



Kinetic Fountain, Beetham Plaza

Prepared for Merseyside Civic Society

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Rev. 01

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Document Origin

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1.0 Introduction & Brief

Clancy Consulting Ltd have been appointed by Merseyside Civic Society to undertake a visual inspection of the Kinetic fountain, Beetham Plaza, Liverpool.

Our brief was to attend site and undertake a visual survey of the exterior of the pool structure and the area beneath the pool. Following the inspection, undertake an assessment of previous and proposed loading configuration and report on the findings.

The report deals solely with the aspects referred to within it and is prepared specifically for the client.

This report is not for transmission in whole or in part to any other third party and we bare no obligation to any such third party for its content without our expressed permission in writing.

Such permission will not be unreasonable withheld and we confirm that we have no objection to you sharing the contents of this report with either building owner, their Insurers or various respective agents.

Our general inspection comprised a visual inspection of accessible parts of the structure. We did not break into the fabric of the structure.

Throughout the course of our inspection no covered, unexposed or inaccessible part of the structure were examined except for those identified within the report and we are therefore unable to report on a such part is free from defects.

This report is noted to the matters within it and does not constitute an appraisal of any aspect of the general condition or integrity of the building as a whole.

Our inspection was undertaken on the 8th March 2023.

Directions are taken as if looking at the object being described.

2.0 Description of Property

The kinetic fountain and receiving pool is situated on one side of Beetham plaza alongside Drury Lane. The plaza forms the roof structure to a 2 storey basement car park directly beneath.

From Drury Lane the plaza is accessed via a series of steps, and we understand that the alignment of these steps and extent of the high level piazza, was subject to re-landscaping works undertaken between 1997 and 2000.

The pool wall is approximately 1.5 m in height where it abuts Drury Lane (Photo 1). The face of the pool wall is rendered and painted.

From the plaza level, the height of the wall is approximately 600 mm (Photo 2) and is rendered and painted.

Beneath the plaza within the car park area, there is a line of columns with the underside of the slab at a lower level on the far side, towards Drury Lane (Photo 3). The lower soffit level extends the full width of the car park structure (Photos 4,5 and 6).

3.0 Inspection

Our Inspection externally does not indicate any evidence of distress to the structure of the pool or supporting structure.

In parts, there are sections of paint and render which have broken away from the face of the pool wall. There is no evidence within the plaza finishes of any underlying structural issues.

Within the car park, there is evidence of water ingress, staining and peeling of paintwork.

4.0 Discussion

From our observations, we did not observe any indication that the existing structure would not be able to sustain the loading for which it was originally designed.

The increase in water depth from the current 100mm depth to the proposed 406mm depth has been assessed allowing for the overall volume anticipated and we understand this increases the total load from 4.56 tonnes to 23.5 tonnes. This equates to 3.85kN/sqm.

We understand from a review of the information that the depth of water within the pool was originally 406mm and it is reasonable to assume that the original structural design accommodated this.

The works undertaken to the Piazza in terms of raising the level utilising void formers would have added very little load to the supporting structure.

The increase in height and thickness of the pool wall will have added an additional line load, essentially on the line of the pool wall structure. It is also reasonable to assume that allowance would have been made for an imposed load on top of the coping itself.

With reference to the design code at the time the structure was designed, this being CP3 Chapter V, 1952, there is a design imposed load for public pavements over basements of 200 lb per sq ft, which equates to 9.5kN/sqm.

It is not clear of the overall dimensions for the increase in wall width and height but from the information provided it would appear to be somewhere in the region of 675mm wide x 1m high. This would result in an additional line load on the wall and slab of approximately 5.5kN/sqm.

The loading for the wall of 5.5kN/sqm and the loading for the 406 mm depth of water at 3.85kN/sqm are both less than the likely imposed load that the structure would have been designed for, this being 9.5kN/sqm.

There are 2 options proposed in terms of alterations to the wall and coping.

Option 1 – Remove existing coping, reduce height of outer wall to the height of the original concrete wall and add a new lightweight triangular coping.

Option 2 – Remove existing coping, remove outer wall and block leaving existing concrete wall and add a new lightweight triangular coping to the original concrete wall.

Both options prevent any imposed loading being transferred directly to the wall line and as such the added capacity from this over the width of the wall equates to 6.4kN/sqm. The additional removal of dead load due to either the reduction in height of the wall or the removal in its entirety will provide additional capacity.

5.0 Conclusions & Recommendations

Option 1 does have a slight load increase compared the current layout as we will retain the blockwork wall to the full perimeter of the pool, and we are adding additional weight due to the water level. This loading is less than what the structure has likely been designed for.

Option 2 will certainly reduce the load on the slab as we are removing the blockwork to the perimeter to the pool. The proposed results in an imposed loading which is no worse than what was originally constructed.

Both options, in our opinion will not increase the imposed load on the structure for which it will have originally been designed for, and there are no obvious visual signs to indicate that the structure could not safely accommodate this.

6.0 Photographs

Photograph No. 1 - View of pool wall from Drury Lane.



Photograph No. 2 - View of pool from Plaza.



Photograph No. 3 – Line of columns within basement.



Photograph No. 4 – Lower underside of slab.



Photograph No. 5 – View within car park.



Photograph No. 6 – View within car park.

