



RIDGE

BROADWATER FARM ESTATE
TANGMERE MURAL RELOCATION
FEASIBILITY STUDY
HARINGEY COUNCIL
November 2022



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Prepared for

Haringey Council
48 Station Road
Wood Green
London
N22 8LE

Prepared by

Ridge and Partners LLP
Partnership House
Moorside Road
Winchester
Hampshire
SO23 7RX

Tel: 01962 834400

Contact

Rob Leland BEng MSc CEng MICE
Structural Engineering Team Manager
rleland@ridge.co.uk

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1. INTRODUCTION

1.1. Site Address

TANGMERE	HAWKINGE
Willan Road Broadwater Farm Estate London Borough of Haringey N17 6NG	Willian Road Broadwater Farm Estate London Borough of Haringey N17 6LP

1.2. Brief

Haringey Borough Council have instructed Ridge and Partners LLP to undertake a feasibility assessment of relocating an existing mural on the external elevation of the Tangmere building to an external elevation of the Hawkinge building on the Broadwater Farm site in Tottenham, London.

1.3. Limitations

The report provided is feasibility only, it is based on assumptions around the formation and fixings details of the existing mural. Information with regard to the construction of the existing building is based of Clarke Nichols Marcel drawings from the late 1960's. These drawings are not specifically noted as construction drawings, however it is assumed that the blocks are built as drawn.

1.4. Statement

The Report is for the sole benefit and may only be relied upon by the addressee, to whom we will owe a duty of care. The Report or any part of it is confidential to the addressee and should not be disclosed to any third party for any purpose, without our prior written consent of Ridge and Partners LLP as to the form and context of such disclosure. The granting of such consent shall not entitle the third party to place reliance on the Report, nor shall it confer any third-party rights pursuant to the Contracts (Rights of Third Parties) Act. The Report may not be assigned to any third party.

2. PROPERTY OVERVIEW

The Tangmere block of flats on the Broadwater Farm Estate are constructed from the Large Panel System (LPS) form of construction. An assessment was carried out in 2017-2018 which deemed that the block was insufficiently robust to resist disproportionate collapse. Demolition was therefore recommended.

On the North elevation of the block is an existing mosaic mural which is hoped to be retained and relocated so as not to be lost during the demolition.



Figure 1 – Tangmere North Elevation Mural

The existing mural on the north elevation of Tangmere is fixed and supported on an insitu reinforced concrete walls as opposed to the precast panel system, which forms the structure of the main building, see Figure 2. It is understood that the mosaic mural is formed in panels which are fixed back to the insitu reinforced concrete walls. These panels will be removed and stored while the existing building is demolished. It is currently unclear as the form of these mural panels.

