

BROADWATER FARM ESTATE

PROPOSAL FOR DISMANTLING, CONSERVATION WORK AND RE-INSTALLATION OF
BIG MURAL MOSAIC ON FACADE OF THE BUILDING



INTRODUCTION

DBR Conservation has been involved in producing methodologies for securing, removing and re-installing of a great mosaic situated on the facade of Broadwater Farm Estate.

The building itself is in demolition phase and therefore, due to the same location of the mosaic and the lack of scaffolding at the front facade, the access to it is temporarily limited.

With the help from Senior Project Manager of Haringey Council and collaboration with Hughes & Salvidge (demolition company), DBR Conservation has managed to inspect and assess the site in order to establish the extent of work and outline some proposals so that this amazing artwork can be relocated to allow this cultural asset to continue to be enjoyed and celebrated.

The mosaic was installed in the mid Eighties meaning that it was completed some 20 years after the building had been constructed in the Sixties.

In fact, the shaft around which the mosaic was placed, used to be the rubbish chute of the building. It's U-shape and predominant positioning in the centre of the facade was absolutely perfect for welcoming the artwork.

Architecturally, the shaft has a role of the “visual connection” between access galleries and residential levels and and it is a “block”¹ of reinforced concrete that extends upwards to all five floors starting from the first.

The shaft is 2981.5mm wide and the depth is 1143mm (overall width is 5267.5mm) while its height measures 16970mm.

The thickness of the concrete including the mosaic is 228.6 mm.

Total surface of the mosaic is 89,058sqm (approx. 90sqm)².

When the mosaic was laid, the rubbish chute was eliminated and so there was no more access to dispose of the rubbish on each and every floor level (Image 1).



Image 1 - Rubbish chute entrance blocked with a wall

- 1 At the moment, we are not able to establish if this is really the only big block of cement or it is made up of few interconnected U-sections. There are no signs of joints that can be noticed after the first invasive investigative operations carried out at the back of the shaft but those could have been hidden between floor joints and therefore invisible from inside.
- 2 For further technical/structural information on the shaft, please see the “Report on Structural Demolition” by Hughes & Salvidge 2122-38-R01(Edition1), May 2022, in attachment.

The building entrance was probably modified with an additional glass and metal structure to eliminate the place that was designated previously for rubbish bins/containers. This new entrance integrates the first level of the shaft and so the mosaic results covered (image 2).



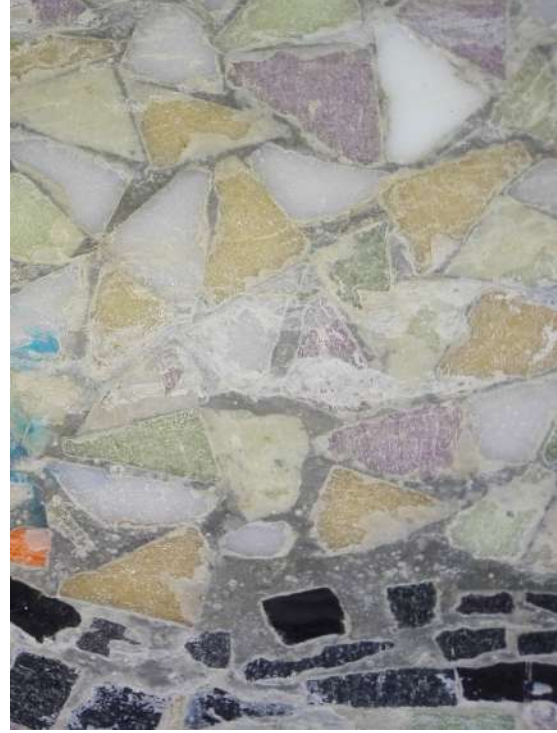
Image 2 – First floor level

TECHNIQUE OF MOSAIC MAKING: “REVERSE METHOD”

The mosaic is made up of different shape tesserae in vitreous paste that measure 4mm in thickness. These tesserae, some of which were cut and shaped by hand, were inserted face-down to create a design previously prepared by the artist on a backing paper soaked in reversible adhesive. Everything was divided in few sections and panels of different shapes and various dimensions (approx. 1000mm or 1200mm). Once the wall backing was prepared with a cement based adhesive, each and every panel was installed, pressed on to the adhesive and left to dry for about 2 days. The backing paper was then removed and the mosaic was ready to receive the final cement based grouting.

CONSERVATION STATE OF THE ARTWORK:

The mosaic, except its section on the first floor, is exposed to bad weather. The tesserae, being in vitreous paste and therefore non-porous, are continuously being washed away by rain and result to be rather “clean” even if they are covered with superficial limescale that tends to opacify their colour. Significant problems can be found on the material of cement origin used for glueing and final grouting. In fact, there is a presence of crystal clear efflorescences which is a whitish patina created as a result of chemical reaction of cement carbonation (Images 3a-b).



Images 3a-b – “Opaque”effect due to hight presence of limescale plus whitening of cement carbonation

This natural phenomenon is very common and is not necessarily risky for the cement but it causes a superficial weakening which creates a partial detachment of the tesserae from the wall backing (image 4a-b).



Images 4a-b – Detachment of tesserae from the substrate

During the second site visit, DBR Conservation carried out a “tap testing” on the tesserae in different accessible areas and could notice what was previously described.

Above mentioned chemical phenomenon, the partial detachment of the tesserae from the backing and inevitable structural movements of the building have inevitably caused the loss of pinpointed portions of the mosaic (Images 5a-b).



Images 5a-b – Portion of lost tesserae

The process of advanced carbonation with subsequent metal corrosion inside the reinforced cement is present on the first floor where the mosaic is inside the structure.

The flat roof in reinforced concrete that leans onto the shaft has created for many years copious amounts of water stagnation which, as years went by, have caused numerous infiltrations between the shaft and the roof. Infiltrations of water, saturated with iron oxides and saline efflorescences, have completely covered the mosaics, making it almost illegible (Images 6a-b).



Images 6a-b – Staining caused by rust and saline efflorescences

The phenomenon of intense humidity can also be noticed through heavy presence of moss that also attacked the cement material in between the mosaic tesserae. When the moss expanded, the tesserae subsequently fell out (image 7a-7b).



Images 7a-b – Moss attack

Further found damages of vandalistic nature such as cracks/knocks and graffiti are also present at eye level (Images 8a-b).



Images 8a-b – Graffiti, paint and vandalistic acts on the mosaic surface

CONDITION REPORT

Erection of a covered scaffold is indispensable and needs to be stretched along the shaft perimeter so that all surfaces of the mosaic can be reached ergonomically. Work needs to be carried out according to specific guidelines from DBR Conservation and the structural engineer in order to safeguard the workers' safety as well as not to affect the mosaic structure itself (i.e. the scaffolding needs to be “free” and not attached to the shaft structure).

A full condition report will be then undertaken.

This will include:

- ! Photographic documentation of the entire mosaic area.
- ! Tap Testing of the entire mosaic surface
- ! Mapping of damaged areas.
- ! Creation of the templates³ of the tesserae that are at risk from falling and cataloging/numeration of each and every tessera removed for their future positioning.
- ! Estimating number of missing tesserae

RECOMMENDATION FOR PREVENTATIVE WORK

Recommendation of a “preventive” work will cover conservation methodologies for securing the mosaic so not to risk creating any damages during “removal” phase of the mosaic from the structure.

This will include:

- ! General dry cleaning of the mosaic surface using soft-bristle brushes to remove consistent and inconsistent general particles and deposits of salts on the surface.
- ! Rinsing of the entire mosaic surface using soft-bristle brushes and a mix of Vulpex detergent⁴ and water (1:6).
- ! Re-rinsing with clean water and drying of the surface with microfibre cloths so not to leave watermarks on the surface.
- ! Once the surface is completely dry, application of a mix of Paraloid B72 consolidant in acetone⁵ (percentage to be established after appropriate trial tests) on the entire surface, with concentrations on the damaged areas and those with cracks.

RECOMMENDATION FOR A SAFE MOSAIC REMOVAL

We can start by saying that attempting to remove the mosaic from its backing mortar to release the artwork from the concrete structure is in itself an extremely invasive technique.

Everything gets even more complicated when this backing and the “screed” are in modern cement.

The modern cement and concrete might also be modified with additional polymers which make these materials incredibly strong.

DBR Conservation has explored many options in order to find the best solution to remove the artwork that would have the least physical effect on the mosaic.

Partial removal of backing screed by means of cutting a limited (few millimetres) portion of mosaic

- 3 Templates will be made using the “frottage” technique or rather placing big paper sheets (i.e. thin washi paper or similar) directly onto the mosaic and rubbing wax pastels on the sheet. The result will be a perfect copy of each tessera and its exact position.
- 4 For further information on the product, please refer to technical sheet in attachment.
- 5 Application of Paraloid B72 in all surfaces will allow us to create a strong consolidation/bonding in every part of the mosaic, especially the weakest one. For further information on the product, please refer to technical sheet in attachment.

with its background starting from the top to the bottom is, unfortunately, not to be considered given that the mosaic is U-shaped and therefore wherever we started to cut we would risk to damage a lot of surface on the mosaic sides.

By “stripping” tesserae from the screed using the traditional technique of animal glue and gauzes glued in layers directly on to the surface is not to be considered due to the nature of the glass tesserae being very brittle. The continuous pulling and tapping process for detaching the tesserae from the background would break a vast amount of tesserae.

This system is used on old stone mosaics laid onto fragile and not coherent lime mortar beds.

The cemented “screed”, where the tesserae were “glued” onto, is approximately 30mm thick and very compact so it results to be one body only with the reinforced concrete shaft.

DBR Conservation, collaborating with the contract demolition company Hughes & Salvidge and the Haringey Council technical office led by Peter de Bique, have proposed an alternative that seems to be far less invasive compared to others and we hope that it can be taken into consideration by the officers of the competent authorities for their approval.

This technique includes cutting horizontally the shaft in sections starting from the top and using Diamond Wire cutter or Diamond saw cutter⁶ as detailed below.

LOCALISED REMOVAL OF TESSARAE PRIOR TO DIAMOND CUTTING

DBR Conservation will create the tesserae templates of the cutting areas with relative photographic documentation. The tesserae will be numbered and safely stored in order to re-use them once the “bodies” of cement are re-joint together. The tessera removal technique will be carried out mechanically using dental tools and cutting around tesserae with diamond blades attached to a rotary tool Dremel in order to open the joints between each tessera. Then a gentle tapping with a wooden chisel will facilitate the tesserae to get detached from the substrate. This system should allow to save at least 80-85% of original tesserae unless these are not already broken⁷

The edges of the removed areas will be consolidated by means of using Paraloid B72 and will be bevelled through application of a non-dry plasticine clay so that the tesserae are sealed and penetration of water during cutting prevented. The cutting strips will be left exposed in order to keep the cutting process under control in its every millimetric movement from the outside of the shaft towards the inside.

If in some cases it is not possible to follow existing joints, the cutting lines will be chosen according to the type of tessera. Before the cutting commences, we would, for example, opt for the removal of an entire strip/band of standard square tesserae rather than removing the ones that were originally cut & shaped by (the artist's) hand.

In both cases the removal of tesserae above and below the cutting lines is expected and should be considered in order to avoid any risk of breaking the edges of glass tesserae due to very uneven joints lines.

The cutting methodologies and possible removing of tesserae in cutting areas mentioned above will be decided upon after preliminary tests trials which will further highlight the validity and quality of the system. In any case, the work will always be maintained at the highest standard levels of the mosaic preservation and protection.

⁶ The cutting process is a highly specialised work, so a specialist company will be involved in this process. DBR Conservation will supervise their actions from start to finish.

⁷ This is just an estimate but in any case the removing will be carried out with extreme caution and trials will be carried out to establish the validity of the technique.

DIAMOND WIRE CUTTING

Diamond wire is one of the modern cutting technologies widely used in “controlled demolitions”. It was originally used in quarries to cut big blocks of marble, granite and all sorts of hard stones but, with the modern technology, it is also used on reinforced concrete, big concrete screed and foundations. The diamond wire cutter doesn't have any limit of depth that it wouldn't be able to cut through.

The diamond wire is a stainless steel cable with a diameter of 5mm to 8 mm, surrounded by small cylinders where synthetic diamond pearls are attached onto their surfaces.

These cylinders are separated one from another by high pressure plastic material.

The structure is surrounded by the cable which is connected to pulleys.

These pulleys are moved by a machine and create a rotation, pulling the cable according to the cutting line. The cooling water system prevents the cable from becoming hot and at the same time it prevents the spreading of dust in the air.

The low noise, the absence of vibrations and the ability to cut large volumes, makes this system a possible solution for this mosaic project - a solution that can be fundamental when it is necessary to intervene on just one portion of a building without compromising the stability of the structure.

TRUCK MOUNTED DIAMOND SAW CUTTING

An alternative to diamond wire cutting is the diamond saw cutting.

The saw has a stainless steel blade coated with synthetic diamonds which rotates in one axis only and therefore, being so stable, it cuts the material in a neat and clean cut. The cooling water system, also in this case, prevents the disk from becoming hot and at the same time it prevents the spreading of dust in the air. This machineries can cut vertically, horizontally and diagonally due to their guides rail system. This system, like the diamond wire cutting, consents the removal of large portions of material like concrete without interfering with the surrounding area while controlling dimensions, volumes and weight.

The system can be applied to any kind of material, even onto the heavily armatured concrete and it is a valid alternative to the diamond wire cutting system for its speed, precision, low noise and absence of vibrations.

A big advantage of this system over the diamond wire cutter is the thickness of the cut line.

In fact, the amount of lost material when using a wire cutter is bigger than when using a diamond disk. The amount of lost material with diamond saw is 4.6 mm and this is a fundamental difference when every millimetre of this precious artwork can not be neither underestimated nor wasted.

LIFTING AND HANDLING BLOCKS

A competent company will carry out a suitable lifting and loading test with the help of a structural engineer so to establish the right method of action.

A possible method for lifting the blocks could be using specially designed anchors to lift very heavy cement masses. These anchors would be inserted on top of every block by carefully drilling holes, and a special resin would be injected inside so to create an extreme bond between the cement mass and anchors.

A pulling test will be then carried out to check the strength of the anchors before creating any lifting tension.

During the cutting process, the block will be sustained creating tension by crane which would take the strain off the heavy load. Stainless steel pads will be inserted inside the cut line in order to keep the block in “loco” and so to keep the cut line open.

A stainless steel standalone structure with a heavy duty electric chain hoist could be also built along the whole length of the shaft so to provide further stability and safe tension to the blocks when lifted and then brought back to the ground.

DIMENSION OF BLOCKS

Please find the calculation of the estimated weight of a concrete slab:

Volume of 1-metre block = 1,195 m³

Density of concrete = 2,400 kg/m³

Therefore the weight of 1-metre block is 2,868 kg (around 2.9 tonne)

The sections could be varied but should initially be established according to the crane payload and methods (still to be confirmed by means of suitable load verification and safety) of lifting of the cement masses.

DBR Conservation will highlight the areas to be cut taking the above mentioned variations into account, and opting for a cut across existing panel joints created by the artist on the mosaic when these are as long as the perimeter of the shaft itself (images 9-9a-b).

Image 9 - Existing joint along the perimeter of the shaft

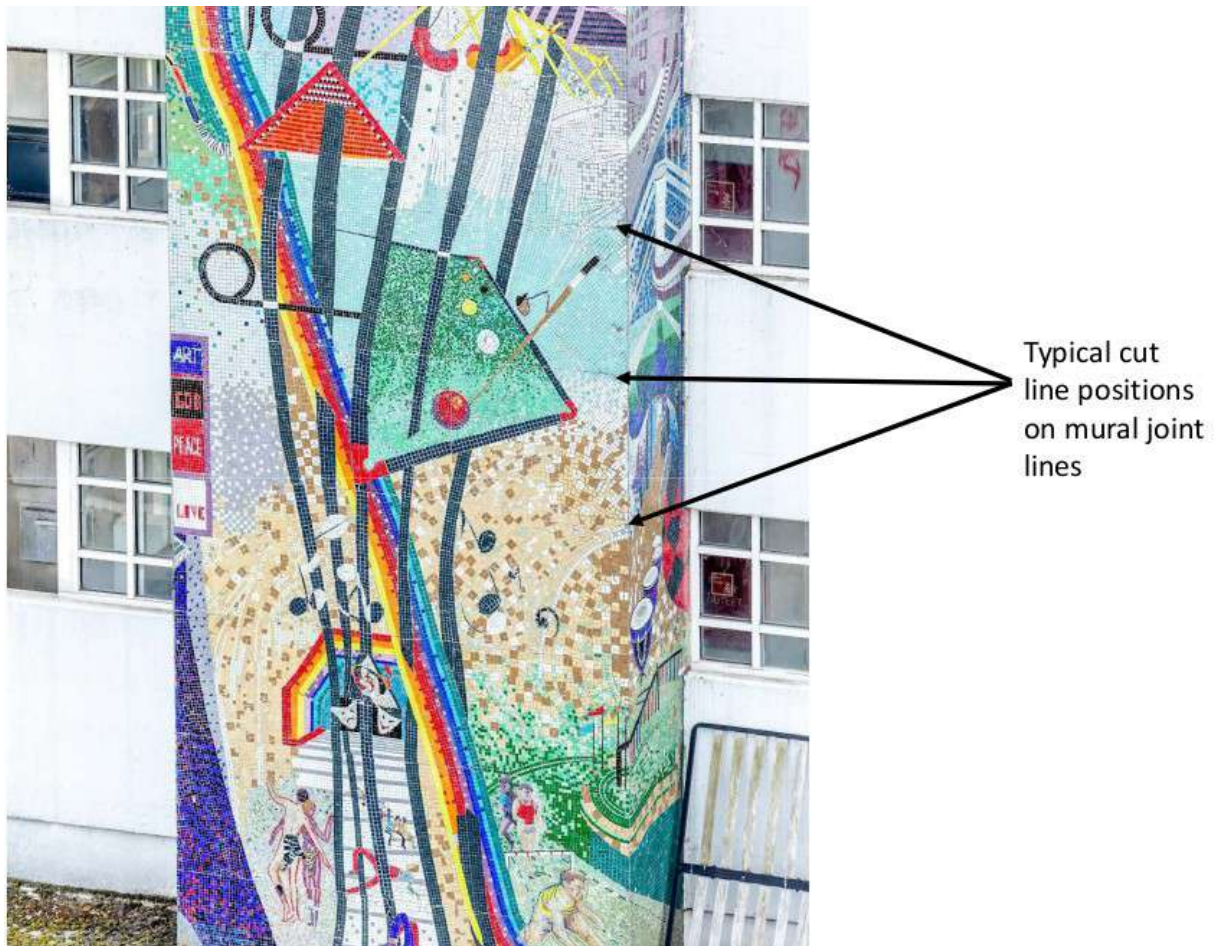
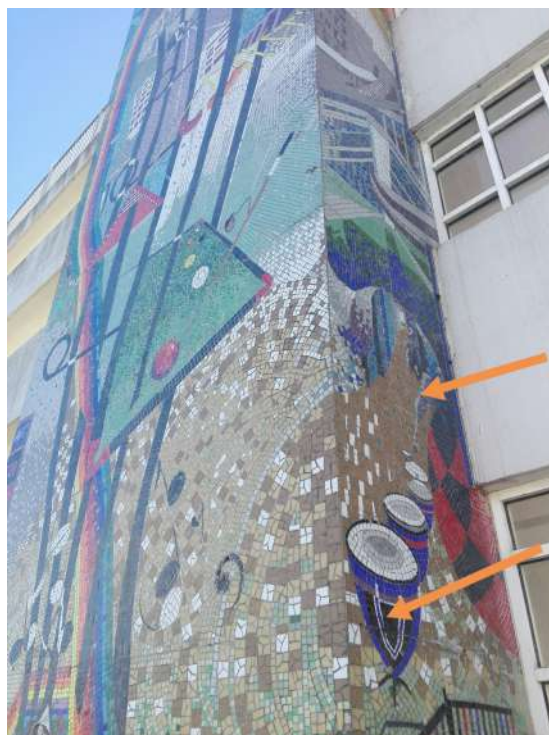


Image 9a



Image 9b



PROPOSAL FOR SECURING THE MOSAIC

Once the cutting sections are agreed upon, the mosaic will be prepared and secured through application of at least two criss-crossed layers of cotton gauze with the aid of Paraloid B72 paying attention that every layer is perfectly stuck onto the surface.

FURTHER REINFORCEMENT

If during the testing phase the layers of cotton gauze in Paraloid B72 are not sufficient, we will consider the use and application by brush of a homogeneous layer of silicon rubber⁸ so to create elasticity inside the “safety jacket”. Above it, we will apply a series of layers of quadaxial fibreglass fabric soaked in Jesmonite AC300resin⁹ which would provide further stability (Sandwich system) and resilience to the “safety jacket”.

STORING OF MURAL MOSAIC BLOCKS AND ESSENTIAL EQUIPMENT

So, the cut blocks will be lifted and brought to ground on top of big heavy duty shock absorbing pads, loaded onto a truck and transported to the nearby area that has been designated and organised specifically to welcome the artwork¹⁰.

A big, covered and limited-access and alarmed storage compound will be designed and built in a confined area especially so that the work can be carried out in total safety inside. Conservation materials are sensitive to severe change of temperature and humidity, so it is essential having an indoor dry environment to keep the atmosphere to an acceptable level, especially during winter time.

The blocks will have to remain being lifted off the ground by reinforced timber/stainless steel structures so that their heavy weight doesn't cause any possible damage to the mosaic sides or edges. Each block will have to be positioned facing upright in order to work on both edges and rise enough from the ground in order to work on the sides¹¹.

⁸ This rubber is primarily used for the casting of low melt alloys, both centrifugally and by hand, or where a very firm mould is required.

⁹ For further information on the product, please refer to technical sheet in attachment.

¹⁰ The lifting of the blocks and their transport to a safe place will be carried out by competent company and in all cases DBR Conservation will supervise these actions from start to finish.

¹¹ A particular lifting equipment is essential to be installed on each block in order to carry out operations as such and

Constructing a heavy duty flooring in the work area is also forecast so that the blocks can be moved and turned with adequate lifting equipment and vehicles in order to facilitate conservation work and storage.

Good lighting system inside the storage compound is essential. LED Site lamps would also be installed to create a closer light when needed.

110V power system is mandatory on site.

Welfare spaces such as organised anti-vandalism containers should be installed in the confined area by the storage compound for a Office, Canteen and toilets (Men and Ladies).

A specified area is also forecast for COSHH materials.

A ventilation system is essential to keep a reasonable air flow inside the working area in order to contain dust and fumes that certain operations would possibly create¹².

CONSERVATION WORK OF MOSAIC BLOCKS ONCE STORED

The first step will be to remove the “safety jacket” above the mosaic “faces”.

Paraloid B72 will be dissolved through soaking of gauzes in acetone which will then be gently lifted.

Residues of Paraloid B72 on the surface will be removed using cotton-wool pads soaked in acetone. Once the protection is taken away, an assessment and condition report will be undertaken on each unit.

A series of samples will be carried out to establish and confirm the methodologies mentioned during preliminaries phases such as:

A cleaning process will be carried out to eliminate any impurity on the surface by using an emulsion of Vulpex in water (1:100) and bristle brushes.

There will be further cleaning using buffered acid¹³ mixed in water 1:10 to eliminate saline efflorescences and clean the pores of cement material.

Everything will then be rinsed with distilled water to avoid appearance of salts which the cement could cause to rise on the surface due to capillarity.

On the first floor blocks, where there is a strong presence of paints and graffiti, the tesserae will be cleaned and the grout treated with a benzyl alcohol based paint stripper¹⁴.

The rust stains will be treated with a rust remover extractor poultice¹⁵ and, if necessary, the grout will be lightly thinned to receive new grouting.

The areas where the grout is damaged will be refreshed and restored using materials and “like for like”¹⁶ method.

The missing portions of tesserae will be replaced with the tesserae in vitreous paste that are very similar to the originals¹⁷ and positioned in the exact place of their origin.

The substrate, before being cover with tesserae will have to be re-cleaned and “dug” approximately 2-3mm beyond the thickness of tesserae.

This operation will be carried out with Dremel rotary tool and manually using chisels.

should be maintained also as a safety precaution for the entire duration of work.

12 For these operations personal protective equipment will be worn and a rigorous H&S programme will be maintained at all times.

13 Product in question is Fila Deterdek Pro. For further information on the product, please refer to technical sheet in attachment.

14 Product in question is Peelaway 7 paintstripper. For further information on the product, please refer to technical sheet in attachment.

15 For further information on the product, please refer to technical sheet in attachment.

16 In any case, materials will be tested and subject to analysis and review during work phase and always in accordance with what competent authorities approve. Please note that information in this report regarding materials could be slightly different depending on problems found during the works. Any modification to the work methodologies will be immediately communicated to the relevant offices and RAMS will be updated for clarity and transparency of the work processes.

17 If there is no documentation regarding the place where the artist sourced the original tesserae from, it will be possible to order and have custom-made the new glass ones directly from Murano in Venice.

The same “like for like”¹⁸ method will be applied to the bonding material used for laying the tesserae.

At the end of operation we foresee a superficial “re-grouting” across all of the mosaic so that any possible micro crack can be closed around the tesserae giving them new stability and a “veil” of colour uniformity.

CONSERVATION WORK OF MURAL MOSAIC ONCE REPOSITIONED IN NEW & FINAL LOCATION

A scaffold will need to be erected again in front of the re-installed¹⁹ mural mosaic.

As far as the horizontal-cut areas are concerned, the reconstruction of the “lost material” (lost between the blocks during cutting process) should initially be considered .

Heavy duty spacers (measuring the same as the lost material) could be positioned in between the blocks so to re-build the exact needed dimension.

The spacers would be installed under the surface in order to leave enough gap to inject a backing fibre-reinforced cement filler²⁰ in order to close every interstice.

Once the blocks have been repositioned to perfectly conceal the joints and create the same visual continuity as imagined by the artist, the laying of tesserae along these horizontal lines can commence.

Tesserae will be positioned and glued exactly in the original place using the templates previously made prior to cutting.

Final grouting will blend these repairs with the rest of the mosaic.

As for the vertical-cut areas, at the furthest side ends of the blocks where the mosaic is not present because it was previously attached to the building structure, the cement will be re-cleaned, paint removed and finally all will be polished.

Then cement will then be ready to receive a new coat of paint²¹ or left bare to see and treated with the rest of cement material.

The metal strips (probably in stainless steel) which delimitate the mosaic on the side ends and which were used as guides during layout, will be re-cleaned with wire wool and left to view (Image 10).

18 In any case, materials will be tested and subject to analysis and review during work phase and always in accordance with what the competent authority decides and approves.

19 Methods and new place of re-installation of the artwork will be decided in accordance with the competent authorities.

20 Efficient product is Mapegrout Thixotropic fibre-reinforced cement mortar. For further information on the product, please refer to technical sheets in attachment.

21 We can consider a mineral based paint (i.e. Keim mineral paint). Colour is to be established by competent authorities.



Image 10 – Stainless steel strip along vertical side ends

PAINT RE-TOUCHING AND PATINATION

If the superficial re-grouting of the whole mosaic surface is not enough to achieve a good colour uniformity then a paint re-touching or patination of the grout can be considered to “blend together” too obvious areas.

FINAL TREATMENT

A superficial consolidating/water-repellent and breathable treatment could be considered to preserve and increase durability of cement materials²².

PHOTOGRAPHIC DOCUMENTATION

A photographic documentation will be undertaken during the whole length of the project showing chronologically the phases of work before, during and after, and including the sequences of cutting and removing process.

FINAL REPORT

A final report will be undertaken providing full documentation regarding the whole project. This final report will include also recommendations for a long term maintenance programme of the art work for Haringey council.

²² Efficient consolidants widely used in the modern and antique architectural stone surface conservation are Silicati di Etile. These formulates can be mixed together with siloxane based products which transform the treatment also in water repellent. For further information on the products, please refer to technical sheets in attachment.

COMMENTS

Collaborating with various professional figures who have different backgrounds and experiences, we are confident that this is going to be the key to finalising the amazing project at highest of standards that Historic England and various competent offices itself is expecting from us to deliver.

APPENDICES

CALCULATION SHEET

LOVELAND

Project Title

TALKS WIDE HOUSE

Job No

2122-33

By

MRL

Date

OCT 22.

