



**Kings Road Arches, Brighton**  
**Ross Hemsley**

# Background & History



## Structure

- Highway Structure maintained by BHCC
- Positioned on Brighton Seafront
- Constructed circa. 1890
- 26 individual 'arches'
- Part of on-going regeneration of area



## Project Goals

- Upgrade structure to support Highway loading – accidental highway loading in accordance with EN 1991-2:2003
- High end commercial artist units

## Progress

- Currently in construction phase

# The good old days





# The not so good days....



- **Assessed in 2009**
- **Assessed capacity 3t  
GVW Accidental  
Vehicle Loading**
- **Vehicles prevented  
from accessing upper  
promenade**





## Inside existing unit





## Cracks to soffit



## Separation of façade and cracks in piers





# Movement in façade east end





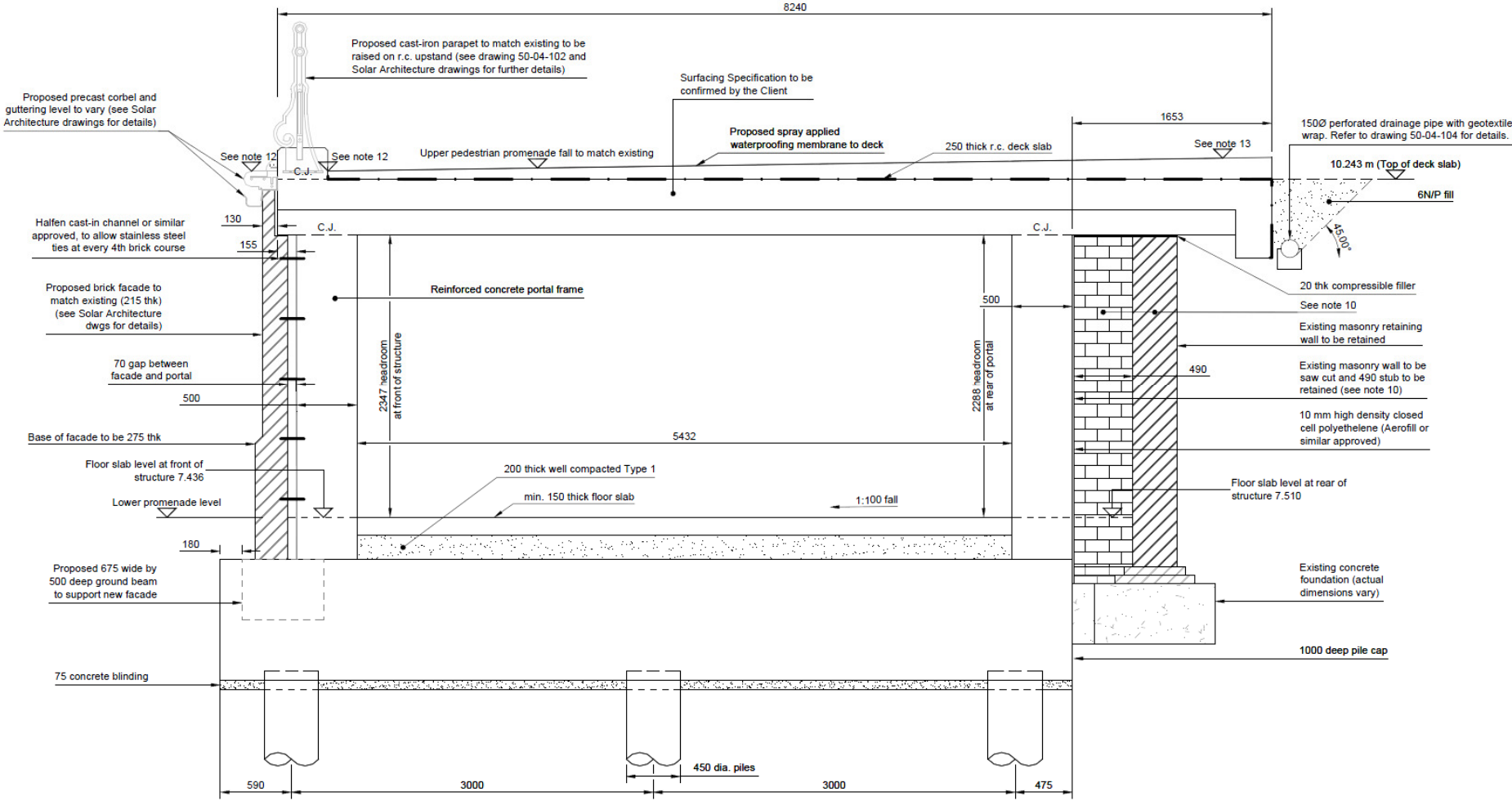