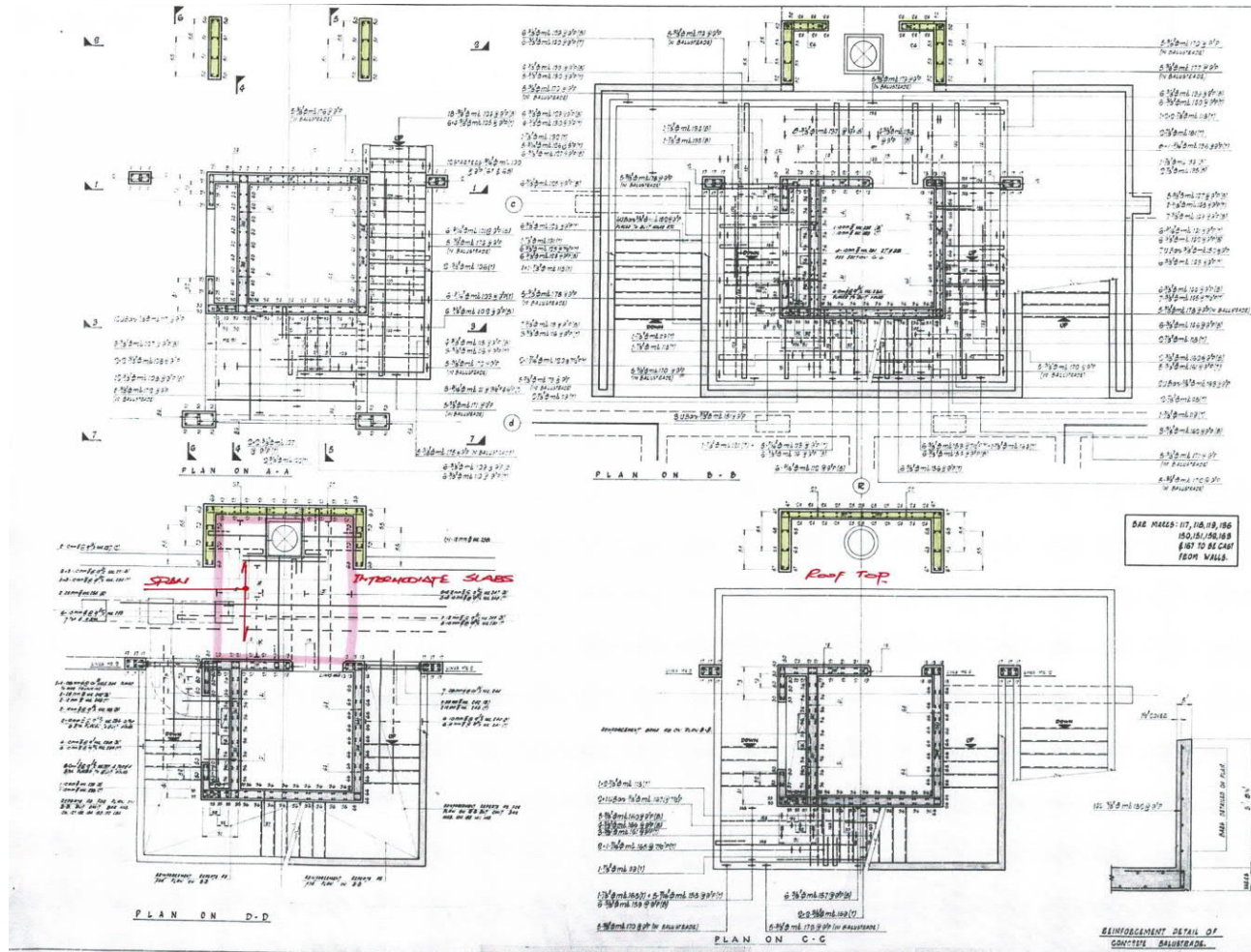


Figure 2 – 1960's reinforcement drawing for concrete mural support structure

4. PROPOSED RELOCATION

It is proposed to relocate the mural from Tangmere to the east elevation of the adjacent Hawkinge building, see Figure 3.



Figure 3 – Proposed location for mural relocation

4.1. Existing Building

The existing Hawkinge building is an LPS building split into a six and four storey block. It is proposed that the existing mural is relocated to the east elevation of the six-storey block. The intrusive investigations and following assessment found that the four-storey block required strengthening, however the six-storey we're adequate without additional strengthening.

4.2. Proposed Mural Location

It is proposed that the existing mural will be located in front of the existing lift core on the East elevation of the block where there are currently no existing windows. The mural will site directly above the current rear entrance lobby for the block. Refer to Figure 4 and Figure 5 for mural location

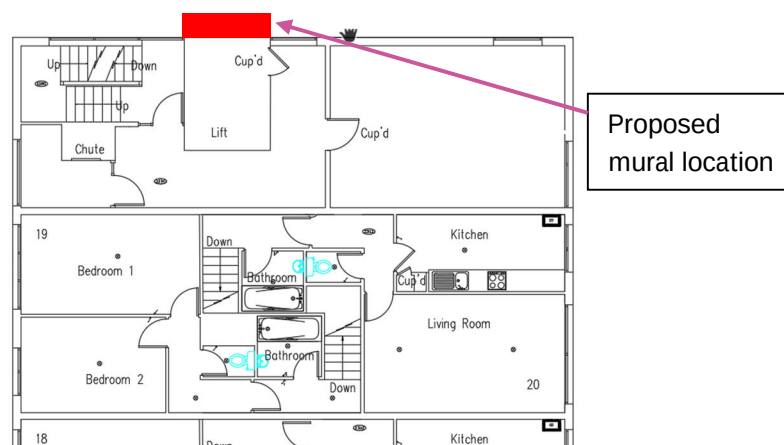


Figure 4 – Hawkinge Mural Location



Figure 5 – Proposed mural location

5. PROPOSED SUPPORT STRUCTURE

In order to relocate the proposed mural a new external support structure is required. This frame will need to be self-supporting so as not to add additional load to the existing building. Lateral restraint can be taken from the existing building.

