



Method Statement for the dismantling and storage of the Bicycle Mural – Stantonbury, Milton Keynes

CLIENT – Aldi Stores Ltd

Method Statement Author – Mark Pinfield



Contents

1. Introduction

1.1 Aims

1.2. Background information

2. Mural description

3. Condition assessment

4. Method statement

4.1 Initial Appraisal

4.2 Protection of Mural

4.3 Removal of vegetation

4.4 Erection of scaffold

4.5 Survey

4.6 Demolition of buildings

4.7 Cutting and removal of mural

5. Relocation

6. Photographic Record

7. Appendices

Lincoln Conservation Report

1. Introduction

This report has been prepared to respond to and address the requirements of Conditions 19 and 20, included within planning permission ref. 18/01469/FUL for the *“Demolition of existing retail/commercial units and the construction of a new Class A1 foodstore (1,790sqm), reconfiguration of adjacent car parking and associated landscaping.”*

The Conditions require the following:

(19) Prior to the commencement of works a scheme of protection whilst the bicycle mural remains on site shall be submitted to and approved in writing by the Local Planning Authority. The mural shall be protected thereafter in accordance with the approved scheme of protection.

(20) No demolition or dismantling of any parts of 22-36 Stantonbury Centre, including any works that may directly or indirectly endanger the structural integrity of 22-36 Stantonbury Centre and the Bicycle mural, shall take place prior to the completion of the removal and storage of the Bicycle mural. The removal and storage of the Bicycle mural shall be carried out in accordance with a detailed scheme of removal and storage to be submitted to and approved in writing by the Local Planning Authority. The removal and storage scheme shall include details of how the mural will be surveyed, recorded, cleaned, protected, facings applied, removed, handled and stored, including storage location. The scheme shall be in full accordance with the details set out in the submitted Conservation Method Statement, Project Name Stantonbury Bicycle Tile Mural received 19.06.2019.

The aim of the report is to understand the importance of the mural to the south facing exterior gable to the existing shops at 24 Stantonbury Road, Stantonbury, Milton Keynes and propose a suitable method to dismantle and store the mural at the Stantonbury International School. Although the mural is not subject to statutory protection, it is known to be widely appreciated and valued locally. The School propose to use sections of the mural as visual ‘signposts’ to various areas around the college, and as part of the School’s own development proposals. After its removal from the existing units, the mural will require storage on the college premises within 2 steel containers palletized with a picture indicating on which pallet each piece is stored. In preparing this

Method Statement a meeting has been held with the School, Avonside Construction Management and Kier Construction (the contractor that will be carrying out the wider redevelopment works on behalf of the school).

Proposals for the redevelopment of the site have been approved to demolish the existing retail/commercial units and then construction of a new Class A1 foodstore (1,790sqm) with the reconfiguration of adjacent car parking and associated landscaping; Planning Application Reference: 18/01469/FUL (Milton Keynes Council, 2019).

This Methodology has been produced in conjunction with the Lincoln Conservation report, which is referenced within the Method Statement.

1.1. Aims

The aim of the report is to set out how the mural is to be dismantled in a way that the mural can be stored in a safe manner and to allow the reuse of the sections of the mural in line with the local school's proposal of "signposting" around the school following its own redevelopment proposals.

1.2 Background information

The artist John Watson created the mural with the help of children from one of the local comprehensive schools; many pupils (as well as bicycles) are depicted on the mural, which is intended to portray 'childhood happiness and enthusiasm'. The 60' by 24' mural comprises around 1,200 tiles, which were made and fired in the school's art department, decorated and glazed in the artist's studio, then re-fired at the school before being fixed directly to the brick wall.

2. Mural Description – Reference Lincoln report section 4 page 6

3. Condition Assessment - Reference Lincoln report section 4 page 9

4. Methodology

4.1. Initial Appraisal

In February 2019 a core sample was taken of the existing tile mural and the brickwork to which it is attached. The core sample was taken from the bottom of the wall towards its eastern side. The core sample (which has been provided to the Parish Council) shows the make-up of the tile, adhesive and brick used in the construction of the existing units and is referenced in the Lincoln report condition assessment.

The mural is mounted on the external face of an existing cavity wall, which has an inner leaf of blockwork and an outer leaf of brickwork. The cavity wall includes 'butterfly ties', which are located in 1m internals, with staggered centres.

Taking the Lincoln Conservation report into consideration and due to the proposed change in reuse of the sections of the mural, the methodology of the cutting, removal and subsequent storage of the mural has evolved to accord with the proposed end use of the mural, as noted in the introduction.

4.2. Protection of the mural

The mural will be protected by installing a 6mm plywood panels to the external face, which will be screwed into the tile joints. The scaffold will be built to the outside face of the mural and the inside gable wall of the blockwork gable wall. This will allow for the removal of the plywood as each section is cut into 2 tiles x 2 tiles square. Prior to the installation of the plywood, a self-adhesive, low tac PVC protection will be applied to the ceramic face to ensure that it of the mural is protected during the removal works.

4.3. Removal of vegetation

Once the first layer of plywood has been installed the existing vegetation can then be removed, whilst being protected by the plywood. This will then allow

clear access for installing the remaining plywood from alloy tower and the erection of the scaffolding. Attention should be given to any roots or stem tendrils that may have penetrated the wall. If vegetation has breached the mural then these stem tendrils should be cut, and the remainder left in place to be processed during later conservation work. Any incident of this should be recorded.

4.4. Erection of scaffold

The scaffold will be erected to the inside blockwork gable wall with with returns. The same will be carried out to the outside with returns to the front and rear of the building of 3 metres. The scaffold will be 3 lifts high with a loading bay to each lift built to TG20-13 with scaffold buttress supports.

4.5. Survey

In line with the Lincoln Conservation report, when access to all surfaces of the mural is available following the removal of vegetation and with scaffolding to the upper level, a full survey of the scheme should be undertaken. This will include (but is not limited to):

- a high-quality photographic record of the tiles, either individually or in small groupings;
- a condition assessment noting the location of damage and the likely deterioration factors of the tiles
- the stability of the mortar behind the tiles can be mapped through knocking the face of the tile with a lightweight rubberised hammer. The different acoustic returns should be mapped and will indicate the stability and adhesion to the substrate which will help inform processes during the removal stage

4.6. Demolition of buildings

Once all of the above is in place, demolition of the rest of the building will take place. This will start with the removal of the roof. Once the roof is removed a cut through the wall will be carried out 3.5metres from the corner of the mural and the wall closest to the cut will be taken down by hand, then controlled demolition of the rest of the building.

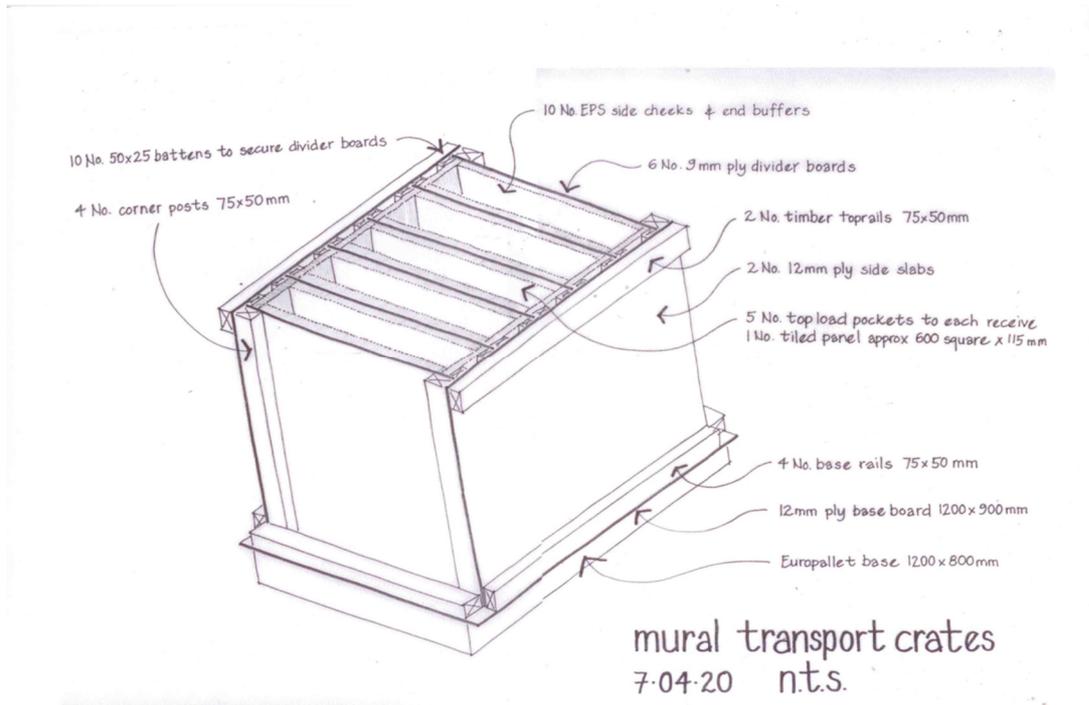
4.7. Cutting and removal works of mural

Following detailed consideration of the Lincoln Conservation report, and the proposed handling of the materials, we have looked at an alternative method of cutting and removal. This method also takes into consideration the future storage of the materials, as they are not proposed to be used immediately. The future reuse of the materials, which are proposed as “signpost” markers following a wider development initiative at the school will be addressed in accordance with Planning Condition 21.