Checked

\

Date

\

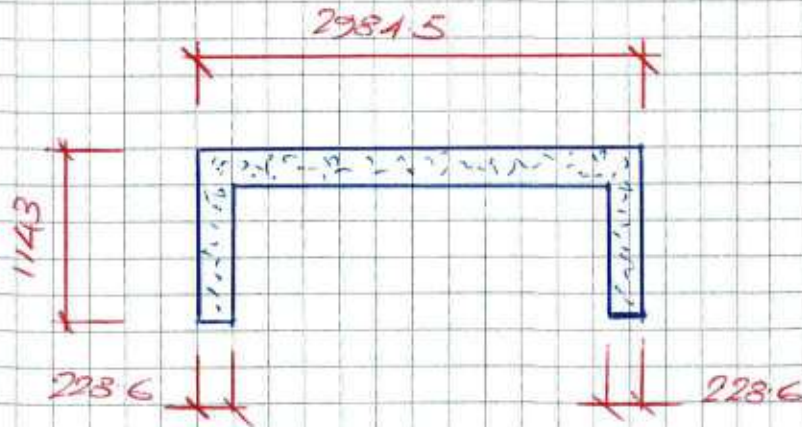
Page

of

\

References

Results



HEIGHT = 16370MM

MURAL DIMS

(THE DIMENSIONS PROVIDED ARE
CONCRETE DIMENSIONS)

LOVELAND

ON BEHALF OF



REPORT ON STRUCTURAL DEMOLITION

OF

**BIN CHUTE AREA NORTH END
TANGMERE HOUSE**

TO

ENABLE RECOVERY OF DECORATIVE MOSAIC

2122-38-R01(Edition 1)

May 2022

**REPORT ON STRUCTURAL DEMOLITION
OF
BIN CHUTE AREA NORTH END
TANGMERE HOUSE
TO
ENABLE RECOVERY OF DECORATIVE MOSAIC**

2122-38-R01(Edition 1)

	Edition 1		Edition 2		Edition 3	
	Date	Initials	Date	Initials	Date	Initials
Prepared	03-05-22	MRL			-	-
Checked	03-05-22	MRL			-	-
Approved	06-05-22	DB			-	-

FOR MICHAEL LOVELAND LTD

REPORT PREPARED BY

**Michael Loveland
BSc(Hons) CEng MStructE MICE**

REPORT CHECKED AND APPROVED BY

**Danny Bing
Hughes and Salvidge**

Tangmere House

Mosaic Recovery

Table of Contents

1.0 General	3
2.0 Description of the Structure	3
3.0 Demolition of Norther Bin Chute	5
4.0 Calculations and Drawings	6
5.0 COnclusions	6
Appendix A	
Archive Drawings	
Appendix B	
Photographs	

1.0 General

Michael Loveland Ltd has produced this report for Hughes & Salvidge Ltd.

The primary purpose of the report is to advise on the structural form of the existing structure in the vicinity of the bin chute, lift shaft and stairs to the north end of Tangmere House to enable safe demolition and recovery of the decorative mosaic.

This information will then be used and co-ordinated to generate the methodology for the local demolition of the designated structure.

This report has been based on archive information together with a walk around the structure on Monday 21st March and Tuesday 6th April 2022.

Assessment of the existing structure is made with reference to BS 6187:2011 Code of practice for full and partial demolition.

Reference to other British Standards or accepted codes of practice are highlighted where used.

2.0 Description of the Structure

2.1 General

This report is based on a review of the archive drawings and a walk over inspection of the building by Michael Loveland Ltd and Hughes and Salvidge on the above dates.

The structure comprises a precast and cast-in-situ reinforced concrete frame. The block is 'U-shaped' in plan and was built in a ziggurat form, with each successive floor recessed back from the floor below. The cast-in-situ element of the principal frame rises to second floor slab level together with the in-situ concrete lift and stair cores at the north and south end of the building which rise further to full height.

The main entrance to the building is via the concierge to the north end, within which is a bin chute and a lift shaft which services each floor together a staircase that encompasses the lift shaft. The stair core is internal up to 2nd floor deck level and is then open above, linking via cast-in-situ walkways to the main corridors running along the inner edge of the U-shaped block serving the flats on each level.

The precast element of the structure is constructed from a style of Large Panel System (LPS) erected over the in-situ-podium slabs at first and second floor levels.

Historical reports suggest that the block was constructed using the Larsen Nielsen System. This form of construction involved the use of large precast, hollowcore floor and roof slabs which span between large loadbearing precast wall panels. The panels and slabs were manufactured on the land adjacent to the site, then craned into place and assembled. Reinforcement extended from the panels into the joints between the elements and were tied together. The joints between the elements were then cast using in-situ concrete and a dry-pack mortar used for final bedding of the precast loadbearing wall panel above.

Tangmere House also possesses several elements not normally found in other LPS systems, including precast concrete beams and columns supporting flats at high level.

2.2 North Lift/Stair Core, Bin Chute

The structure to the northern stair core/lift shaft together with the bin chute all form shear cores for horizontal stability together with support to the adjacent walkways which again, are cast-in-situ reinforced concrete.

This report addresses these areas only with the purpose of identifying the safe method of demolition for recovering the decorative mosaic.

These works will then be included into the wider demolition strategy which is identified under a separate document.

3.0 Demolition of Northern Bin Chute (Lift Shaft and Staircase)

3.1 Document Review

In order to develop the methodology and assess the residual stability of the superstructure during the demolition, Michael Loveland Ltd has undertaken a desktop review of archive information together with a sense check in the form of a walk over survey.

Archive Drawings Reviewed:

The drawings listed refer only to the North End 'tower' and are included within Appendix A of this document.

Clarke Nicholls Marcell Drawing Reference: - 1655

372 – Lift Area North End - Sheet 1
374 – Lift Area North End - Sheet 3
375 – Lift Area North End – Sheet 4
376 – Lift Area North End – Sheet 5
377 – Lift Area North End – Sheet 6
378 – Lift Area North End – Sheet 7
380 - Lift Area North End – Sheet 8
431 – 3rd, 4th, 5th and Roof Spandrel Walkways (North End East Side)
432 – 2nd, 3rd, 4th and 5th Floor Walkway Slabs (North End East Side)

3.2 Stability

From the review of the above documentation together with other accompanying details, reinforcement drawings provided, and the walk over, the North End lift area and walkways are identified as cast-in-situ reinforced concrete.

Furthermore, the lift/stair core is identified as being a shear core capable of resisting horizontal load effects in orthogonal directions.

3.2 Methodology

3.2.1 Overall

In general terms the precast concrete elements are to be demolished down to the 1st/2nd floor podium level utilising a system of back propping and 'top down' demolition. In parallel with these works, the cast-in-situ elements to the lift/stair cores will be reduced in height, remaining in place to provide lateral stability as the structure is reduced.

Once the structure is at 2nd/1st floor level the remainder of the structure will be demolished using 'high reach' machines.

The overall methodology and safe system of working is to be developed under a separate document as previously state.

3.2.2 Northern Bin Chute (Lift Shaft and Staircase)

The bin chute structure is to be demolished by discreet cutting of and lifting out of the wall areas one storey at a time.

The proposed methodology is:

- (i) Remove of the adjacent walkways
- (ii) Back prop the landing slab immediately in front of the lift doors (6th Floor)
- (iii) Support to the 'U' shaped bin chute walls (6th to Roof) by 'hanging' from a crane
- (iv) Separate of the bin chute wall by saw cutting immediately above slab level.
- (v) Lift out the wall panels
- (vi) Break out the landing slab and remove.

The process will then be repeated down through the structure.

4.0 Calculations and Drawings

Calculations and detailed drawings will be provided for the back propping of the landing slabs, lateral restraint to the walls and the lifting of the 'cut' concrete elements for development of and inclusion within the demolition methodology document.

During construction of a reinforced concrete frame it is normal to prop the formwork of the slab under construction from the slab(s) below and therefore the propping of one slab onto the slab(s) below is considered to be a safe method of demolition.

5.0 Conclusions

The top down methodology proposed for the recovery of the structure supporting the mosaic is suitable provided a defined sequence is followed.

Appendix A

Archive Drawings



CONSULTING CIVIL AND
STRUCTURAL ENGINEERS
E TOWERS, 20 THE EMERALD, 2, 3
UNIVERSITY TQ, LONDON, W8 8
L. TEL: 01 262 8811

DATE	0.1	CONTRACT NO.	
EST. NO.	1000	NO. OF	100
UNIVERSITY TOWERS, LONDON			

1655/372



**D&E MATES: 117, 118, 119, 136
150, 151, 152, 169
#167 TO BE CABT
FROM WALLS.**

PLAN ON A-A

PLAN ON B-B

PLAN ON C.C.

REINFORCEMENT DETAIL OF
CONCRETE ALUSTRAP

THIS DRAWING TO BE RETURNED TO THE ARCHITECT IMMEDIATELY UPON COMPLETION OF THE WORK. IT IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.

CONTRACTOR TO CHECK ALL DIMENSIONS AND LOCATIONS OF WORK PRIOR TO BEGINNING.

NO.	DESCRIPTION	DATE	BY
1	REVISION		
2	REVISION		
3	REVISION		
4	REVISION		
5	REVISION		
6	REVISION		
7	REVISION		
8	REVISION		
9	REVISION		
10	REVISION		
11	REVISION		
12	REVISION		
13	REVISION		
14	REVISION		
15	REVISION		
16	REVISION		
17	REVISION		
18	REVISION		
19	REVISION		
20	REVISION		
21	REVISION		
22	REVISION		
23	REVISION		
24	REVISION		
25	REVISION		
26	REVISION		
27	REVISION		
28	REVISION		
29	REVISION		
30	REVISION		
31	REVISION		
32	REVISION		
33	REVISION		
34	REVISION		
35	REVISION		
36	REVISION		
37	REVISION		
38	REVISION		
39	REVISION		
40	REVISION		
41	REVISION		
42	REVISION		
43	REVISION		
44	REVISION		
45	REVISION		
46	REVISION		
47	REVISION		
48	REVISION		
49	REVISION		
50	REVISION		
51	REVISION		
52	REVISION		
53	REVISION		
54	REVISION		
55	REVISION		
56	REVISION		
57	REVISION		
58	REVISION		
59	REVISION		
60	REVISION		
61	REVISION		
62	REVISION		
63	REVISION		
64	REVISION		
65	REVISION		
66	REVISION		
67	REVISION		
68	REVISION		
69	REVISION		
70	REVISION		
71	REVISION		
72	REVISION		
73	REVISION		
74	REVISION		
75	REVISION		
76	REVISION		
77	REVISION		
78	REVISION		
79	REVISION		
80	REVISION		
81	REVISION		
82	REVISION		
83	REVISION		
84	REVISION		
85	REVISION		
86	REVISION		
87	REVISION		
88	REVISION		
89	REVISION		
90	REVISION		
91	REVISION		
92	REVISION		
93	REVISION		
94	REVISION		
95	REVISION		
96	REVISION		
97	REVISION		
98	REVISION		
99	REVISION		
100	REVISION		

REVISIONS:

1. REVISION

2. REVISION

3. REVISION

4. REVISION

5. REVISION

6. REVISION

7. REVISION

8. REVISION

9. REVISION

10. REVISION

11. REVISION

12. REVISION

13. REVISION

14. REVISION

15. REVISION

16. REVISION

17. REVISION

18. REVISION

19. REVISION

20. REVISION

21. REVISION

22. REVISION

23. REVISION

24. REVISION

25. REVISION

26. REVISION

27. REVISION

28. REVISION

29. REVISION

30. REVISION

31. REVISION

32. REVISION

33. REVISION

34. REVISION

35. REVISION

36. REVISION

37. REVISION

38. REVISION

39. REVISION

40. REVISION

41. REVISION

42. REVISION

43. REVISION

44. REVISION

45. REVISION

46. REVISION

47. REVISION

48. REVISION

49. REVISION

50. REVISION

51. REVISION

52. REVISION

53. REVISION

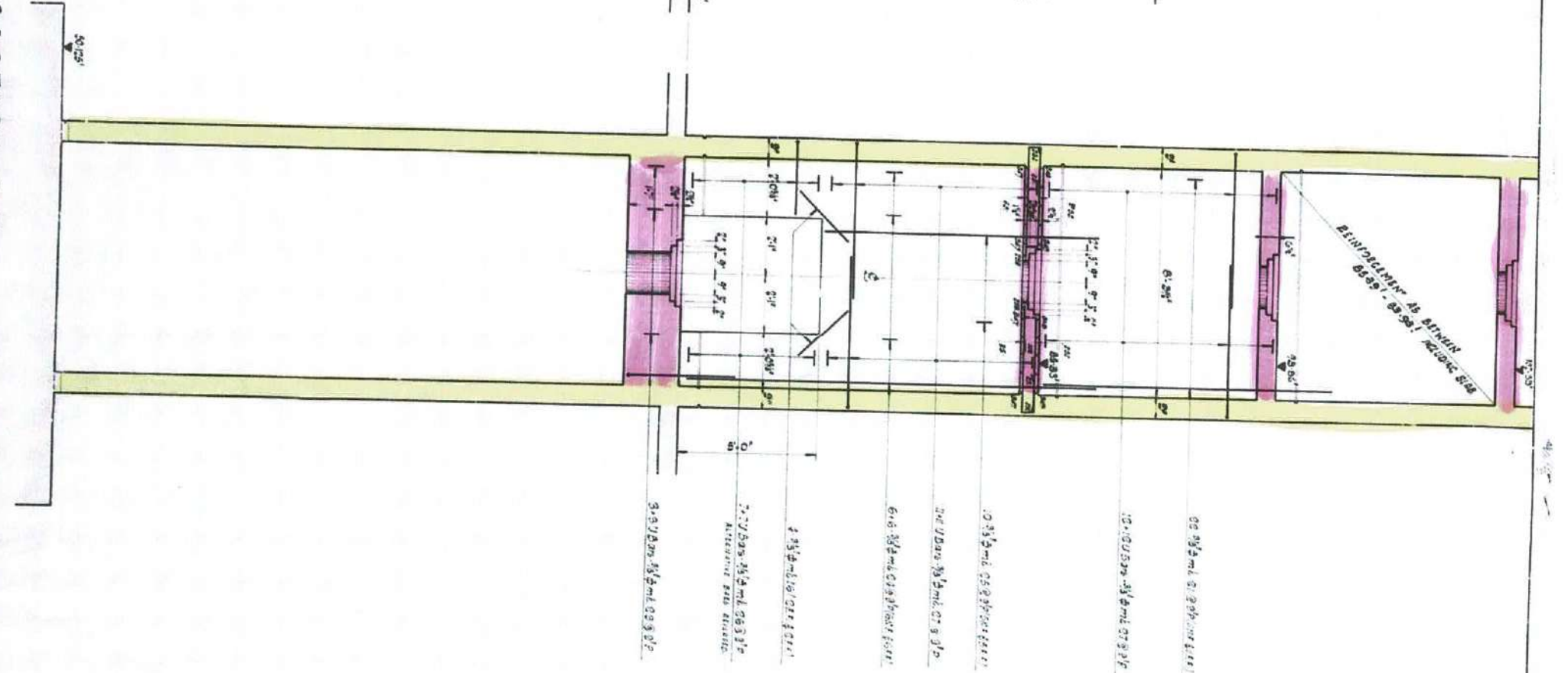
54. REVISION

55. REVISION

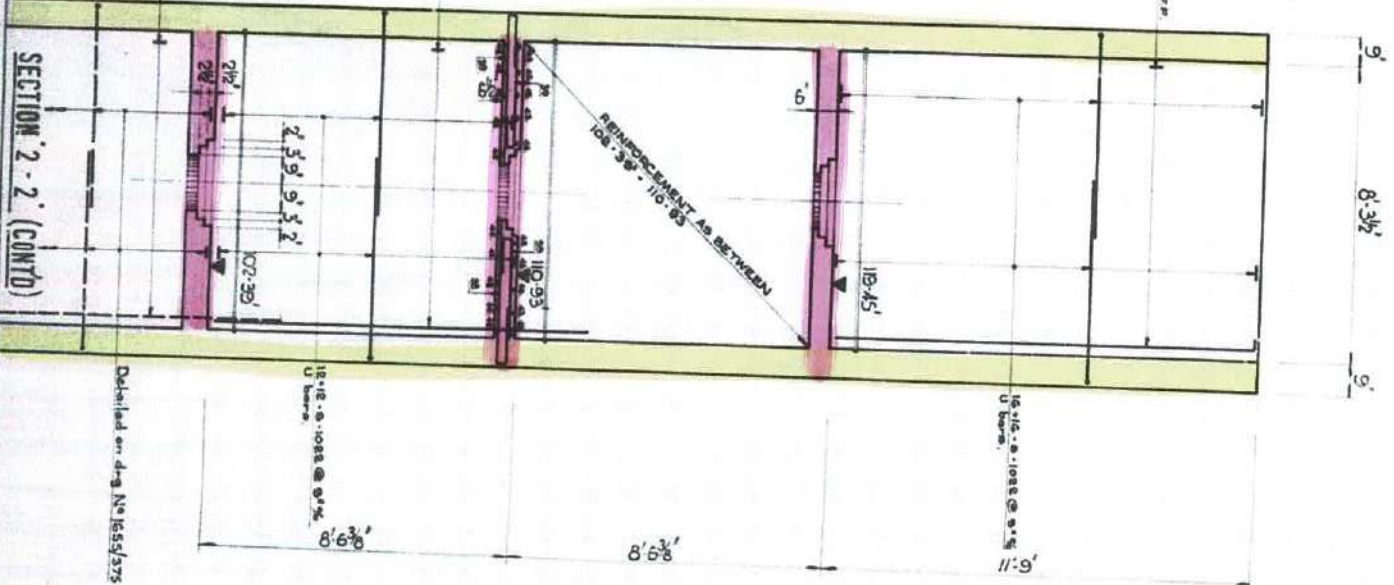
56. REVISION

57. REVISION

58. REVISION



655/375

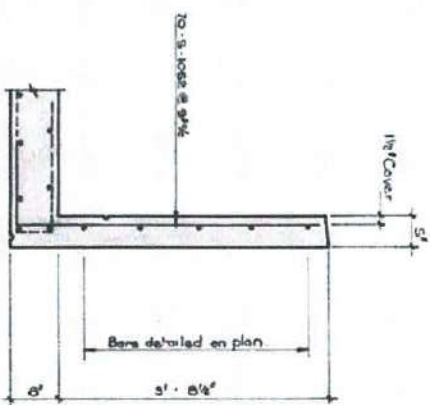


HARNESS BROOKLYN	WICKLIFF	LIFT AREA - NORTH END SHEET 6	SETTING OUT & ERECTING OF LIFT WALLS	ARCHITECT	C. J. LAKE A.E.I.B., Borough Architects, London Borough of Waverley	CLARE NICHOLLS MARCEL	CONSULTING CIVIL AND STRUCTURAL ENGINEERS. THE TOWER IN THE BROADWAY- MARKET SOUTH-WORK, WBS TEL. 800 or 100/801.	DATE OF DRAWING T.J.	BY F.B.D.	SCALE AS SHOWN	PROJECT NO.	1655/370
---------------------	----------	----------------------------------	---	-----------	---	--------------------------------------	---	----------------------------	--------------	-------------------	-------------	----------

