

As Designed 1962

As Opened 1967

Restoration of the Piazza Fountain, Liverpool

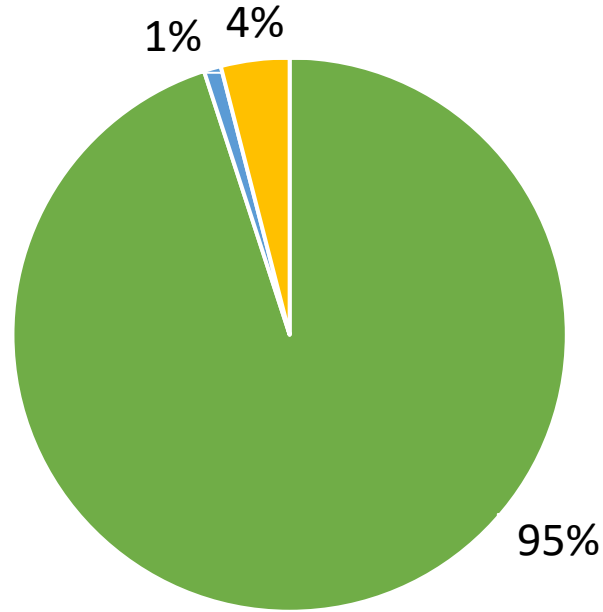
- Richard Huws' sole surviving fountain
- Earliest & finest of only 2 'bucket' fountain in the World
- One of Historic England's "*most fascinating*" listings

Merseyside Civic Society

2: Restoration of the Piazza Fountain, Drury Lane, Liverpool

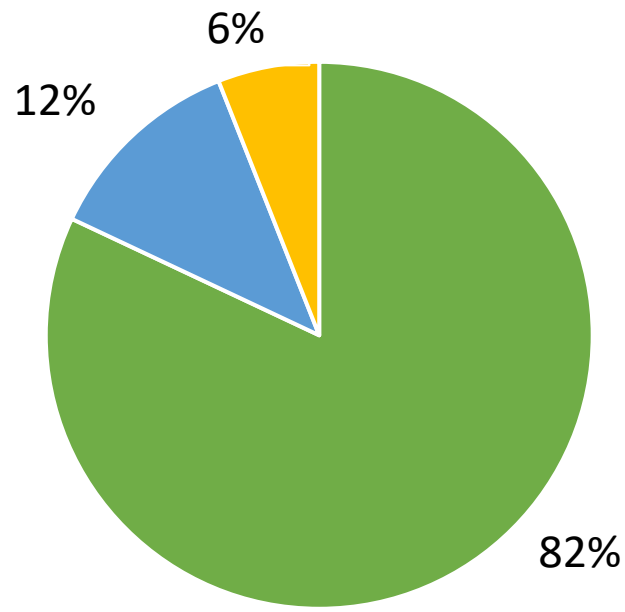
Results of Engage Liverpool's online, public questionnaire (131 Respondents)

1: How should we approach the restoration?



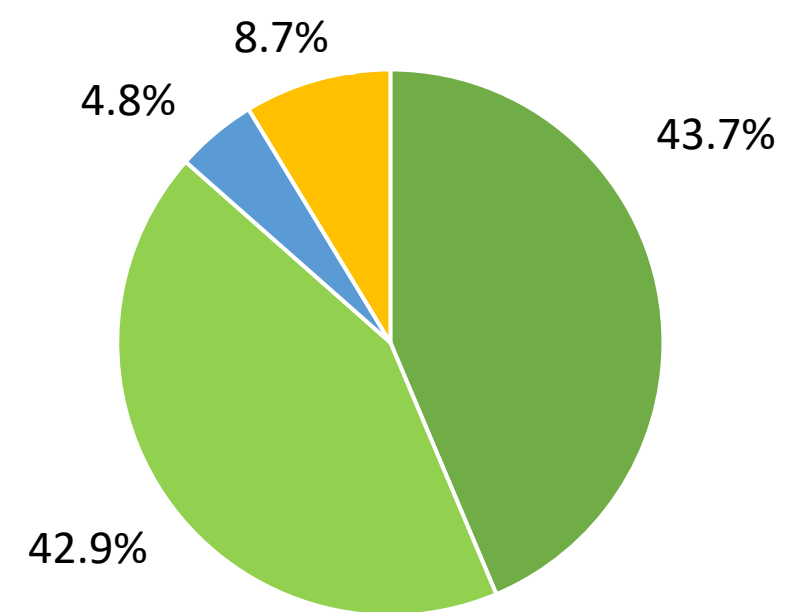
- RESTORE:** Fully return the fountain to its original appearance and performance.
- REPAIR & MAINTAIN:** Cheaper but would not restore the 1967 look of the fountain.
- No preference either way

2: Should we restore the original 420 mm water depth?



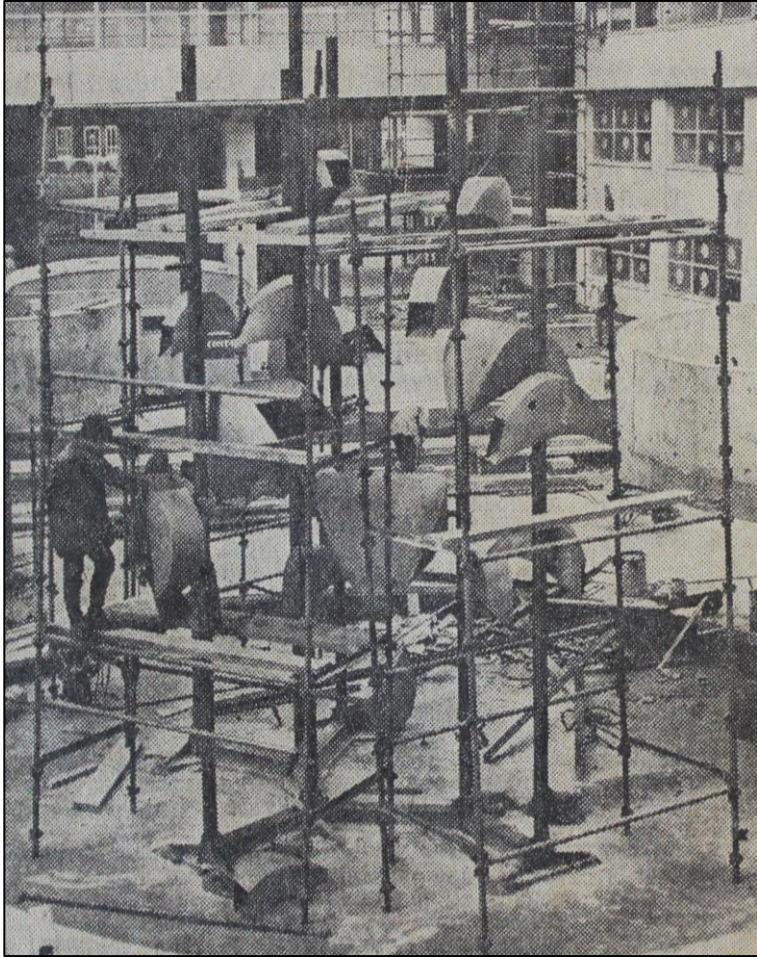
- RESTORE:** Restore the original 420mm depth of pool and install new Health & Safety measures.
- MAINTAIN:** Leave the water at its current 100mm depth and accept continued loss of waves in pool.
- No preference either way.

3: Should we restore the fountain's original wall finishes?



- RESTORE:** Restore the original finish with glossy black ceramic mosaic tiles.
- RENEW:** Use natural slate mosaic tiles, more in keeping with the current piazza.
- MAINTAIN:** Retain the current finish and colours of the fountain.
- No preference either way.