The cutting method proposed within the Lincoln Conservation report, requires the drilling of holes in the corners of the grout line. On review, it is clear that to physically hold this and to allow lifting of a 1200mm x 1200mm size panel, the bolts would be required to be bigger than the grout lines themselves and would therefore would therefore cause significant damage. The weight and size of these panels (estimated as 194.4 kg) is also considered not to be capable of ensuring the structural integrity of the panels and tiles.

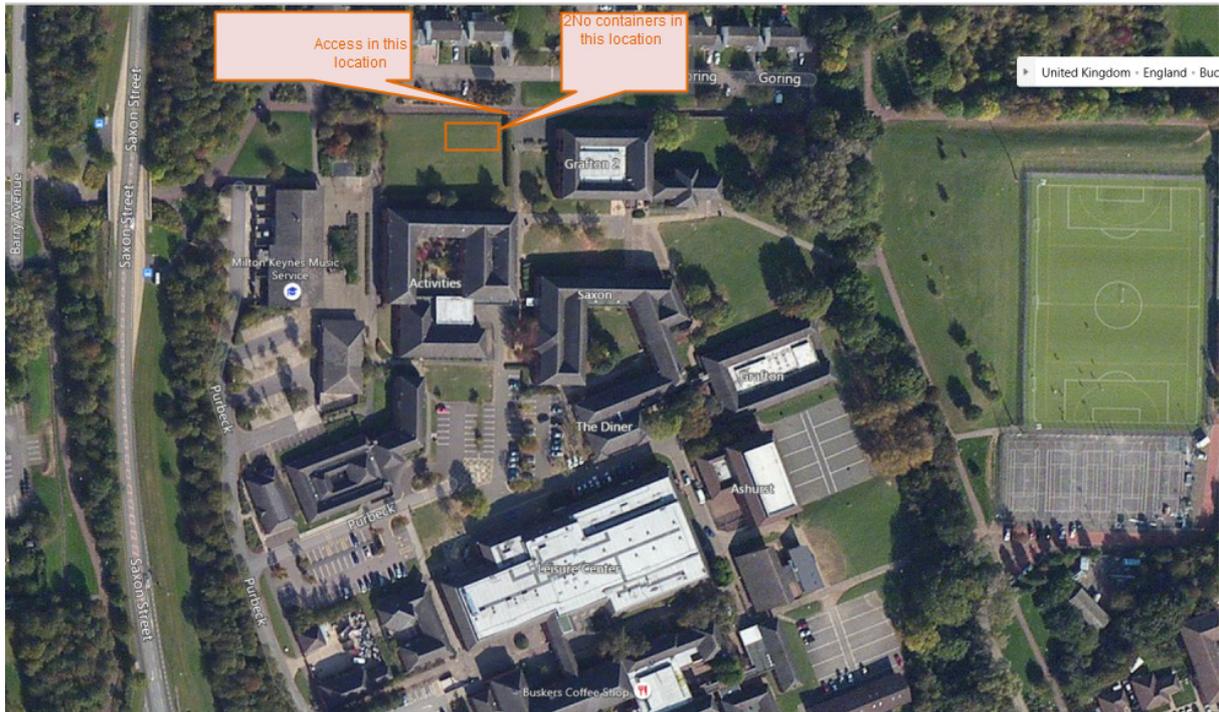
In line with the Lincoln Conservation report, the proposed method for cutting the mural will be cutting the grout line with a diamond cutting equipment. . Diamond cutting results in lower friction, therefore minimising damage to tiles. We propose to cut the tiles into sections 2 tiles by 2 tiles (600mm x 600mm) as this allows for the sections to be lowered manually into pallet crates, straight after cutting. The pallet crates will be sectionally divided to store the mural in an upright position and surrounded by a semi rigid installation. The pallet crates have been designed to take 6 sections of the mural, once the 6 pieces have been placed into the pallet crate. Each section will be numbered on the top of the brickwork, a location picture corresponding to the numbers will be

placed in the crate along with a picture showing the sections to the outside of the box for ease of referencing.



To maintain the stability of the wall, the rear blockwork wall will be removed by hand once each level is completed and brickwork ties cut as each individual section is removed

After each day the pallets will transported to the school, with the pallets being loaded into 2 steel containers, which will be located on the school premises as agreed with the school.



Location plan of container storage at the school

A Specialist Contractor Anquale Ltd has been engaged for the Diamond Cutting and has previously carried out works of a similar nature for Kier Construction

- Removal of a local school mural from the Tesco in Yate, 12 E Walk, Yate, Bristol, BS37 4AS. For Smiths, Gloucester, Construction.

5. Relocation

Following more detailed discussions with Stantonbury International School, the relocation of the mural that was originally proposed in the Lincoln Conservation report has now been superseded. The mural is now proposed to be installed in multiple locations within Stantonbury School Campus to act as signposts around the school. The signposts are to be installed by the school's contractor Kier Group.

6. Photographic record

As set out above, prior to the commencement of any works associated with the mural, a high-resolution photographic record will be taken of each tile. This will enable the tile to be re-created in the event that a tile was to become severely damaged. A specialist contractor has been instructed to carry out the photographic record - <https://www.uniquetiles.uk>

- 7. Appendices** – Lincoln Conservation Report has been referenced within this document and has been used to form the methodology where feasible.



LINCOLN

CONSERVATION

Research and conservation of historic decorative schemes in the built environment

Project Name: Stantonbury Bicycle Tile Mural

Client: ALDI Stores Limited.

Report Author: Sarah Cheng

www.lincolnconservation.co.uk
info@lincolnconservation.co.uk
01522 835055 or 5051

Contents

List of figures	3
Introduction.....	4
1. Aims	5
2. Scope	5
3. Background information.....	6
4. Mural description	6
4.1 Surface.....	6
4.2 Size.....	8
4.3 Substrate	8
5. Condition assessment.....	9
5.1 Core sample	9
4.1.1 Body	10
5.1.2 Glaze.....	12
5.3 Mural condition assessment	13
5.3.1 Surface	13
5.3.2 Tile structural stability.....	15
6. Method statement.....	17
6.1 Ethical considerations.....	17
6.2 Removal of vegetation.....	17
6.3 Survey	18
6.4 Cleaning.....	18
6.5 Application of facings	19
6.5.1 Application of direct fabric facing.....	19
6.5.2 Cushioning facing layer	20
6.5.3 Rigid facing.....	20
6.6 Cutting, lifting and positioning of mural sections	22
7. Recommendations.....	23

7.1 Post removal conservation.....	23
7.2 Relocation	23
7.3 Documentation	25
7.4 Engagement	25
8. References.....	26
Appendices	28
A: Tile survey data	28
B: Community response to mural	29
C: Method statement February 2019	30
D: Current site plan	33
E: Proposed site plan	34
F: Proposed Mural relocation site	35

List of figures

FIGURE 1 VIEW OF THE WHOLE BICYCLE MURAL DURING SITE VISIT.....	4
FIGURE 2 CENTRAL SECTION OF THE MURAL SHOWING THE RELIEF ON THE TILE SURFACE	7
FIGURE 3 SIGNATURE OF THE ARTIST AND FRIENDS	7
FIGURE 4 DIAGRAM TO INDICATE THE CONSTRUCTION OF THE WALL	8
FIGURE 5 CORE SAMPLE, DEMONSTRATING INCONSISTENCY OF TILE ADHESIVE APPLICATION.	9
FIGURE 6 MACRO PHOTOGRAPH SHOWING THE TILE AND SUBSTRATE.....	10
FIGURE 7 DINO-LITE IMAGE OF THE DEFINED GLAZE LAYER ON THE BODY OF THE TILE X153 MAGNIFICATION.....	11
FIGURE 8 BODY OF TILE TAKEN WITH DINO-LITE AT 153X MAGNIFICATION	11
FIGURE 9 MACRO PHOTOGRAPH DEMONSTRATING THE CRACK STRUCTURE OF THE GLAZE.	12
FIGURE 10 SPALLING OF BROWN GLAZE TO LOWER SECTION OF THE WALL WITH EFFLORESCENCE ABOVE.	14
FIGURE 11 SPALLING OF BLUE GLAZE IN THE LOWER MID-SECTION OF THE WALL.....	14
FIGURE 12 APPEARANCE OF SOLUBLE SALTS ON THE SURFACE OF THE TILE, ALSO SHOWING FIRING CRACK TO THE GLAZE. ROUNDED EDGES DEMONSTRATE IT TOOK PLACE BEFORE THE GLAZE HAD SET	14
FIGURE 13 DEEPER FIRING CRACK THROUGH THE BODY	15
FIGURE 14 LOSS TO EDGE, RINGED IN WHITE	16
FIGURE 15 DETAIL OF MORTAR JOINTS.....	16
FIGURE 16 DIAGRAM TO SHOW LEVELS OF APPLICATION OF THE FACINGS.....	19
FIGURE 17 REPRESENTATION OF A 4X4 GRID OF TILES AND POSITIONING OF STAINLESS-STEEL THREADED RODS IN RED	20
FIGURE 19 DIAGRAM TO SHOW A FACED SECTION HELD WITH RIGID FACINGS, STAINLESS STEEL THREADED ROD AND TIMBER BATTENS.	21
FIGURE 18 DIAGRAM TO SHOW BATTEN POSITION IN RELATION TO THE MURAL SECTION AND STAINLESS STEEL THREADED RODS	21
FIGURE 20 PROPOSED NEW LOCATION OF THE MURAL	24