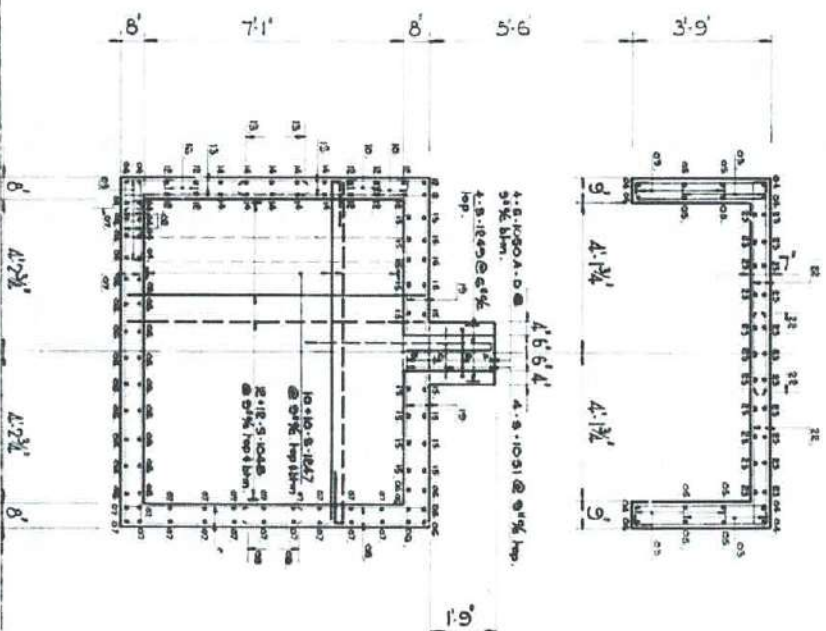
10

1625/377

5



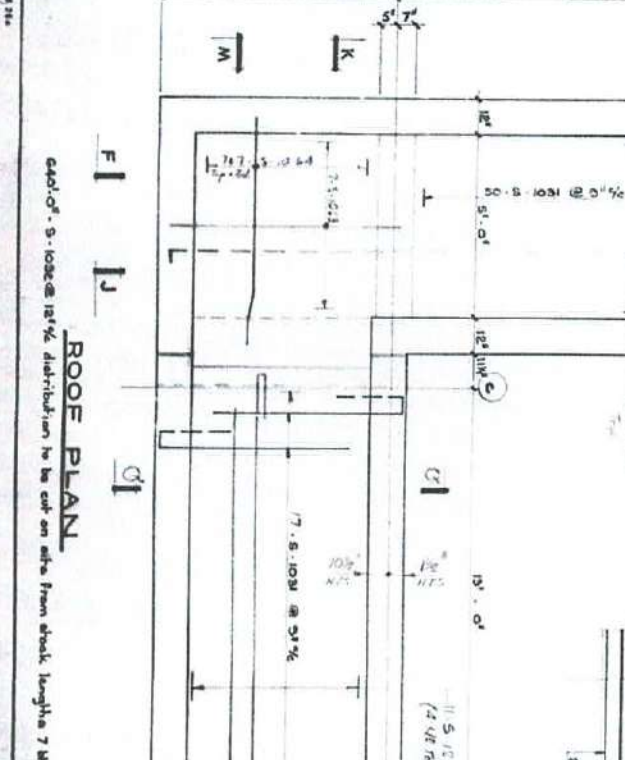
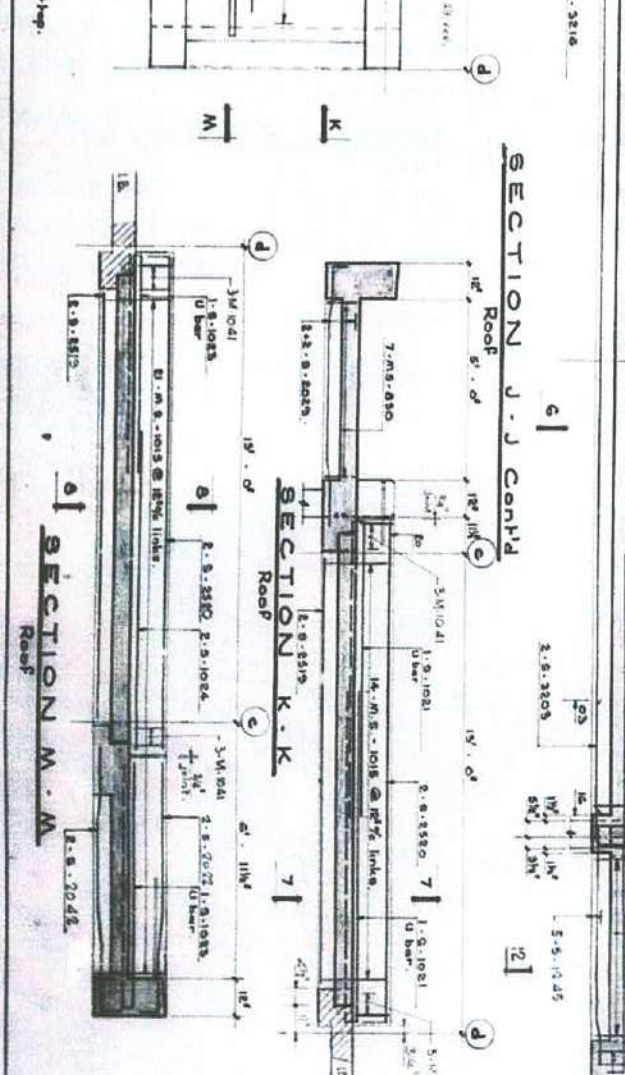
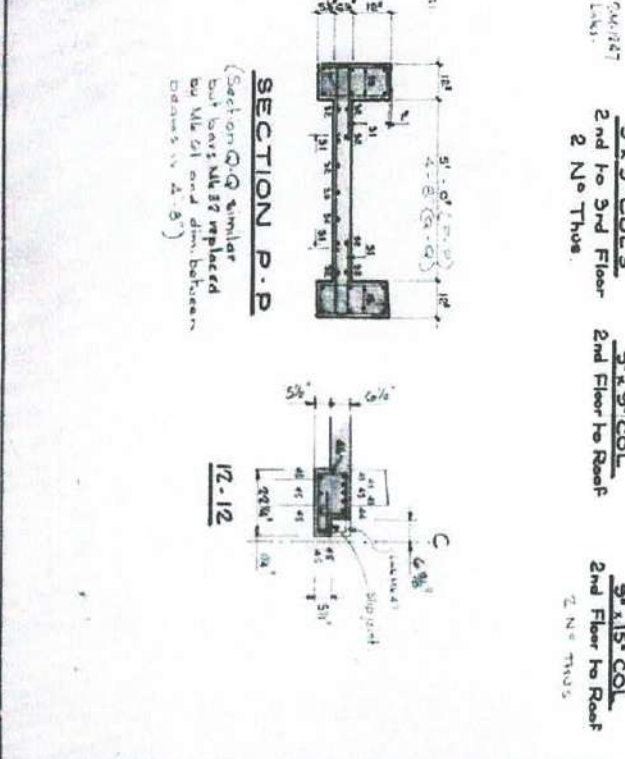
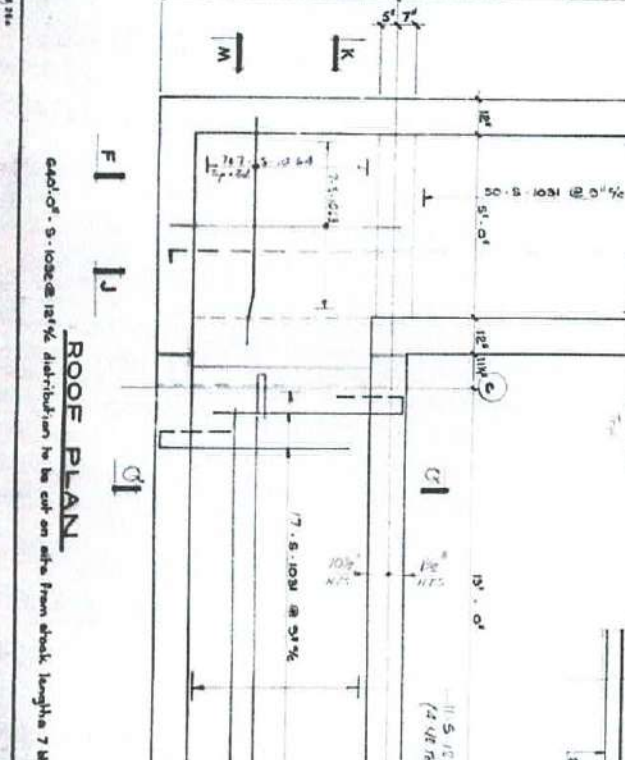
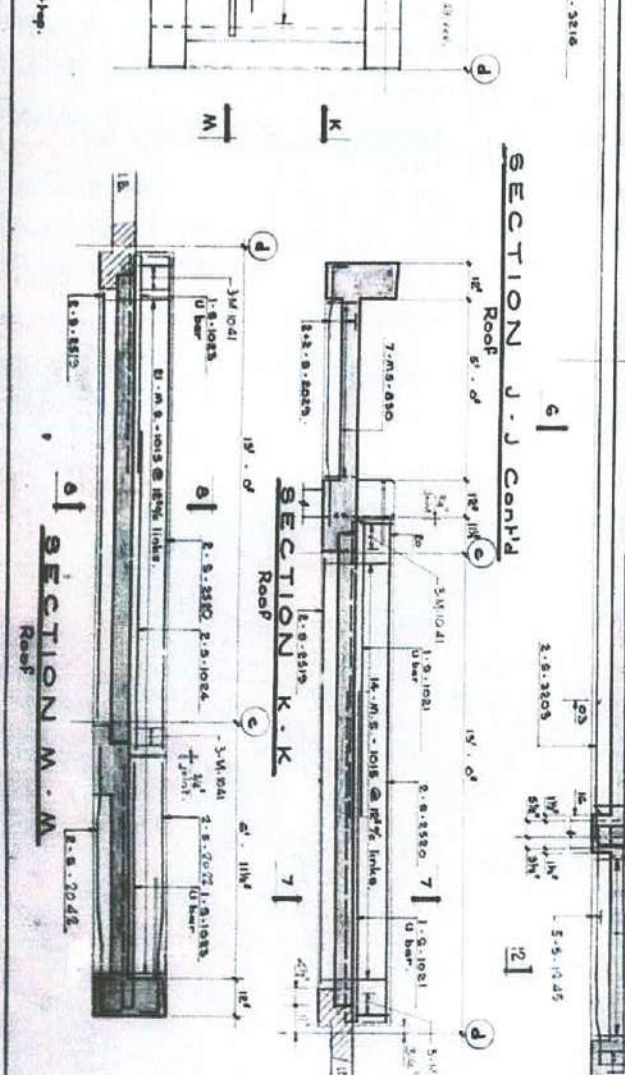
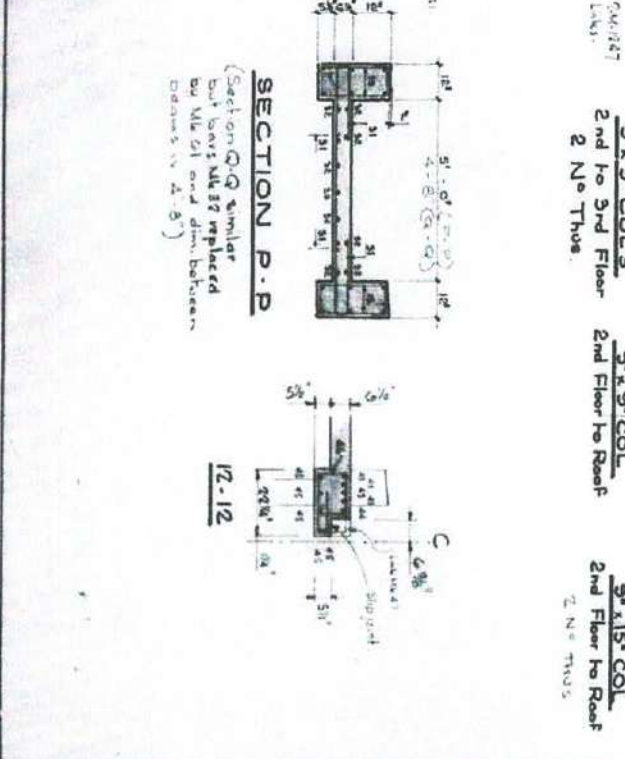
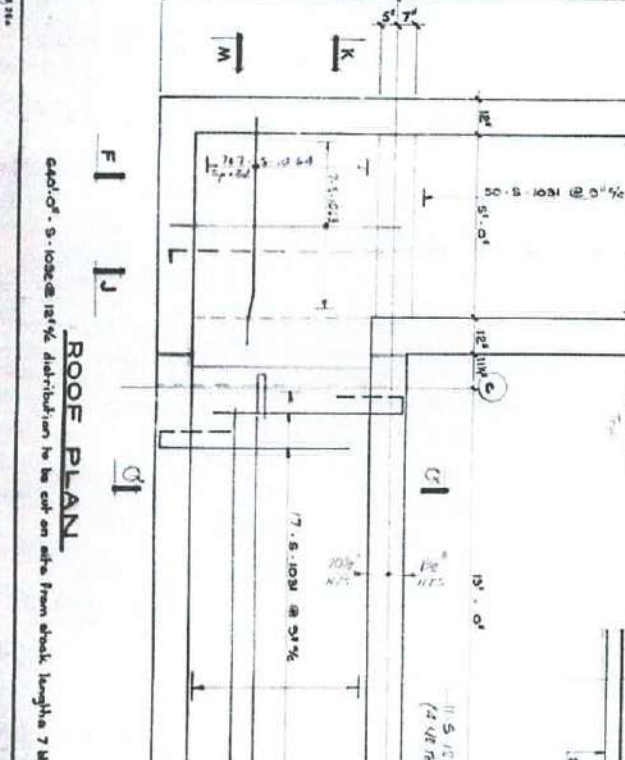
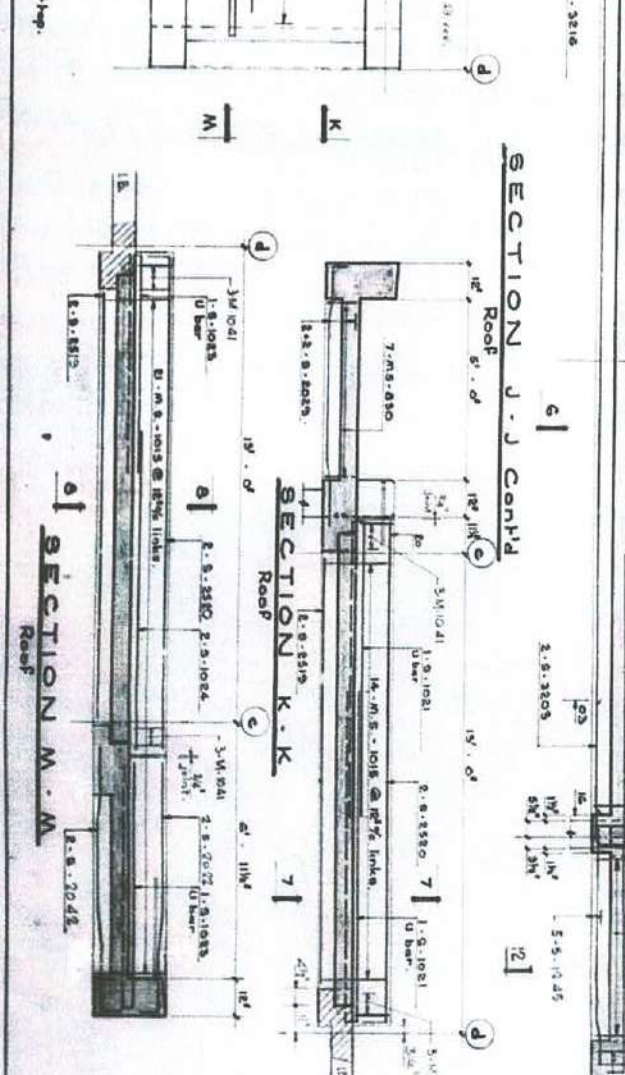
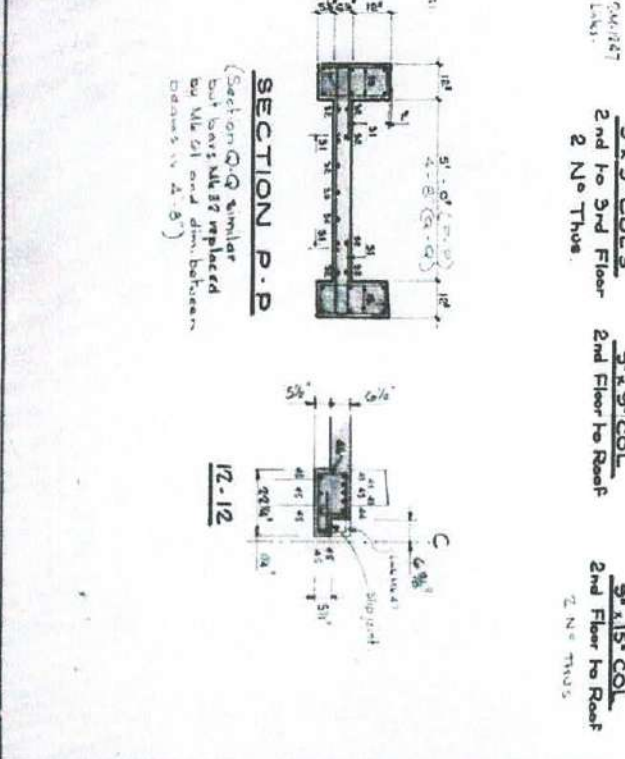
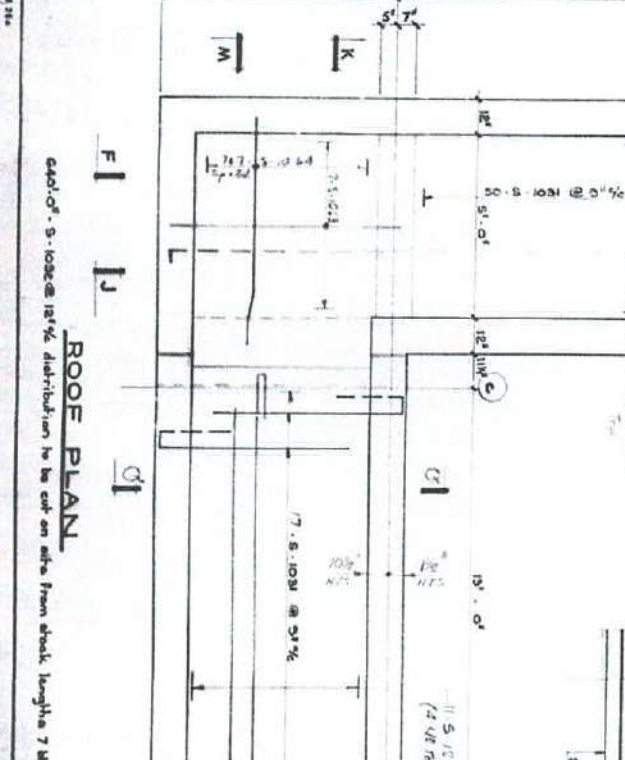
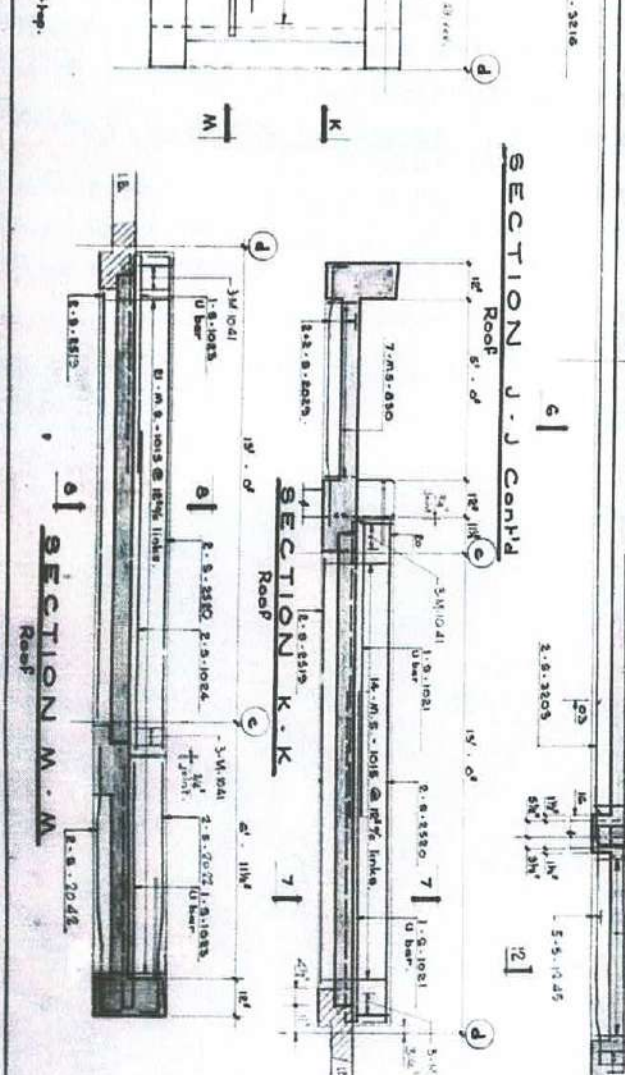
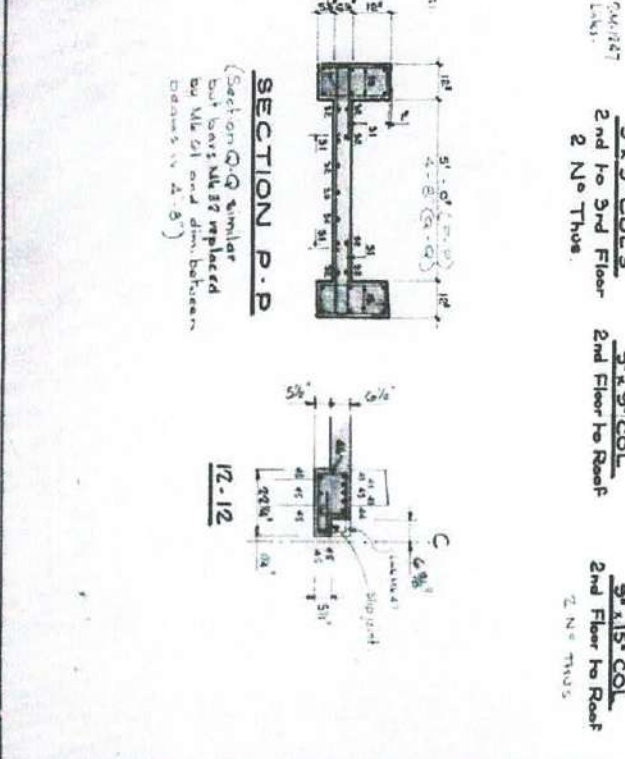
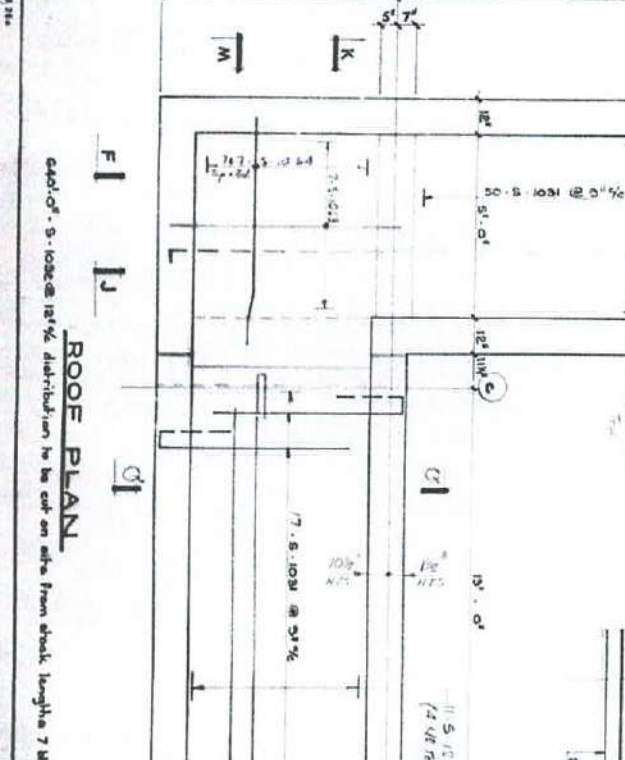
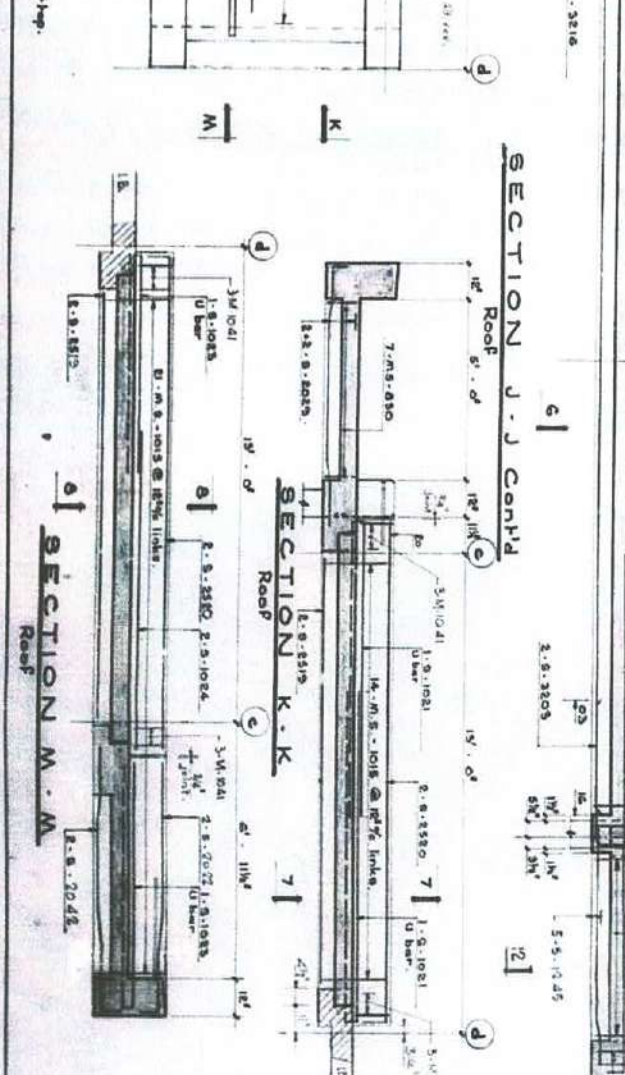
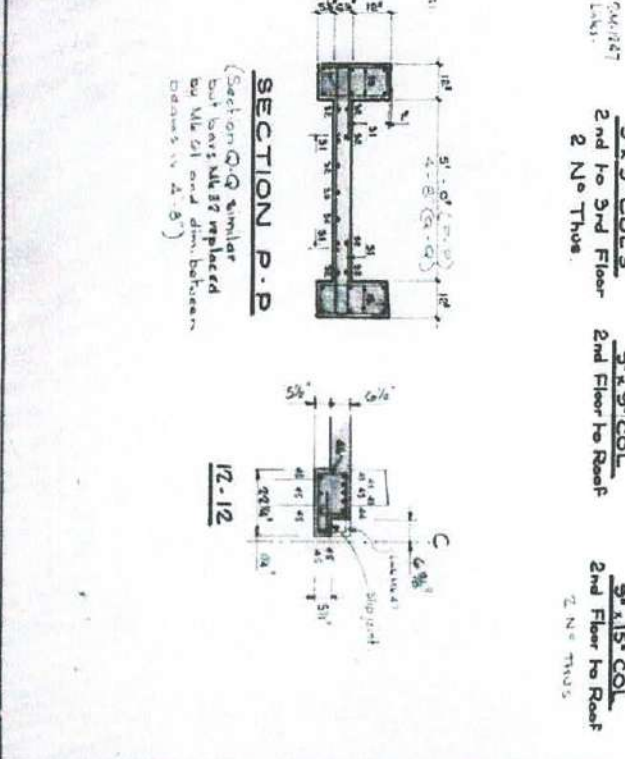