3: Restoring the Base & Height of the Piazza Fountain



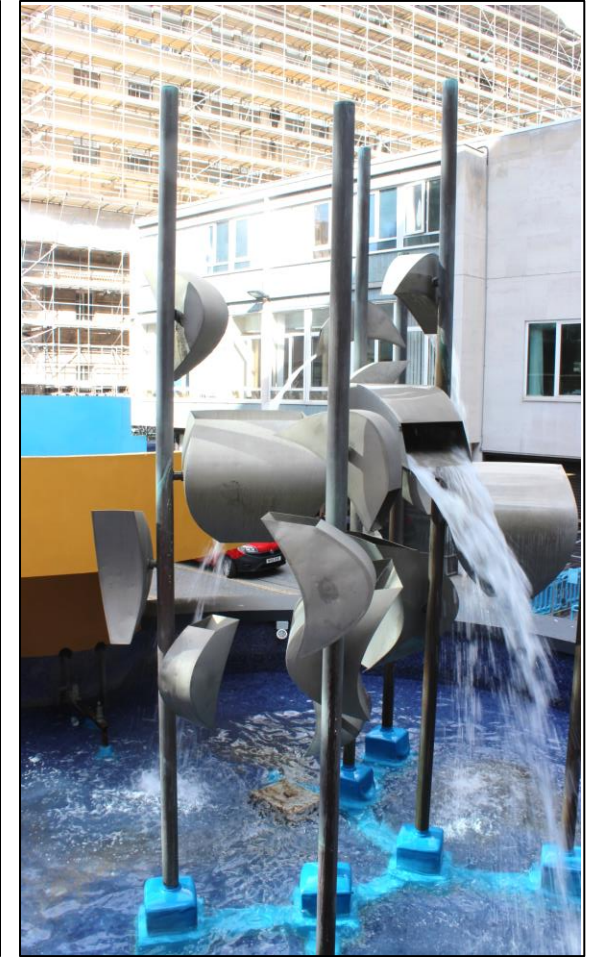
Installation of fountain, 1966/67

Showing original metal manifold base



Opening 2/5/1967: Fountain rises out of water

Base fully concealed under waves & white water



Current blue base

Encased & very prominent

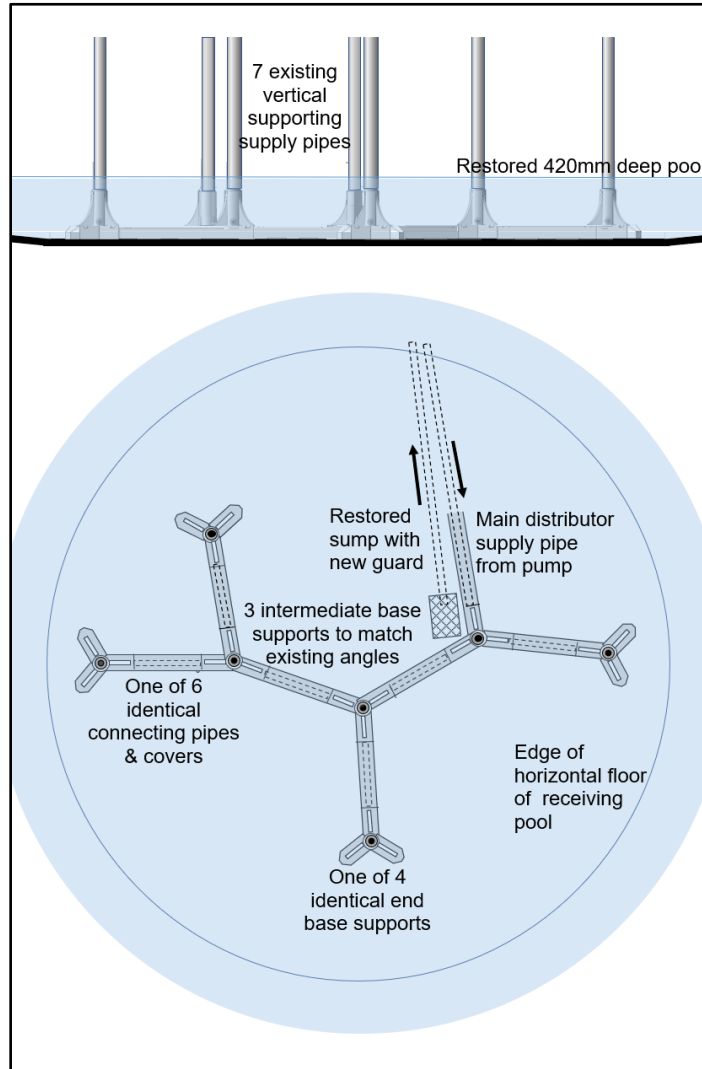
- ❑ Original manifold base strengthened by encasing in concrete and fountain height reduced by some 400mm (possibly prior to 1997)
- ❑ New bright blue waterproof covering applied to concrete (circa late 2017 or early 2018 - recently re-painted)

4: Restoring the Base & Height of the Piazza Fountain



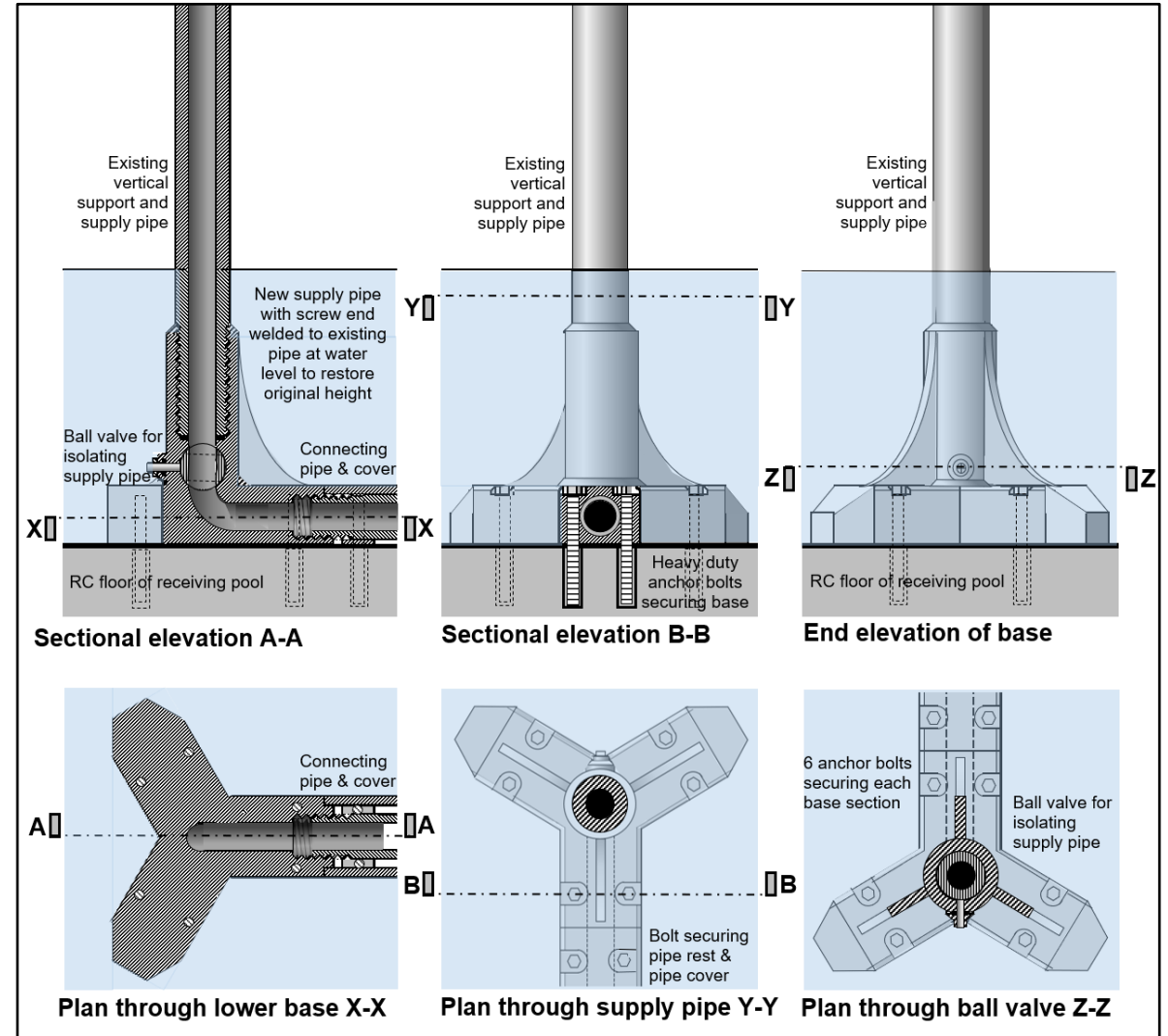
Cracks in existing base

(recently patched up and repainted)



Elevation & plan of new manifold

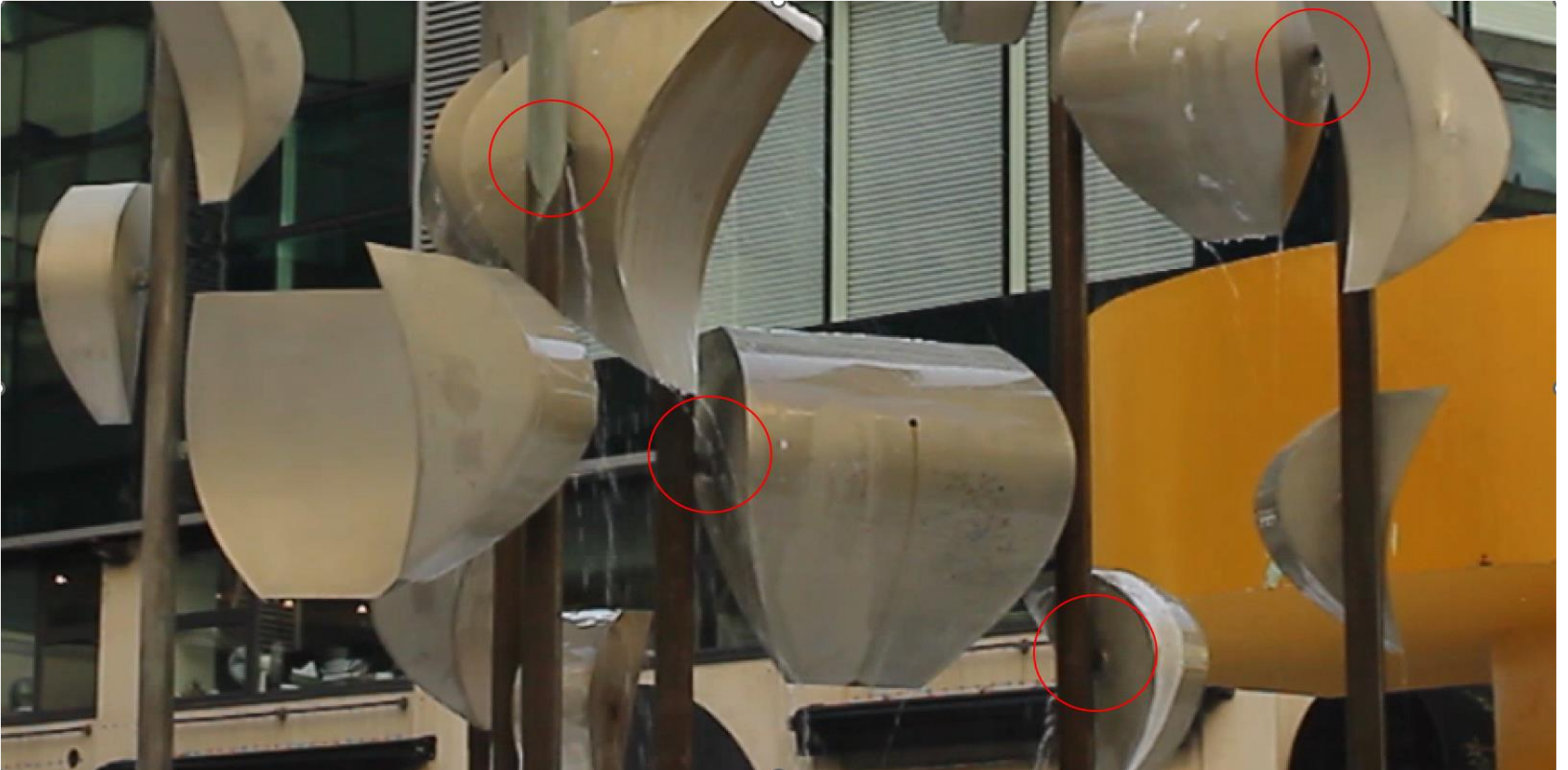
Fabricated in 7 base & 6 connecting parts all dismantlable for future maintenance