Introduction

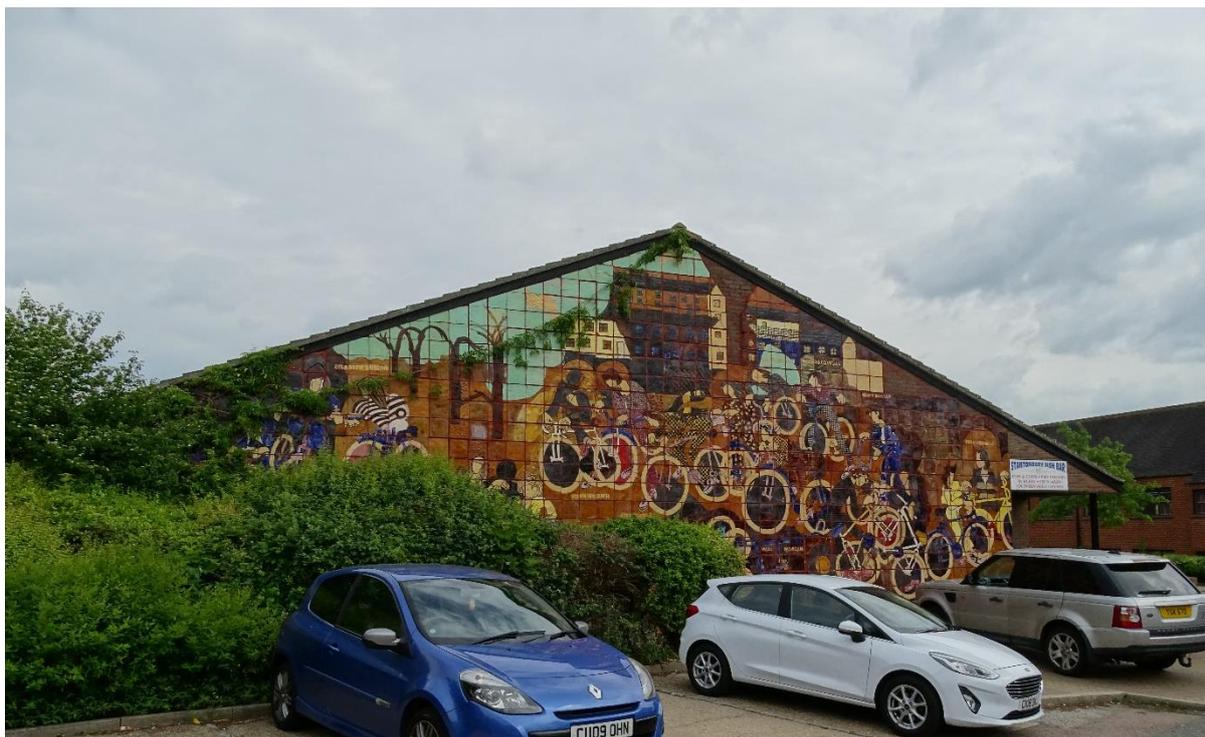


Figure 1 View of the whole Bicycle Mural during site visit

This report has been prepared by Sarah Cheng through Lincoln Conservation at the request of ALDI Stores Limited following initial plans already submitted regarding the redevelopment of 22-24 Stantonbury Centre. The report centres on understanding the significance of the ceramic mural attached to the exterior, south facing gable end of the aforementioned building, assessing its condition and providing a method statement for its removal from the wall, see Figure 1. The plans for the redevelopment of the site have been submitted to demolish the existing retail/commercial units and the construct a new Class A1 foodstore (1,790sqm) with reconfiguration of adjacent car parking and associated landscaping; Planning Application Reference: 18/01469/FUL (Milton Keynes Council, 2019). Objections have been raised due to the treatment of this mural and its removal, see 18/01469/FUL. All these documents have been taken into consideration when producing this report.

This report has been compiled following a visit to the mural to assess the site and the condition of the mural. A core sample of the mural had previously been removed and this was reviewed using microscopy to understand the body type of the tiles and adhesion to the substrate. While on site, members of the parish and the Chair of the Parish Council were also consulted. Pre-site information was provided through correspondence with Dan Templeton of Planning Potential.

1. Aims

The main aim of this report is to understand the proposals for the long-term future of the ceramic mural. The report will assess the condition of the mural and the impact of the current method statement and provide an alternative method. In addition, it will evaluate the proposed relocation of the mural.

2. Scope

This assessment of the condition of the mural is an overview to provide greater understanding into the factors that will impact upon the removal of it from its current position. The condition appraisal was impeded by the vegetation growth on site and as such access was limited to the full mural, however general guidelines have still been drawn.

3. Background information

There is no Historic Environment Record for this piece of public art. Research so far implies the following:

It was created collaboratively between John Watson, a ceramic artist from Wavendon to the south east of Milton Keynes and students from the Stantonbury School (Living Archive, n.d.). This is substantiated by an article from the Tile Society, they say that the mural was created by the artist with the help of children from the Stantonbury Campus school. The mural is intended to portray 'childhood happiness and enthusiasm'. The mural was made, and biscuit fired in the school's art department, glazed in the artist's studio, then fired again at the school before being fixed directly to the brick wall (Tiles and Architectural Ceramics Society, 2005). The mural was made to celebrate the opening of the Stantonbury Campus, see Appendix B, a progressive school of the time with a strong arts focus, the pupils wore no uniform and called the staff by their first names (Discover Milton Keynes, 2017).

4. Mural description

4.1 Surface

The large tiled mural is believed to have been created in conjunction with the children from the local school, this school can be seen from the site. The mural depicts figures on bicycles and built heritage in the background. The mural does not completely cover the wall but some of the edges form part of the scene. The surface relief of the tiles shows the use of incisions and surface texturing to add to the visual nature of the mural along with its colour palette, see Figure 2. Names of assumed pupils are incised into the design in various places and the work is signed by the artist, see Figure 3.



Figure 2 Central section of the mural showing the relief on the tile surface



Figure 3 Signature of the artist and friends

4.2 Size

Each individual tile is approximately square in shape and the length of the side varies in size, between 28-29cm, which highlights the handmade nature of the tiles. The mortar joints between the tiles is also variable, between 1-2cm with most of the gaps tending to be towards the larger size. The mural covers nearly the entirety of the gable end of the building, which is approximately 20m wide and 7.5m high to the apex of the roof, and the roof slopes down to a height of 2.5m (figures taken from plan, see Appendix D). Using these figures, the approximate area of the Mural is 100m².

4.3 Substrate

The substrate comprises a brick outer leaf of a cavity wall onto which the tile is adhered, see Figure 4. The adhesive is unknown but is relatively soft following observations of the core sample. It should be noted however, that while it is possible a proprietary adhesive was used, there could be varying degrees of strength and application across the whole area.

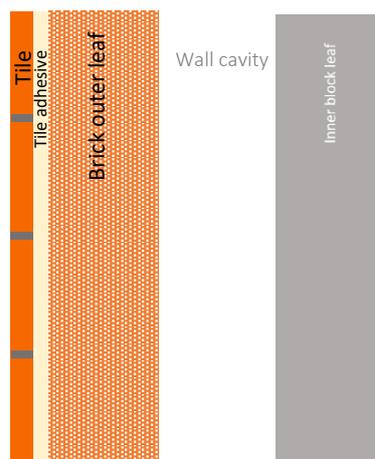


Figure 4 Diagram to indicate the construction of the wall

5. Condition assessment

The site was visited on 04/06/2019. The mural was recorded and assessed through Dino-Lite images (hand held digital microscope) of a core sample consisting of the tile body and substrate, and digital photography and observation of the mural in situ.

5.1 Core sample

The sample (see Figure 5) was removed in February 2019 to inform a previous method statement, (see Appendix C). The location of the sample was not apparent, and it is thought that it may have been removed from an area currently obscured by vegetation, to the bottom left of the mural (see Figure 1).



Figure 5 Core sample, demonstrating inconsistency of tile adhesive application.

Circular cored sample size:

Diameter		8cm
Total depth of core consisting of:		11.5 cm
	brick	10cm
	tile	0.75cm
	tile adhesive	0.75cm

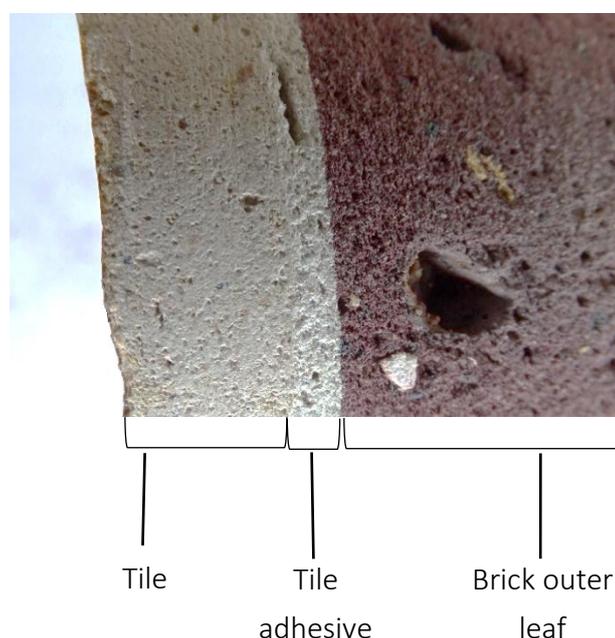


Figure 6 Macro photograph showing the tile and substrate

The core sample consists of the tile, tile adhesive and brick outer leaf, see Figure 6, observations of it enable conclusions to be drawn about the body type and glaze layers.