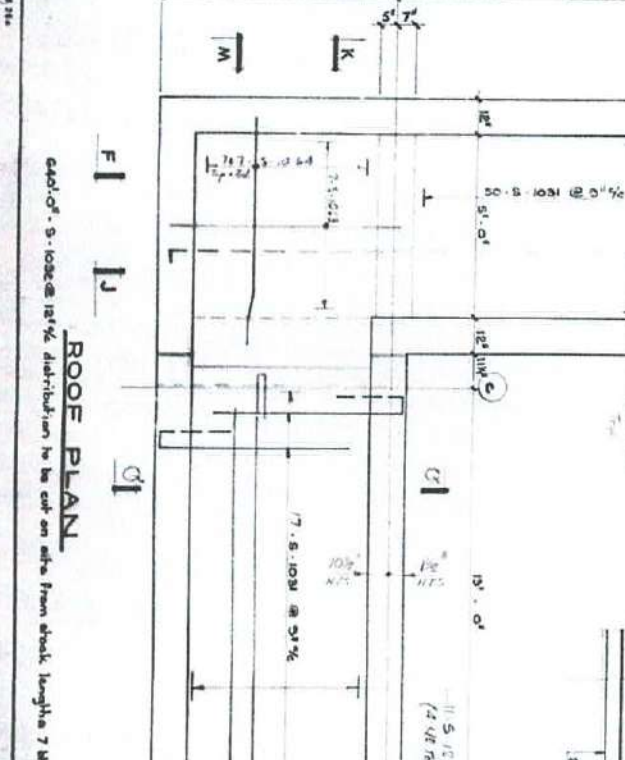
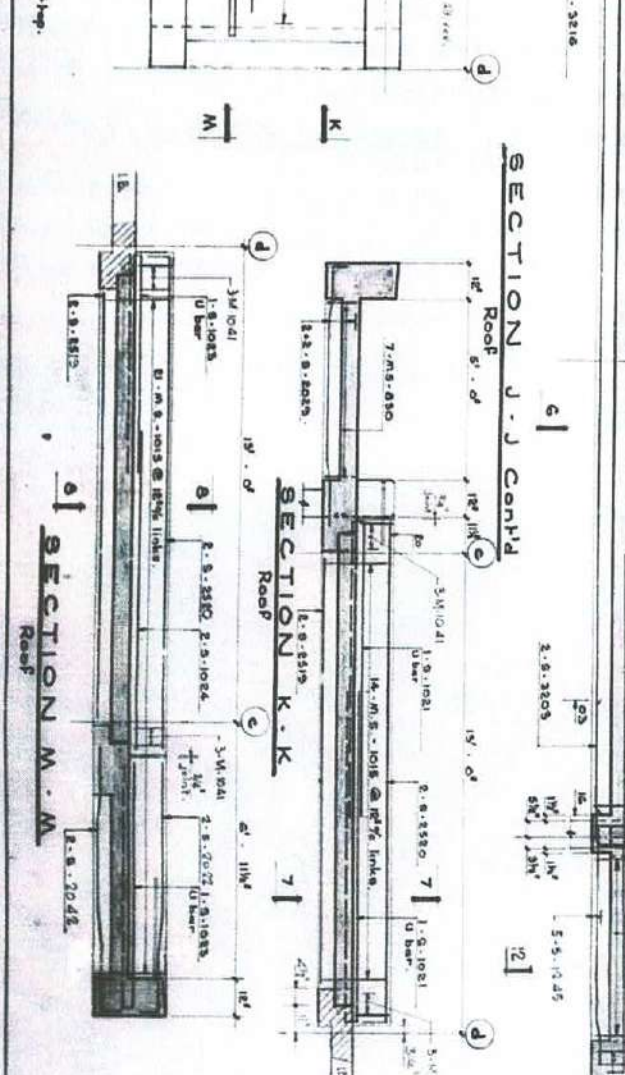
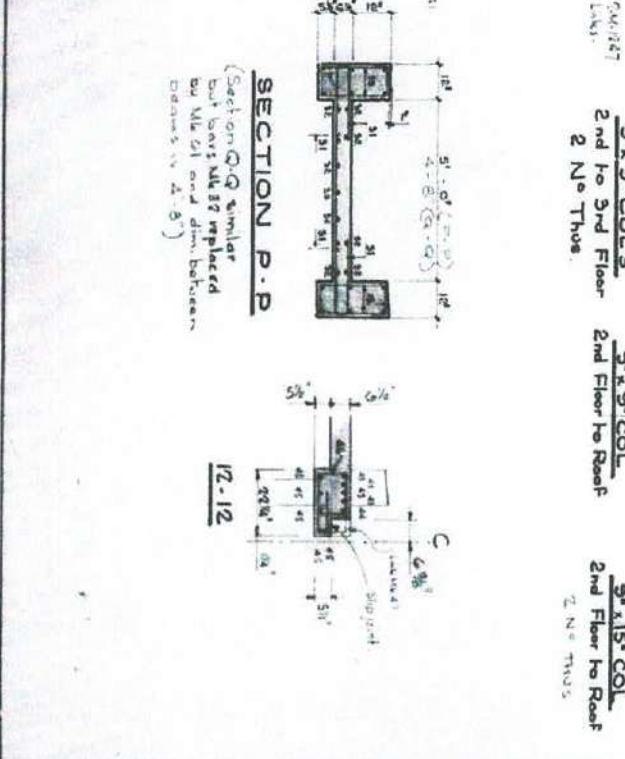
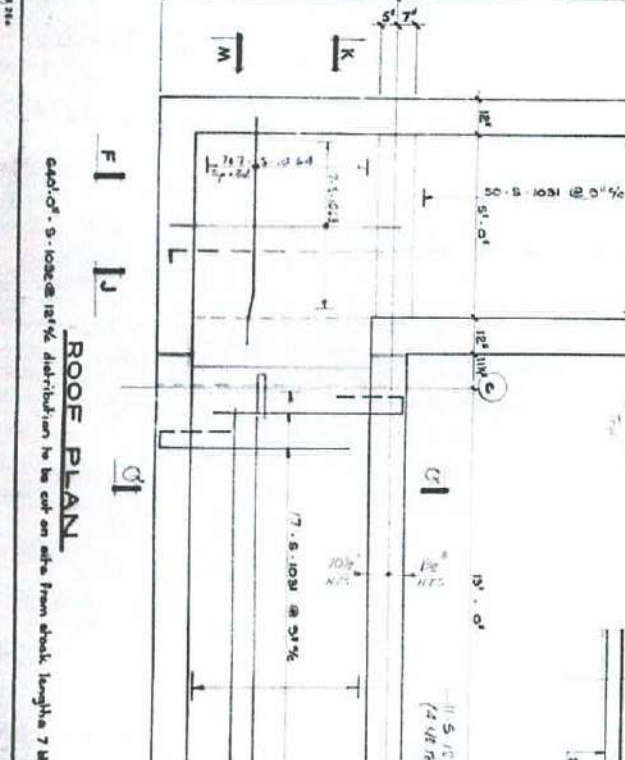
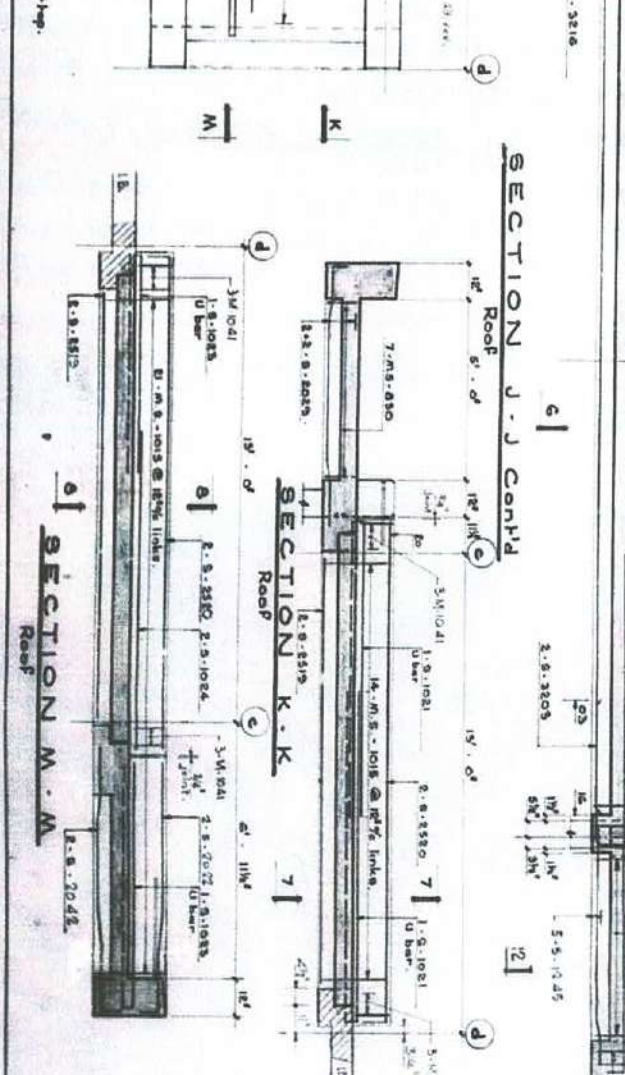
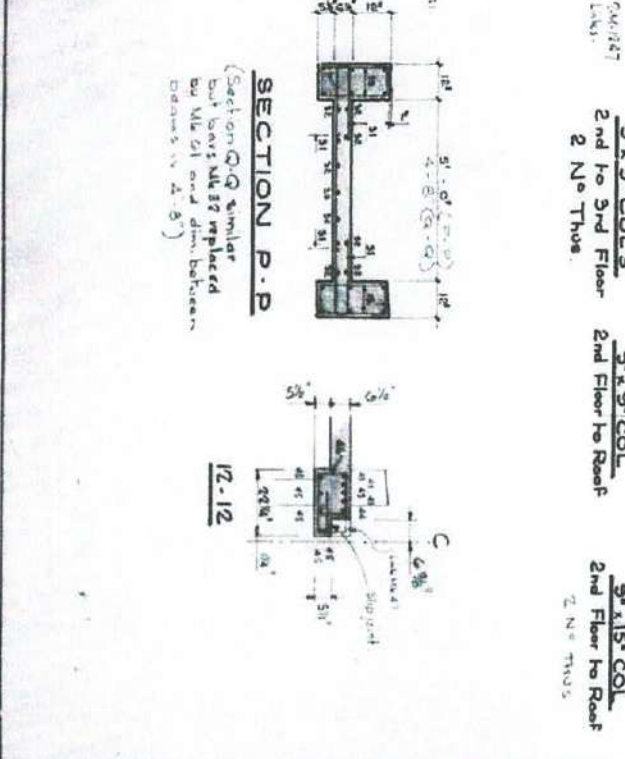
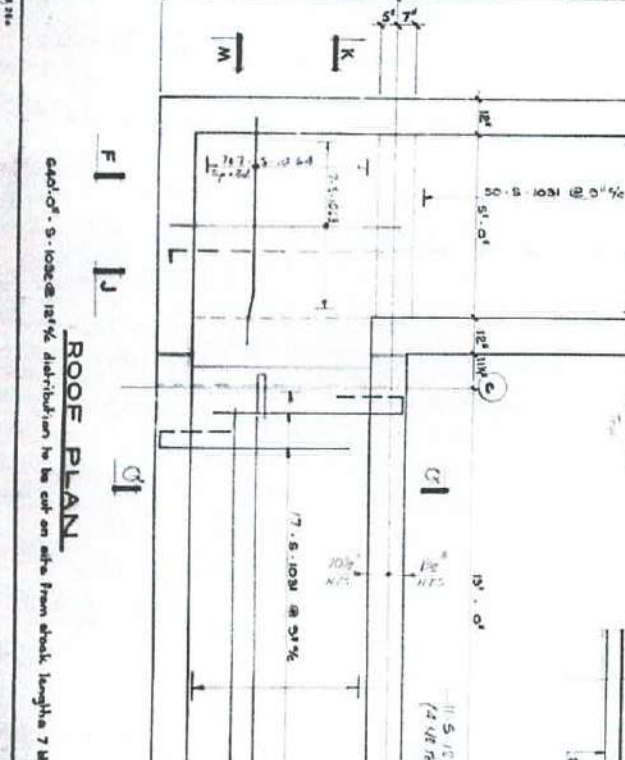
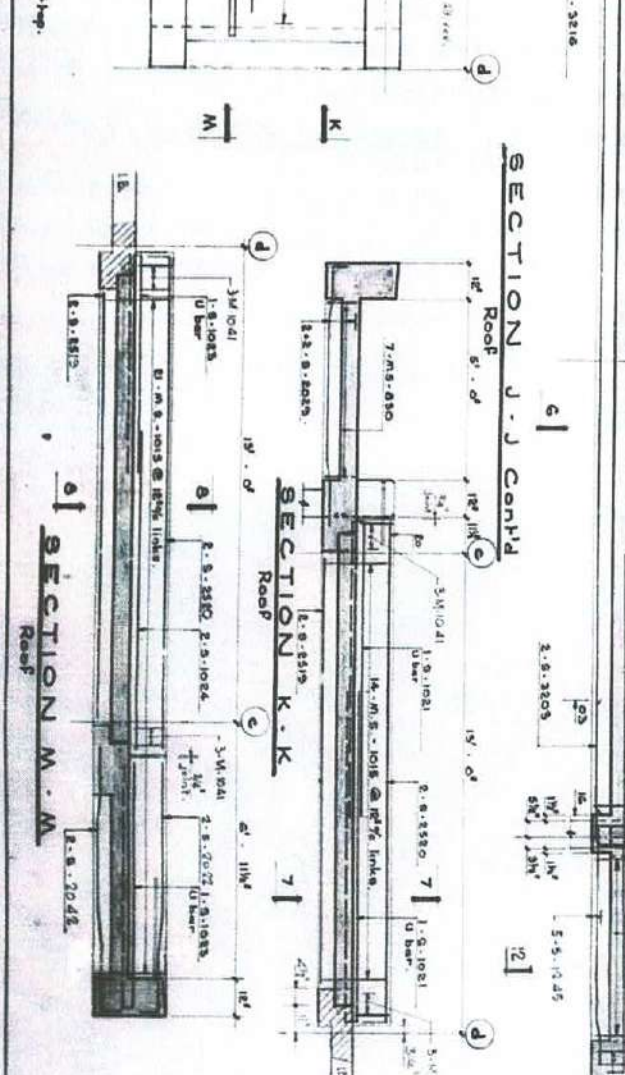
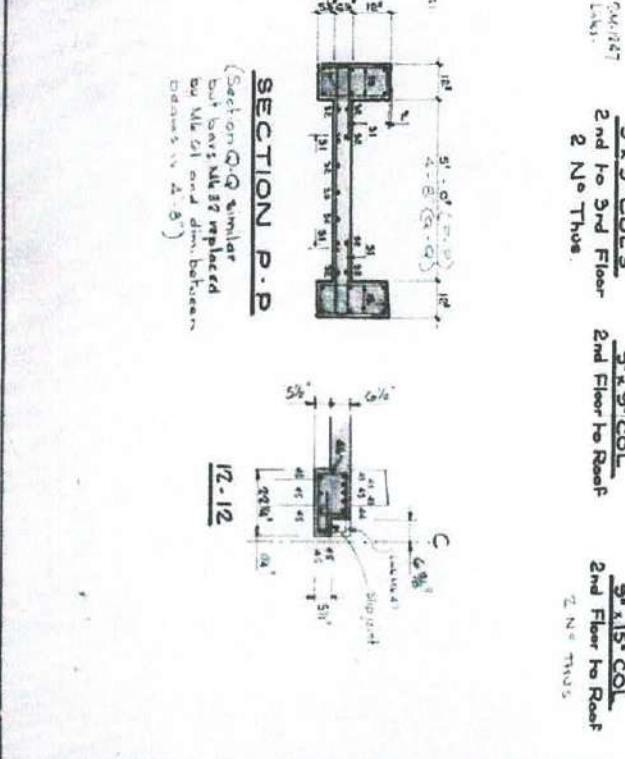
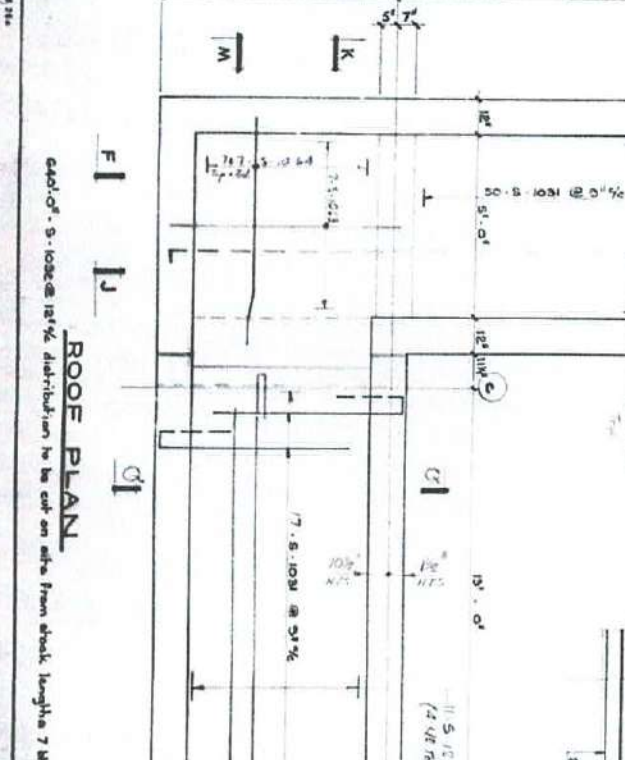
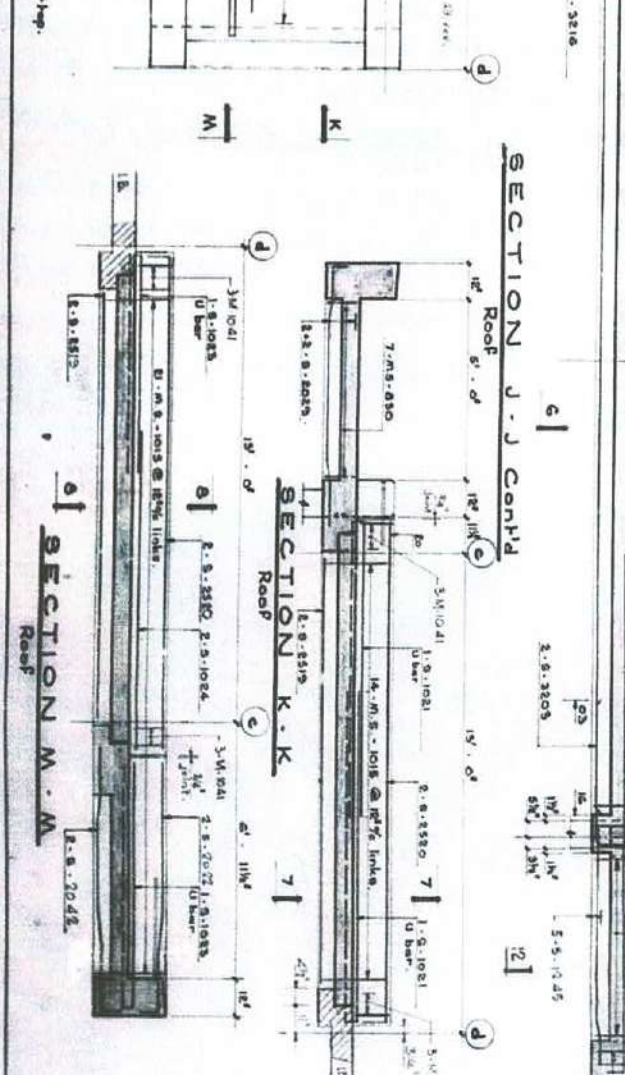
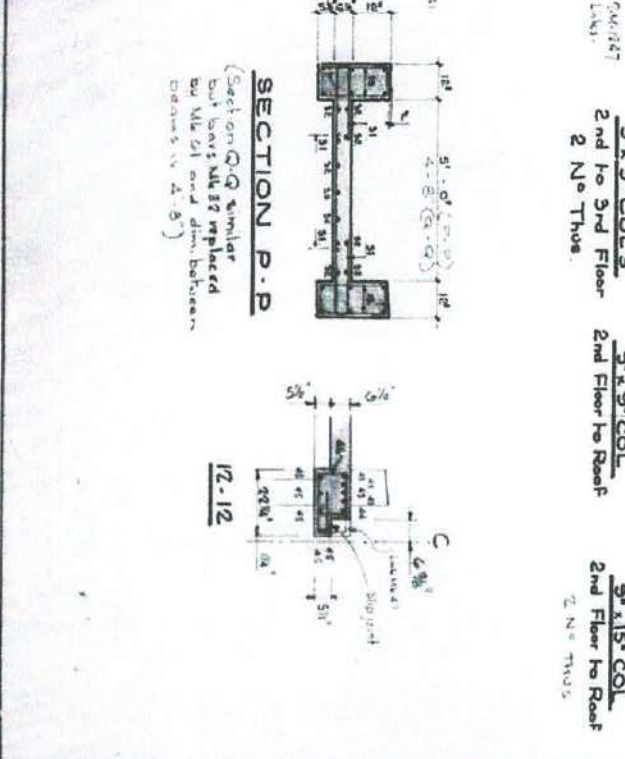
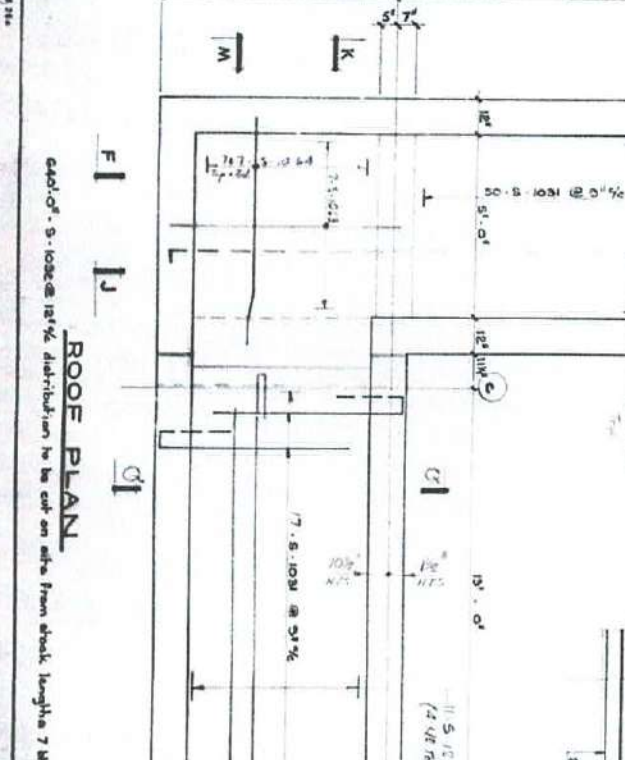
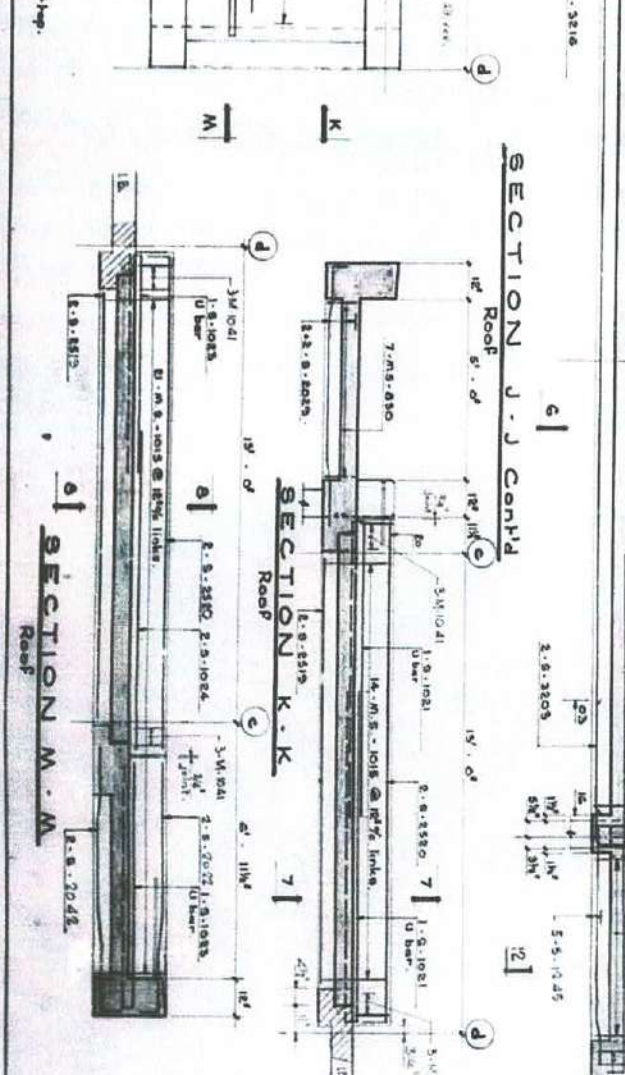
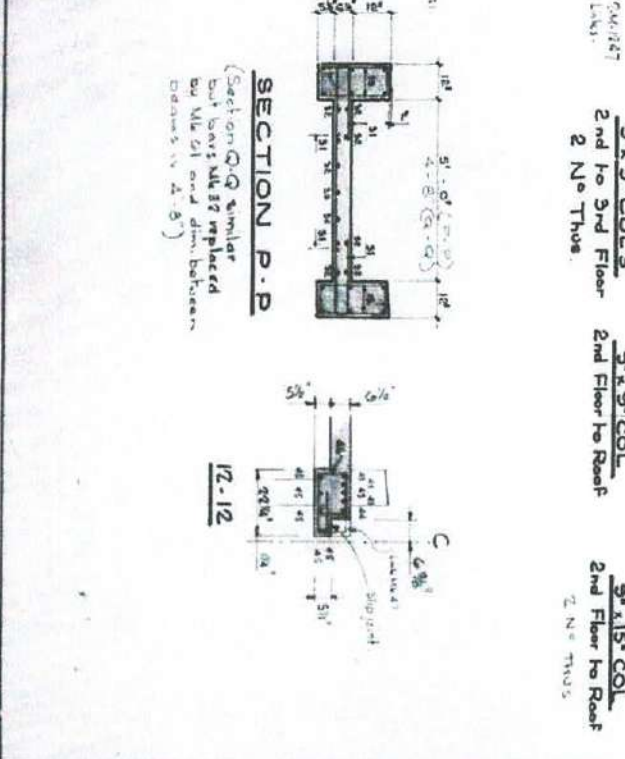
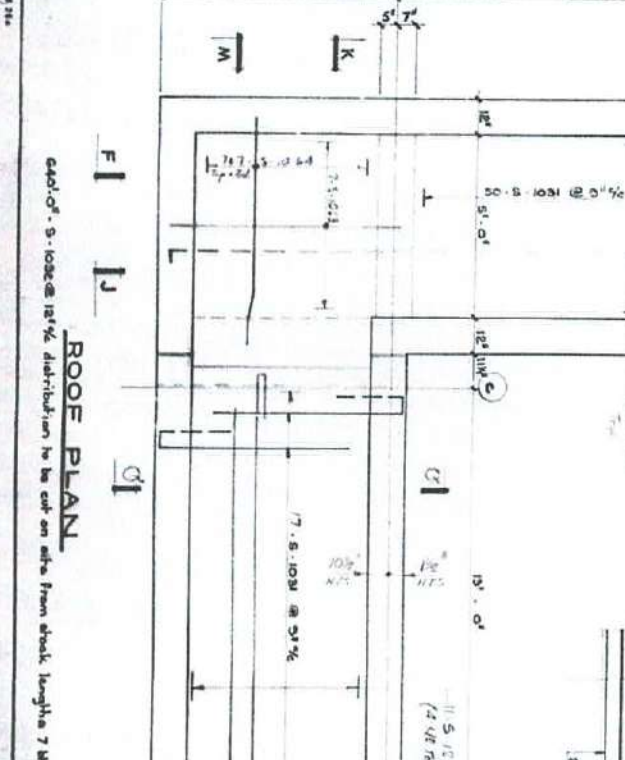
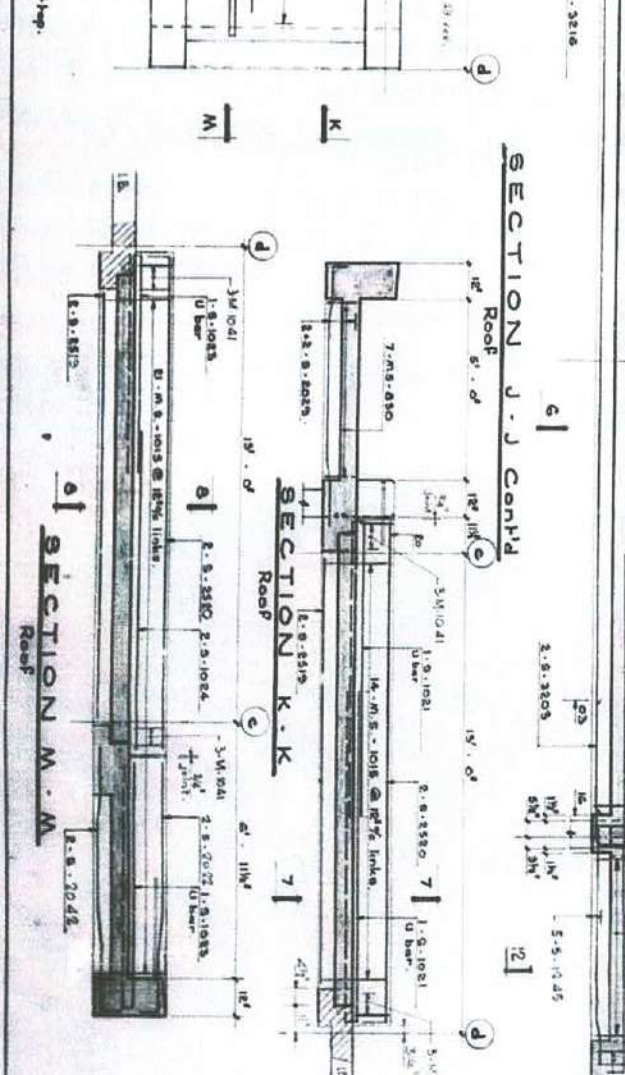