The structure of the existing rear entrance lobby is unknown, it is therefore recommended that the proposed structure bridges over the lobby so as not to impose additional load onto the structure.

5.1. External Steel Frame

The most suitable solution would be to install a lightweight steel frame with horizontal members at regular centres supporting a cementitious panel which the mural panels would be fixed to. At the lower levels the frame would need to be designed to bridge over the existing rear entrance lobby. This is the worst-case approach. It may be possible to punch through or support the new frame off of the existing rear entrance lobby structure.

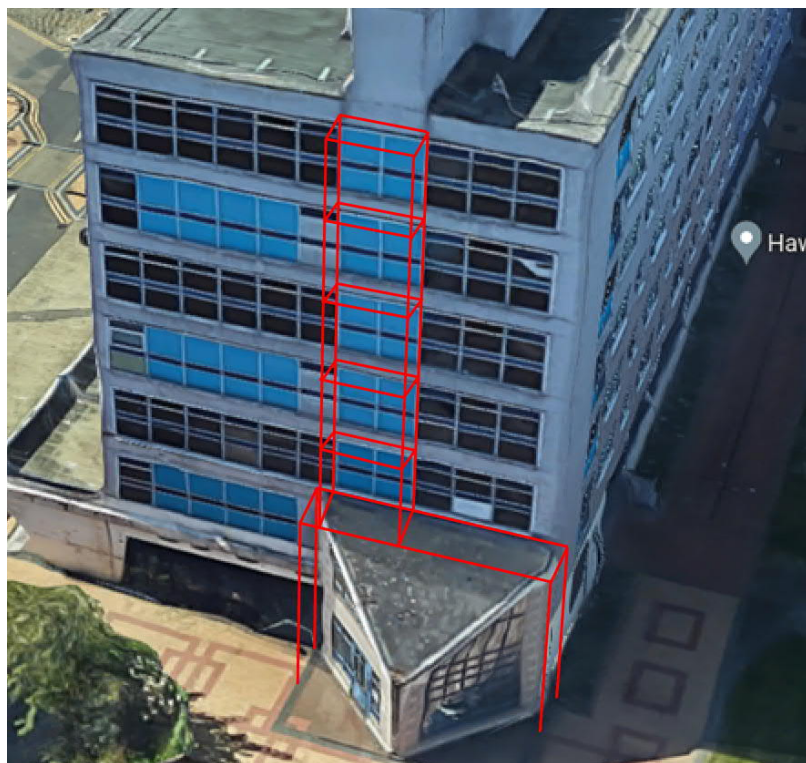


Figure 6 – Proposed steel frame layout

5.2. Stability

The proposed frame would need to be designed as a rigid structure, utilising vertical and in-plan bracing to ensure that the frame is independently stable to resist lateral loads.

Lateral restraint would be provided by fixing back to the existing building. This would involve fixing through the existing façade through to a steel angle at the junction of wall and floor slab, internally. The existing hollowcore planks would need local infill of the core to allow the bolts to be fixed through the slab, refer to Figure 7 for details.