4.1.1 Body

The body of the tile is buff coloured and shows a variety of small coloured inclusions and air pockets, see Figure 8. These indicate that the tiles are earthenware and are likely to have greater than 5% porosity, this porosity can be clearly observed in Figure 6. It is probable that the clay body would have been formed and then biscuit fired, the glaze would then have been applied and a glaze firing up to 1100° would have been carried out. The glaze is gloss and translucent and shows a distinct layer from the body of the tiles, see Figure 7 (Buys & Oakley, 1993). These observations support some of the background research already gathered as to the stages of manufacture (see section 0).



Figure 7 Dino-Lite image of the defined glaze layer on the body of the tile x153 magnification.

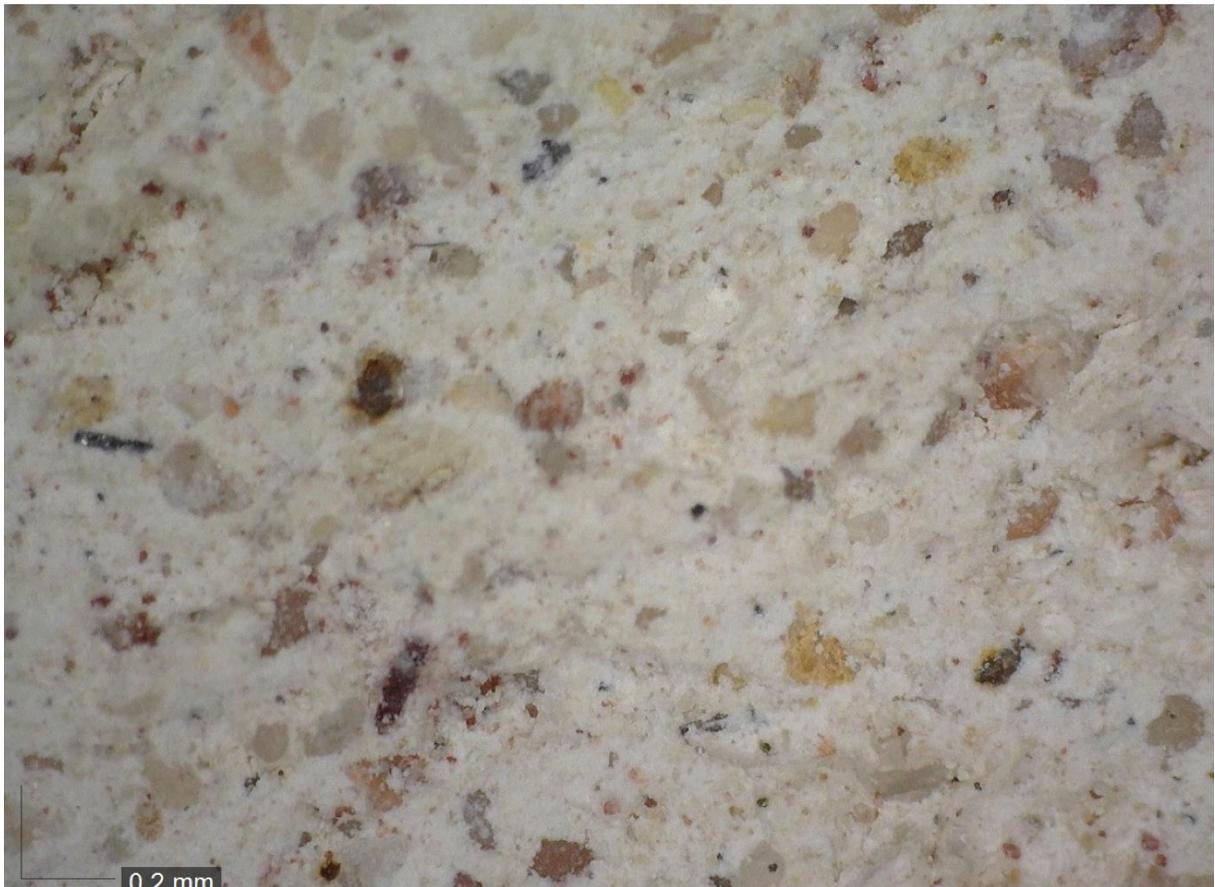


Figure 8 Body of tile taken with Dino-lite at 153x magnification

5.1.2 Glaze

The glaze fit is tenuous with signs of cracking and weak adhesion to the substrate, this crazing occurs due the different strains between the body and the glaze during firing and cooling, Figure 9. The edges of the crack structure appear to be quite sharp, indicating that this occurred to the gaze after it had set. This crack structure provides points of access for soluble salts to the surface.



Figure 9 Macro photograph demonstrating the crack structure of the glaze.

When tested with a number 10 scalpel blade, empirical observations concluded that the body of the tile is slightly harder than the adhesive holding it in place. In places where the tile and adhesive interact, they form a close bond with each other.

5.3 Mural condition assessment

The condition of the tiles behind the vegetation was not ascertained due to lack of access to this area. In general, the surface and structural stability and adhesion of the tiles to the substrate was in good condition.

5.3.1 Surface

There were some areas of deterioration of the glazed surface, it is likely that this is due to the presence of soluble salts which were noticeable on the face of the tiles to the lower two thirds of the mural, concentrated in white patches that follow the crack structure of the tile. The source of these salts is unknown at this point and could be from the tile body or substrate, further testing would provide more conclusive results. The recrystallisation of these salts from within the body of the structure has consequently led to the spalling of glazes on the surface. This deterioration to the surface of the tiles seems to be a combination of efflorescence see Figure 12 and sub efflorescence see Figure 10 and Figure 11, the later creating the most damaging effects on the surface (Torraca, 2009). The wall is south facing and therefore likely to achieve a higher heat gain and faster evaporation of water from the surface.

Firing cracks to the glaze surface was noted in places see Figure 12.

It was also assumed that there were areas of biological growth to the face of the tiles in the areas covered with vegetation.



Figure 10 Spalling of brown glaze to lower section of the wall with efflorescence above.



Figure 11 Spalling of blue glaze in the lower mid-section of the wall

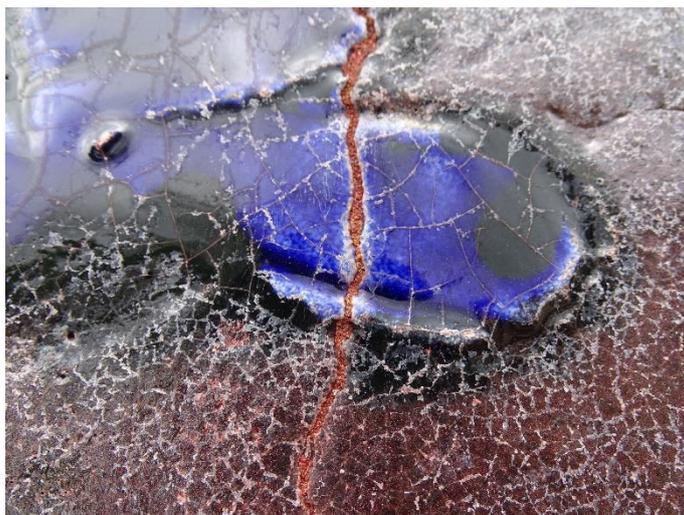


Figure 12 Appearance of soluble salts on the surface of the tile, also showing firing crack to the glaze. rounded edges demonstrate it took place before the glaze had set

5.3.2 Tile structural stability

A number of tiles have firing faults in the form of splits through the body of the tile see Figure 13, these are classed as manufacturing defects rather than as deterioration however, they are weak points in the scheme and allow water ingress (Hamilton, 1978).



Figure 13 Deeper firing crack through the body

The tiles in general, appeared to be structurally sound, and percussive testing suggested that the adhesion between the tiles and substrate was generally good in the areas tested however, only a relatively small area was tested due to access. Some small losses to the outside edges of the scheme were noted, although these were few, see Figure 14.

The mortar joints around the tiles appear to be structurally sound with little loss, however they show a crack structure, see Figure 15.