# View over structure



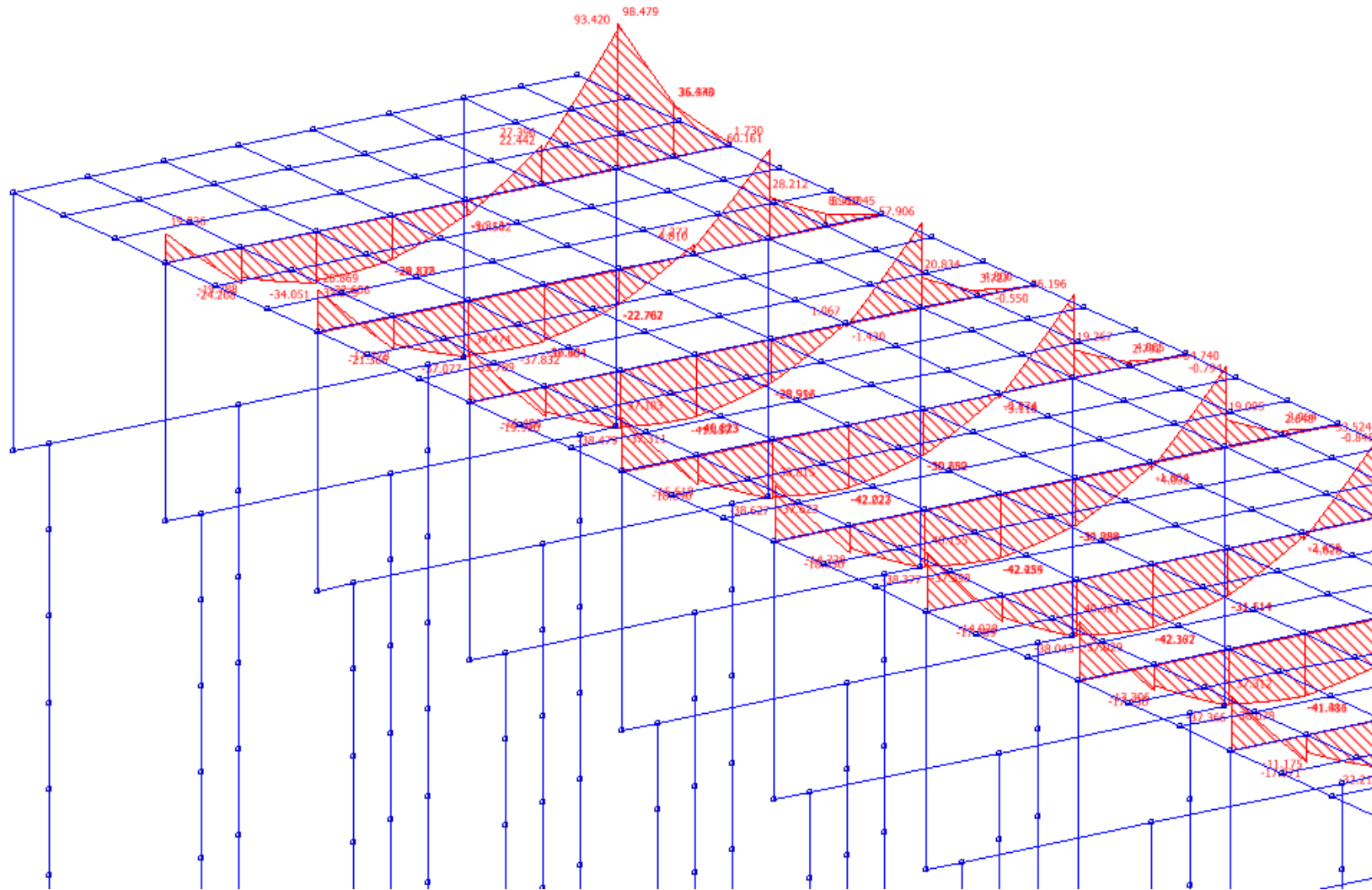
- **Initial Client brief:**
  - Maintain external appearance**
  - Keep Grade II listed paraets**
  - Replace fillerbeam deck with RC deck**
  - Support deck on original piers and rear wall**
  - Remove every other pier**
  - Keep original façade**
- **Close liaison with Architect throughout**
- **Design Changes...**



# Proposed Typical Section



# Structural Analysis



# Design and construction issues

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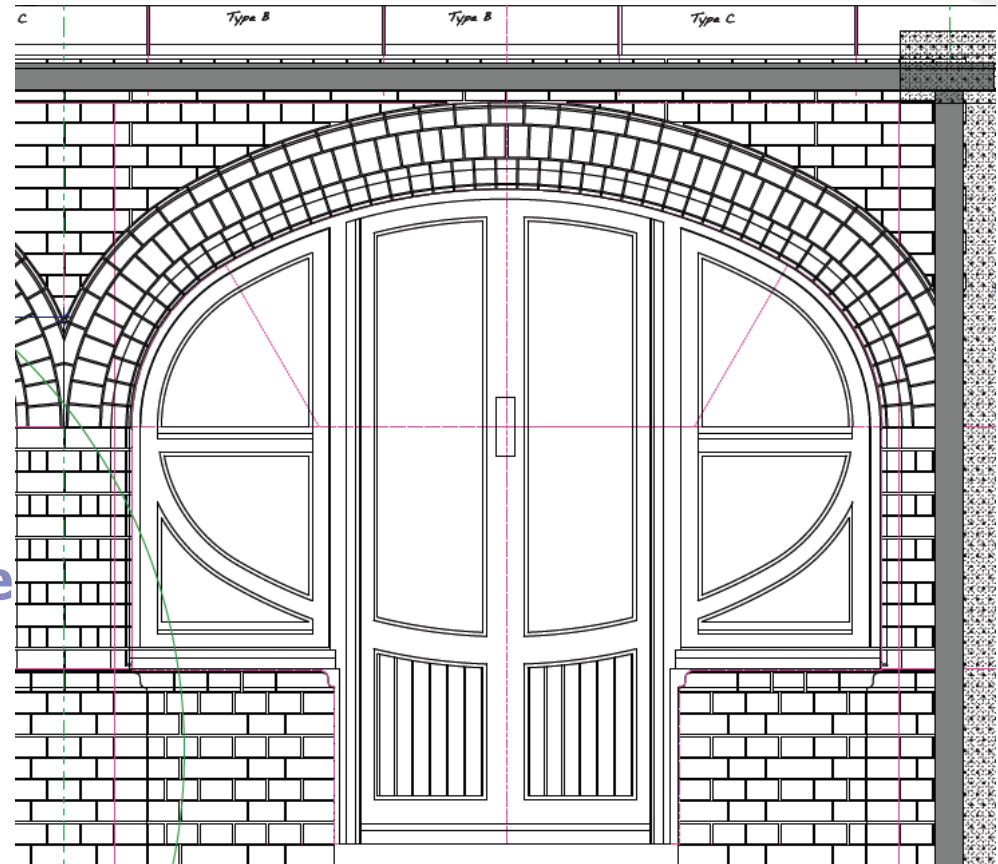
- **Movement joints**
- **Facade**
- **Setting out**
- **Temporary works**
- **Lighting columns**
- **Parapets**