Sections, elevations & plans of a standard end base part

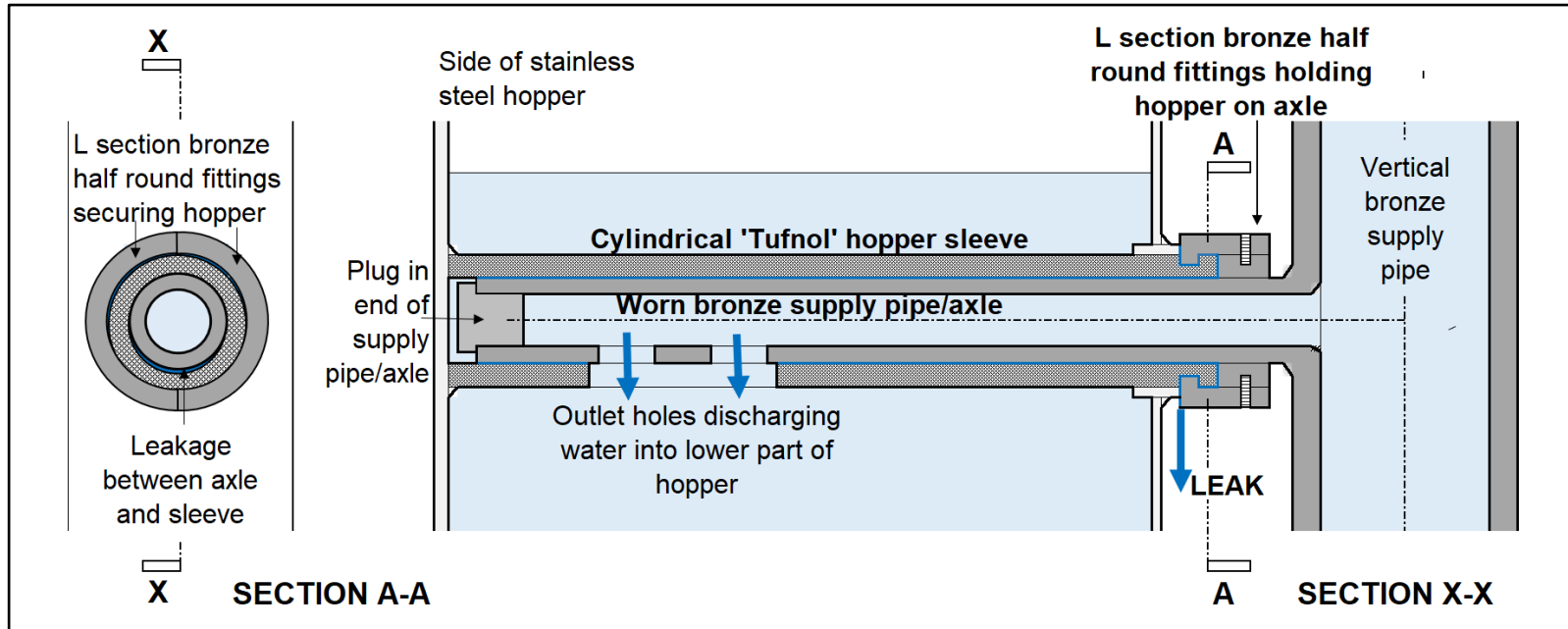
New supply pipes welded to bottom of existing 7 verticals at water level and screwed into bases to restore original height of fountain

5: Restoring the Actual Fountain to Eliminate Leaks from Hoppers/Buckets



Photograph of the Leaking Piazza 'Bucket' Fountain (Buckets leak once filling water reaches central axle/supply pipe)

6: Restoring the Actual Fountain to Eliminate Leaks from Hoppers/Buckets



Sections through the existing bearings of one of the 14 smaller cantilevered hopper/ buckets.

SECTION A-A through existing L-section bronze half round fitting

SECTION X-X through existing revolving hopper and fixed vertical & horizontal supply pipes



Cylindrical 'Tufnol' hopper sleeve
through centre of smaller hopper/bucket



Worn bronze supply pipe/axle
causing leaks between axle and 'Tufnol' sleeve

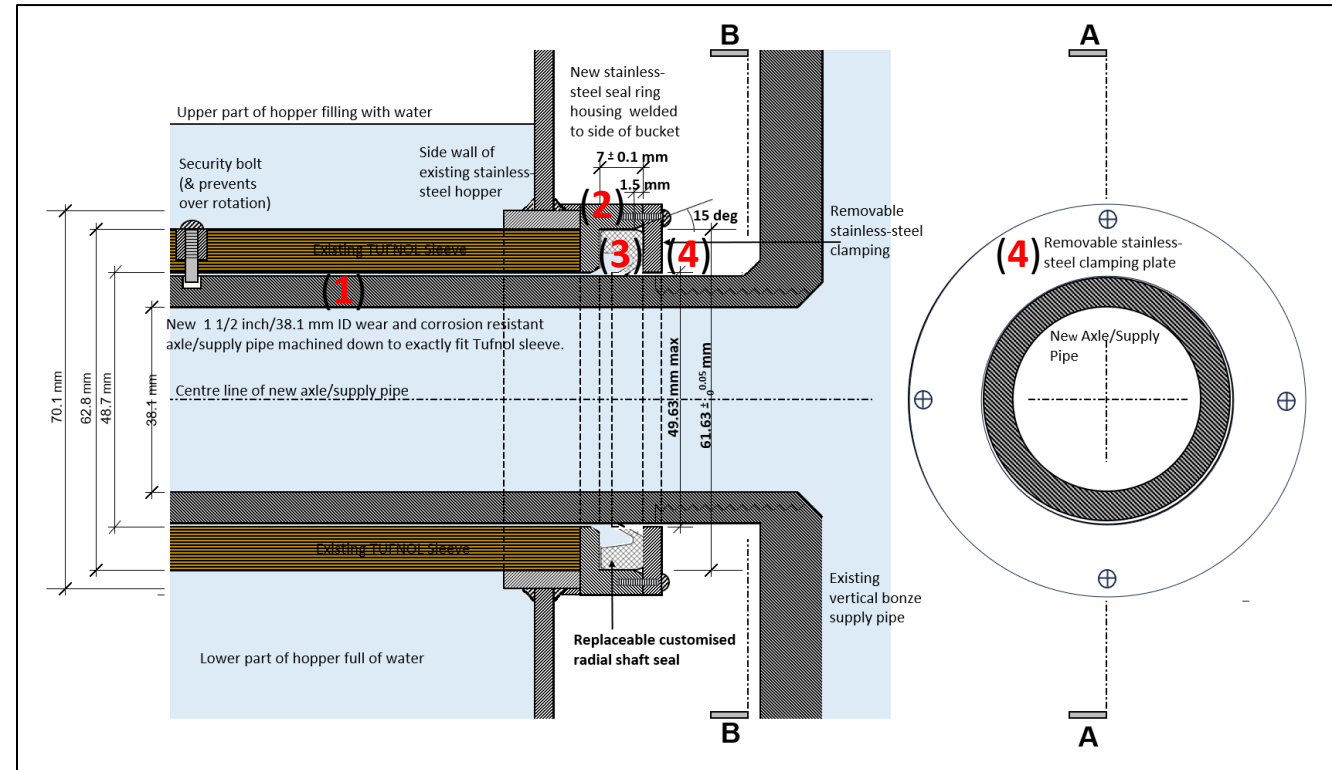


Half round fitting removed
shows areas from which 'buckets' leak

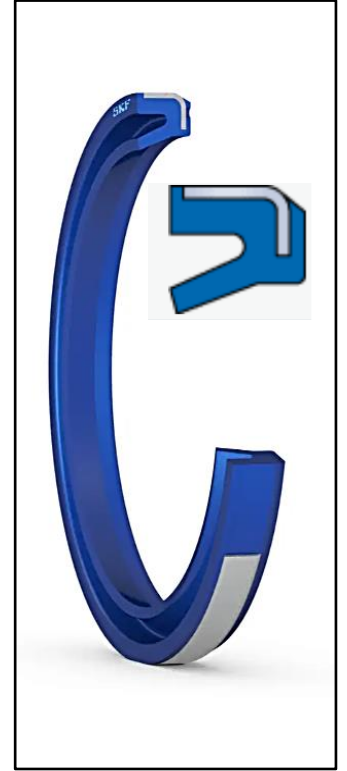
7: Restoring the Actual Fountain to Eliminate Leaks from Hoppers/Buckets