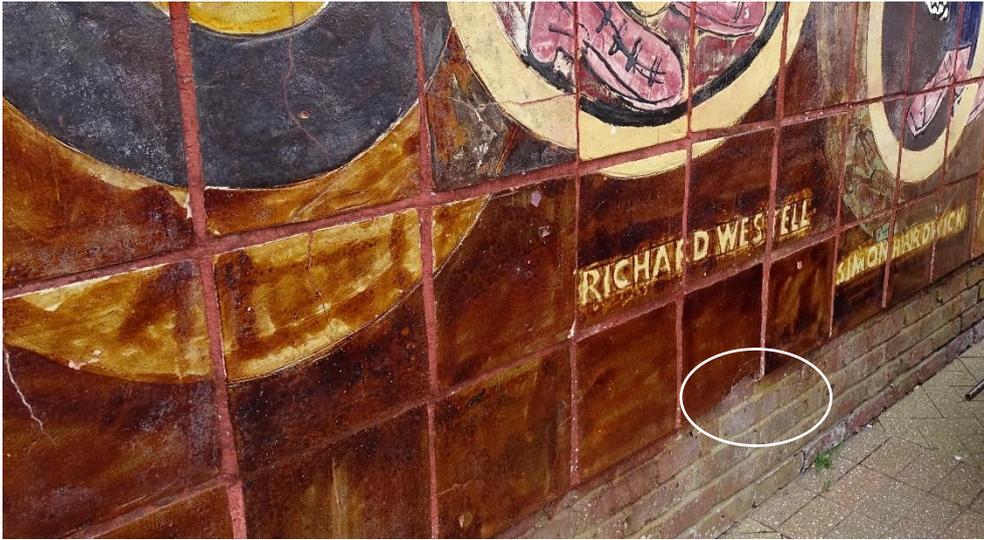


Figure 14 Loss to edge, ringed in white

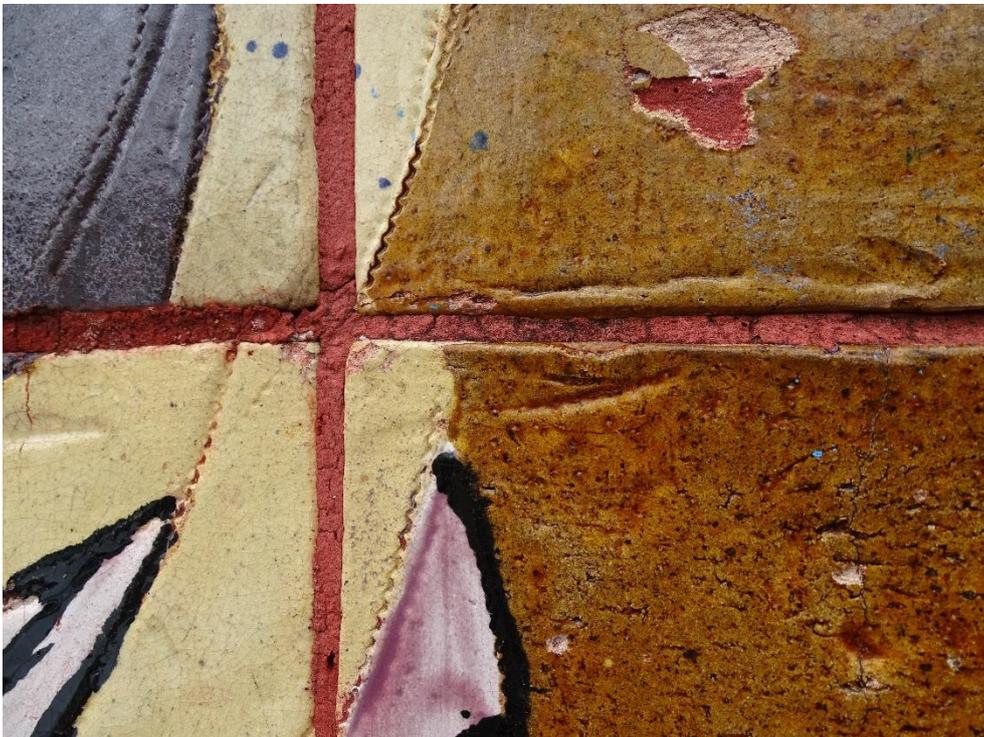


Figure 15 Detail of mortar joints

6. Method statement

6.1 Ethical considerations

The removal of tiles from their original location should never be undertaken lightly, as it is highly interventive and always carries with it the danger of damage and physical loss to parts of the scheme. This is in addition to the loss of social and commemorative values and those of the original context of the mural, that are particularly applicable here (Bond & Worthing, 2016).

It is acknowledged however, that sometimes the relocation of tiled schemes is necessary. These risks can be mitigated through fully assessing the tiles with an understanding of their properties and factors that affect the deterioration of ceramic bodies. This is an important role for the conservator on site, but a successful outcome of the project can only be achieved through collaborative work practices of a team including structural engineers and specialist cutting and heavy lifting experts. (Durbin, 2005)

The intention in this report is to provide a method of applying a facing to the tiles that can then be cut through along the substantial grout lines and then lifted in sections. A structural engineer will be required to calculate the precise size of these sections and specialist cutting and lifting equipment will be needed.

While other methods of removal are possible, this will provide the safest way for the tiles to be relocated. While all factors have been considered, it is acknowledged that there may be cause to adjust this treatment plan during the works, at which point a conservator with appropriate knowledge levels should be consulted.

It is recommended that conservators undertake the early stages of the work such as: surveying, cleaning and application of facings; to act as a watching brief and provide input during later stages. All stages of the work should be documented.

It has been assumed that the mural wall is constructed with a brick outer leaf and block inner leaf with butterfly ties holding the two together, see Appendix C. The removal of the mural should occur before demolition of the rest of the building to reduce the risk of damaging the tiles.

Following observations made on the body type of the tile and its substrate, and considering the condition of the tiles, the following method for relocating the tiles is recommended.

6.2 Removal of vegetation

Before any work can begin, the removal of all vegetation in front and attached to the mural should be carefully removed. Attention should be given to any roots or stem tendrils that may have penetrated the wall. If vegetation has breached the mural then these stem tendrils should

be cut, and the remainder left in place to be processed during later conservation work. Any incident of this should be recorded.

6.3 Survey

When access to all surfaces of the mural is available following the removal of vegetation and with scaffolding to the upper level, a full survey of the scheme should be undertaken. This should include but not be limited to:

- a high quality photographic record of the tiles, either individually or in small groupings;
- a condition assessment noting the location of damage and the likely deterioration factors of the tiles
- the stability of the mortar behind the tiles can be mapped through knocking the face of the tile with a lightweight rubberised hammer. The different acoustic returns should be mapped and will indicate the stability and adhesion to the substrate which will help inform processes during the removal stage

6.4 Cleaning

To facilitate future conservation work, the tiles must first be given a light clean to remove surface dirt and accretions. This will ensure successful adhesion of the facings. Care should be taken to monitor glaze attachment during this phase.

Mechanical cleaning using scalpel blades will be required to remove accretions, and wet cleaning may be required to supplement this. In this case, a solution of Synperonic A7 (synthetic alcohol ethoxylate) a non-ionic detergent, can be used to remove greasy residues applied with white nylon scourers. Care should be taken not to over-wet the fabric. A solution of triammonium citrate (to be determined) could also be applied to remove surface dirt, followed by rinsing with distilled water. All cleaning should be undertaken under the care of a conservator.

6.5 Application of facings

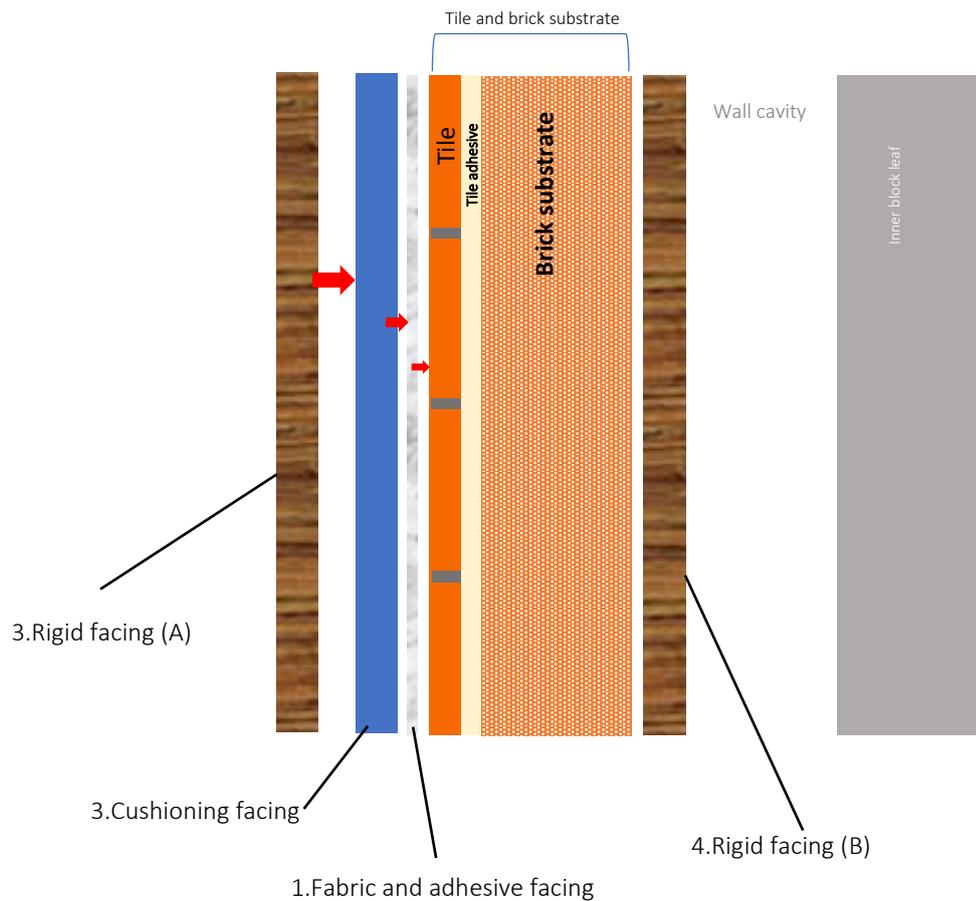


Figure 16 Diagram to show levels of application of the facings

The application of facings to the front of the tiled surface and to the rear of the brick outer leaf will ensure that during the cutting and lifting process, the tiles will remain secure. See Figure 16 to visualise the layers of facings. It is anticipated that the tiles be removed in approximately 4x4 sections where possible, this equates to panels just bigger than 1m², further guidance from a structural engineer should be sought to confirm this. These sections should be mapped before the facings are applied and a gap left in the grout line between sections. This will allow for cutting of the sections once the direct fabric and cushioning facing has been completed.