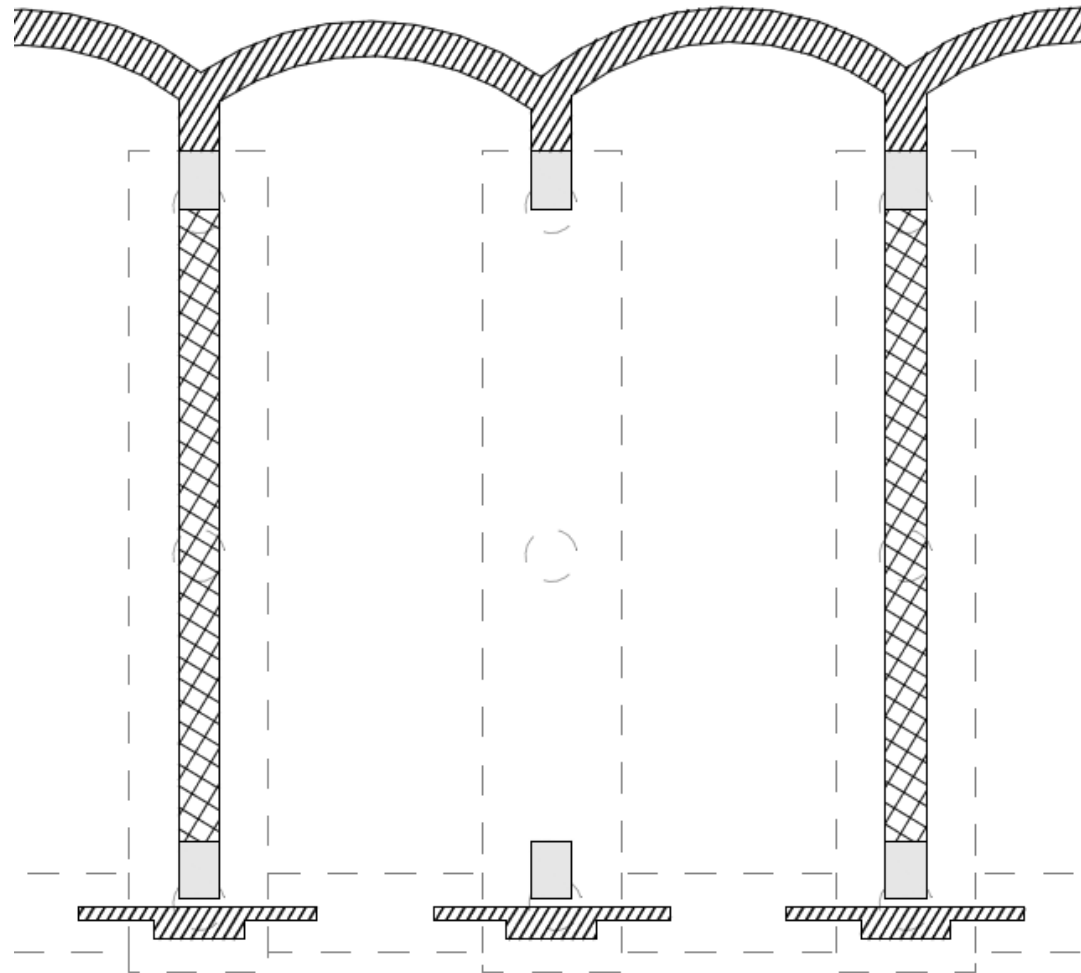
# Precast Facade



- **Precast units**
- **Non-standard bricks**
- **5mm joints**
- **Prefabricated timber frame**
- **Integrated pretty lights!**