Drop & leak on larger 'bucket'
Cause as for smaller buckets



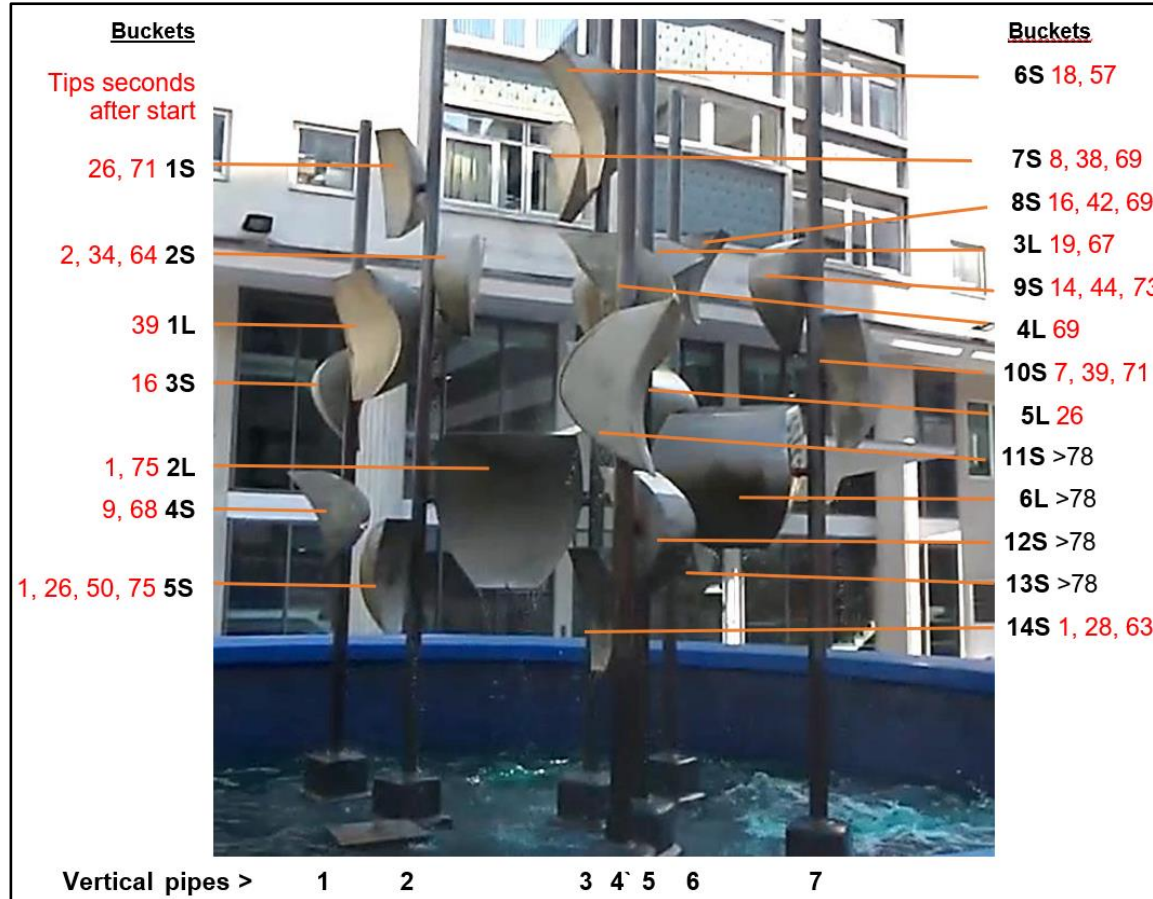
Proposed customised seal in new stainless-steel ring housing
welded to side of existing hoppers & secured by new clamping plate



Similar MCW wiper seal

- 1) Replace all worn bronze axles/supply pipes** (with more wear/corrosion resistant cupronickel or phosphor bronze pipes)
- 2) Weld new stainless-steel housing to side of hoppers/buckets** (to replace projecting TUFNOL sleeve & existing fittings)
- 3) Pressure fit new radial shaft seal in housing** (flexible lip of seal held tight against new axles by water pressure)
- 4) Secure seal in place by new stainless-steel clamping plate** (Remove to renew seal as required)

8: Restoring the Original Tipping Frequencies of the Hoppers/Buckets

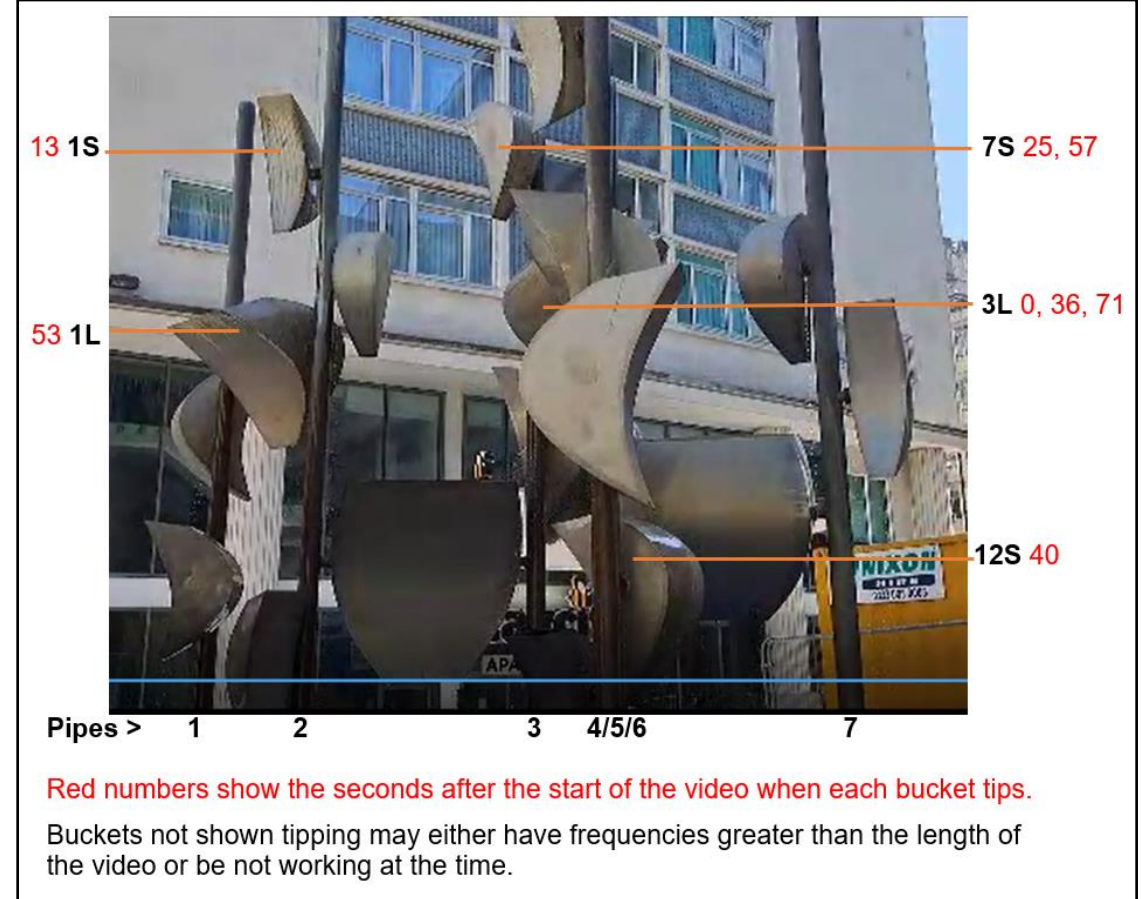


YouTube video of August 2013 - Duration 78 seconds

- Number of buckets shown tipping – 16 of 20
- Cascades shown - 36 (33 in first 71 seconds)
- Number of times 2 or more buckets tip together - 7
- Shortest tipping frequency of a bucket – 27 seconds

Original 1967 Tipping Frequencies even Shorter than in 2013

Fastest small bucket tipped every 15 seconds and slowest large bucket every 90 seconds with others ranged in-between



Friends of PF video of June 2023 - Duration 71 seconds

- Number of buckets shown tipping – 5 of 20
- Cascades shown - 8
- Number of times 2 or more buckets tip together - 0
- Shortest tipping frequency of a bucket - 32 seconds

9: Restoring the 420mm Pool Depth and Resulting Wave Effects



Original appearance with 420mm of water, 1967

3rd of 4 architectural interest reasons for fountain's listing

"Creates a dramatic visual and acoustic display by replicating the sounds and movements of a stormy and tempestuous sea, ..." Official List Entry



Appearance with 100mm of water

This "... particularly apt symbolism in the international port city of Liverpool" is currently non-existent

Restoration will fulfil this reason for listing by restoring the 420mm water depth and the consequent wave movements and sounds

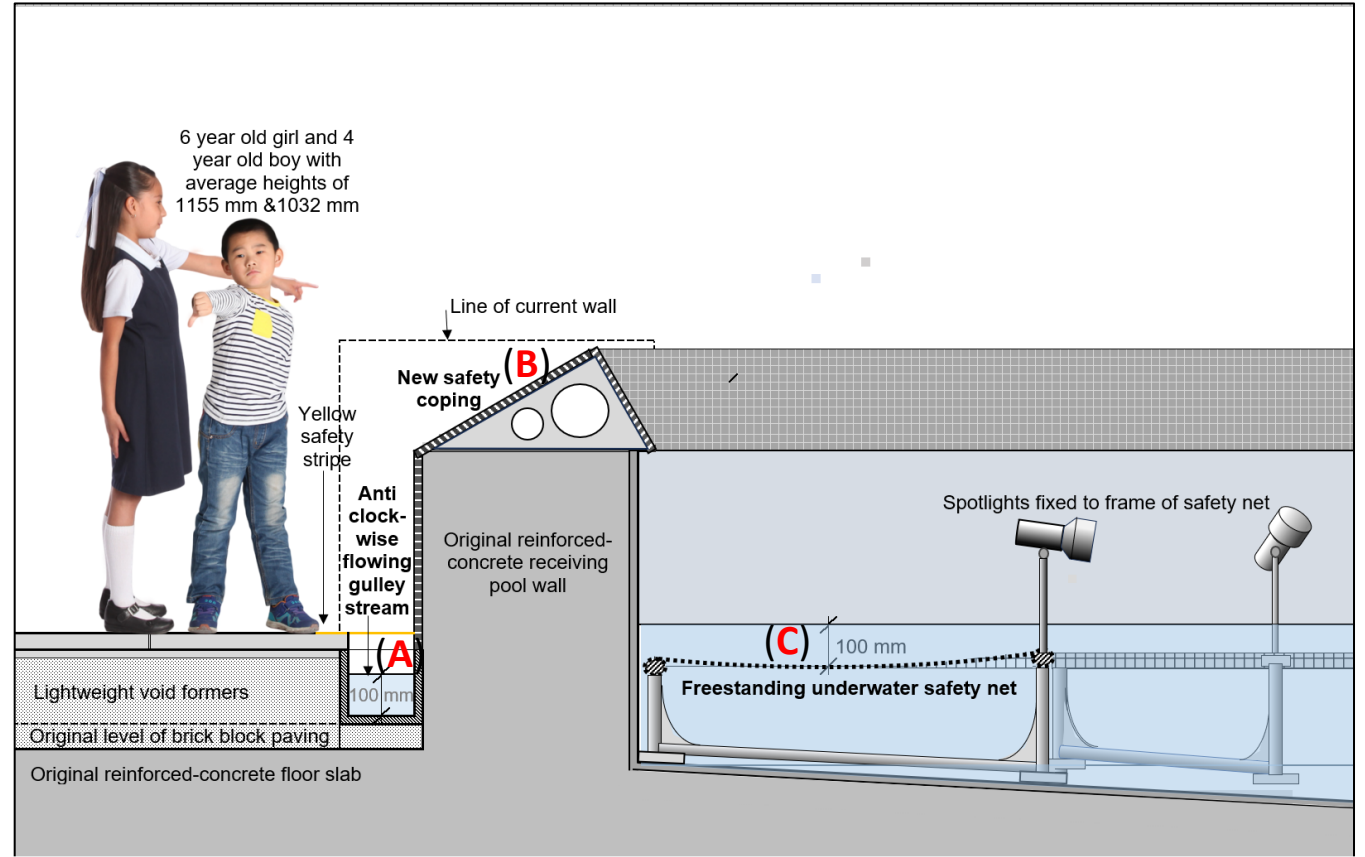
10: Restoring the 420mm Pool Depth and Resulting Wave Effects



Current wide flat coping on low pool wall

Encourages children to climb onto, sit and stand on rim - increases risk of small children falling into new deeper water and invites others to paddle in pool.