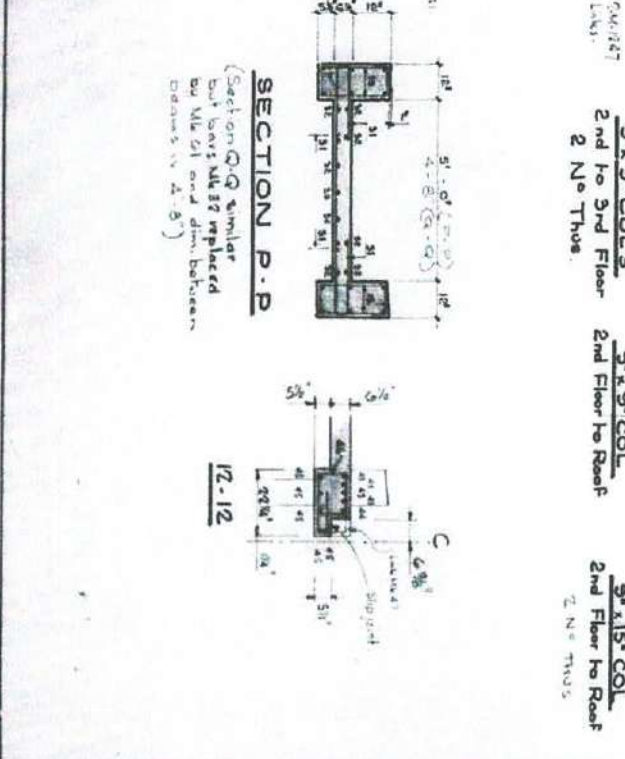
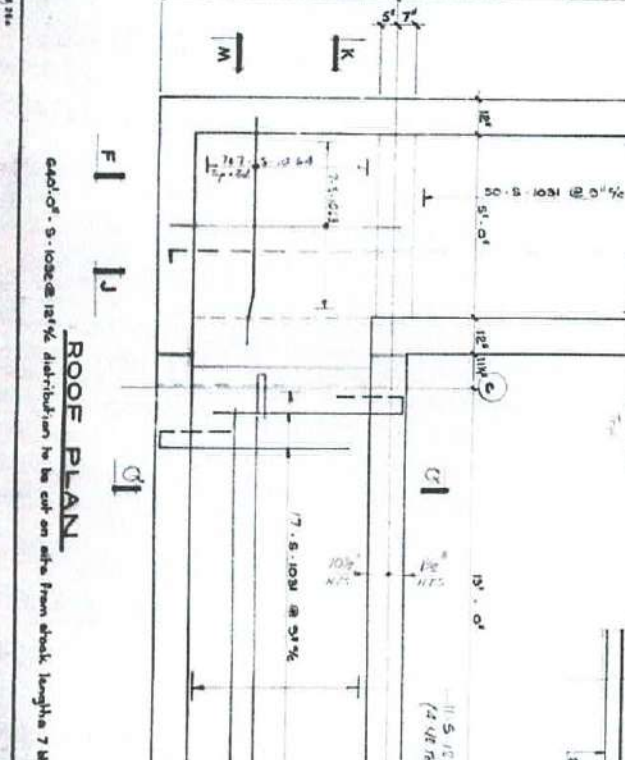
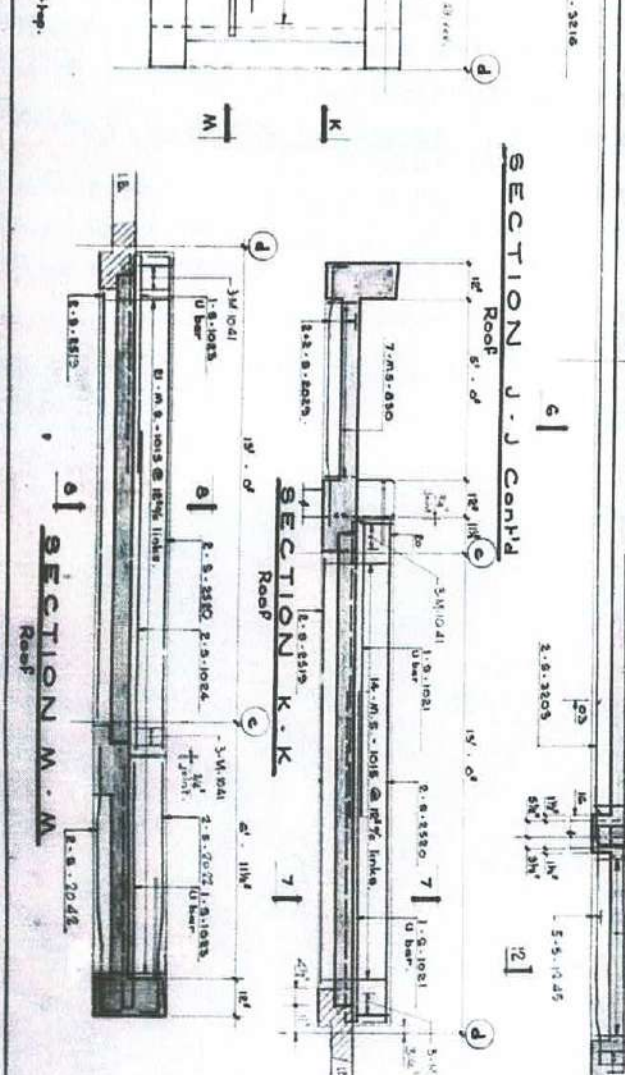
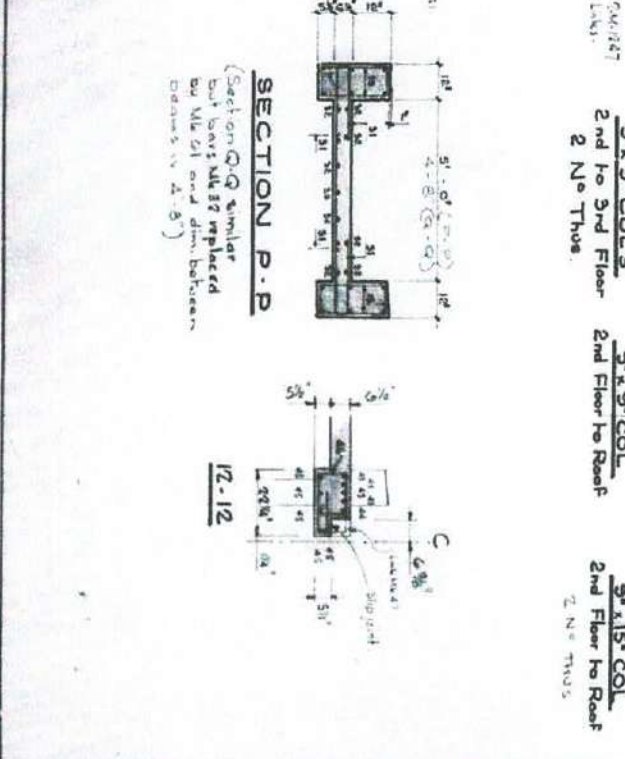
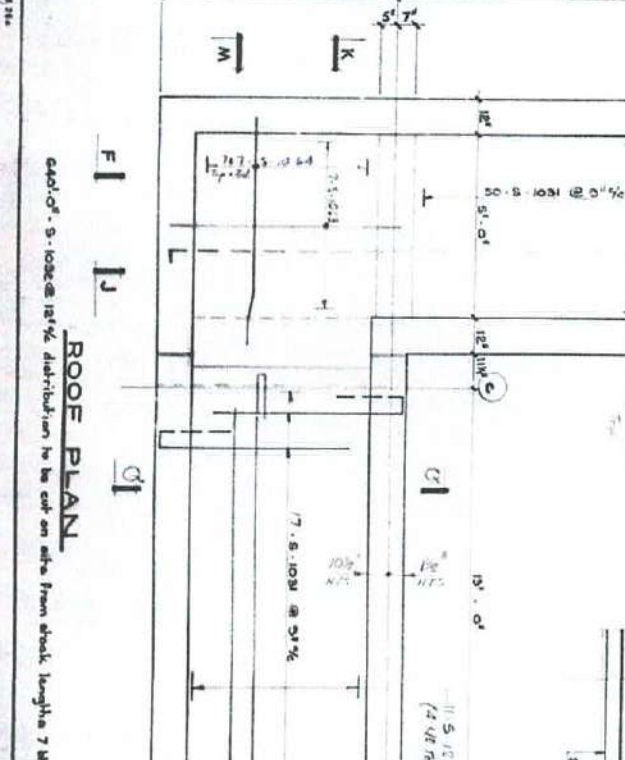
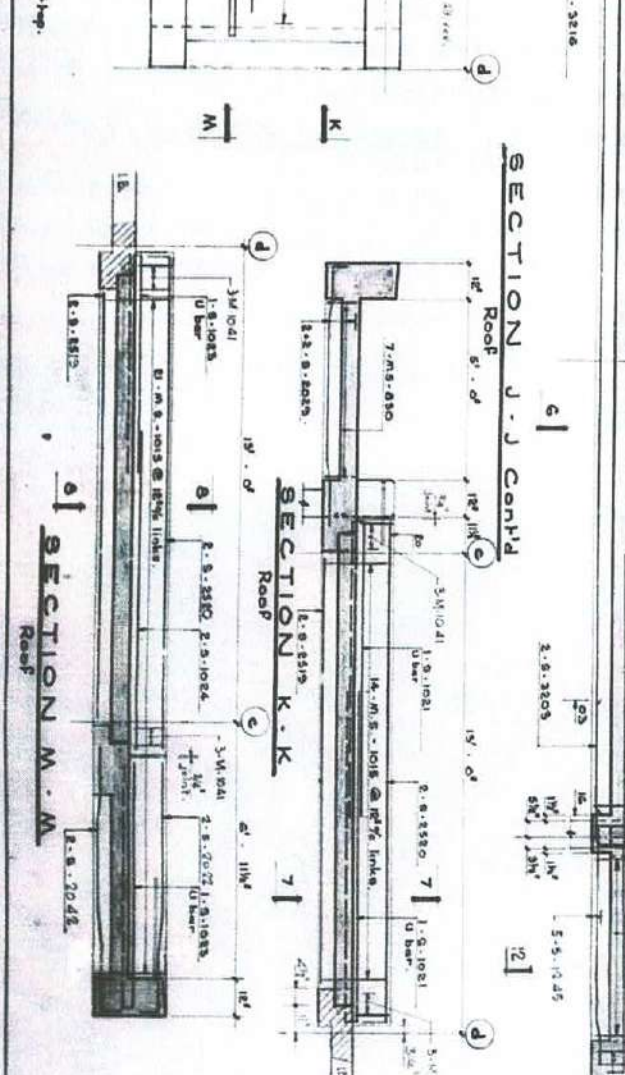
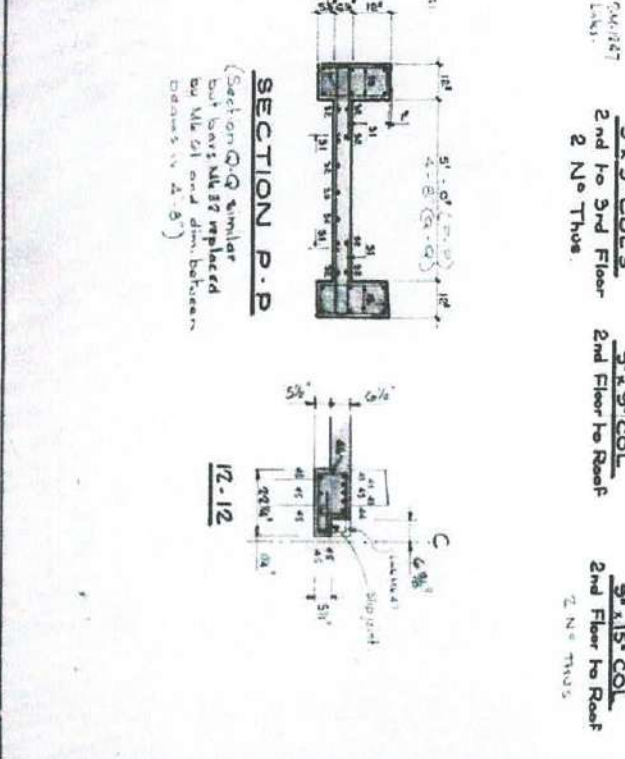
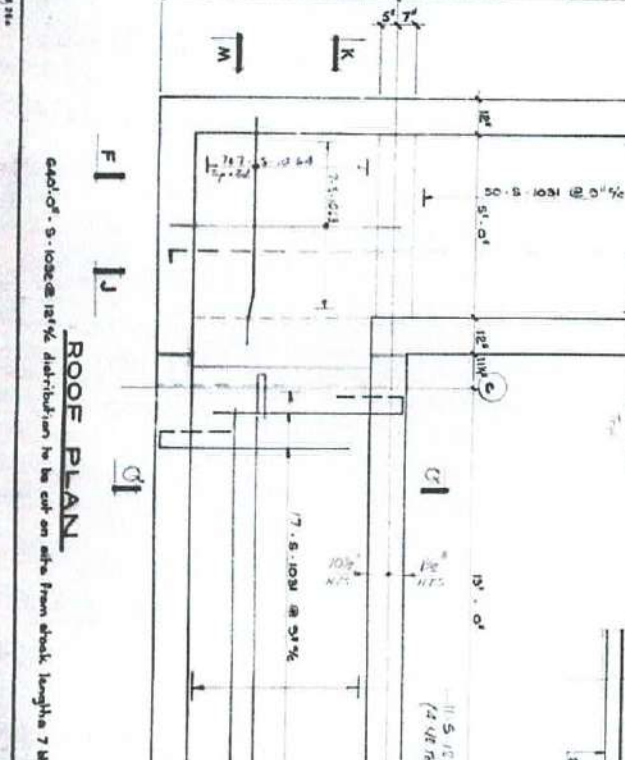
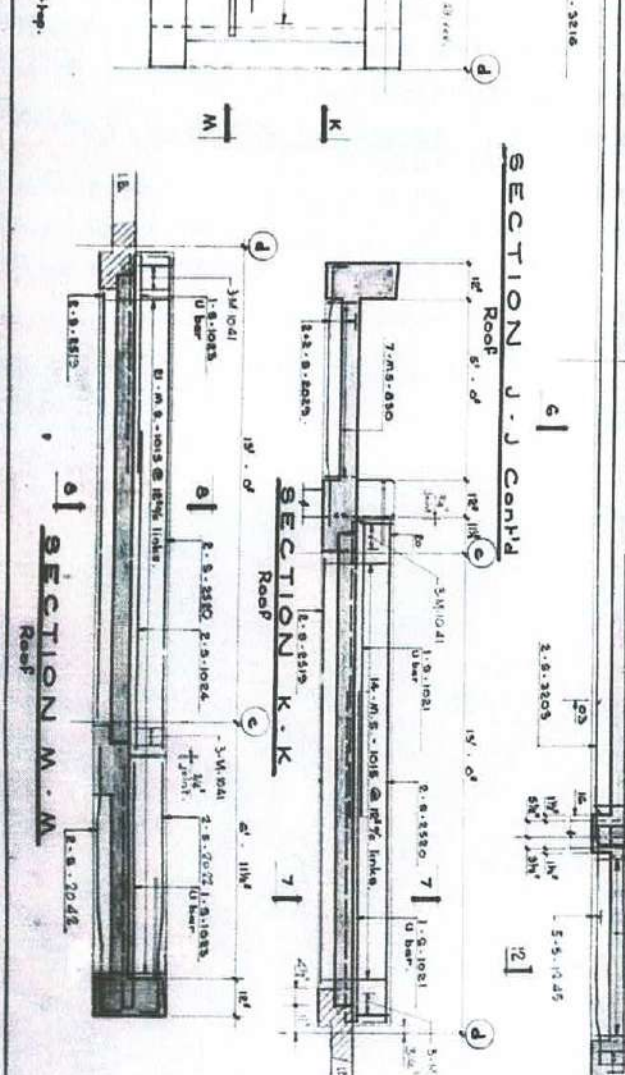
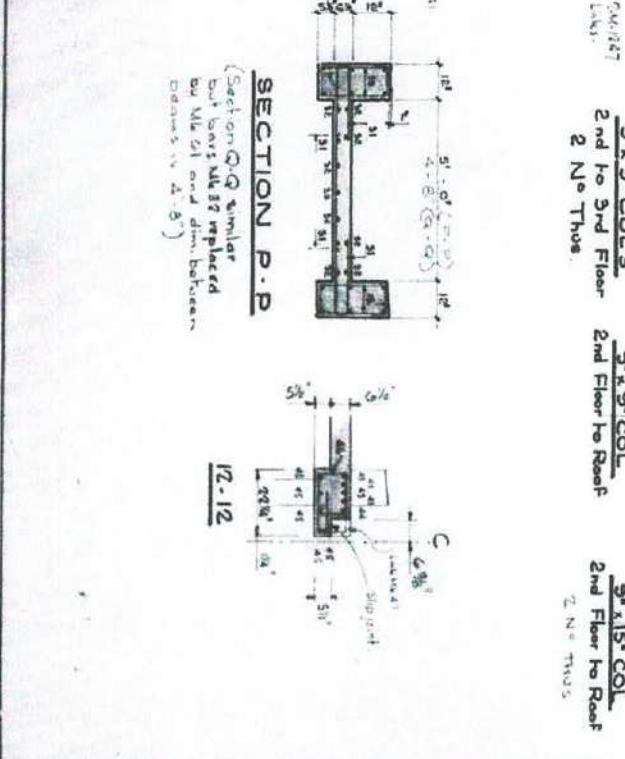
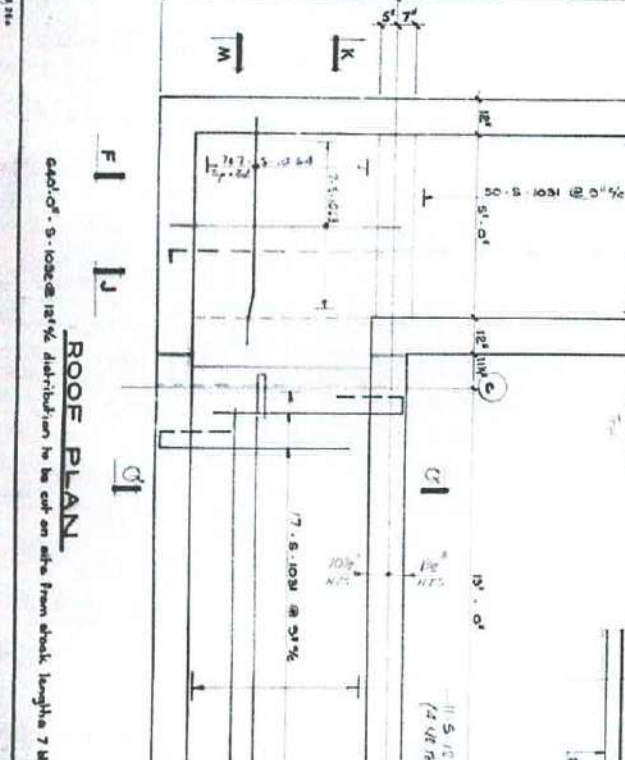
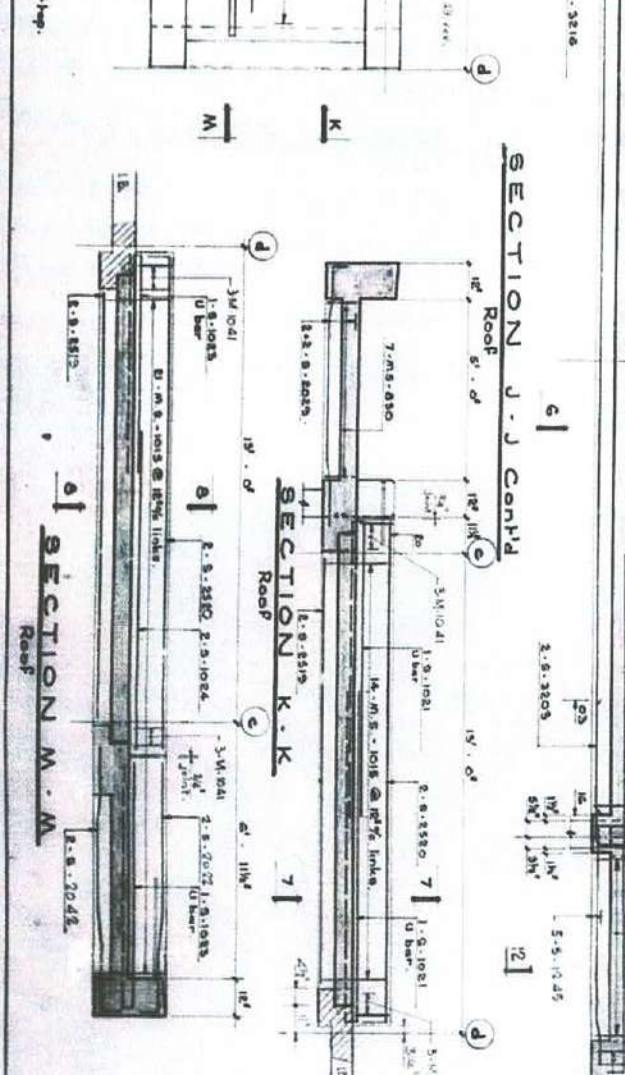
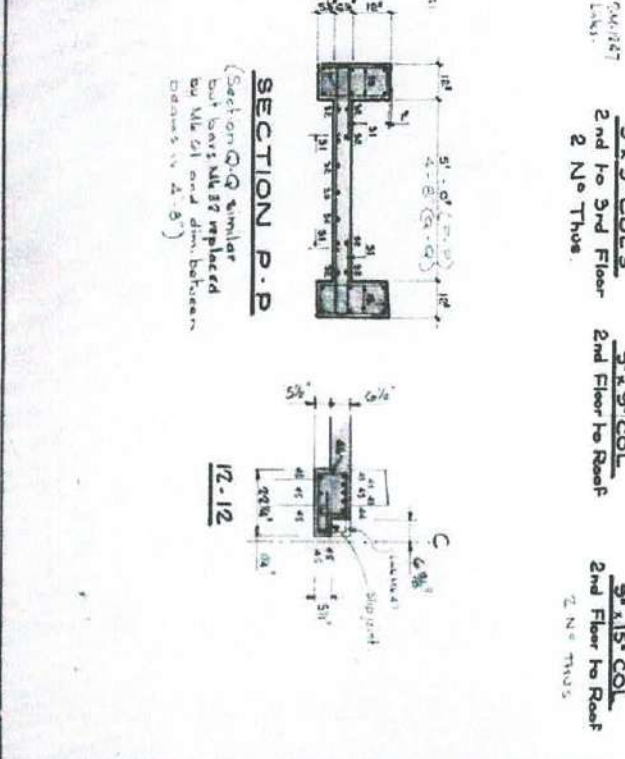
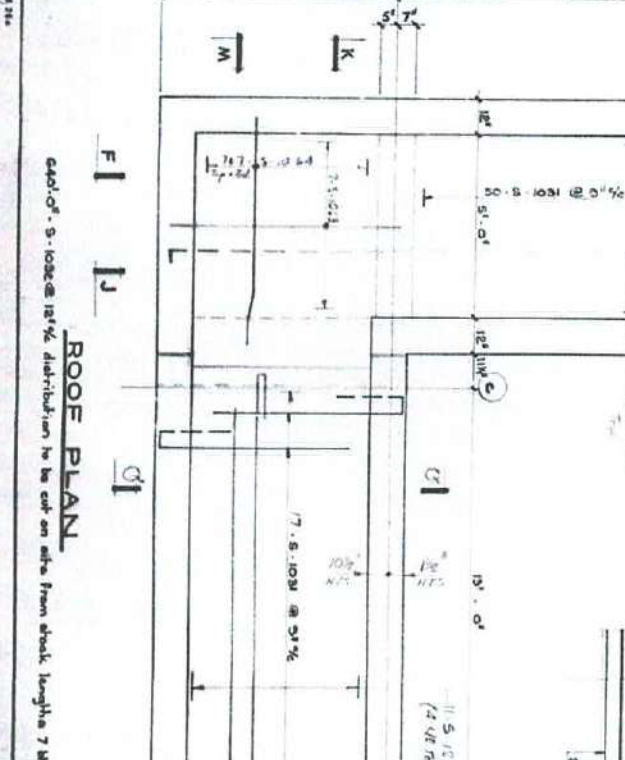
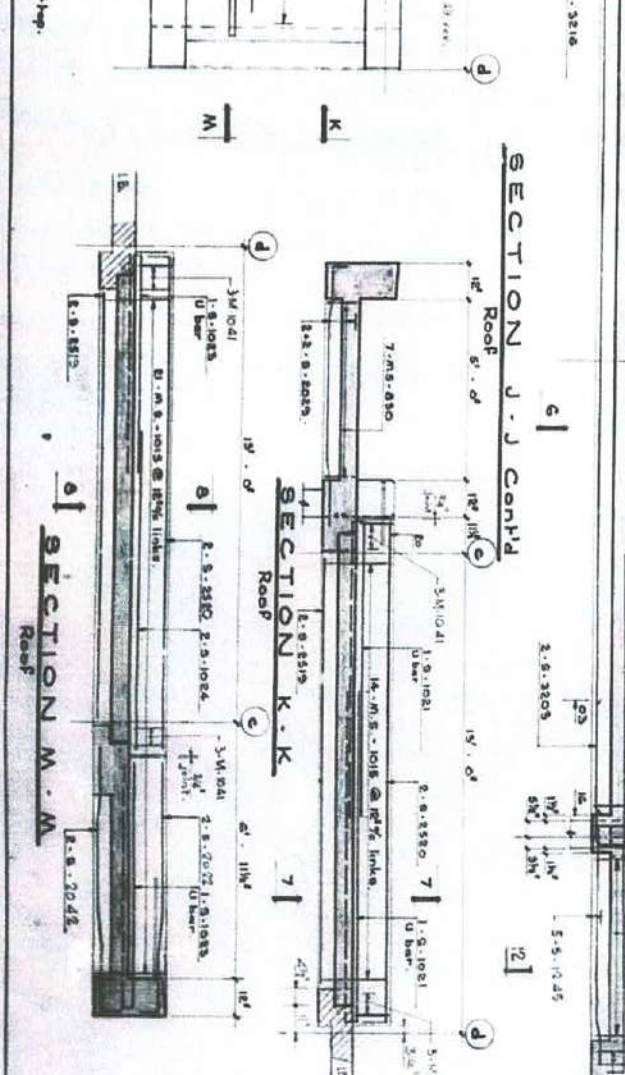
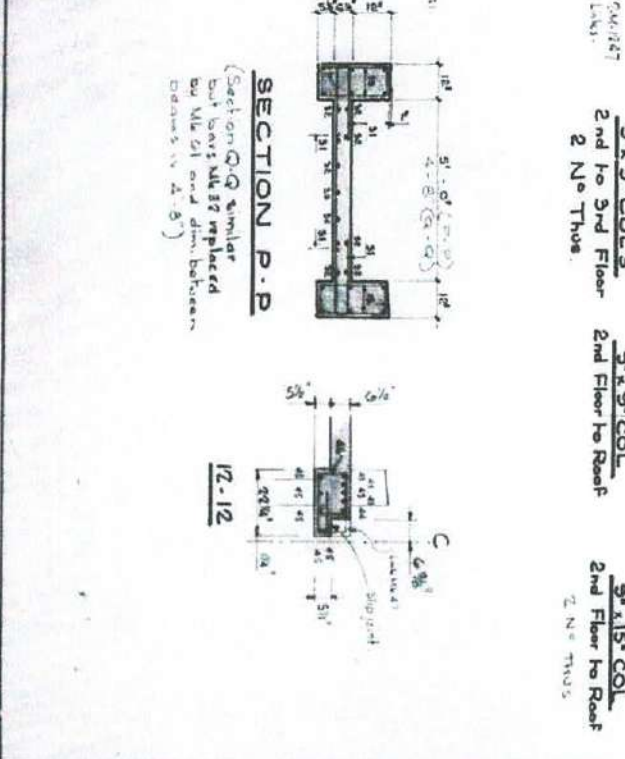
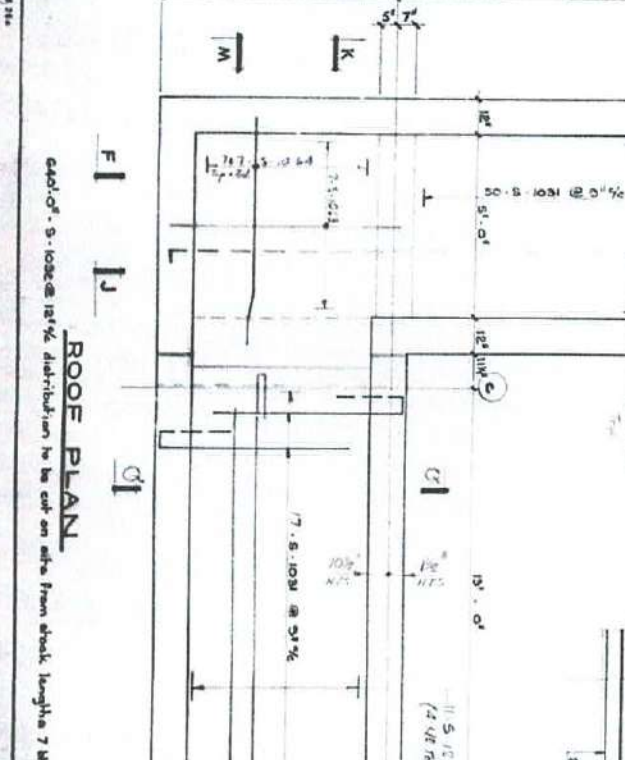