# Typical Plan



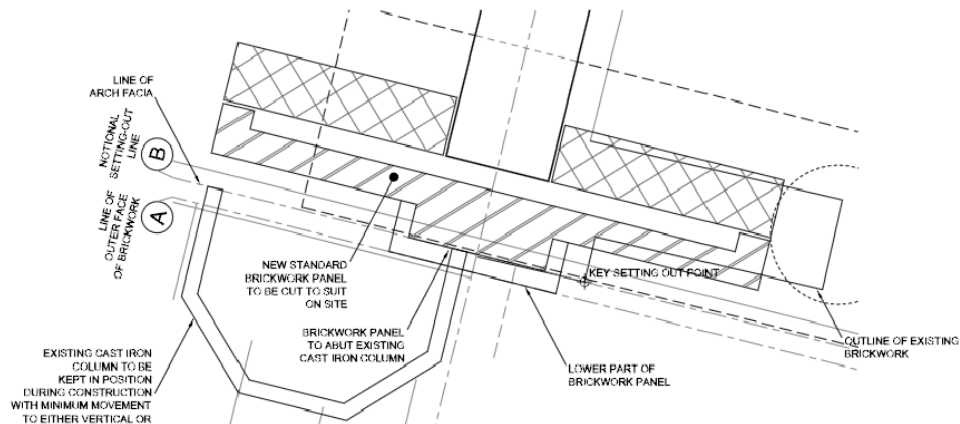
# Setting out



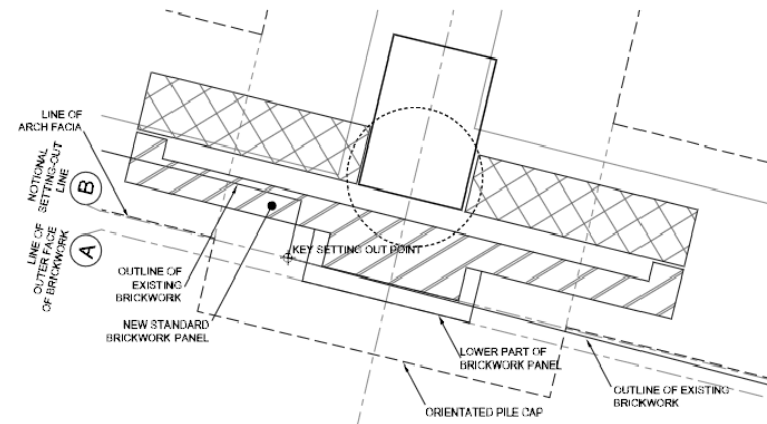
**PLAN AT NORTH WEST KEY SETTING OUT POINT**  
SCALE 1:10



**PLAN AT NORTH EAST KEY SETTING OUT POINT**  
SCALE 1:10



**PLAN AT SOUTH WEST KEY SETTING OUT POINT**  
SCALE 1:10