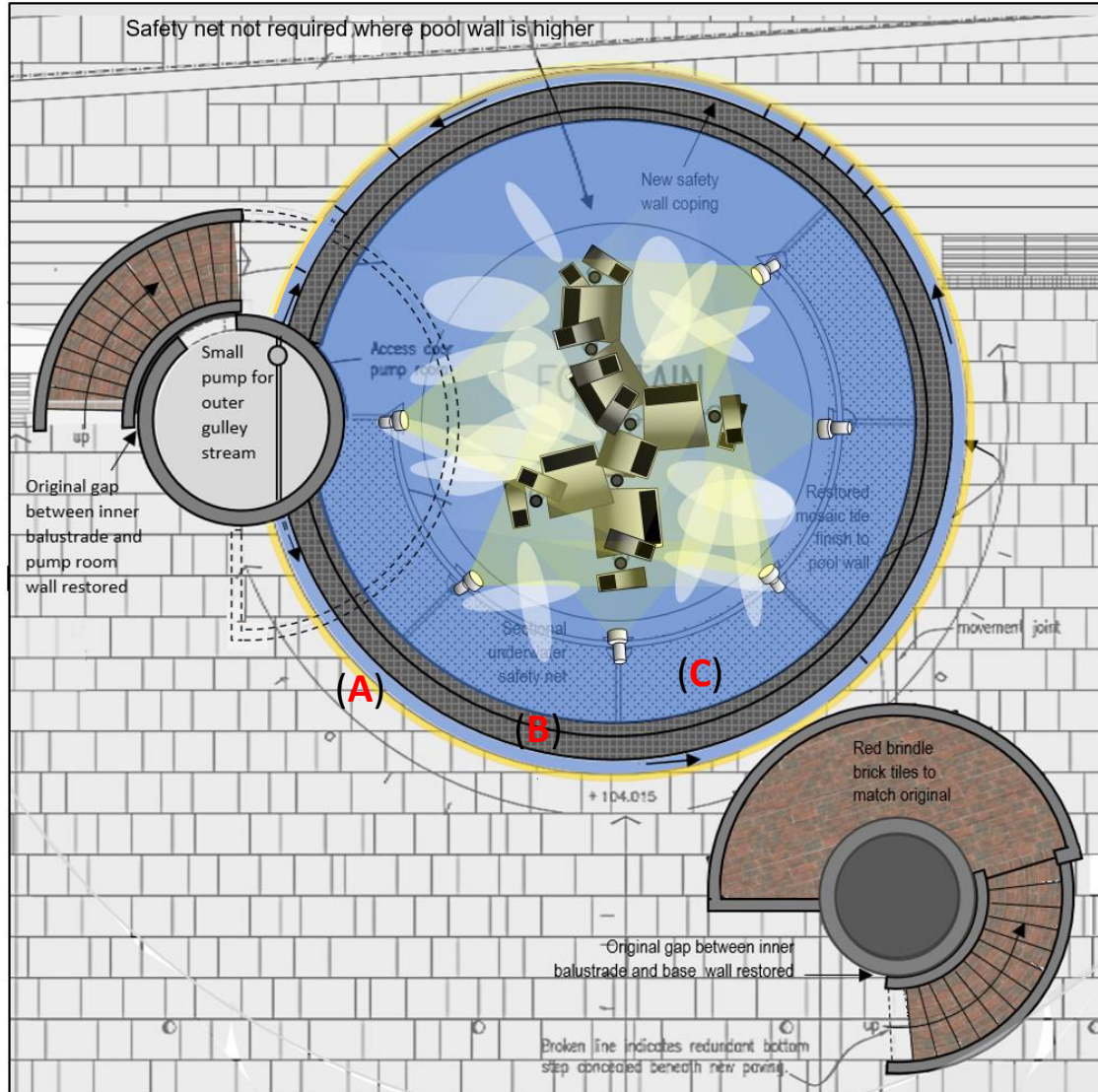
Water depth above 100mm not considered safe.



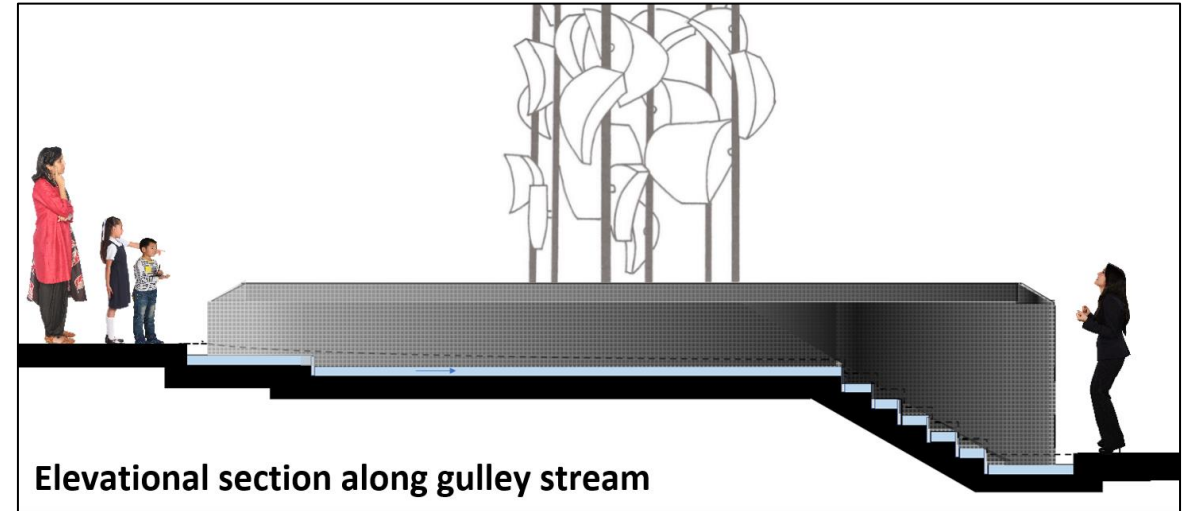
Three possible safety measures

- A) Restore original thinner wall width & form shallow stream around base**
Provides barrier & distracting safe water feature for small children
- B) Replace flat coping with triangular safety coping**
Stops people from sitting, standing or walking on rim of pool
- C) Install a freestanding underwater safety net**
Catches small children still falling in & prevents paddling in pool

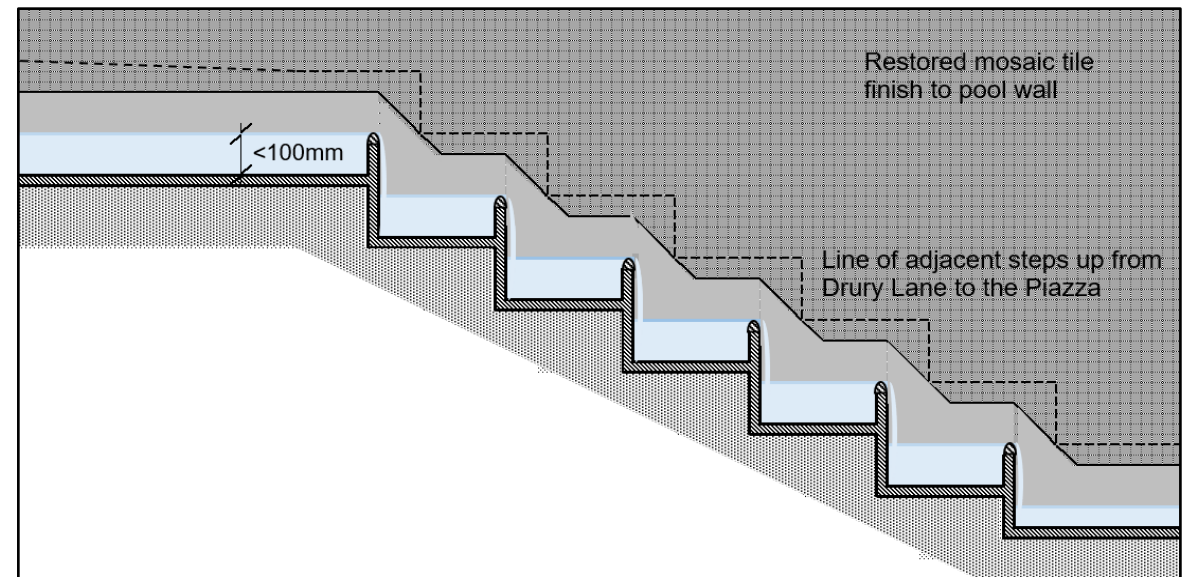
11: Restoring the 420mm Pool Depth and Resulting Wave Effects