6.5.1 Application of direct fabric facing

The aim of the initial layer of facing is to support the face of the tile during relocation. This will be through the application of a fabric layer adhered into position. The fabric should ideally provide lightweight, yet strong support to the face of the tiles for example a spunbonded polyester material or a fibreglass fabric. Before application of the facing fabric, a barrier layer of 20 % Paraloid B72 (ethyl methacrylate/methyl acrylate copolymer) in acetone should be applied. This is a non-aqueous adhesive and therefore will not introduce water into the body

of the tiles and will serve as a removable barrier layer between the tiles and the layer of facing fabric (Casey, 2009).

Once the initial barrier layer has been applied and has set, the facing fabric should be applied in sections and 20 % Paraloid B72 in acetone brushed onto it to adhere it into position. This fabric should form a close bond with all surfaces of the tile face with no bridging in areas of relief. Several layers may be required particularly in areas of higher relief.

6.5.2 Cushioning facing layer

A cushioning layer then needs to be applied to absorb any stresses applied to the mural sections during cutting and lifting. The high degree of relief to the mural has the potential to cause a problem in different areas of contact when the rigid outer facing is applied, therefore these stress points need to be cushioned.

When the facing fabric and adhesive layer have set, small foam pads should then be placed on the high points on the surface to protect these areas. If the areas of relief are found to be too great, Jesmonite AC100 (acrylic modified gypsum composite) or similar, can be topically layered up to raise the levels. A layer of silicone rubber should then be pasted in place. This should be supplemented with a thixotropic additive to stop slumping during this process (Transport for London, 2017).

6.5.3 Rigid facing

It is at this point that the wall cavity should be accessed with removal of roof tiles and barge board to aid progress. Removal of block work and cutting of wall ties should be undertaken as the removal process continues down the wall.

Before the rigid facing is applied, holes should be drilled at the intersection of grout lines to receive stainless steel threaded rods, see Figure 17. These should be planned beforehand.

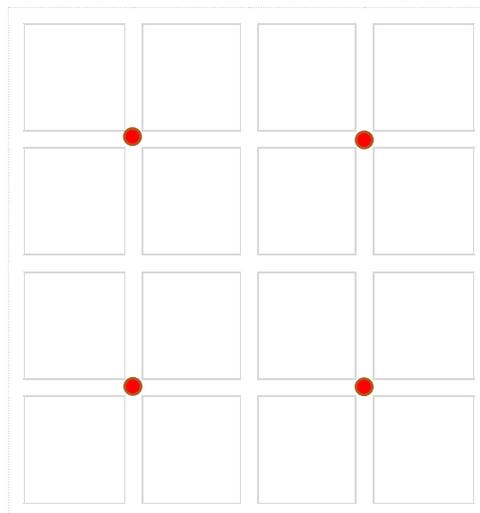


Figure 17 Representation of a 4x4 grid of tiles and positioning of stainless-steel threaded rods in red

A sheet of marine plywood should be pre-cut to the exact dimensions of the tile panel with holes to accept the rods, front and back. The plywood sheets should be applied to the mural face (A) and lowered into the cavity behind (B) see Figure 16 and the threaded rods pushed through, wall ties should be cut as necessary. Timber battens should be placed over the threaded rods and tightened into position with washers and nuts. These battens have a two-fold purpose of applying pressure to hold all the layers in place and enable handing and movement, see Figure 19 and Figure 18.

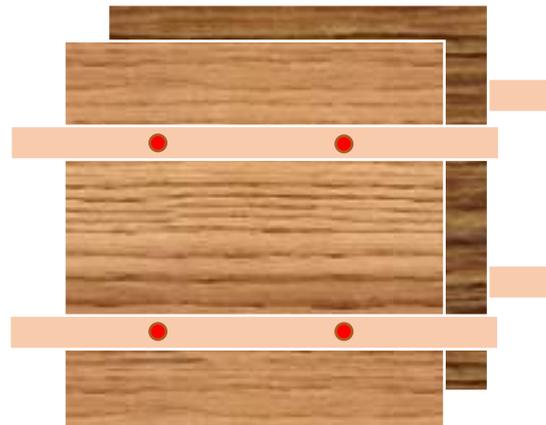


Figure 19 Diagram to show batten position in relation to the mural section and stainless steel threaded rods

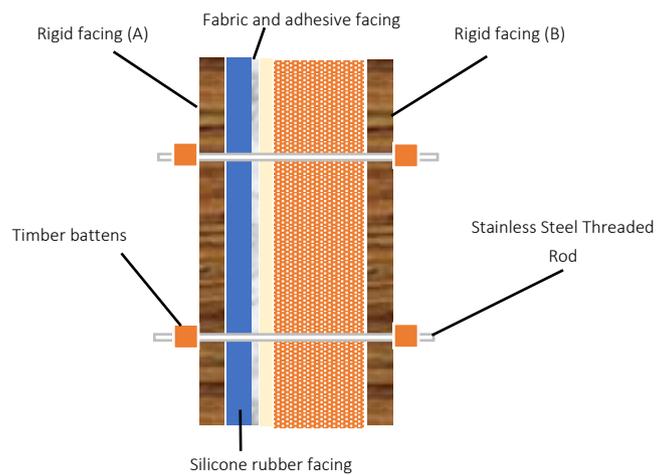


Figure 18 Diagram to show a faced section held with rigid facings, stainless steel threaded rod and timber battens.

6.6 Cutting, lifting and positioning of mural sections

Once all the facings have been applied, the designated grout line can be cut through. It is highly likely that these grout lines will not line up with the brick grout lines. To undertake this a specialist diamond wire cutting team should use to cut through the grout lines and brick substrate. While the grout lines are relatively wide, this channel should be kept as thin as possible.

The lifting team can then undertake removal of the section onto prepared pallets. Their positioning (face up or face down) should be agreed beforehand and this will depend on the long term agreed plans for the mural. Ideally, the murals should be placed face down with the brick substrate uppermost, this ensures that the substrate is accessible for removal without any further lifting necessary. If no long-term solution can be found, then the mural should be stored face up to lessen the strain on the face of the tiled surface.

7. Recommendations

- All works to the mural should be undertaken by specialist named contractors.

7.1 Post removal conservation

Prior to the relocation of the mural, conservation treatment will need to be carried out on the tiles, which includes removal of the substrate from the reverse, facing materials from the front, cleaning and the application of fills to areas of loss.

The mural sections will need to have the substrate removed unless the bricks are to be incorporated into the new location. This is possible in a controlled environment; the face of the tiles will already be cushioned with the substrate uppermost. The substrate can be removed using powered and hand tools under the supervision of a conservator.

Further conservation work should at least consist of the removal of the front facings, and cleaning of the tile surface. There are small amounts of loss to the outside edges of the tiles, these should be addressed once the tiles have been relocated in a compatible material with these areas retouched to match the original colour scheme. It is assumed that any losses will be those recorded before facings were applied. There may be small losses during the relocation process, but it is not anticipated that wide scale damage is likely if the work is carried out under the supervision of specialist contractors.

7.2 Relocation

As expressed previously in section 6, the removal of these tiles has tangible and intangible consequences for the tiles and community they once represented. Figure 20 shows the proposed new location for the mural and the map in Appendix F shows it within the context of the rest of the site. The previous intention for redisplay being summarised in the Appendix F.



Figure 20 Proposed new location of the mural

The location for the mural is close to the original site and therefore acknowledges the community values that this mural represents, to an extent. The site is close to the subway and the mural has the potential to be seen from the road. Within the site, however, it is awkwardly positioned behind trees and away from the main public entrance to the new building.

Therefore, the proposed location of the mural is deemed adequate, however in terms of displaying the mural at an angle, much of the visual impact of the mural will be lost and it will become an easy target for foot traffic and vandalism. Keeping vandalism to a minimum is best achieved in areas of high footfall with good lighting therefore vertical display is the best option.

The new substrate should be a material that is unlikely to introduce further salts into the body of the tiles. There are a wide range of lightweight and strong conservation grade materials such as Hexlite, an aluminium centred honeycomb board, that will provide this and potentially allow for a sectional redisplay process.

While the salts themselves do not cause damage, it is their crystallisation on or in the body of the ceramic following periods of wetting and drying. These salt crystals take up a larger area than the solution they were in, which causes the exfoliation of the glaze from the surface. The body type of the tiles is porous and allows for movement of moisture within the capillary system.

The previous method statement (see Appendix C) recommends an application of an epoxy resin coating; however, this will seal in any moisture, and soluble salts will be concentrated

within the tile with the potential for the disintegration of the body. This exchange of moisture should not be impeded by impervious coatings (Torraca, 2009). Depending on the final position of the mural, the optimal decision would be to leave it with no coating.

7.3 Documentation

- To record the mural prior to its removal, during works of dismantling and following installation in a new location and to provide a copy of those recording documents to the local authority within a specified period of time.
- To provide details of the location/s of the mural during periods of storage or handling.
- To install the mural within its new location within a specified period of time or prior to occupation of a building /development (Franklin, 2016).