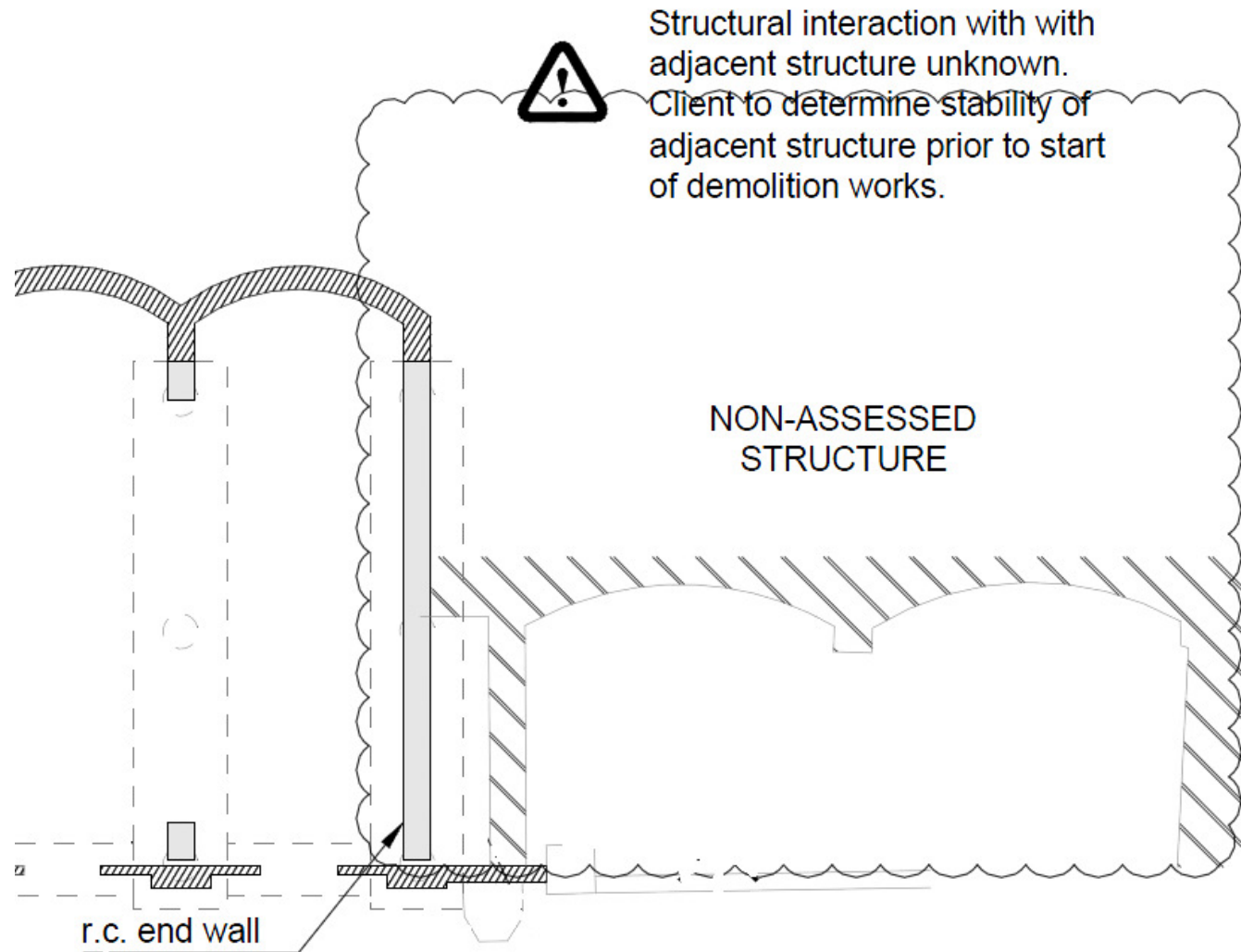
**PLAN AT SOUTH EAST KEY SETTING OUT POINT**  
SCALE 1:10



## Temporary works: adjacent structure, east end



# Adjacent structure, east end

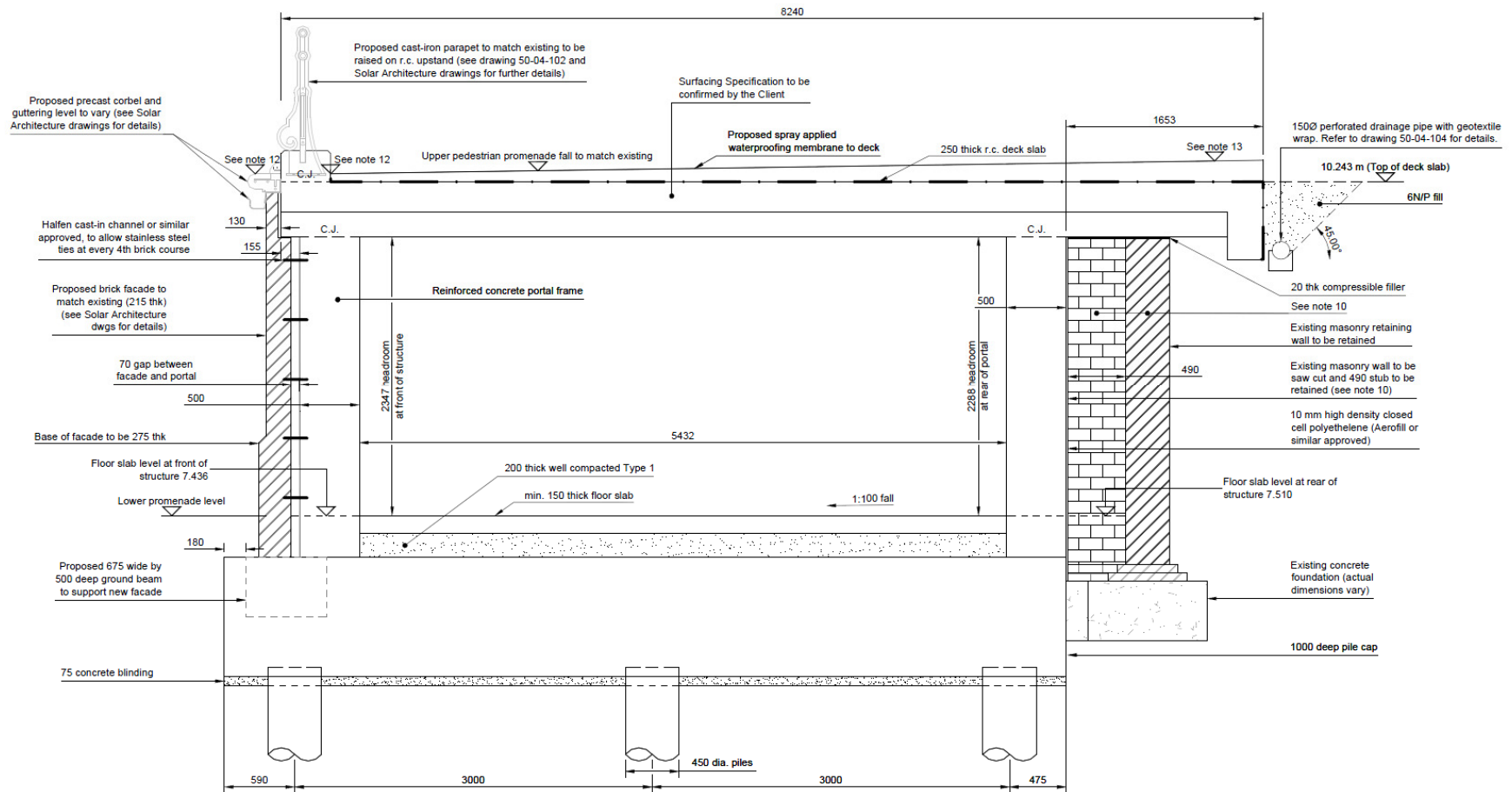




## Adjacent structure, east end



# Temporary Works: Rear wall stability





# Rear wall ground anchors



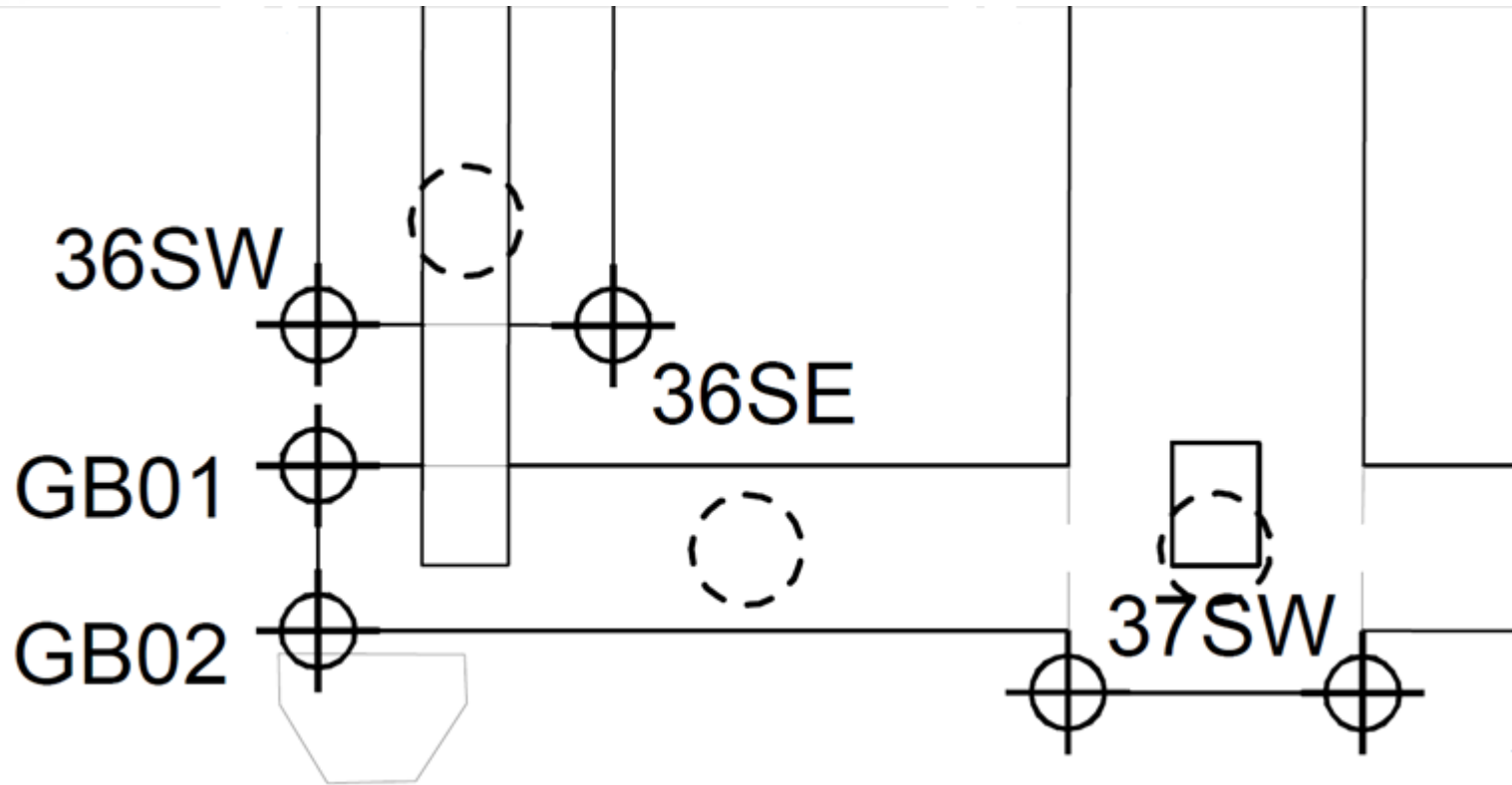