Plan of fountain, showing all 3 possible safety measures

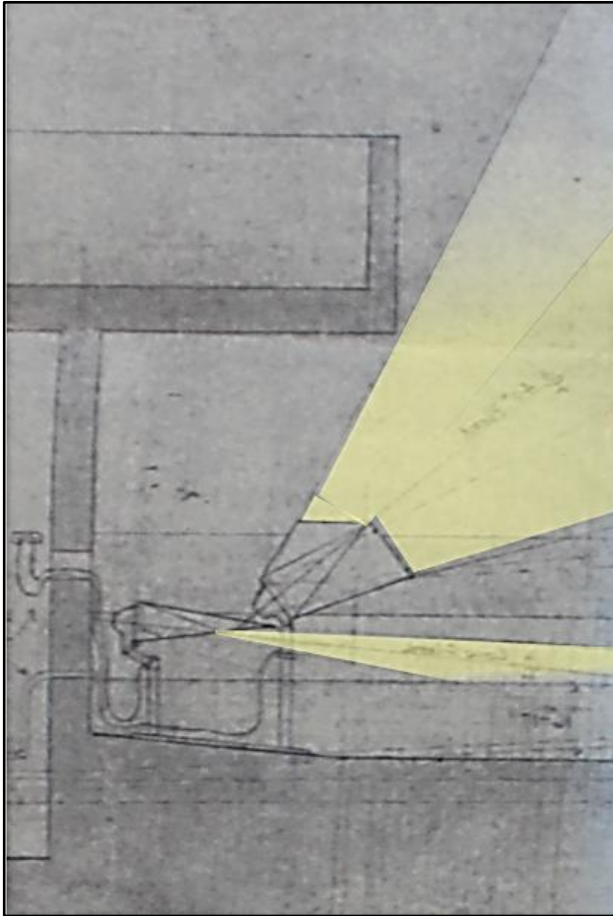


Elevational section along gulley stream



Section through cascades alongside steps from Drury Lane

12: Restoring the Lighting of the Fountain to be Closer to the Original Scheme



Design of original 2 floodlights

freestanding in receiving pool

Broad 40 deg upward floodlight
focussed on buckets/cascades

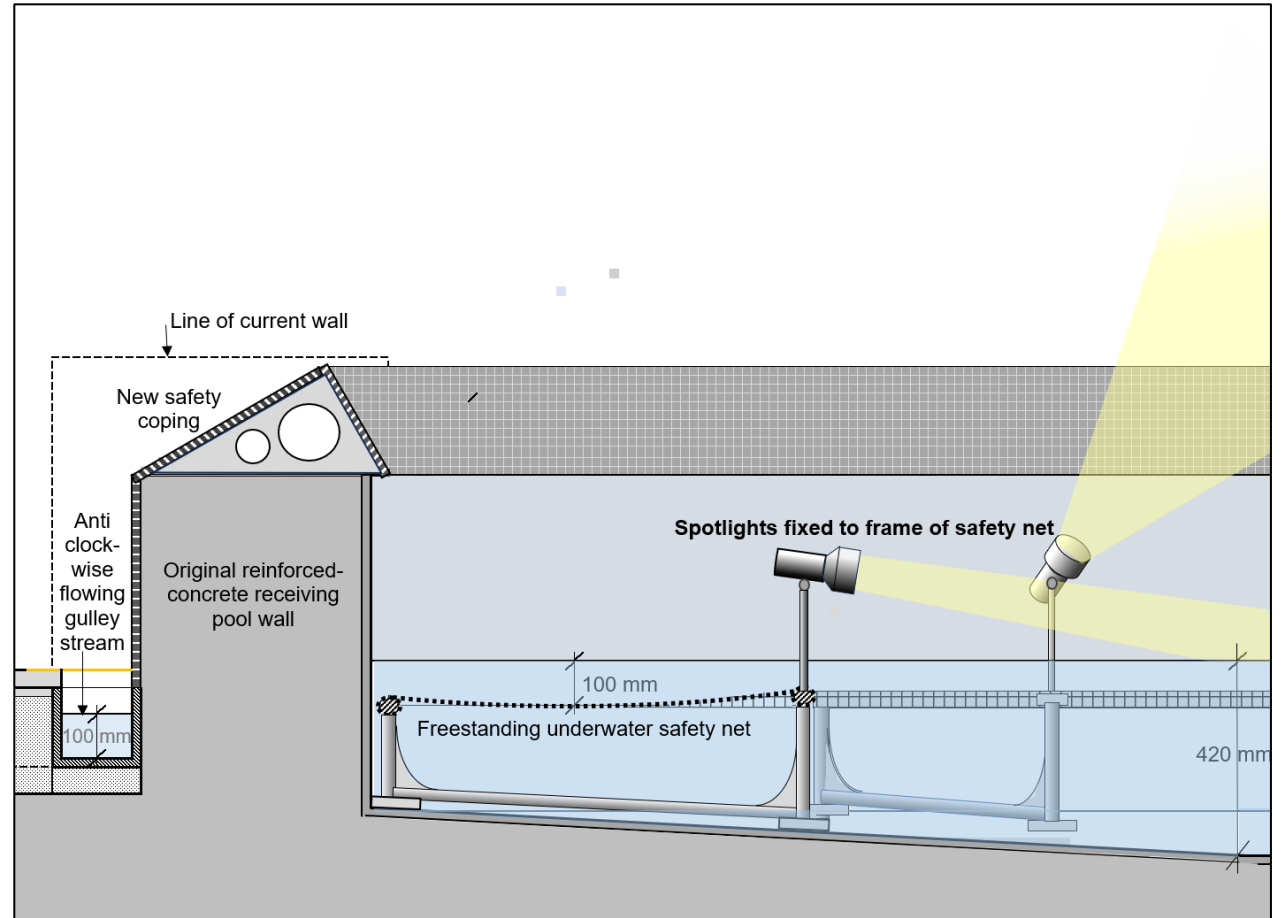
Narrow downfacing floodlight
focussed on waves in pool



Current spotlights

fixed to pool wall

(Shown torn off, but
recently repaired)



Six new spotlights on freestanding frame of safety net

Nearer to buckets and no longer in easy reach of vandals

Waterproof spotlights alternately focussed on buckets/cascades &
resulting waves in the receiving pool

Wiring for spotlights fully concealed in tubular framework of safety net

13: Restoring the Pump Room and Renewing the Pump Room Equipment



Original Bronze Door

Restore original bronze 1967 pump room door



Original Main 3-Phase 17.5hp Pump

Replace original fountain pump with a:-
1. Modern main pump of comparable capacity but significantly more efficient, &
2. Smaller auxiliary twin impeller centrifugal pump circulating the gully streams



New and Old Sand Filters

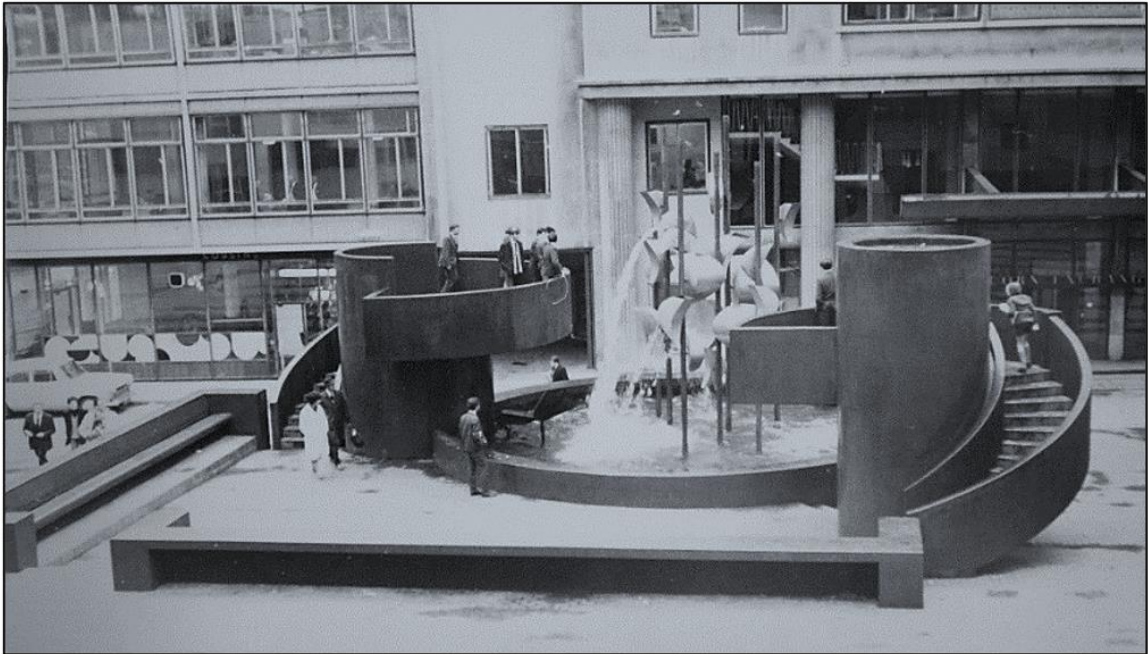
Replace current filters with:-
1. inline heavy & fine particulate stainless-steel filters,
2. UV treatment system, and
3. Automatic chemical dosing