7.4 Engagement

The mural forms part of the public art collection of Milton Keynes. The key to longevity and appreciation of public art is through good interpretation and engagement with the public (Franklin, 2016). The relocation of the mural provides a significant opportunity for the stakeholders in its future to engage with the values of the mural and to celebrate it. The mural, created collaboratively, was made to celebrate a key event in the life of Stantonbury and Milton Keynes as a whole.

8. References

Bond, S. & Worthing, D., 2016. *Managing Built Heritage: The role of cultural values and significance*. Second ed. Chichester: Wiley Blackwell.

Buys, S. & Oakley, V., 1993. *The Conservation and Restoration of Ceramics*. First ed. Oxford: Butterworth-Heinemann.

Casey, S., 2009. *Tiles Murals A new pre-conservation removal technique*. [Online]
Available at: <https://www.buildingconservation.com/articles/tiledmurals/tiledmurals.htm>
[Accessed 5 June 2019].

Discover Milton Keynes, 2017. *Building the City*. [Online]
Available at:
http://www.discovermiltonkeynes.co.uk/uploads/1/0/3/9/10393340/building_the_city_v2.pdf
[Accessed 7 June 2019].

Durbin, L., 2005. *Architectural tiles: Conservation and Restoration*. First ed. Oxford: Butterworth-Heinemann.

Franklin, G., 2016. *Post-War Public Art: Protection Care and Conservation*. s.l., Historic England.

Hamilton, D., 1978. *Architectural Ceramics*. First ed. London: Thames and Hudson.

Living Archive, n.d. *A living history of Milton Keynes*. [Online]
Available at: <https://www.livingarchive.org.uk/content/local-history/areas/wolverton/the-history-of-wolverton-in-100-objects/objects-41-50/object-no-48-john-watson-drawing>
[Accessed 3 June 2019].

Milton Keynes Council, 2019. *Planning – Planning Application Documents*. [Online]
Available at: <https://publicaccess2.milton-keynes.gov.uk/online-applications/applicationDetails.do?activeTab=externalDocuments&keyVal=PAENJ2KWKDQ00>
[Accessed 17 May 2019].

Tiles and Architectural Ceramics Society, 2005. *The Tile Gazetteer*. [Online]
Available at: <https://tilesoc.org.uk/tile-gazetteer/buckinghamshire.html#r6>
[Accessed 5 May 2019].

Torraca, G., 2009. *Lectures on Materials Science for Architectural Conservation*. [Online]
Available at:
https://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/torraca.pdf
[Accessed 6 September 2017].

Transport for London, 2017. *Art on the Underground*. [Online]

Available at: <https://art.tfl.gov.uk/projects/paolozzi-restoration-at-tottenham-court-road-station/>

[Accessed 30 May 2019].

Appendices

A: Tile survey data

Location

22-24 Stantonbury Centre

Date

04/06/2019

Weather conditions

Overcast with periods of short showers

Orientation

South facing

Setting

Gable end on an exterior wall, substrate is brick and there is a wooden barge board to the roof line

Artist/Architect

John Watson assisted by Barry Brown and Stantonbury friends

Description

Large tiled mural believed to be created in conjunction with the children from the local school, which can be seen from the site. Mural depicts figures on bicycles and some built heritage in the background. Mural does not completely cover the wall but some of the edges form part of the scene. There is a definite relief to the surface with clear use of incision and surface texturing to add to the visual nature of the mural along with its colour palette. Names of assumed pupils are incised into the design in various places and the work is signed by the artist

Individual tile size

28-29cm-28-29cm

Mortar gap

Varies 1-2cm

Scheme size

Approx. 1200 tiles

Glaze type

Mainly gloss

Body type

Earthenware

Substrate

Brick with adhesive

Deterioration

Tile condition behind the vegetation is unable to be ascertained due to lack of access to this area.

Surface

Glaze deterioration, particularly in the blue glazes. Soluble salts noticeable on the face of tile to the lower two thirds at least, however this is concentrated in sections, consequently leading to spalling of glazes. It is assumed that there is some biological growth to the face of the tiles in the areas covered with vegetation. A number of tiles have firing cracks which are not classed as deterioration, however they will prove to be weak spots in the scheme either through water ingress or movement.

Structural

Tiles seem structurally sound. Some small losses to the outside edges of the scheme although these are few in number. Bond to substrate is sound in general.

B: Community response to mural

Via email to Sarah Cheng

Date: 06/06/2019

Hi

I understand you are interested in the bicycle wall at Stantonbury Milton Keynes.

My name is on the wall.

The wall was made to feature many of the foundation year students on the day the campus first opened of which I was one.

I spent the remainder of my secondary school years at the campus along with most others featured there.

It would be very sad to see something disappear that has existed all these years and that marks the campus opening.

If you have any information on the plans for it please let me know, if you would like more information please feel free to contact me.

Best regards

SH

AVONSIDE CONSTRUCTION MANAGEMENT LIMITED

205 FORT DUNLOP FORT PARKWAY BIRMINGHAM B24 9FD



TEL: 0121 730 2363

FAX: 0121 747 1944

www.avonsidecm.com

Method Statement of Mural Artwork, Purbeck, Stantonbury.

This Method statement is specifically written in regards to the future treatment of the bicycle mural wall at Purbeck, Stantonbury. The Method Statement reviews the nature and method of fixing of the mural, to consider how it should be removed and preserved as a consequence of the proposed redevelopment works at the site.

Although the mural is neither subject to statutory protection, nor local conservation requirements, it is known to be widely appreciated and valued, and there is a clear desire for it to be preserved in a form that enables its future appreciation. As a consequence of the mural's location within the site, it is widely accepted that the mural will require removal and relocation as part of the development works.

This Method Statement therefore sets out the approach to be taken to its proposed dismantling and relocation to an area agreed with the Parish Council.

Initial Appraisal

In February 2019 a core sample was taken of the existing tile mural and the brickwork to which it is attached. The core sample was taken from the bottom of the wall towards its eastern side. The core sample (which has been provided to the Parish Council) shows the make-up of the tile, adhesive and brick used in the construction of the existing units.

The mural is mounted on the external face of an existing cavity wall, which has an inner leaf of blockwork and an outer leaf of brickwork. The cavity wall includes 'butterfly ties', which are located in 1m internals, with staggered centres.

The core sample has revealed that the adhesive between the mural tiles and the brickwork base is stronger than the ceramic tile. As a consequence, the tiles are not capable of safe removal from the brickwork beneath and this is not a recommended course of action – it is likely to lead to the cracking of tiles beyond reasonable repair. An alternative method of preservation is therefore proposed. The entire cost of this work will be borne by ALDI Stores Limited.

Proposed Approach

As a consequence, this Method Statement sets out the process for the proposed removal of the entire wall structure and its relocation to a site in the immediate vicinity of the Local Centre.

Removal/Programme

The programme will require the removal/relocation of the mural as an early part of the overall build programme for the ALDI store.

Prior to any works being carried out, all foliage around the wall will need to be removed to allow a high resolution photograph to be taken of each individual tile. This will allow all parties a record of the undisturbed mural and will provide a safeguard should any tiles become damaged beyond salvage. Should this arise, the high-resolution photograph will allow the opportunity for the tiles to be recreated and replaced without significantly impacting the integrity of the artwork itself.

Prior to demolition, a scaffold structure will be erected inside and outside of the gable end surrounding the mural. On the ceramic face, a self-adhesive, low tac PVC protection will be placed to ensure that the face is protected during the removal works.

Once deemed safe, we will begin controlled demolition of the rest of the building. When the debris resulting from the demolition is cleared from site, we will begin deconstruction of the gable end complete with the mural.

Diamond cutting equipment will be used to cut between the joints of the tiles, keeping the tiles intact and attached to the brickwork, which will also remain attached to the blockwork behind. As each section of brick / tile is cut we will carefully remove the block work behind, one block at a time, which will mean that the butterfly ties can then be cut from the brickwork / tile. The block work will be removed at the same time as the brickwork/ tiles are removed. The butterfly ties are placed approximately every 1 metre apart, and once the process has started it will be possible to identify each tie.

Diamond cutting results in lower friction, therefore minimising damage to tiles.

As each piece of the entire wall is removed, it will be laid out on pallets in a secured area, this process will be repeated until the full mural is laid out in the secured area. Immediately following its removal, the wall structure will then be moved to a new display location.

A relocation site has been suggested immediately to the north of the proposed ALDI store (see plan – area highlighted in blue) within the public realm, where the mural can be laid on the existing embankment so that it can continue to be appreciated and enjoyed by local residents, stakeholders and visitors to the area. The area of land proposed is owned and managed by The Parks Trust, who have confirmed their in principle agreement to the mural's relocation.

Prior to re-laying the mural, the site will be cleared and a base slab will be created, which will provide support for the mural. When the placement of the mural has been satisfactorily completed, a sealant will be applied to protect the artwork. This sealant will be a graffiti and crime resistant Epoxy resin that will prevent the artwork from any accidental damage or anti-social activity.