# Lighting columns



- West column to stay in-situ
- East column to be moved

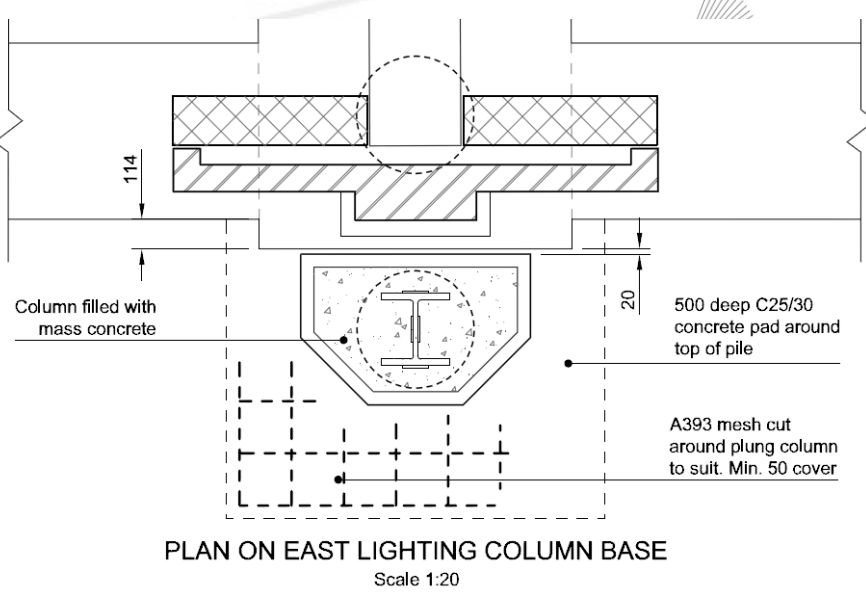
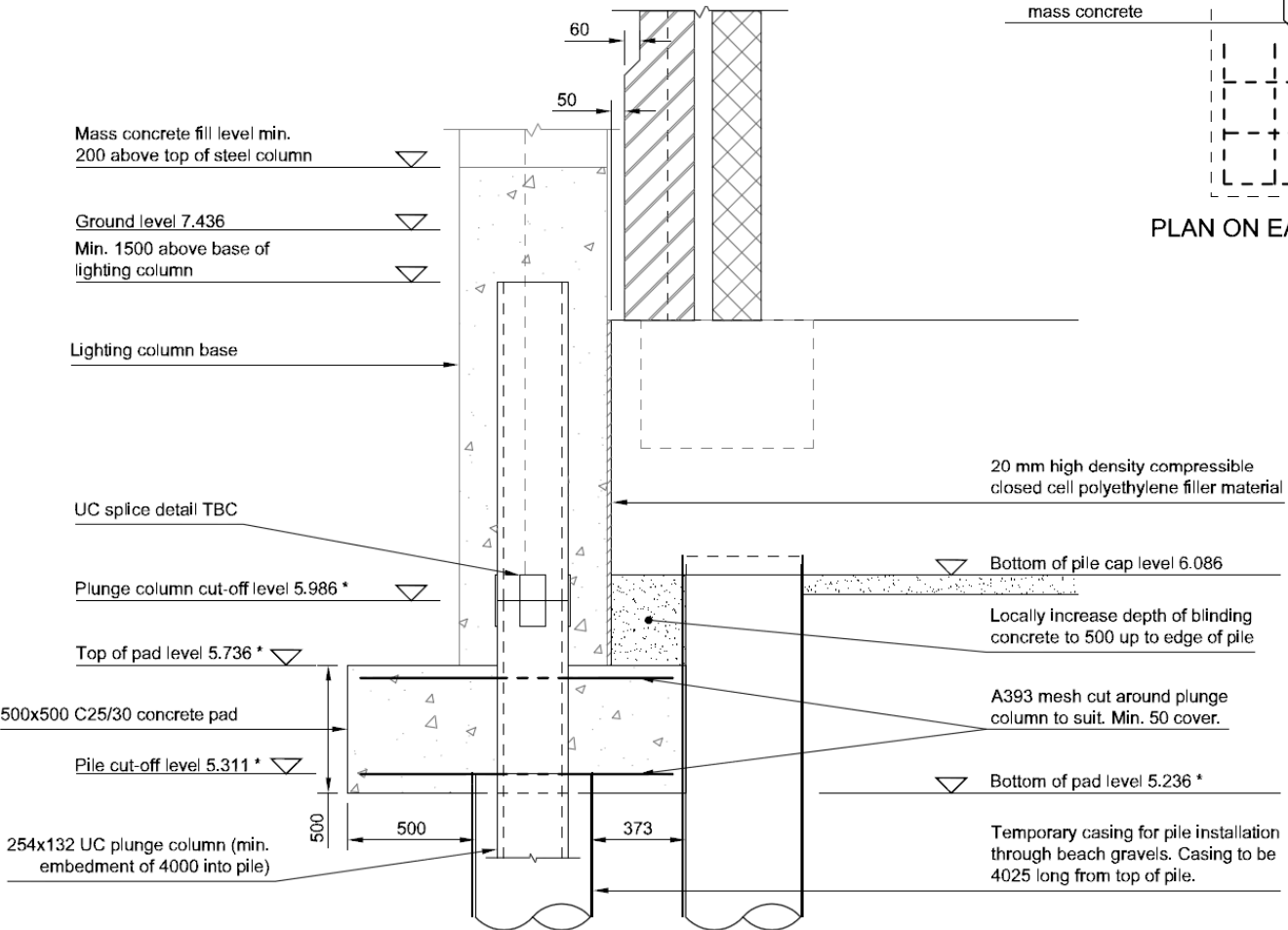


# West lighting column

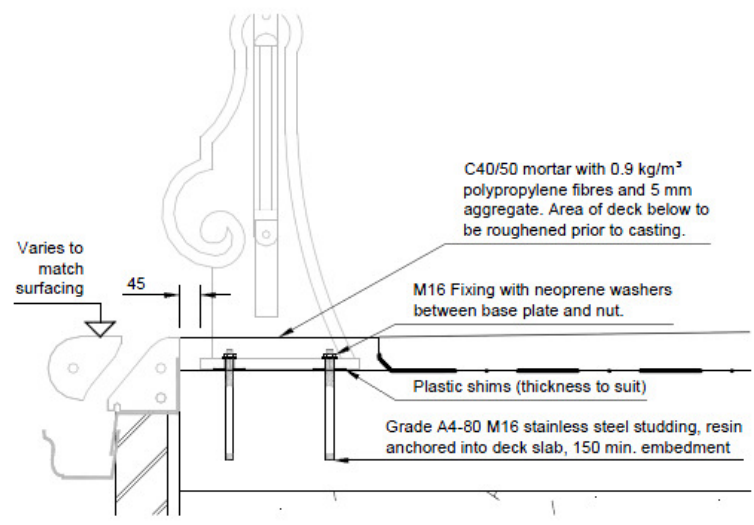
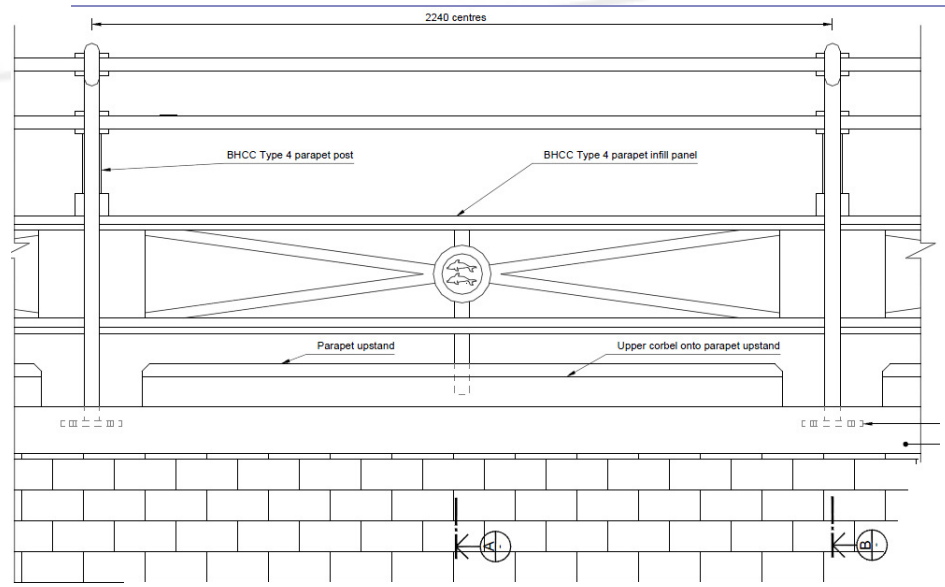