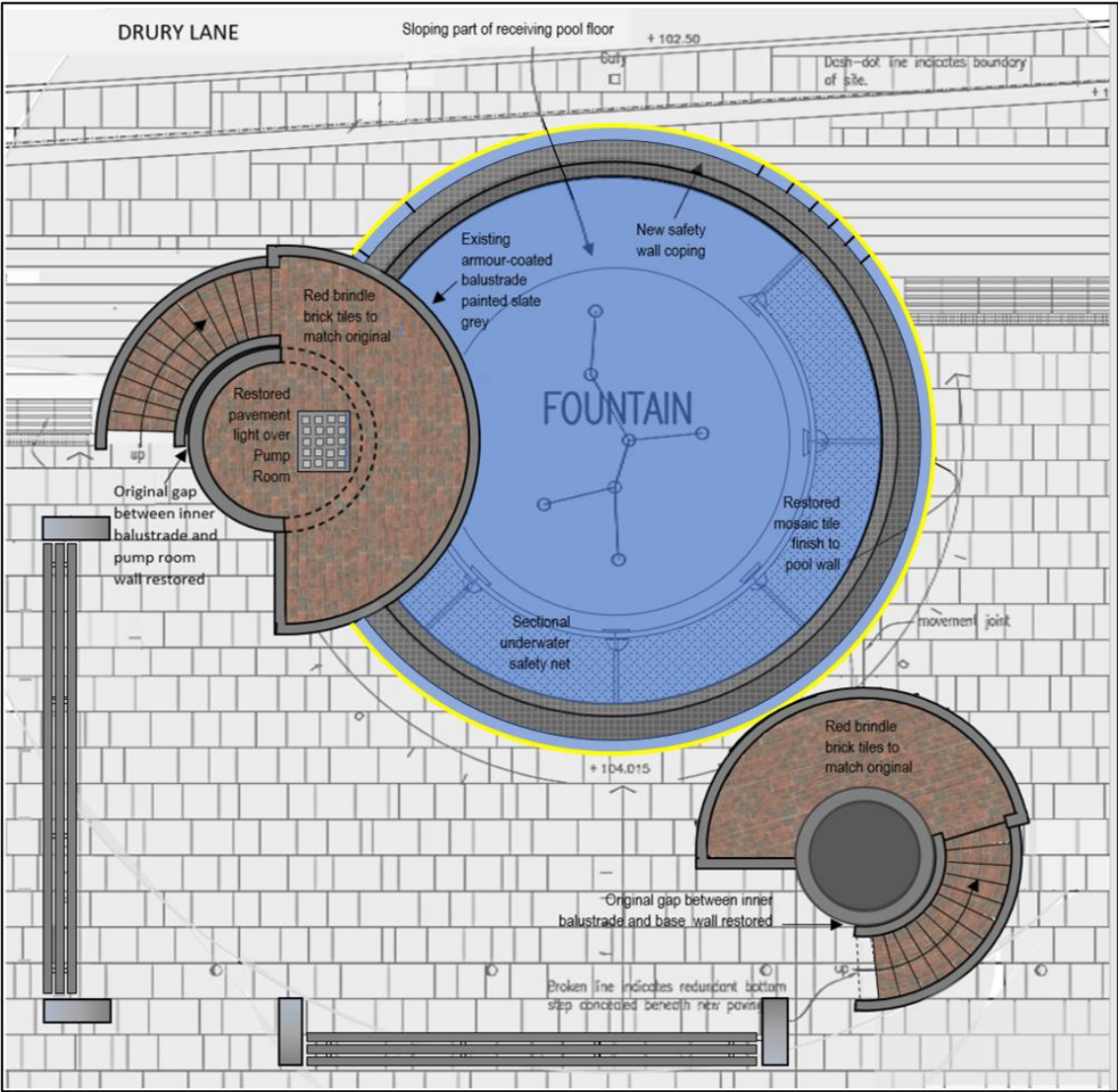
Current Electrical System

Replace and update electrical control system as necessary

14: Re-instating the Seating at the Piazza Fountain

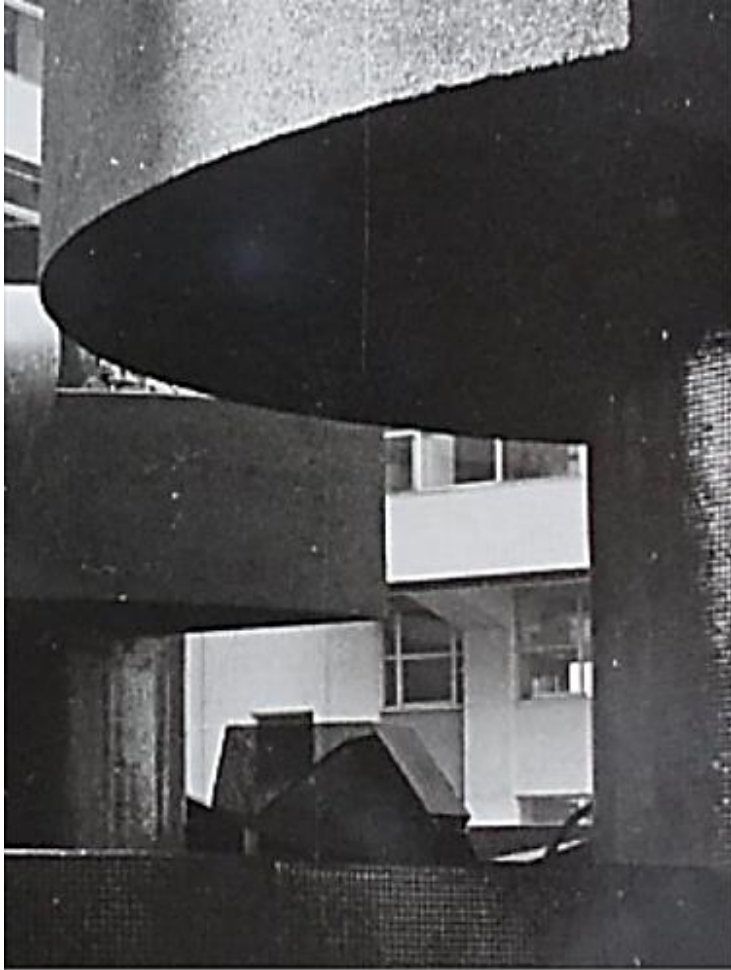


Original seating & its extensive use at lunchtime, 1967
Reinforced concrete seating removed between 1997 and 2000



New bench seating (& litter bins) located to match original
Reinforced re-cycled plastic slats, stainless-steel supports & bins

15: Restoring/Renewing the Fountain's Original Wall Finishes and Darker Colours



Original finishes of pool & platform walls

Richard Huws chose dark finishes to highlight the white cascades



**Surviving area of original
black ceramic mosaic tiles**



Current colour scheme on the all rendered walls

"With regards to a new permanent colour scheme, I think either ... [black or slate grey] would be an enhancement on the current situation. Evidence of the original design/appearance is very useful and helps justify the works."

Liverpool City Council's Conservation Officer

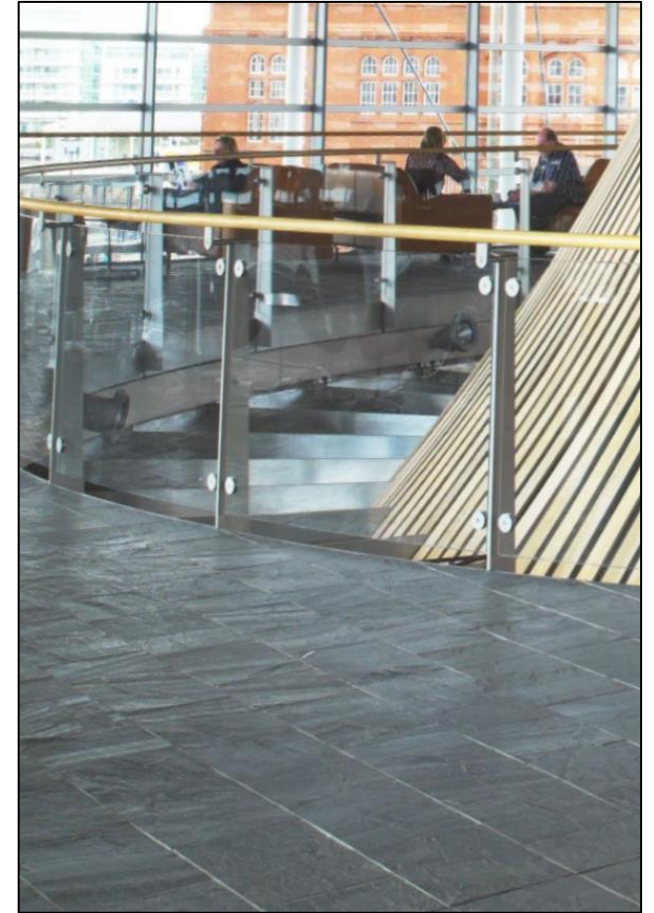
16: Restoring/Renewing the Fountain's Original Wall Finishes and Darker Colours



Aber Falls, Gwynedd, near Bangor
Closest major waterfall to Richard Huws' family home on Ynys Mon



Proposed use of Cwt-y-Bugail dark blue grey polished Welsh slate mosaic 'tiles'
(300 mm x 300mm sheet prior to grouting)



Same slate used in the Welsh Senedd building, Cardiff, 2006
by the late Richard Rogers

(Respondents were split 44 to 43% between the black and slate schemes, but the latter is preferred by local residents)

17: Restoring/Renewing the Fountain's Original Wall Finishes and Darker Colours



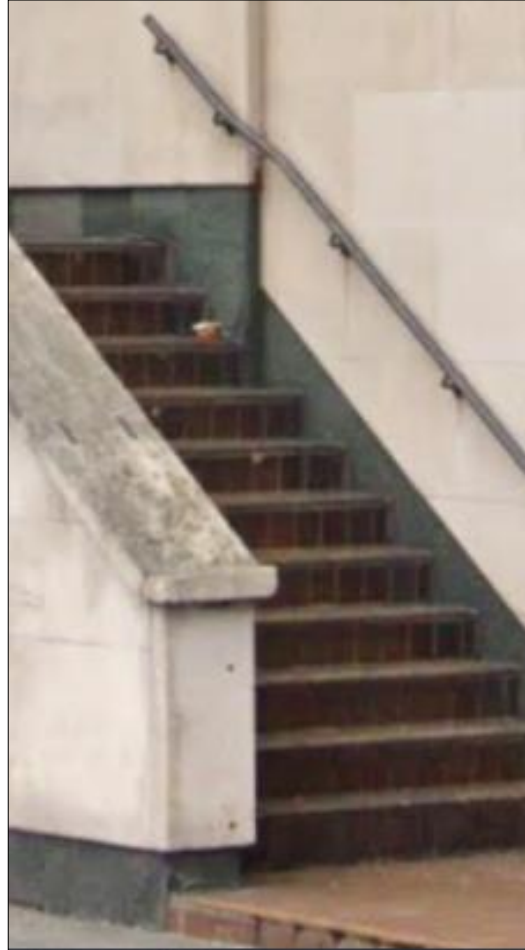
**Piazza Fountain
Elevation to
Drury Lane**