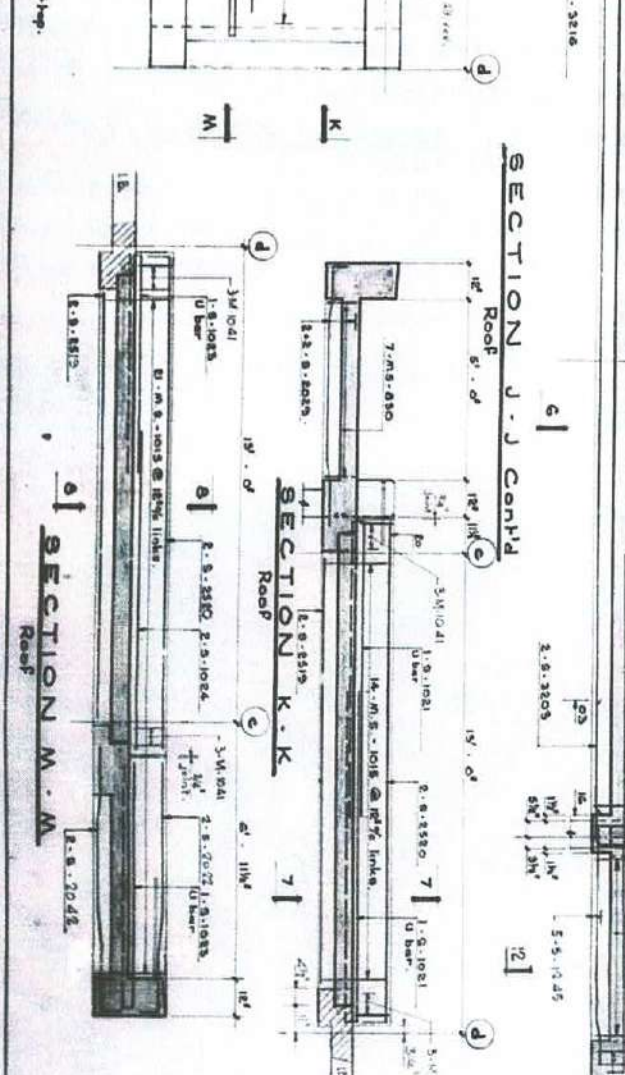
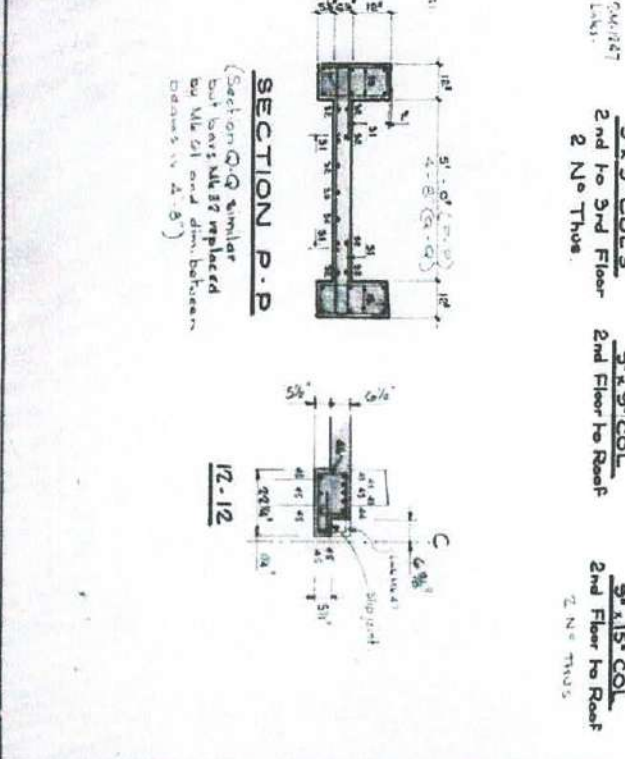
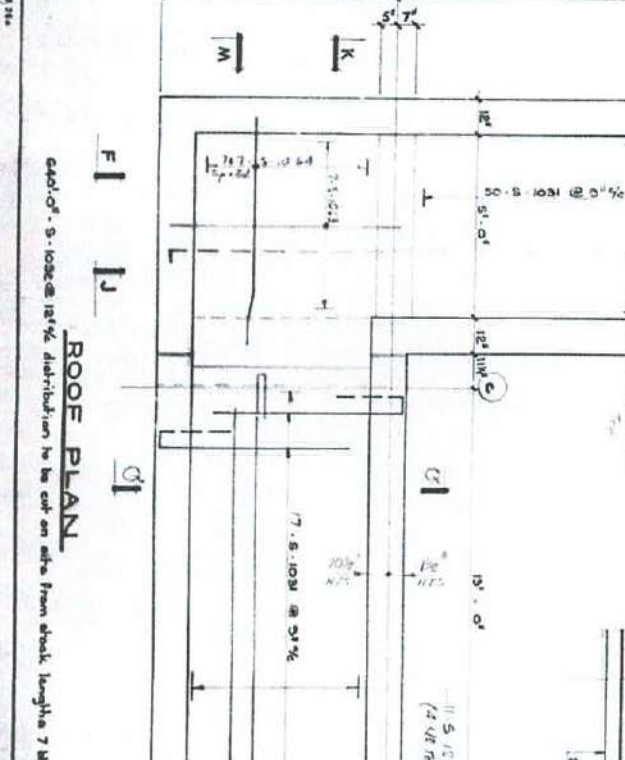
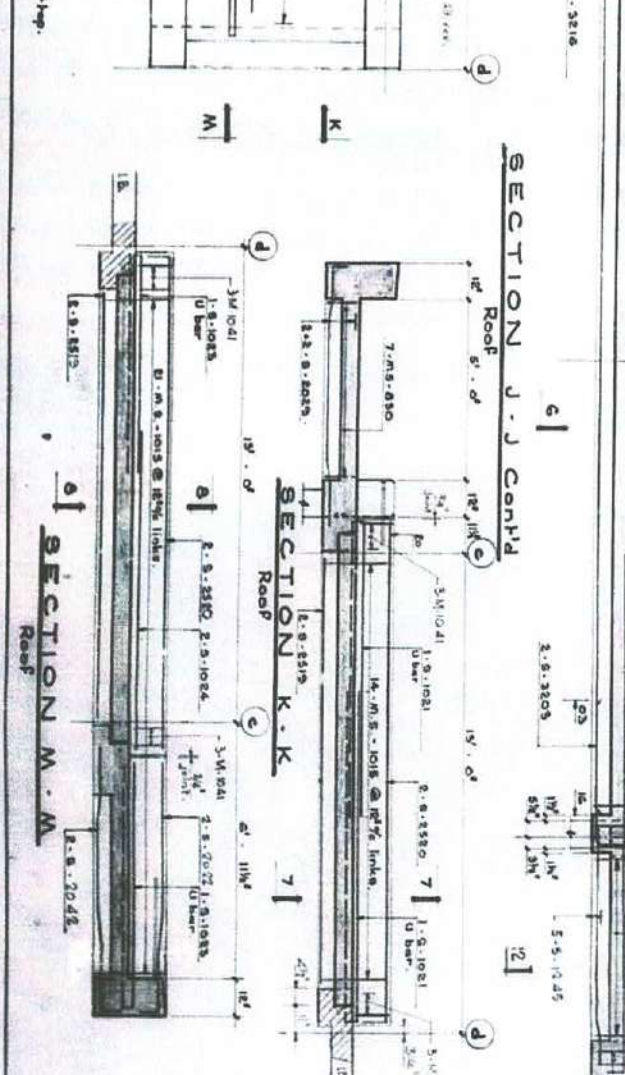
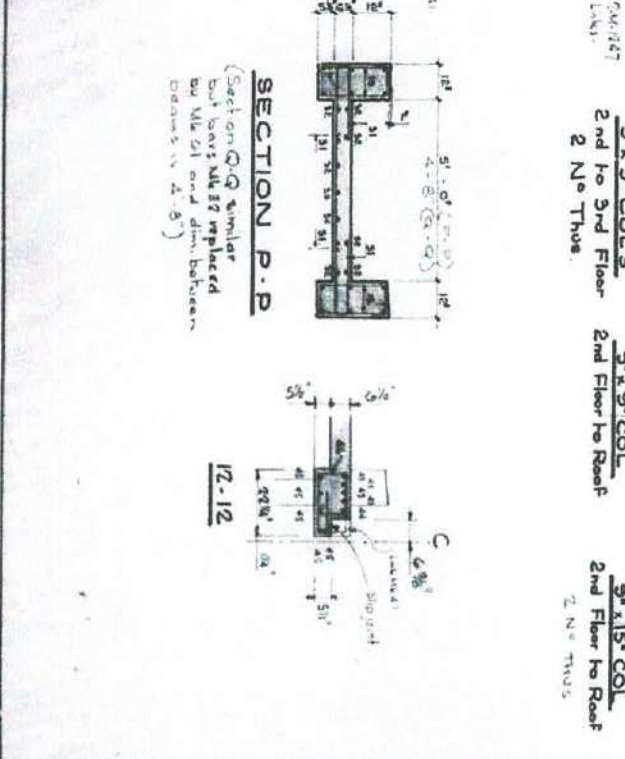
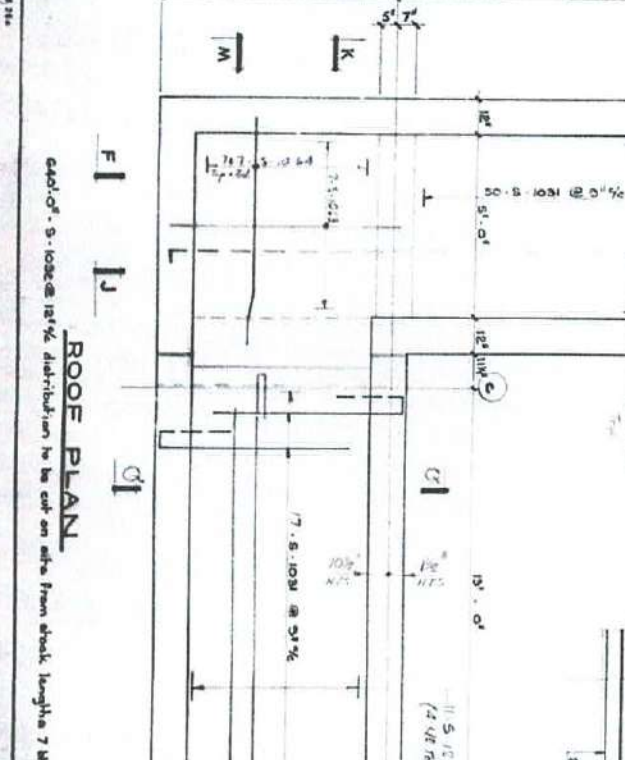
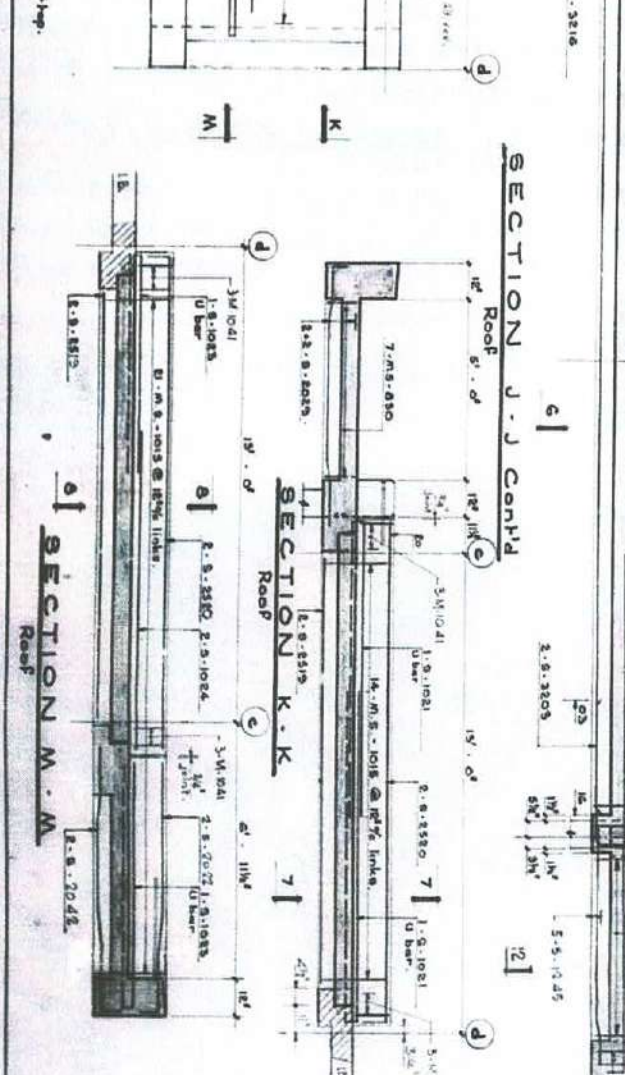
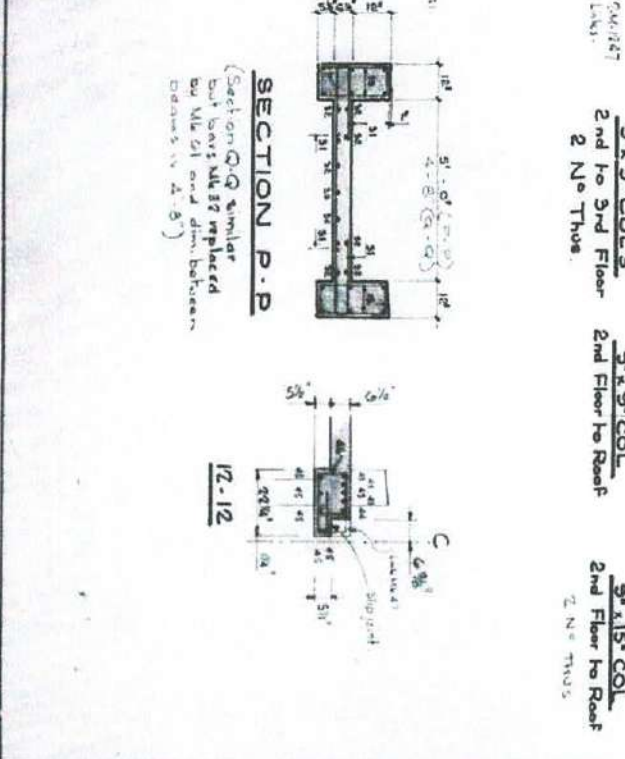
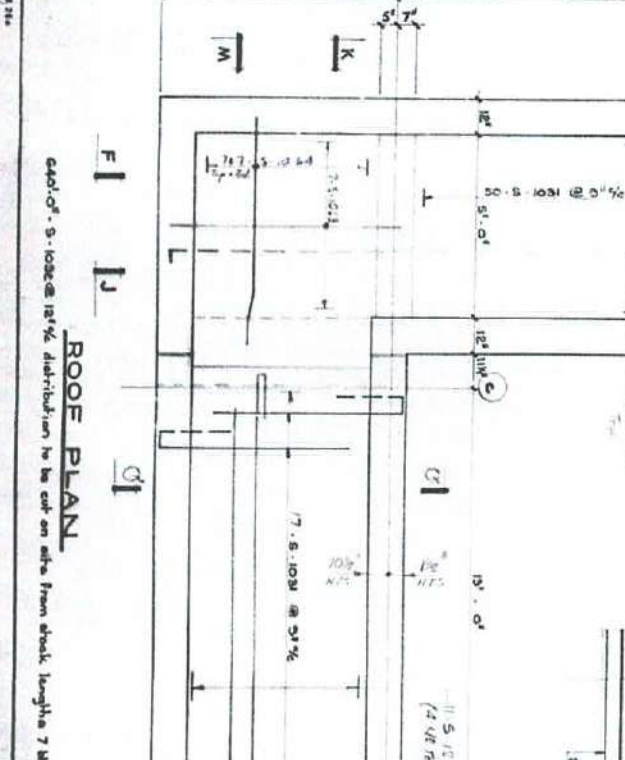
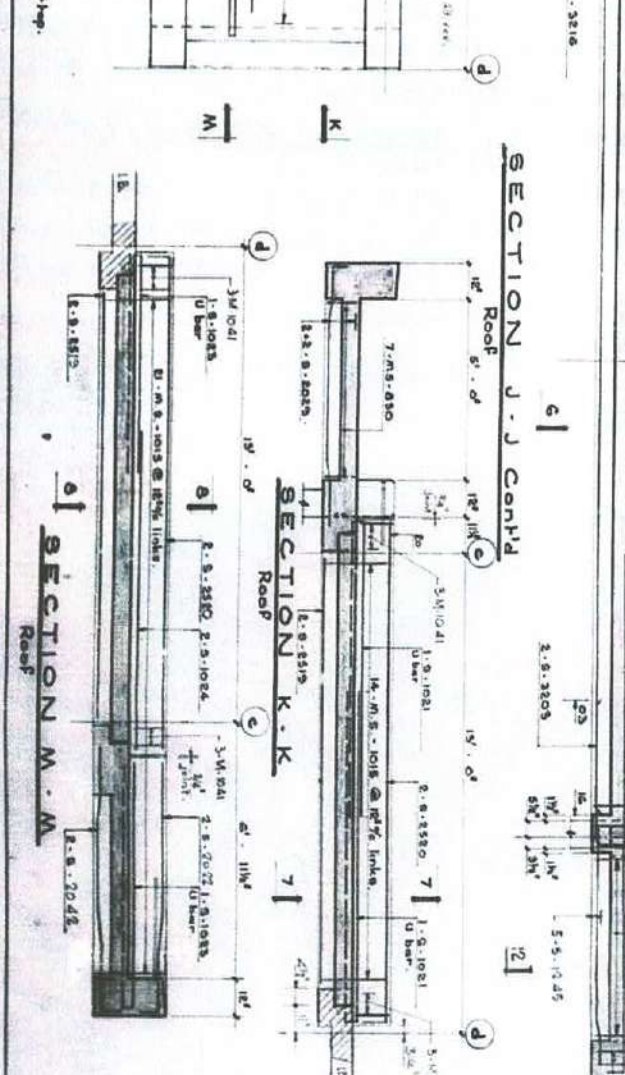
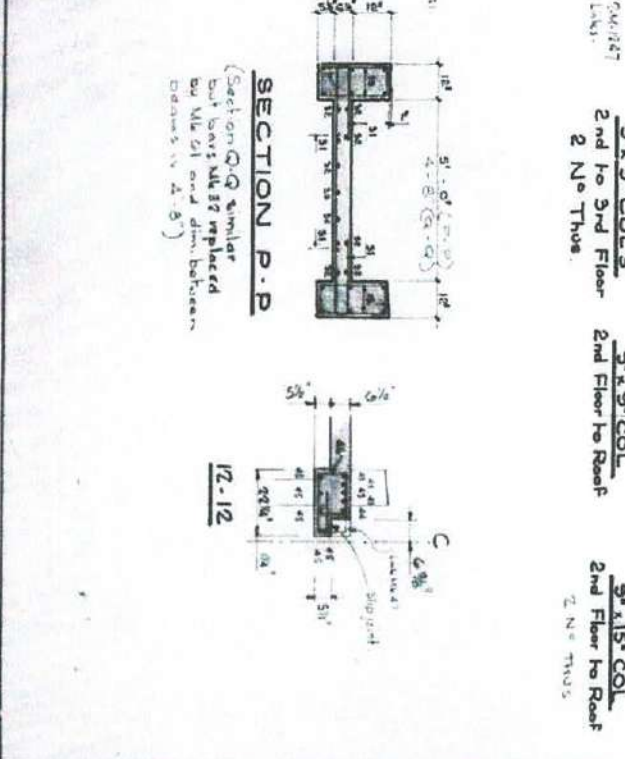
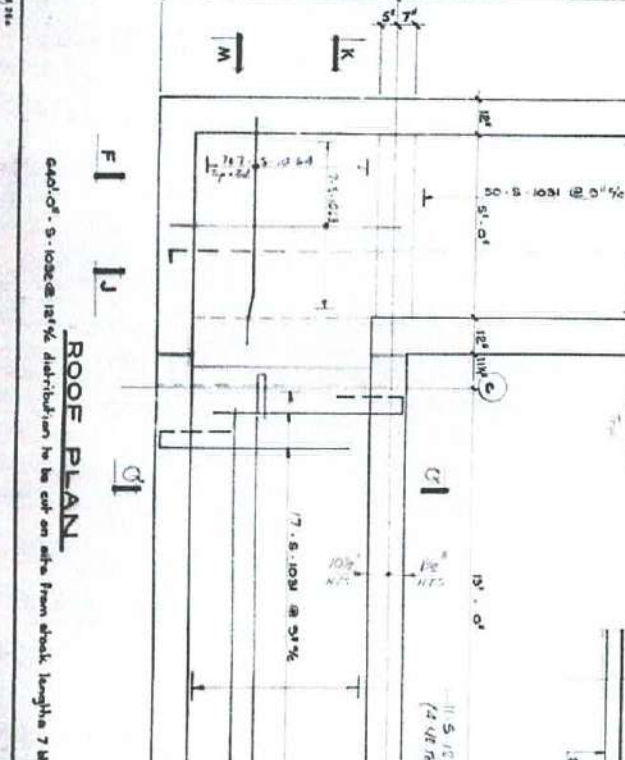
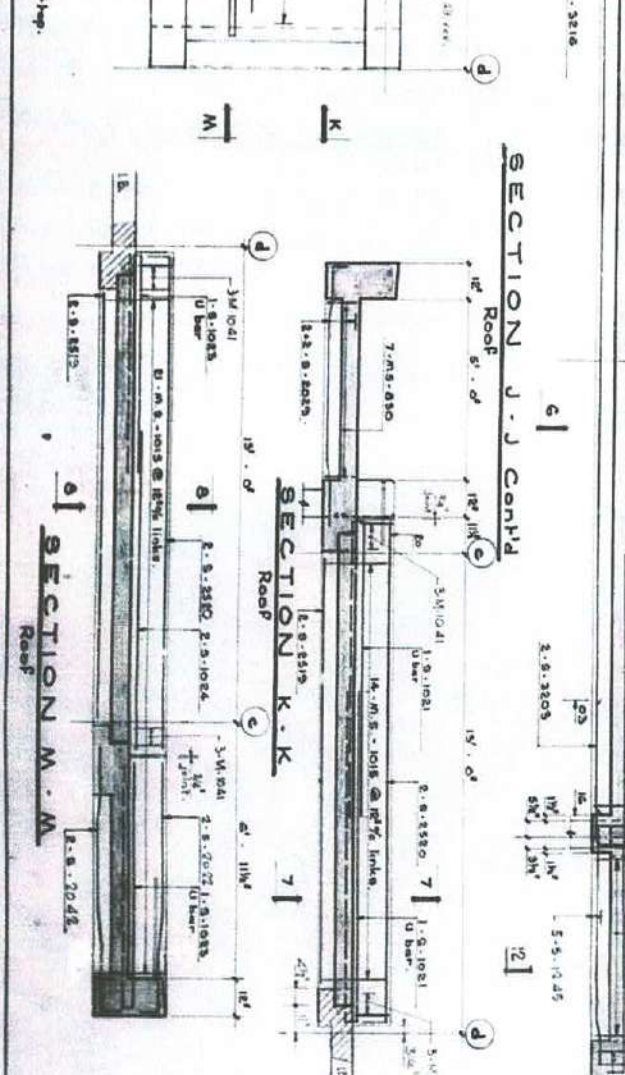
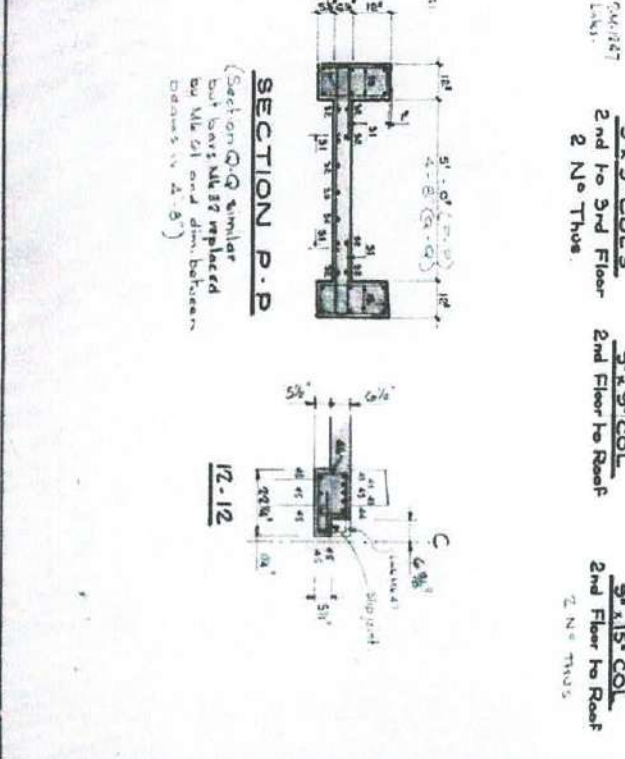
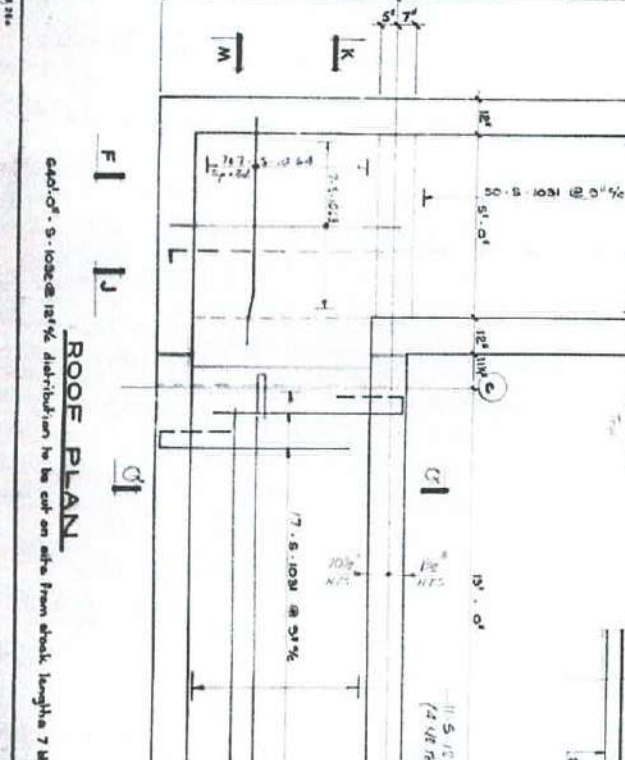
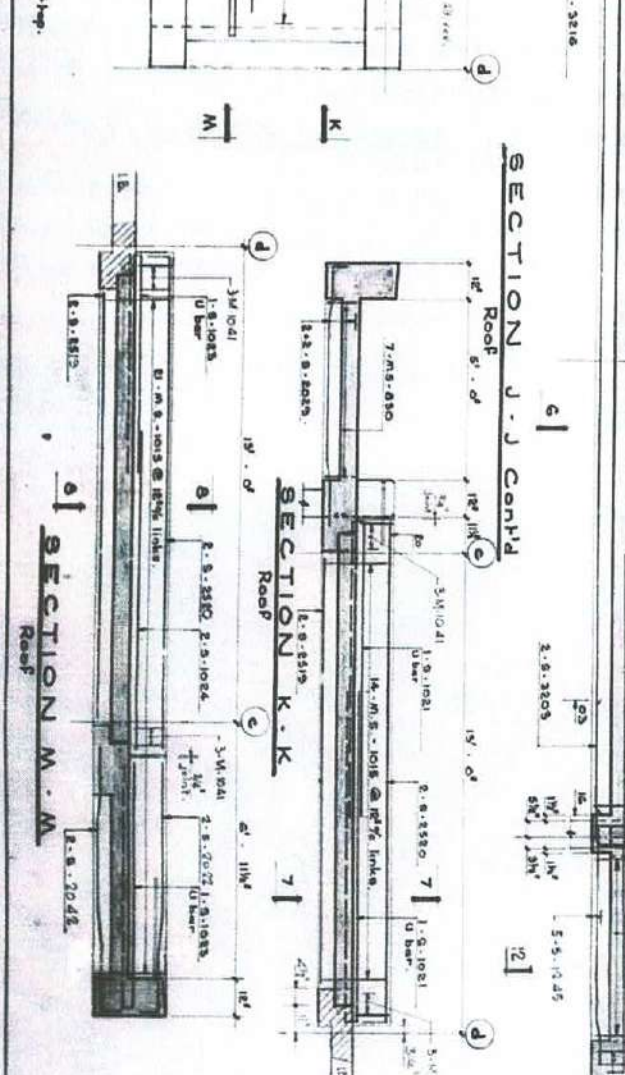
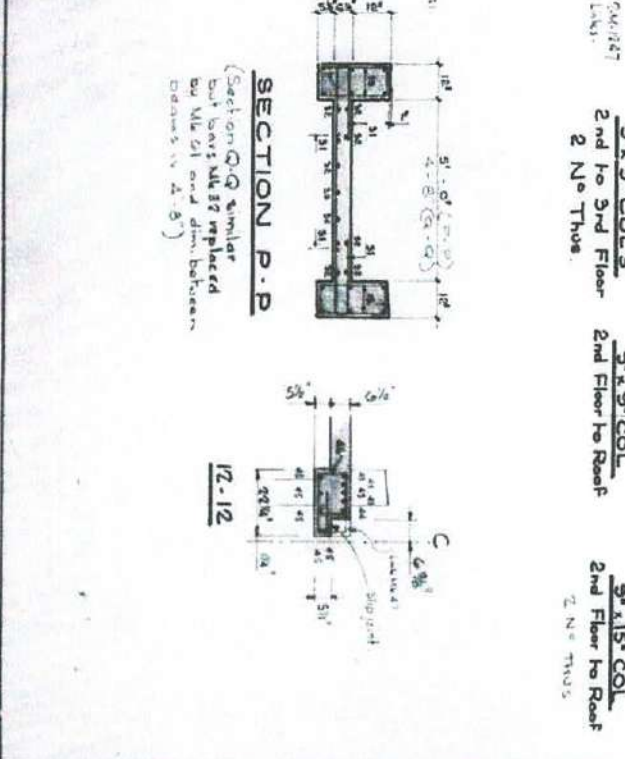