# East lighting column

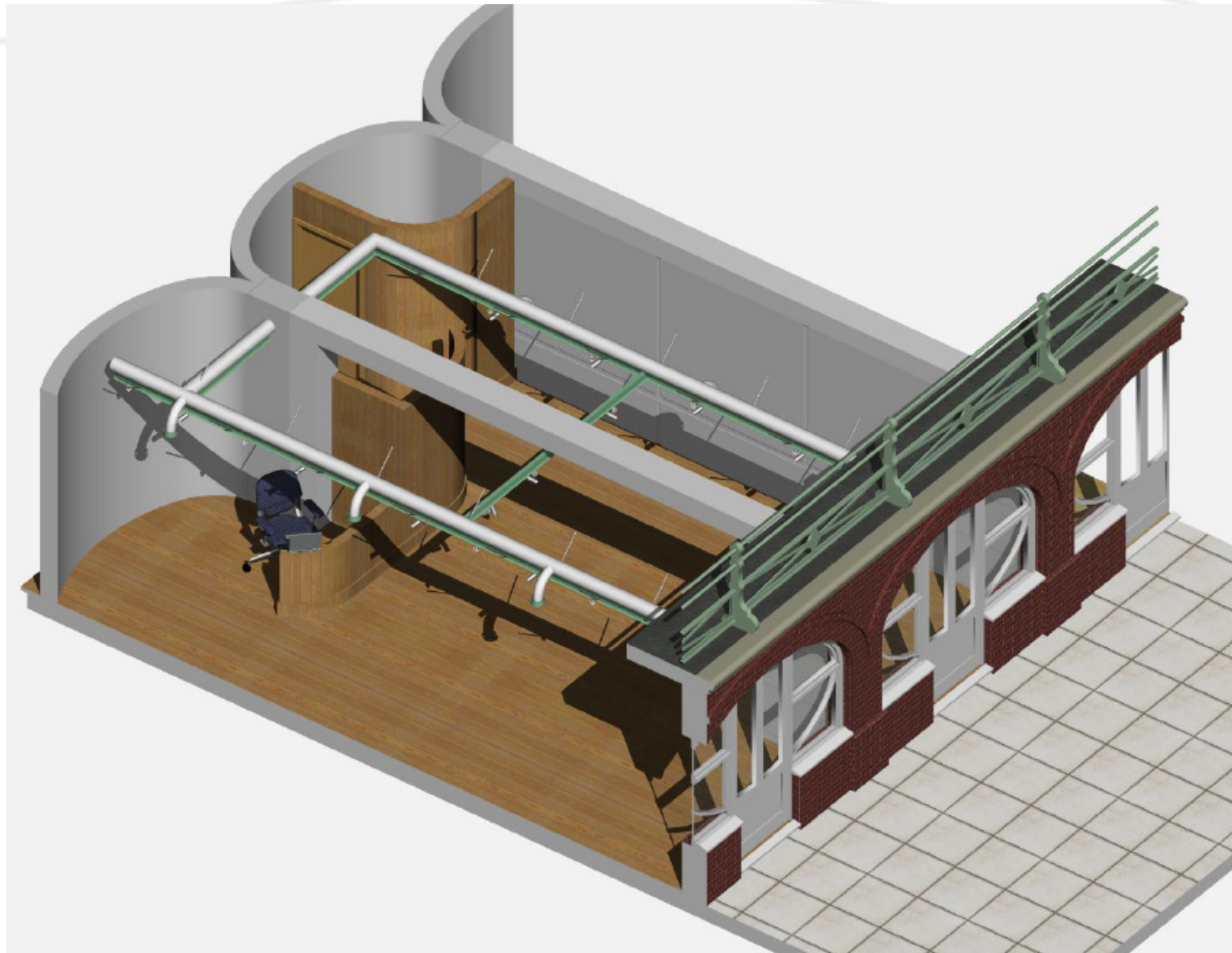


# Parapets & surface water collection





# Finished unit



# Site progress



# Questions

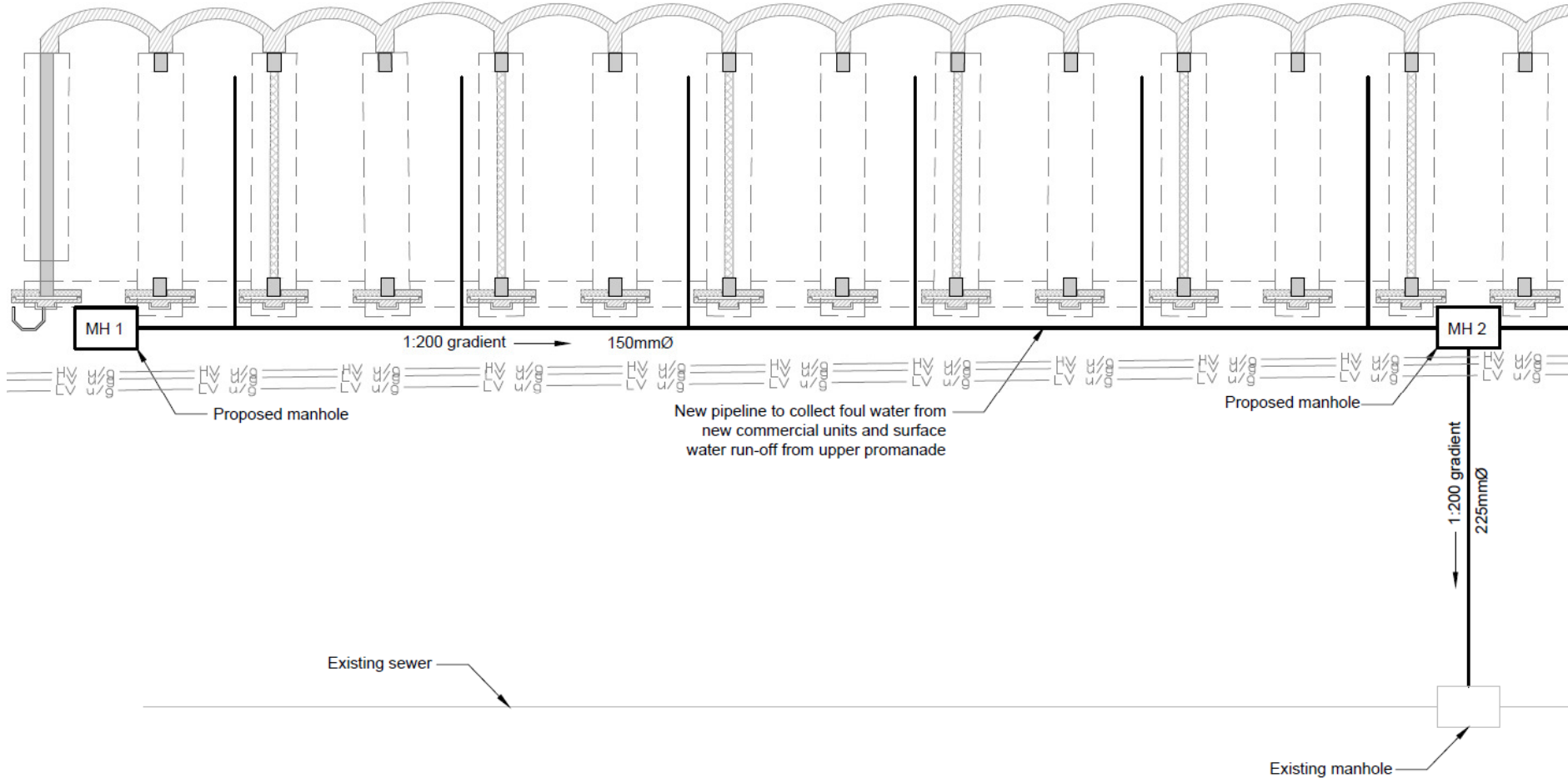