Use of Cwt-y-Bugail dark blue grey Welsh slate tiling and matching paint

18: Restoring the Fountain's Original Floor and Stair Finishes



Original brindle red tiling to platforms & stairs
Stairs relined with dunbar chequer plate steel



Surviving bridle red tiles
on stairs from the Strand

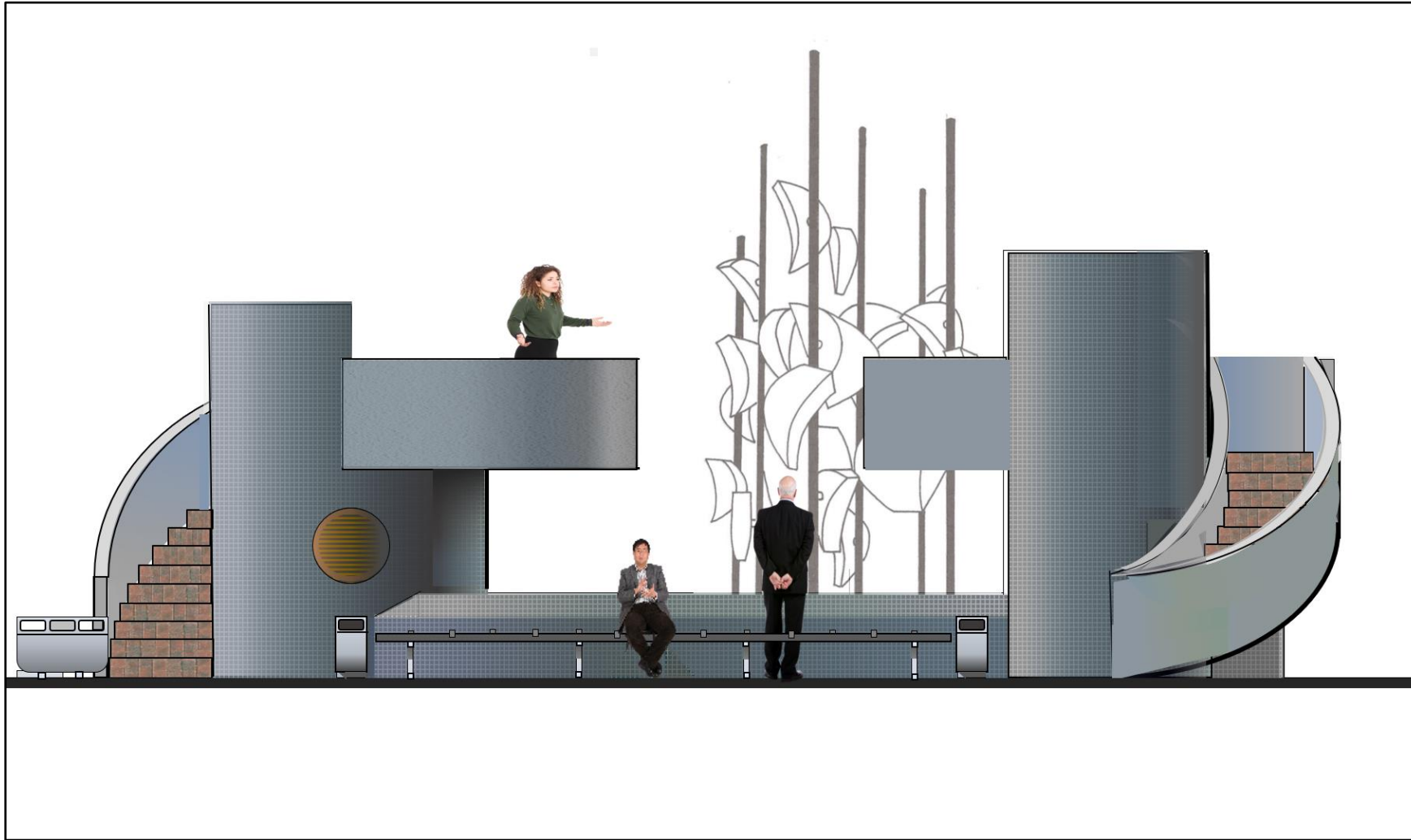


Current disintegrating asphalt floor
finish to viewing platforms

Asphalt to be replaced with original
red brindle brick tiling

Steel covered pavement light to pump
room to be also restored

19: Restoring the Fountain's Original Floor and Stair Finishes



Piazza Fountain, Elevation to the Piazza showing restored stair finish
(and proposed reinstated seating, litter bins and bronze restoration plaque)

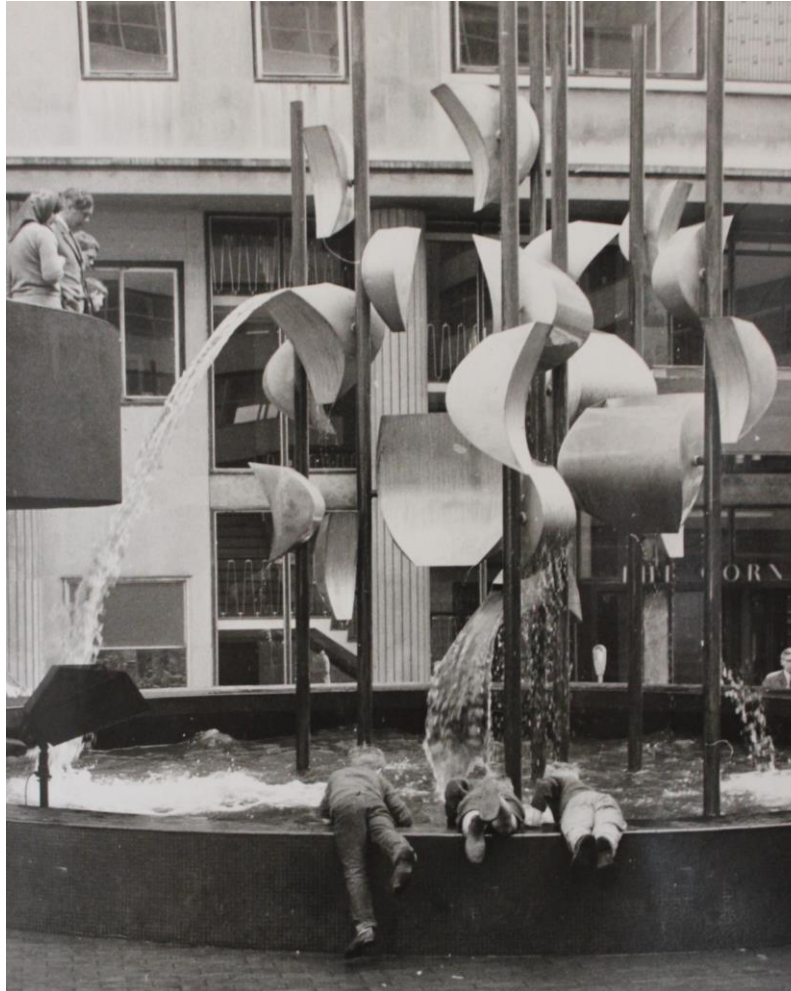


Brindle red brick tiles
to match original tiles

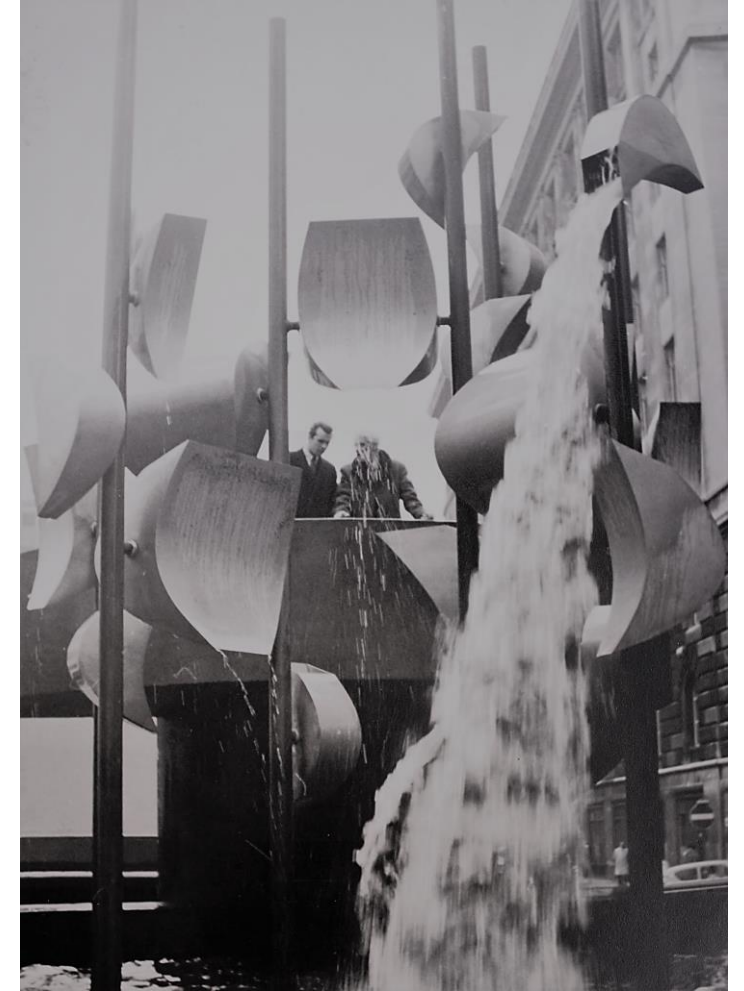
20: Appearance and Performance of Piazza Fountain Restored - & Improved Upon



Glossy tiled finish restored
with more durable polished dark
blue grey Welsh slate mosaic tiling



Deeper water & wave effects restored
while minimising health and safety risks
(including legionella etc)



Original tipping frequencies restored
but future wear of bearings and
leakages prevented