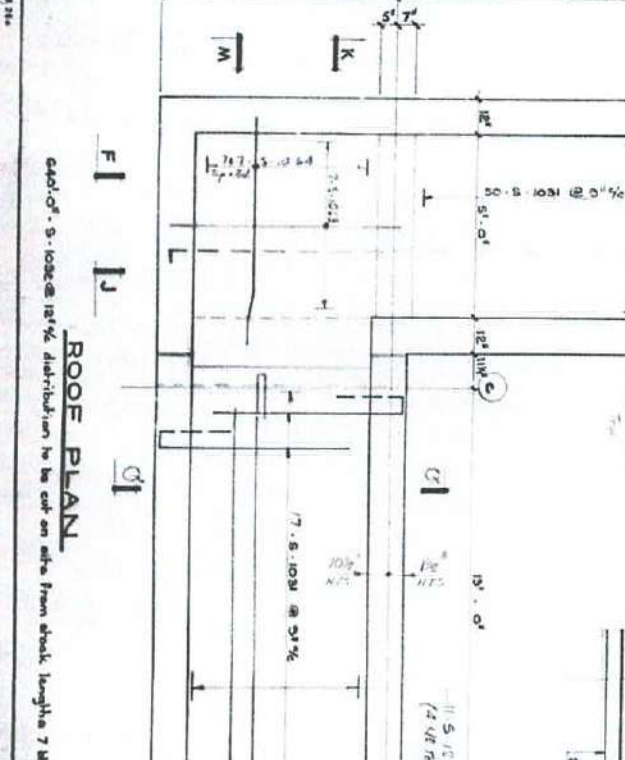
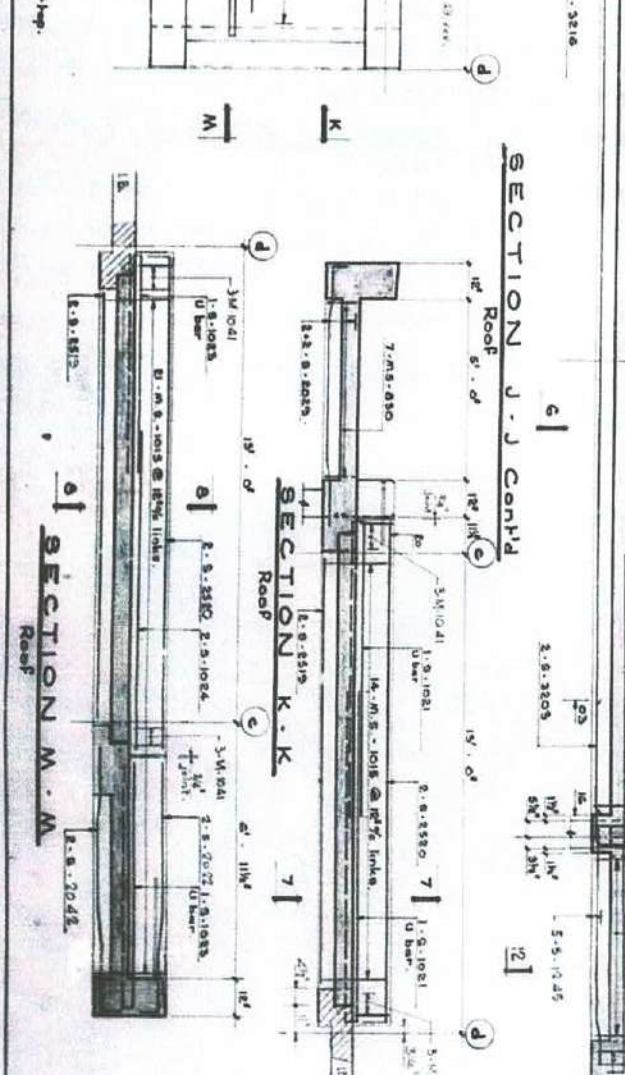
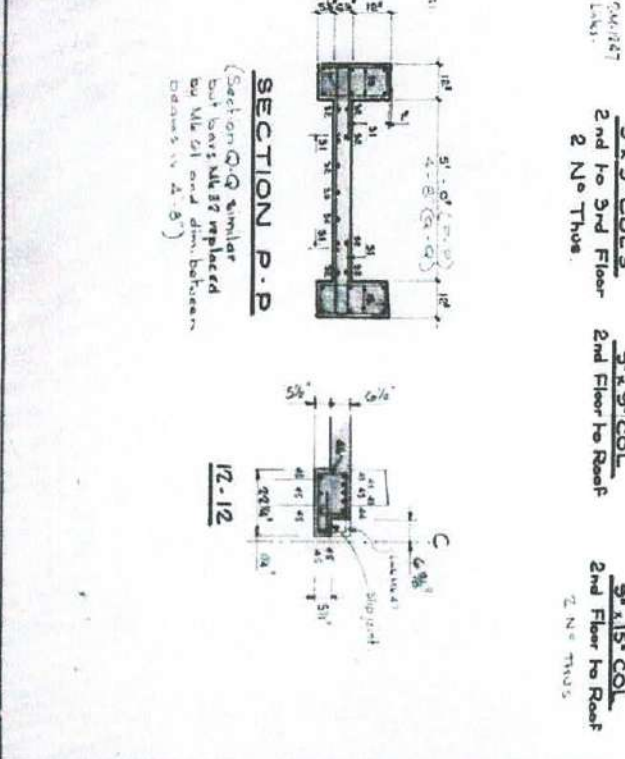
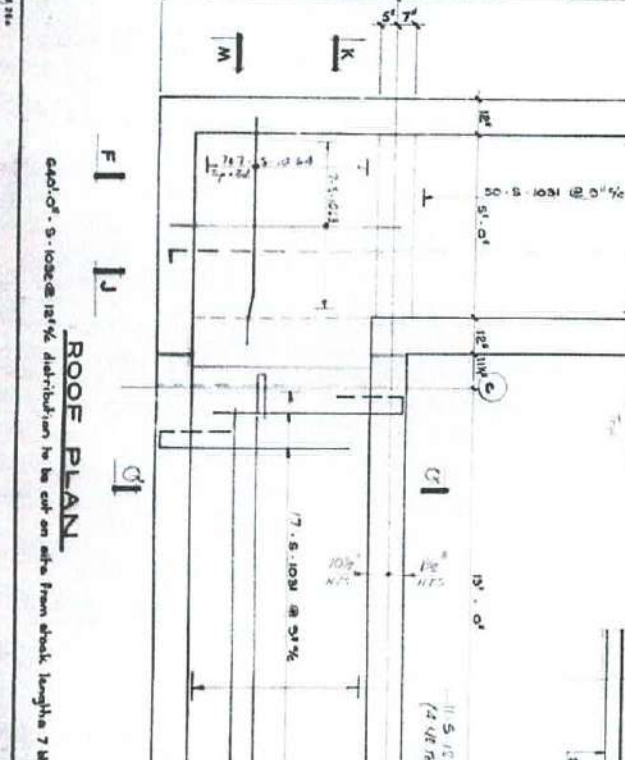
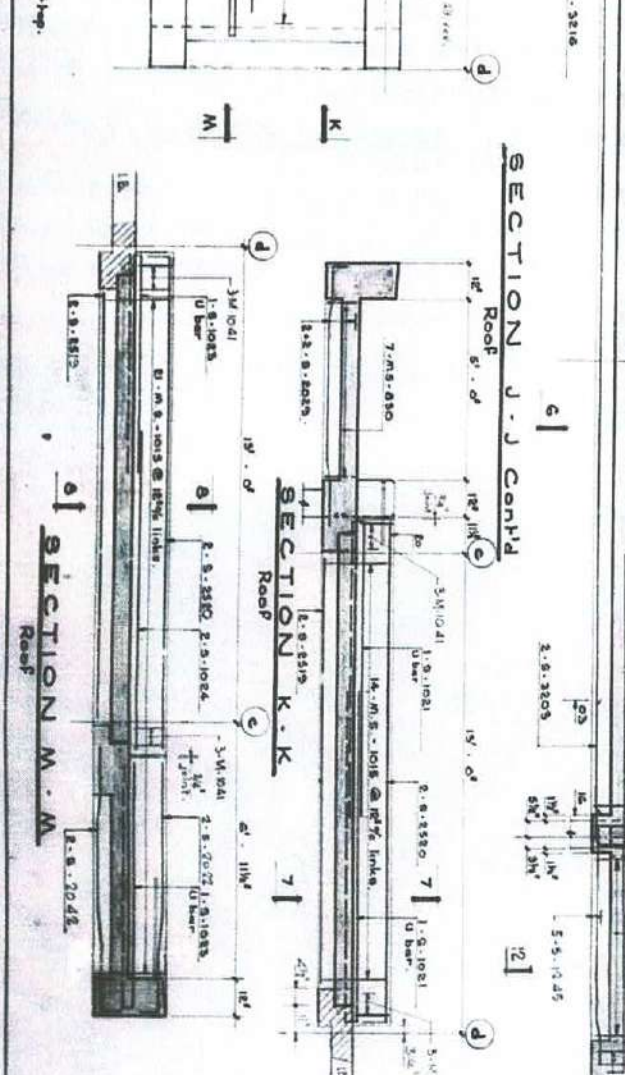
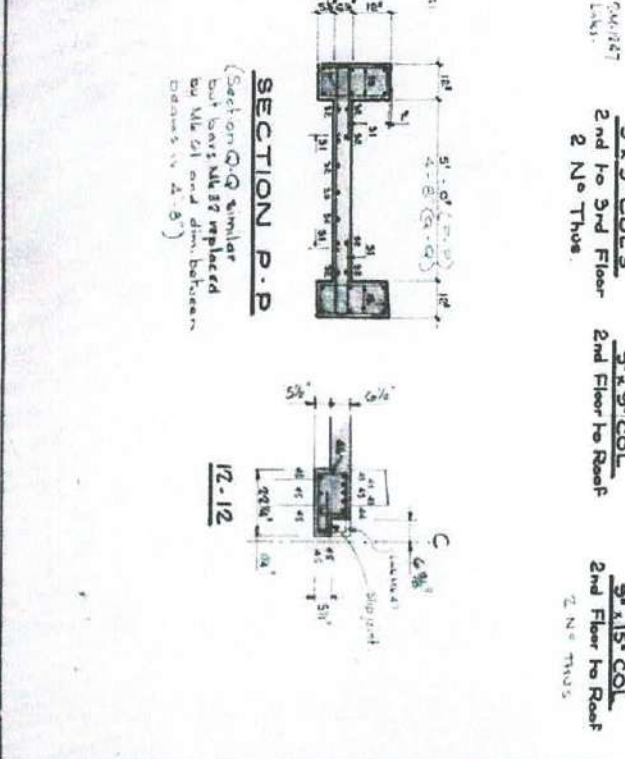
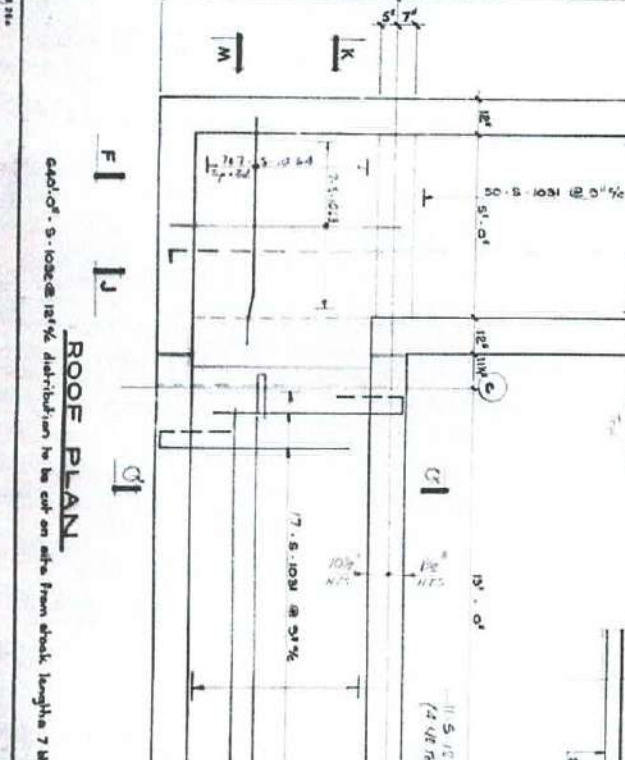
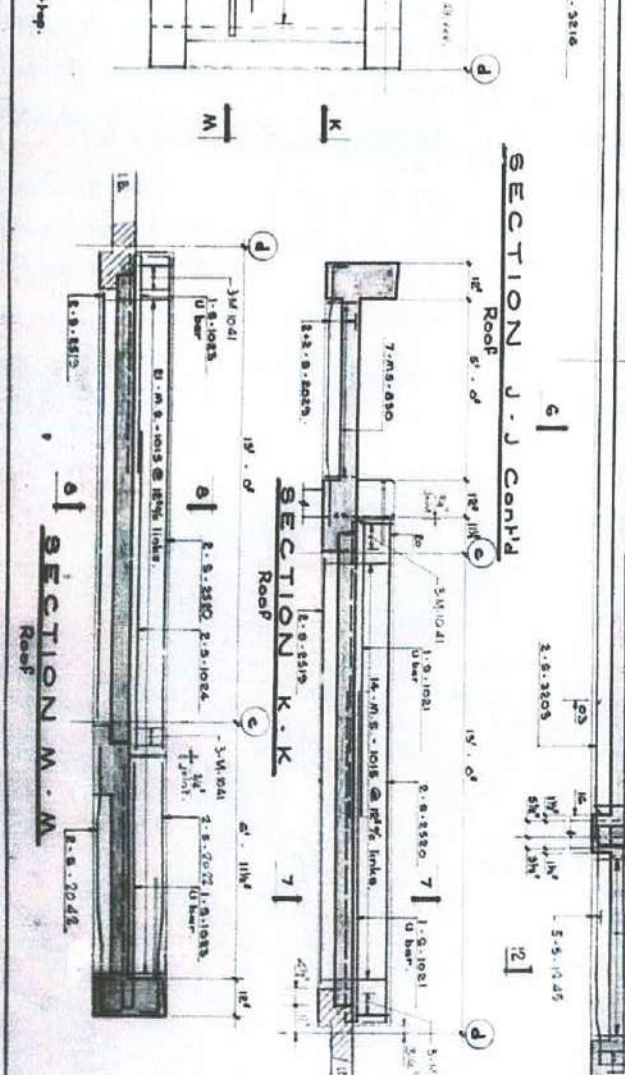
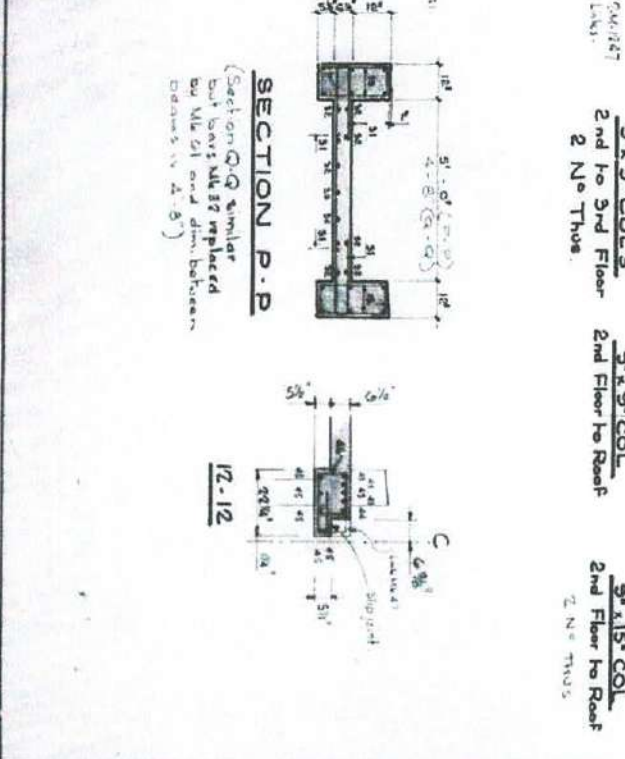
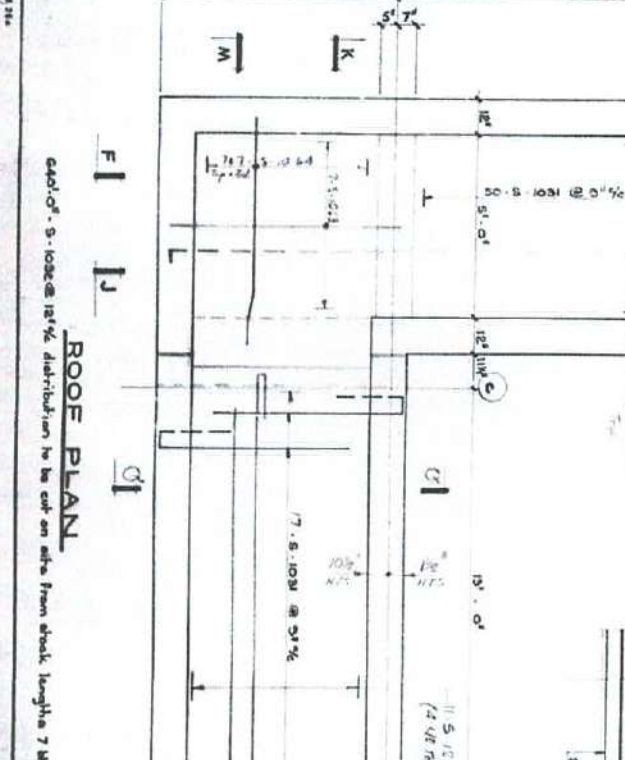
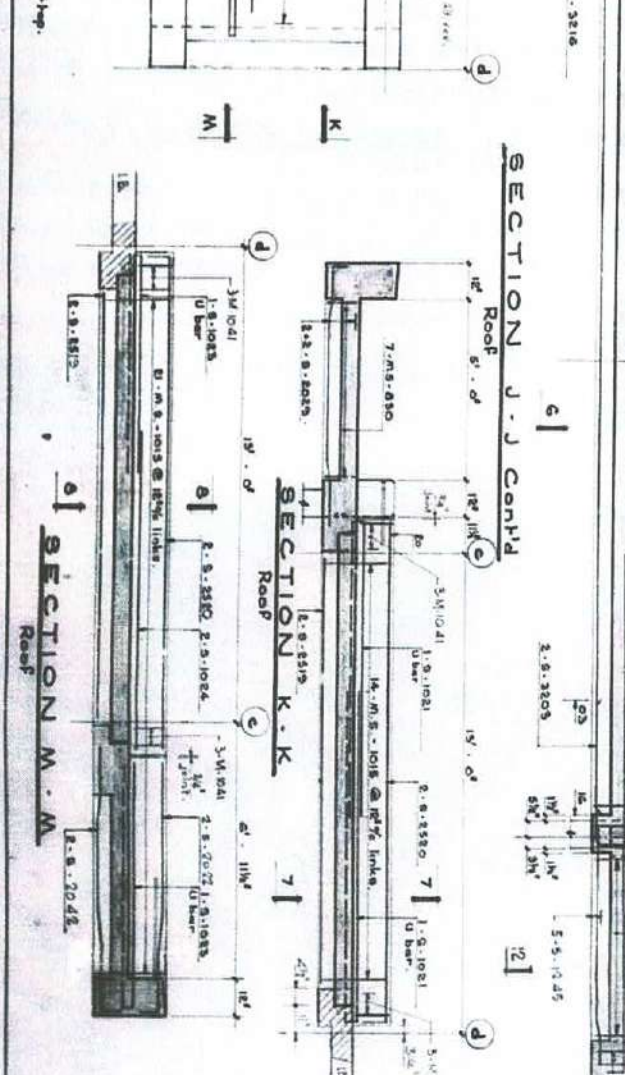
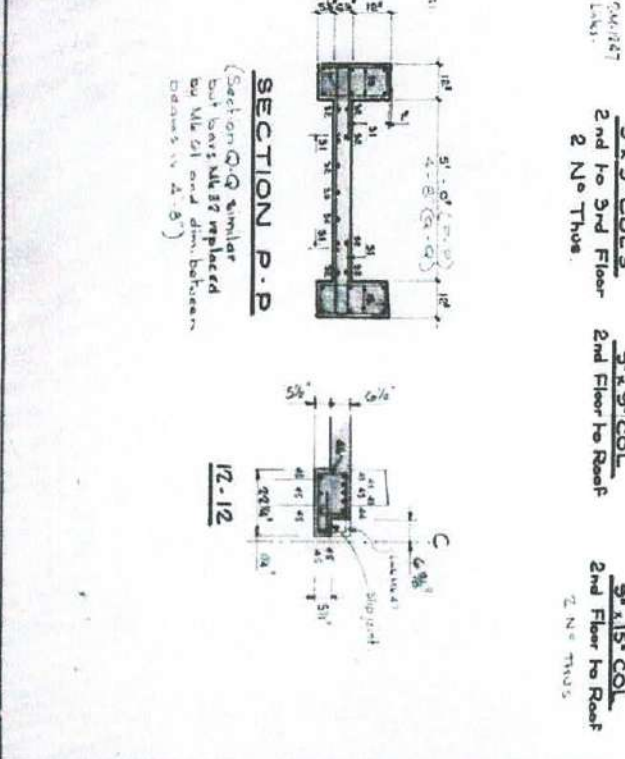
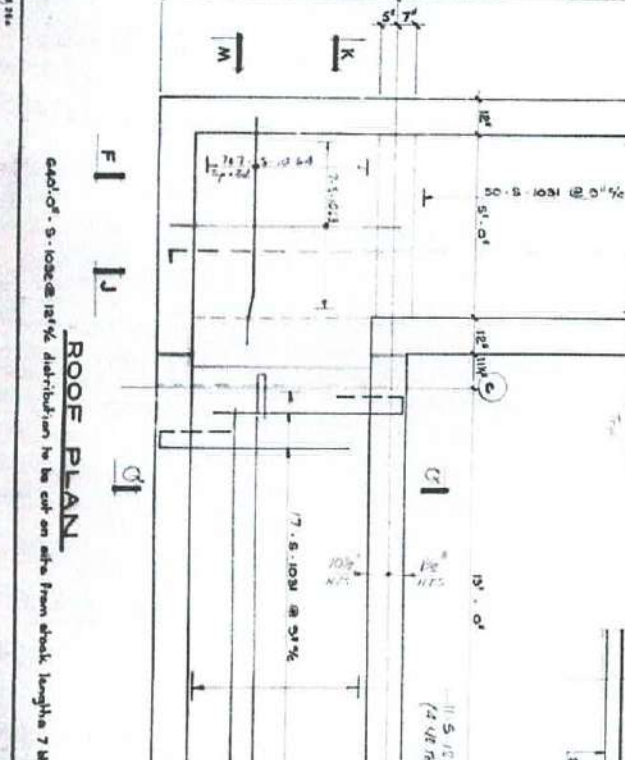
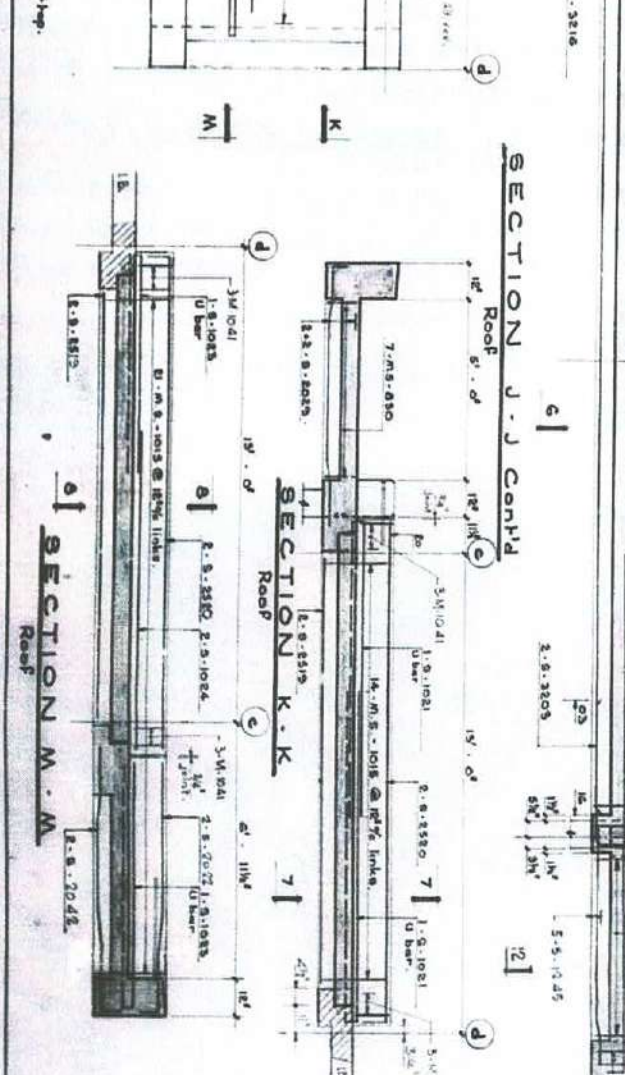
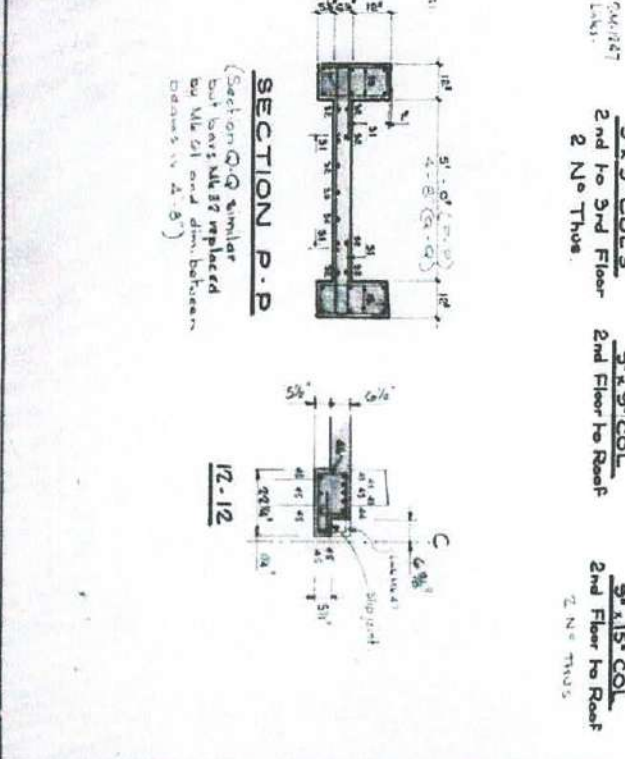
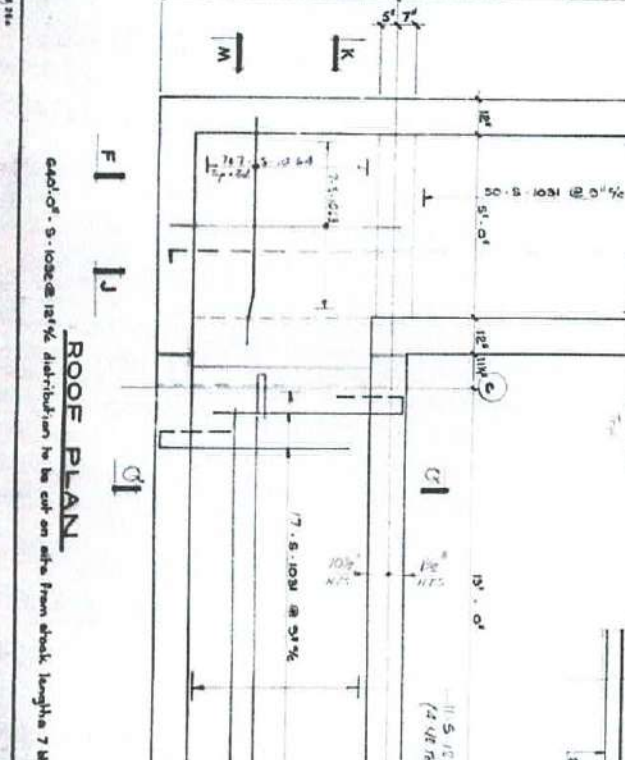
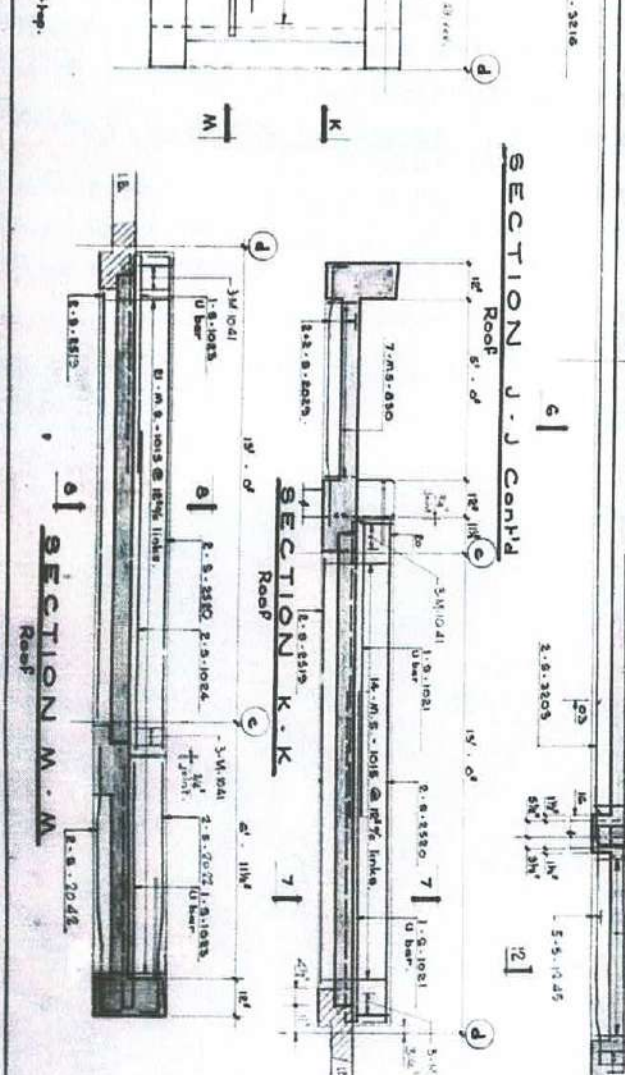