## Adjacent structure, east end

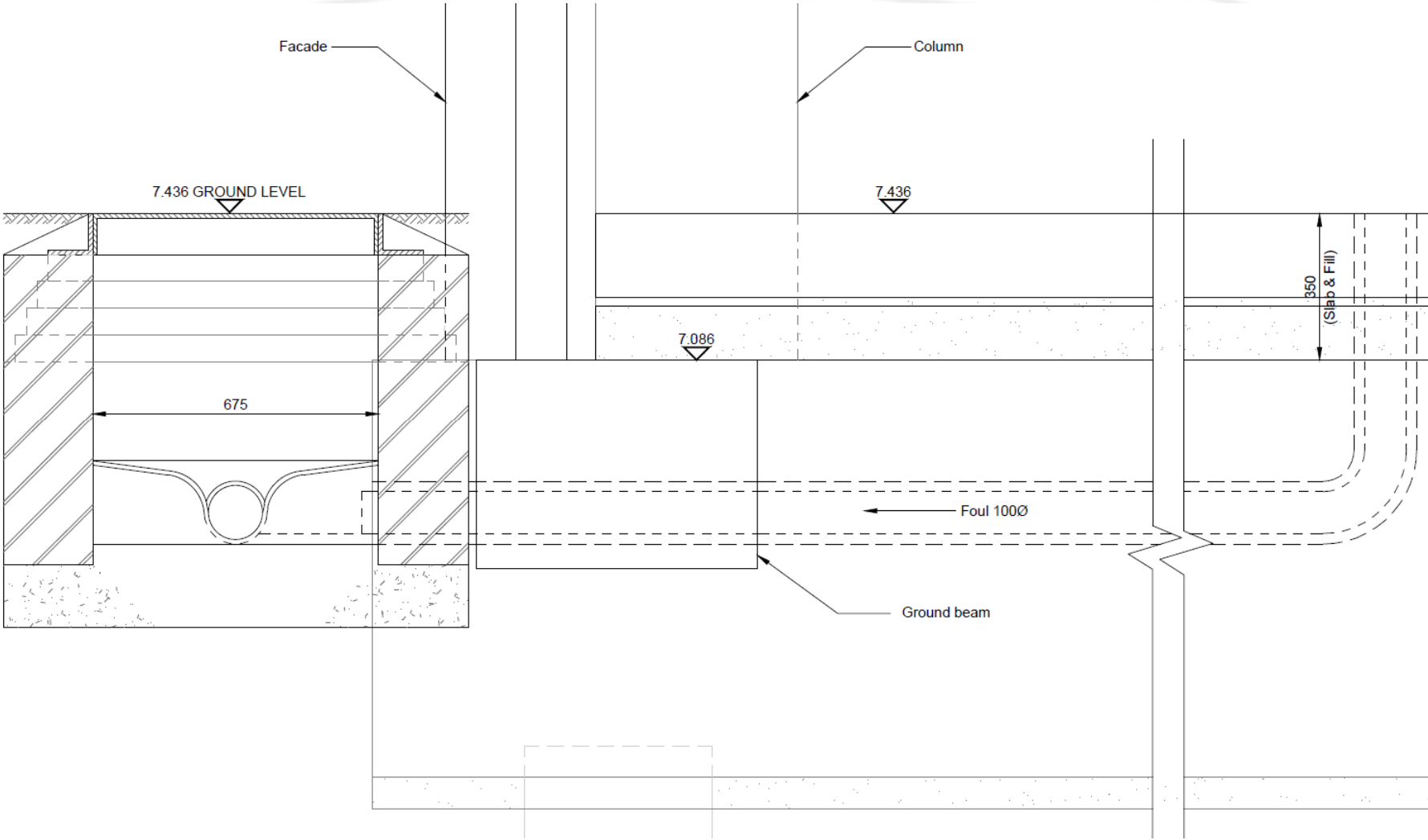




# Combined sewer



# Foul connection



# The good old days





# The good old days