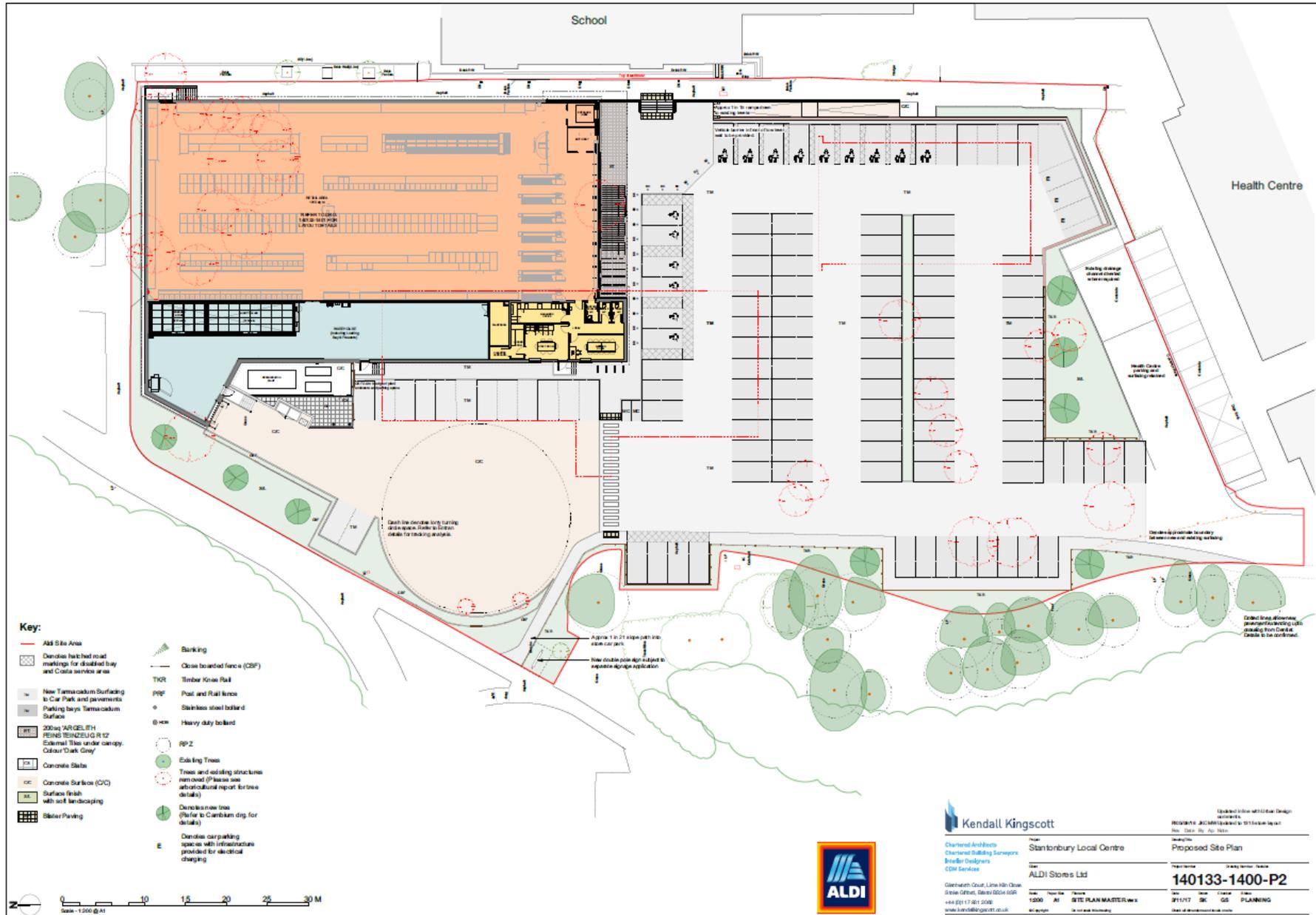
An information structure (to be agreed with Stantonbury School and Parish Council) will be constructed within the area to show information that the Parish Council and school would like to see alongside the Mural.

Contingency

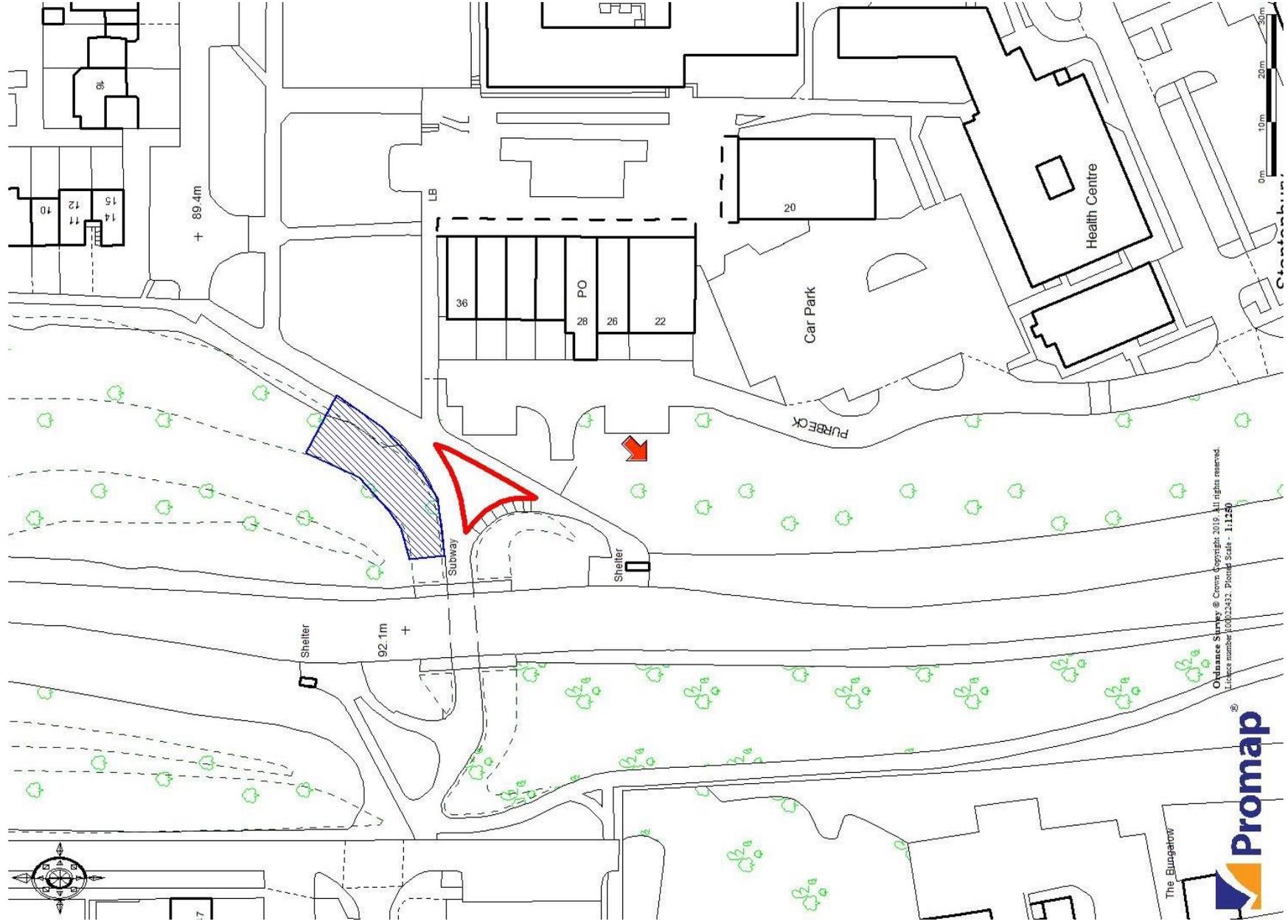
As set out above, prior to the commencement of any works associated with the mural, a highresolution photographic record will taken of each tile. This will enable the tile to be re-created in the event that a tile were to become severely damaged.

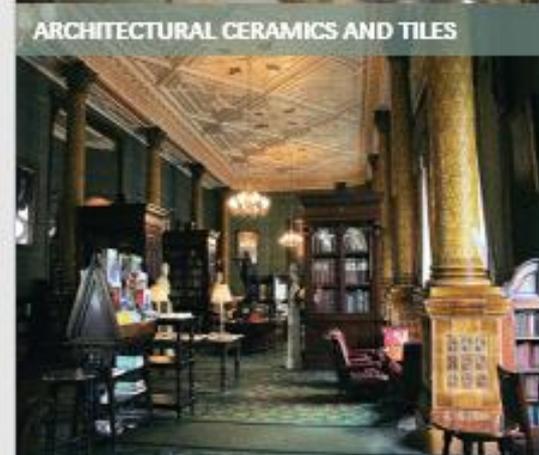
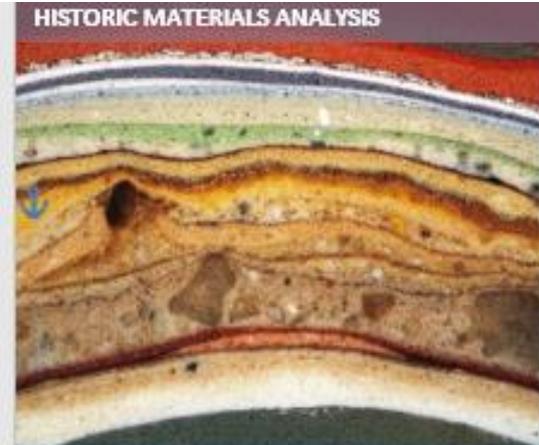
As a final contingency and only in the event that the mural is not be capable of salvage, ALDI Stores Limited will make a financial contribution of [to be agreed] towards the provision of new work(s) of public art within the Stantonbury campus.

E: Proposed site plan



F: Proposed Mural relocation site





www.lincolnconservation.co.uk
info@lincolnconservation.co.uk
01522 835055 or 5051



Lincoln Conservation is a specialist research and consultancy centre within the University of Lincoln.