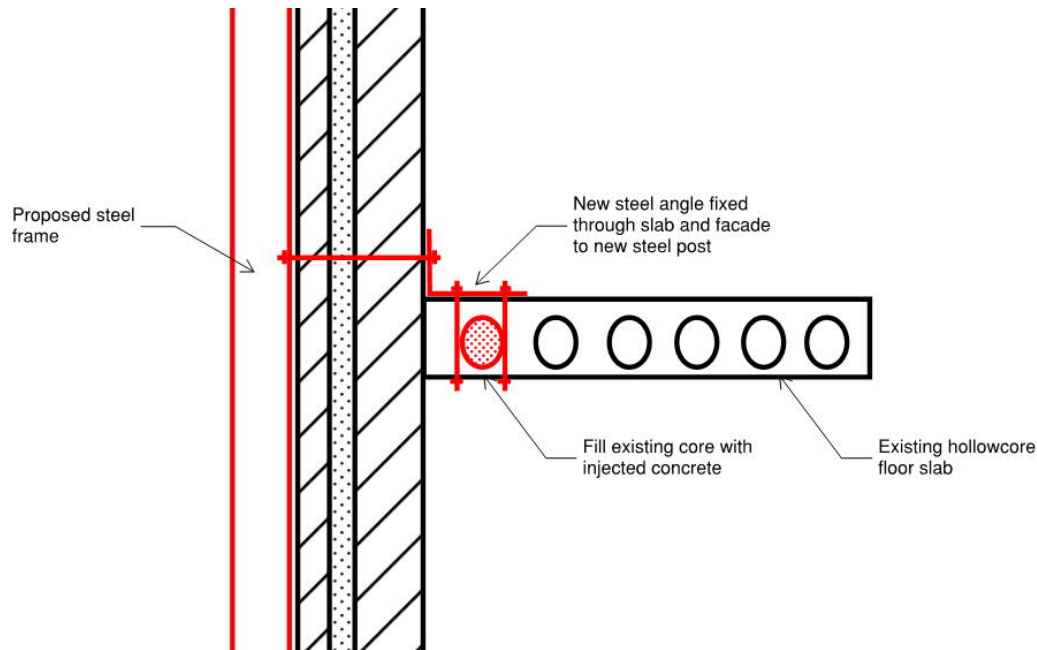


Figure 7 – Proposed fixing detail back to existing building

It is anticipated that this fixing detail will be required at each floor level on both sides of the existing steel support frame. Through more detailed design the option will certainly be refined, and it may be possible to reduce the number of fixings through the existing building façade.

5.3. Foundations

The proposed columns, either side of the existing rear entrance lobby, will need to be supported on new mass concrete foundations. The design of these will be subject to the size and location of existing building foundations as well as ground conditions information.

5.4. Cladding

It is recommended that the frame is weatherproofed with cladding to maintain and avoid water damage to the structural elements within the frame.

The proposed steel frame will sit directly over a fire escape for the block. It is therefore recommended that comments are sought from a fire engineer to ensure that additional risk is not being added to the block.

5.5. Alternative Solutions

Knowing what we know about the construction of the existing blocks and their inherent weaknesses it is highly unlikely that the frame could be supported off of the building without having to support the frame at ground level (thus eliminating the need to bridge over the existing rear entrance).

5.6. Alternative Locations

If the bridging structure over the existing rear entrance lobby was deemed as unacceptable by the Client, there are two similar locations at the site where the mural could be place, with similar frame details:

- East elevation of the six-storey Lypne block
- West elevation of the six-storey Rochford block

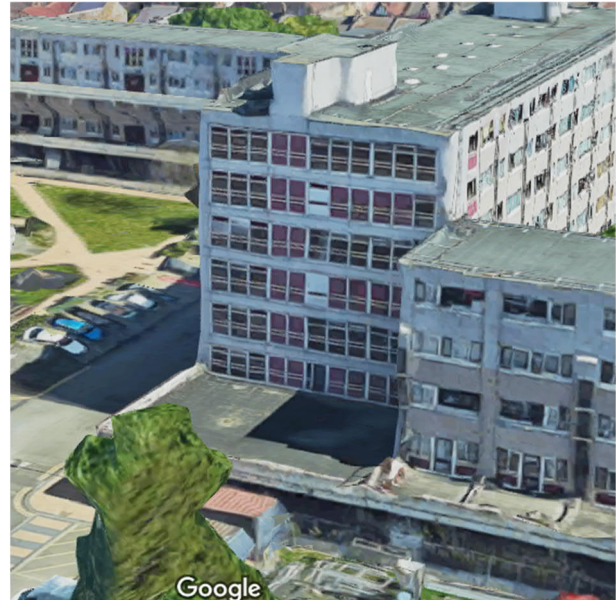


Figure 8 – End elevations of the Lypne and Rochford 6-storey blocks

In these locations the supporting steelwork could be supported of the existing concrete deck, negating the need for a bridging structure over entrance lobbies.

6. FURTHER INVESTIGATIONS

It is recommended that further investigations are undertaken to determine the construction of the rear entrance lobby building. It may be possible to either support the proposed steelwork on the building or pass the steelwork through to avoid having to bridge over.

It is also recommended that localised trial pits are undertaken to confirm the location and depth of the existing foundations to ensure the new foundations can be positioned to avoid them. Tests can also be undertaken within the trial pits to gain ground condition information to enable the design of proposed foundations.

7. CONCLUSIONS

In conclusion, it is certainly feasible to re-support the existing mural on a new frame onto the east elevation of the Hawkinge building. It is recommended that further investigations are undertaken to confirm the details for the proposed steel frame, however the above solution would be seen as worse case and likely to work regardless of what was found by the investigative works.



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