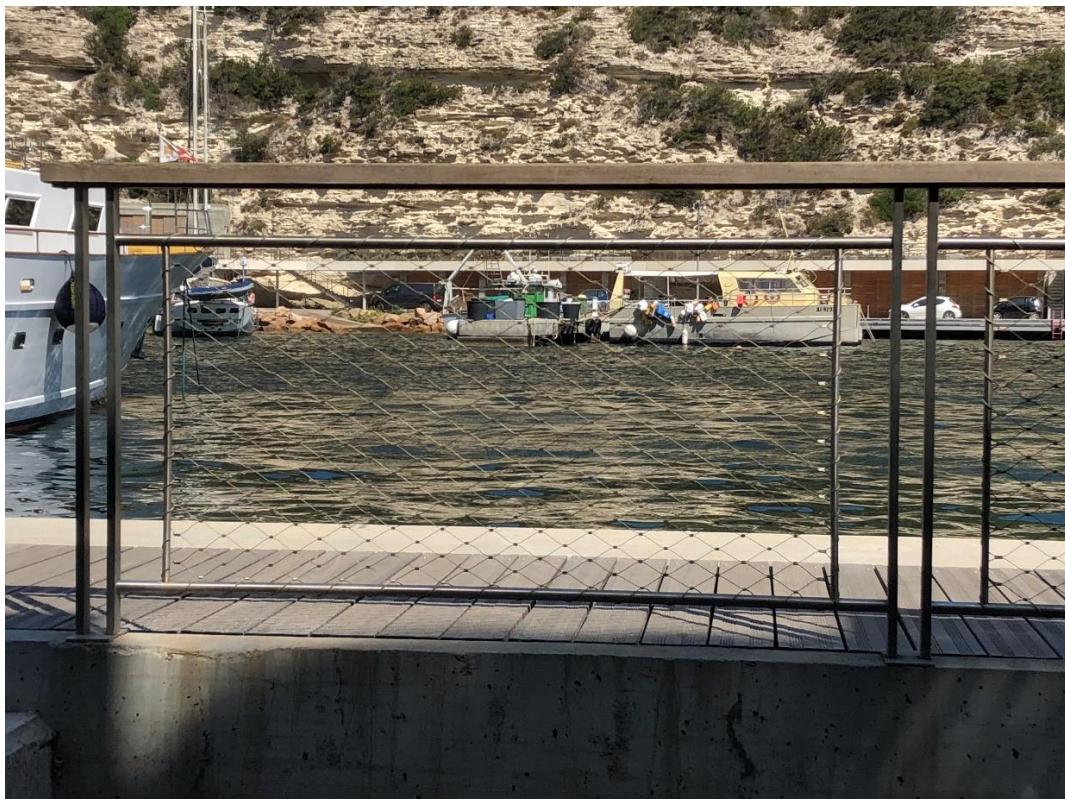
Section through typical bay

Section through central pier

The section through a typical bay, middle image above, has just the curved mesh panel running between the new top rail and the top of the existing balustrade. The curved posts give the shape to the mesh stretched between them. The curved posts are supported on the ledge and held back to the existing balustrade posts using the same saddle brackets as the current proposal. In this way the existing listed structure remains unharmed.

The central pier has in the past always presented a problem but by using the mesh and this particular shape of curved post, the mesh can be connected to an oval collar around the lamp standard. Anyone attempting to climb onto the central pier will find that the mesh is too close above their heads to be able to manoeuvre their way out to the cantilevered end of the mesh.

The mesh is almost transparent when seen from a distance as these images show:-



The appearance of this alternative proposal from the Archway Road would look like this:-



And as seen from the approach along Hornsey Lane compared to the current proposal: -



Current proposal



Alternative proposal

## **Summary**

The Highgate Society agrees completely with the need for these suicide measures and does not put forward this alternative solution with any intention of delaying the project. This alternative proposal uses considerably less materials and requires less fabrication, indeed if the fabrication of the current proposals is well under way then we are confident that much of what has been ordered or even made could be incorporated into this design. It should be remembered that this design uses less than a third of the materials and is considerably less than half the overall weight.

The 80 x 25mm posts could be re-shaped or cut and joined to approximate the new shape. Some of the saddle brackets could be used exactly as they are but fixed to the outside rather than the inside of the balustrades. The mesh is the one new component which would be required.

Both proposals will require safe access to the outside of the bridge balustrading to erect the fence. On the current proposal, whilst the fence panels themselves are accessible from the bridge, the saddle brackets require nuts and bolts to be fitted on the outside of the balustrade and obviously one cannot risk these being dropped onto the road below. Some form of cradle or cantilevered scaffold will be needed for both options and a very carefully worked out construction management plan.

To achieve this considerably better result, we believe that it is worthy of urgent and serious consideration.

David Richmond

Chair Highgate Society Planning Group.

05.12.18