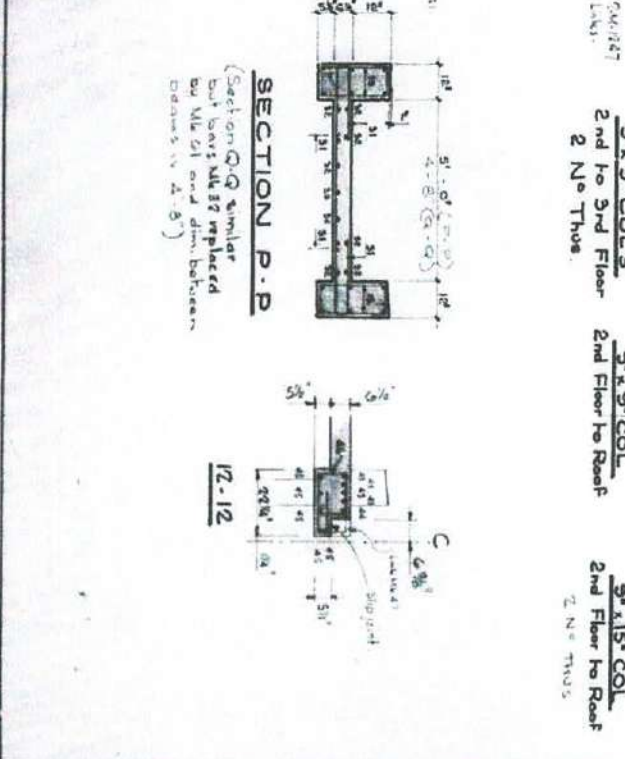
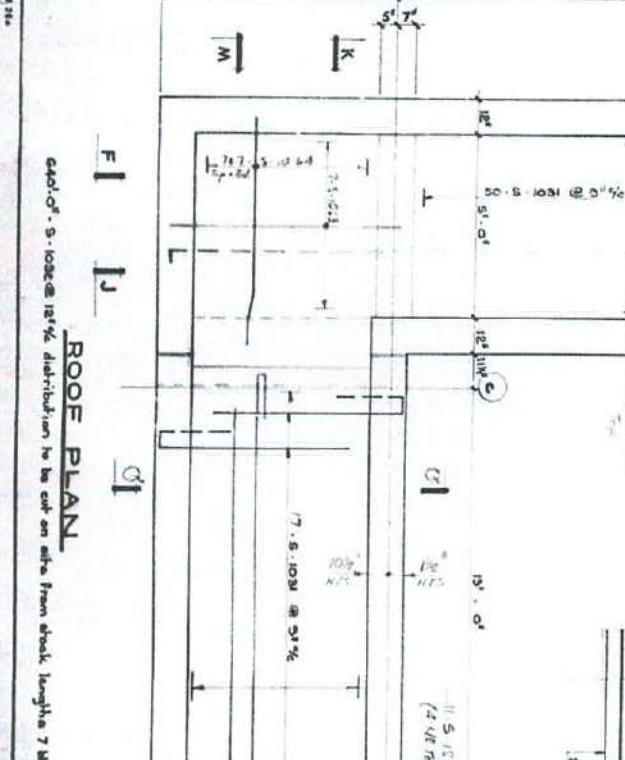
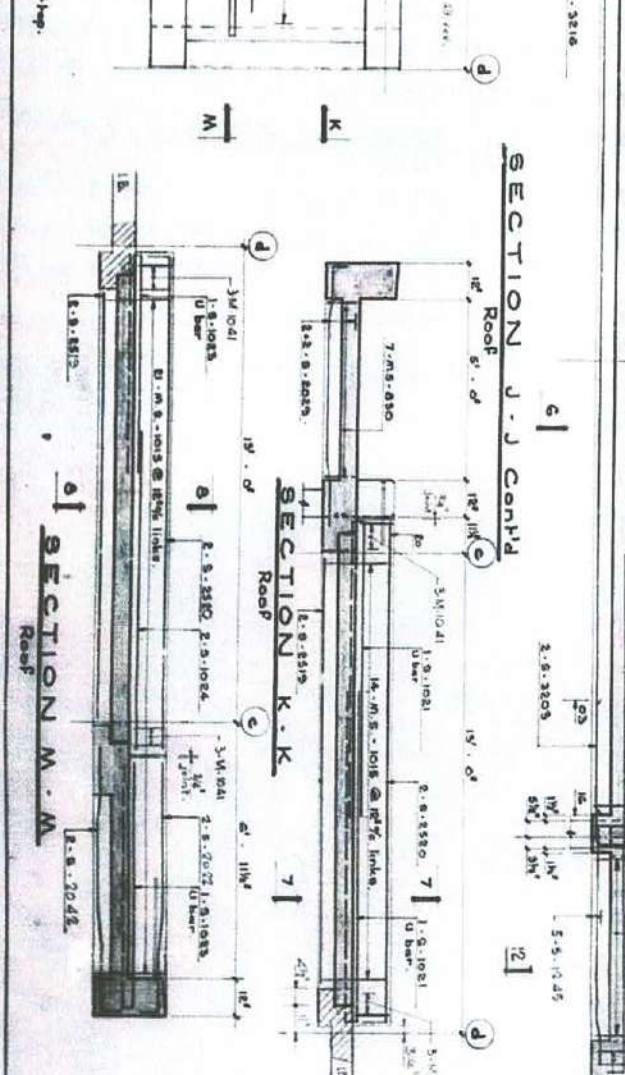
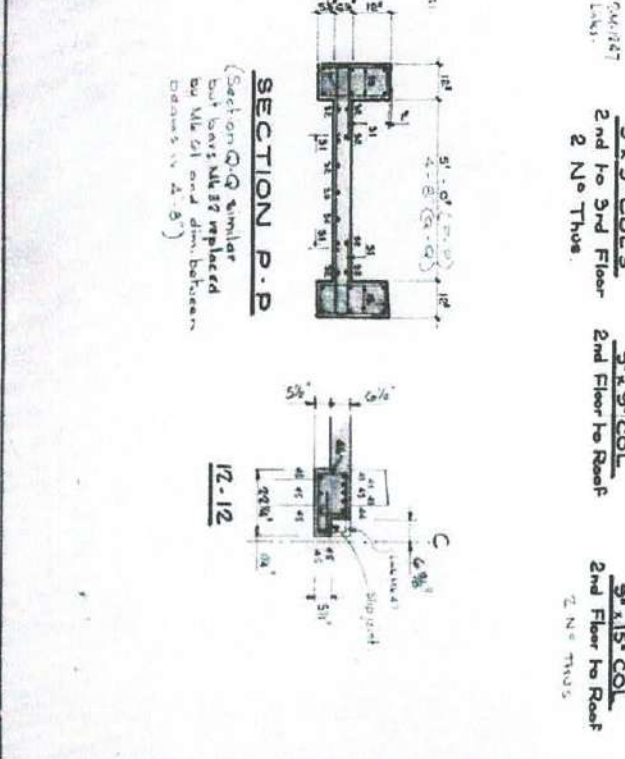
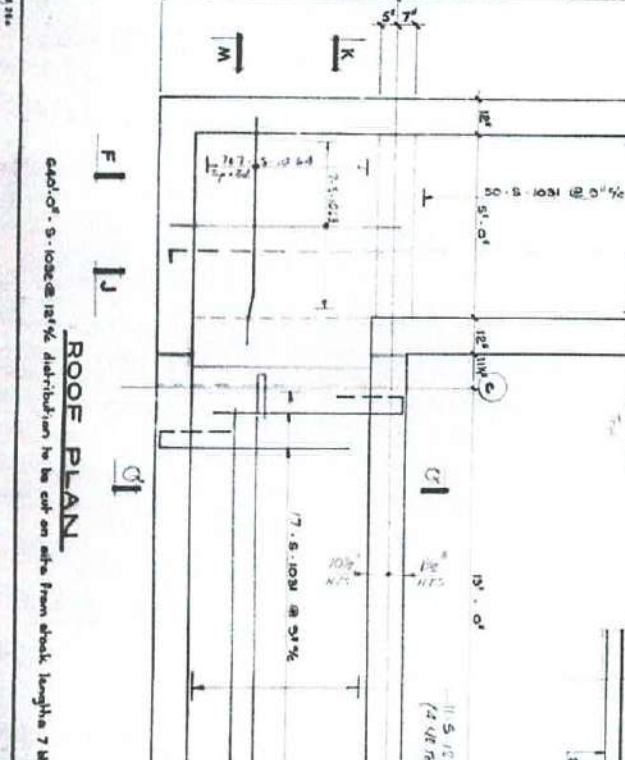
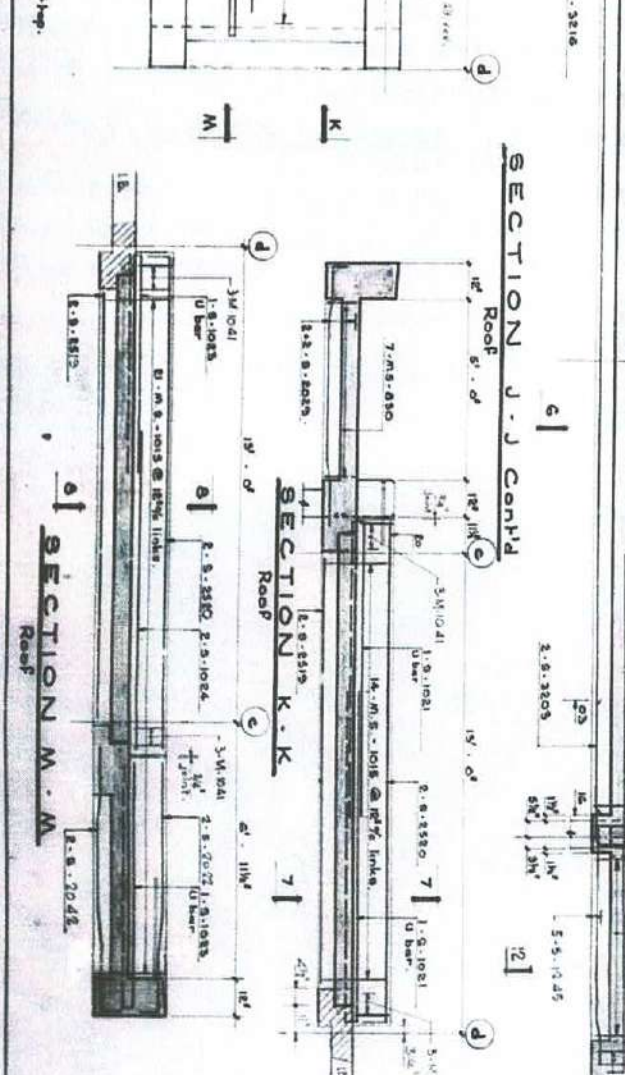
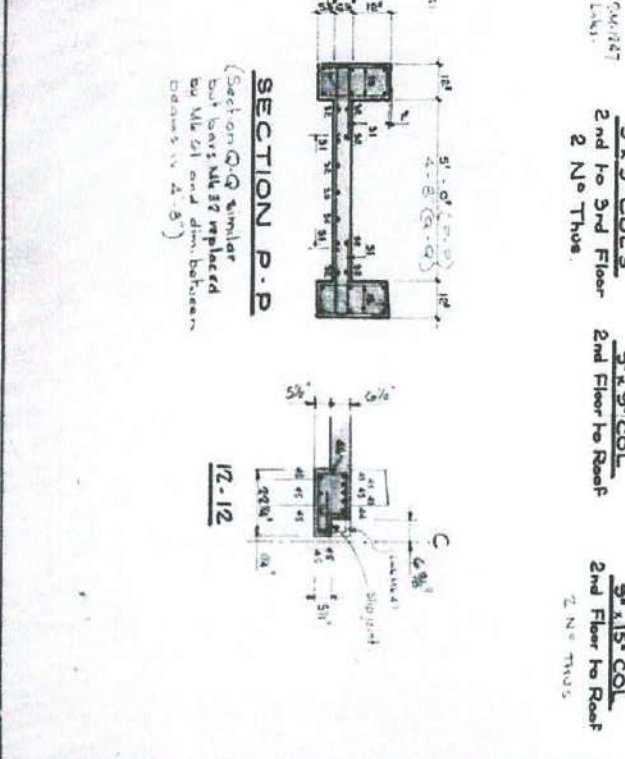
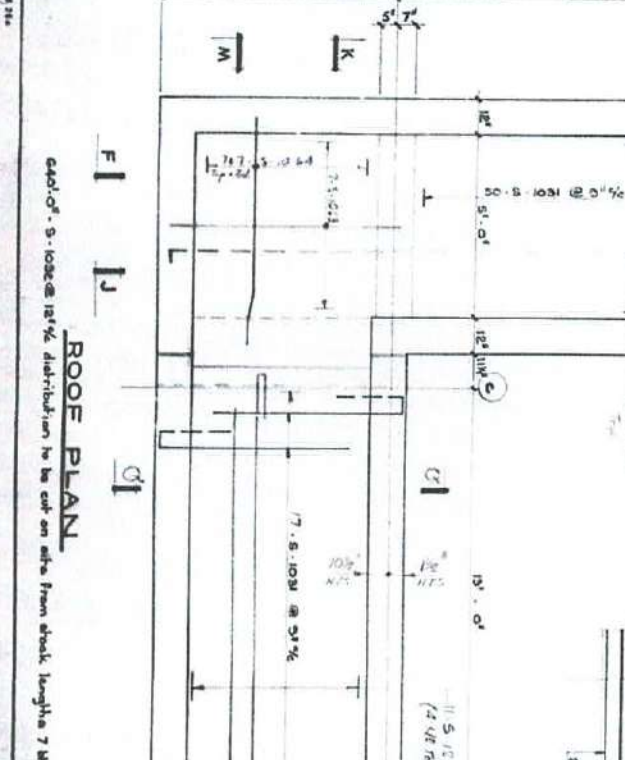
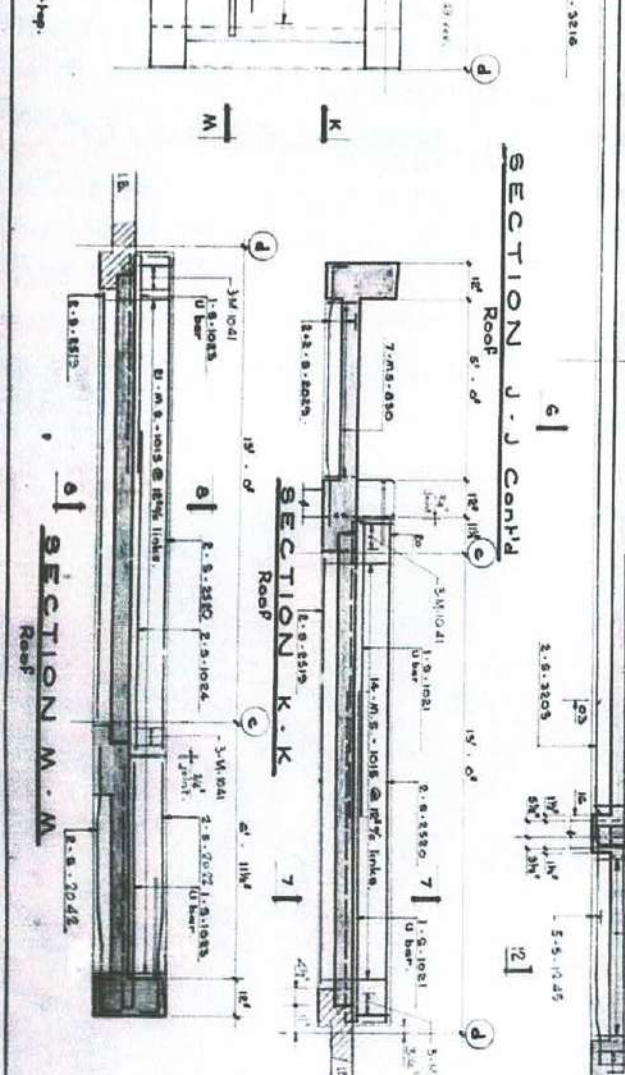
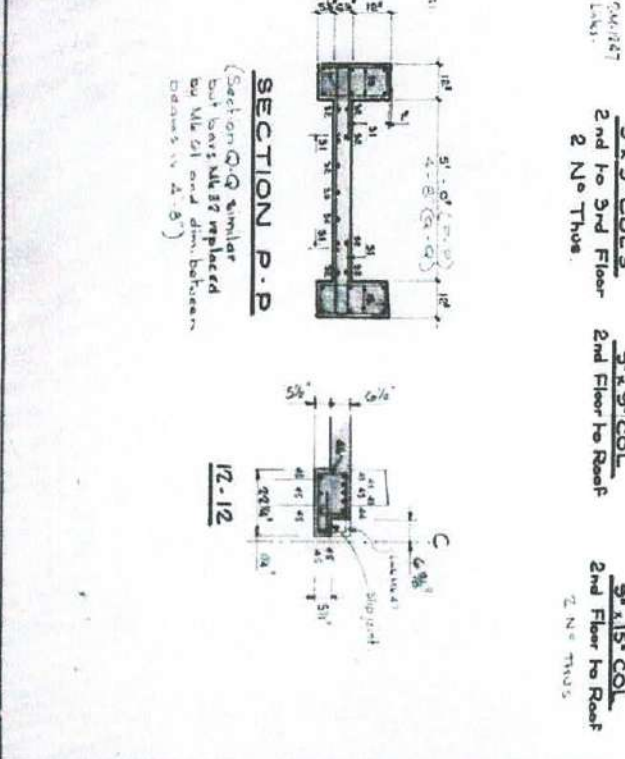
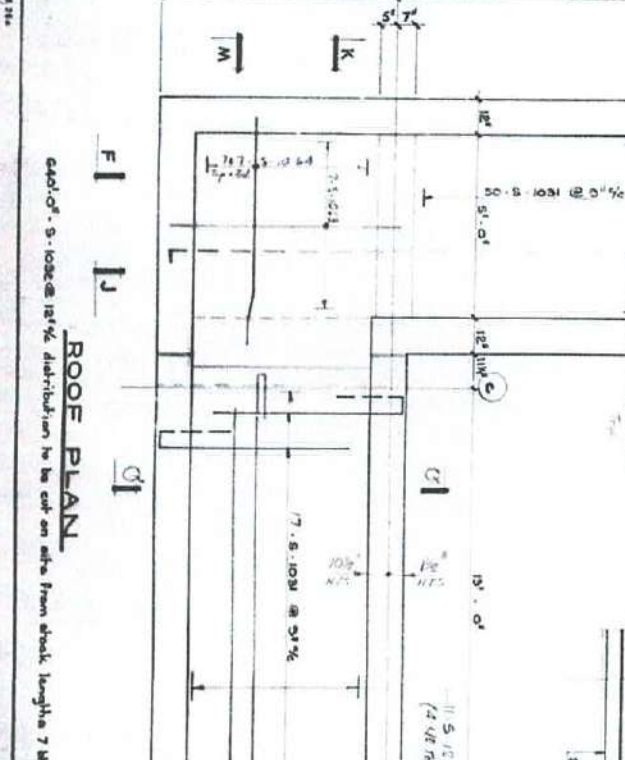
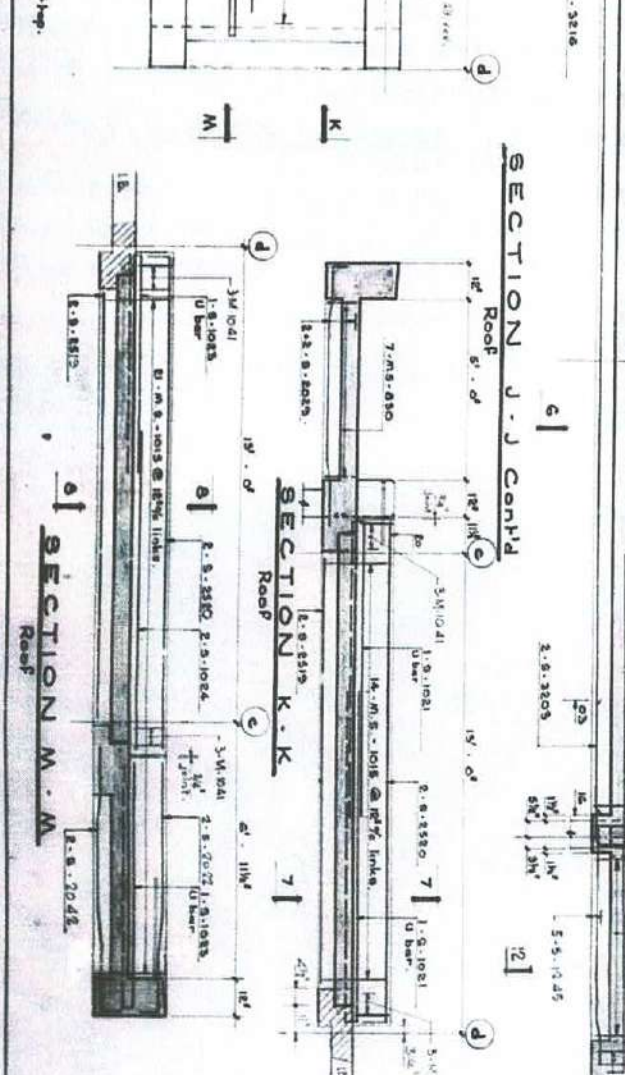
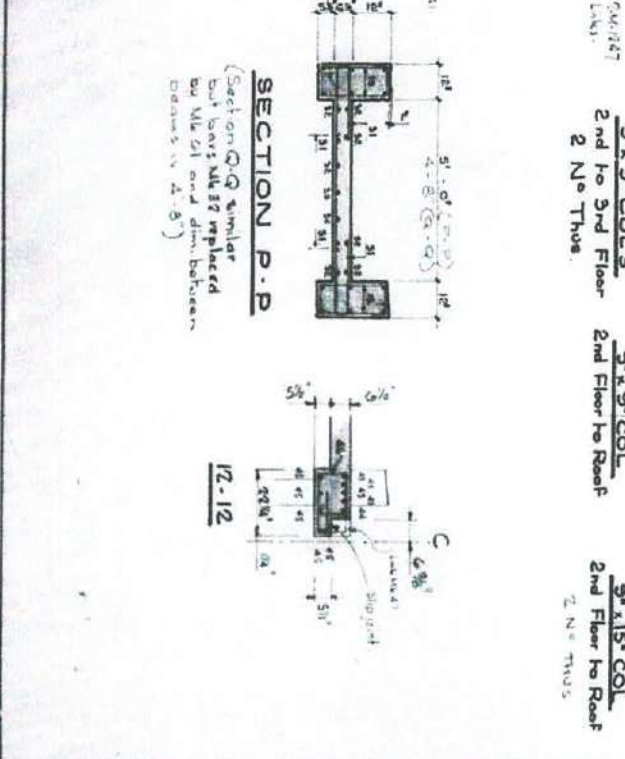
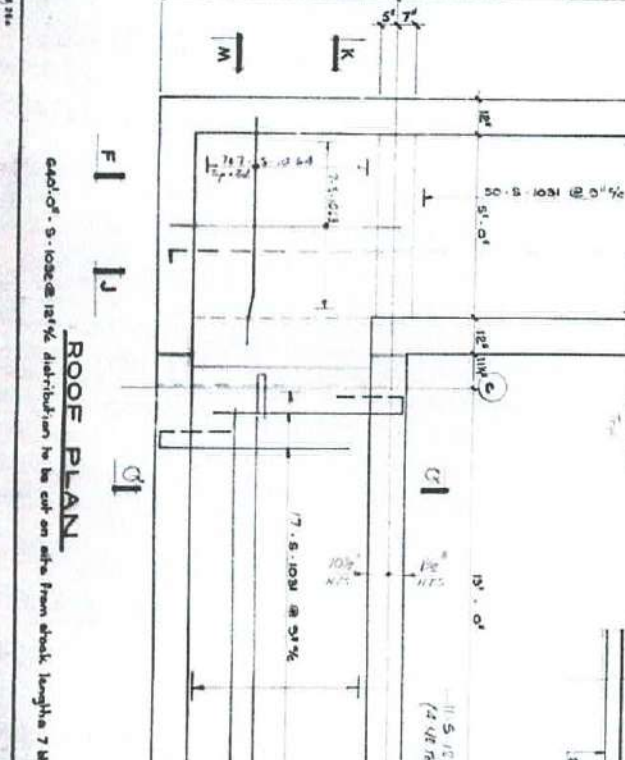
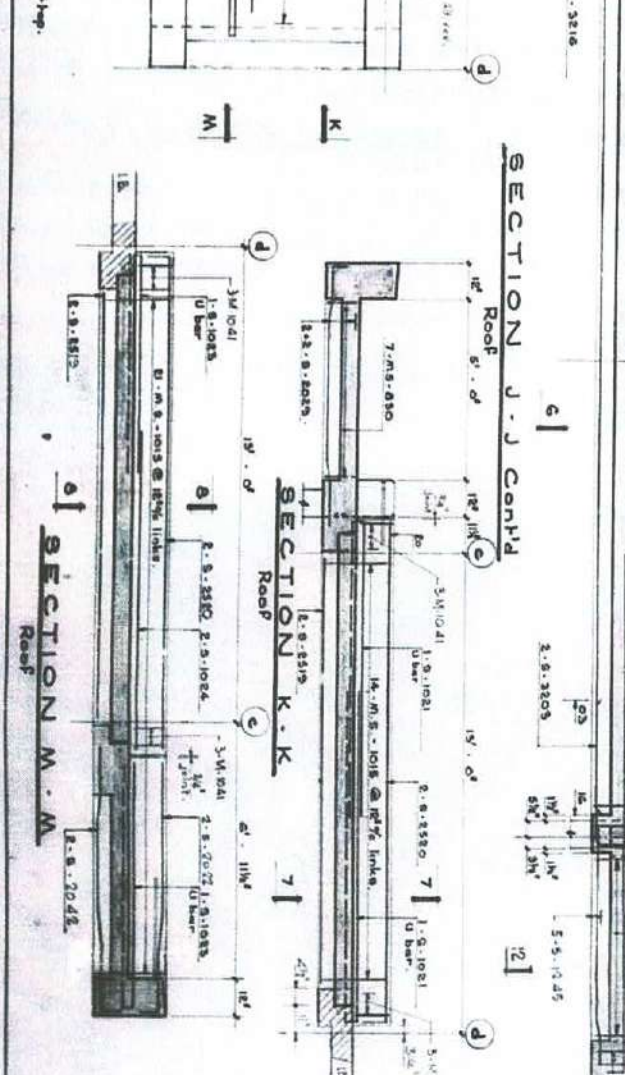
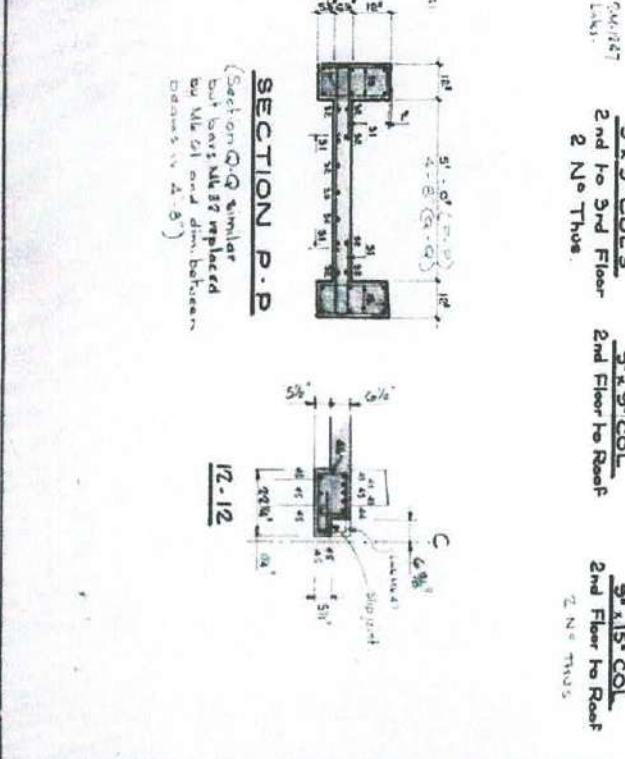
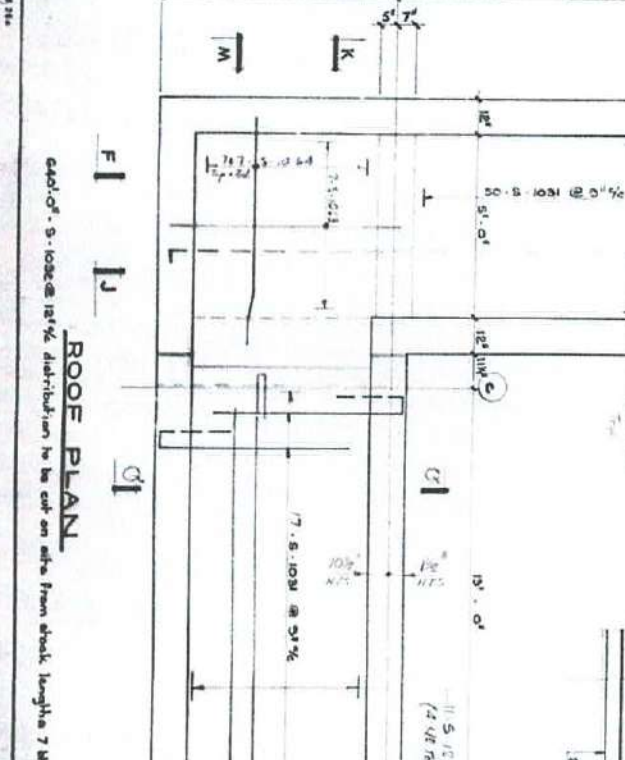
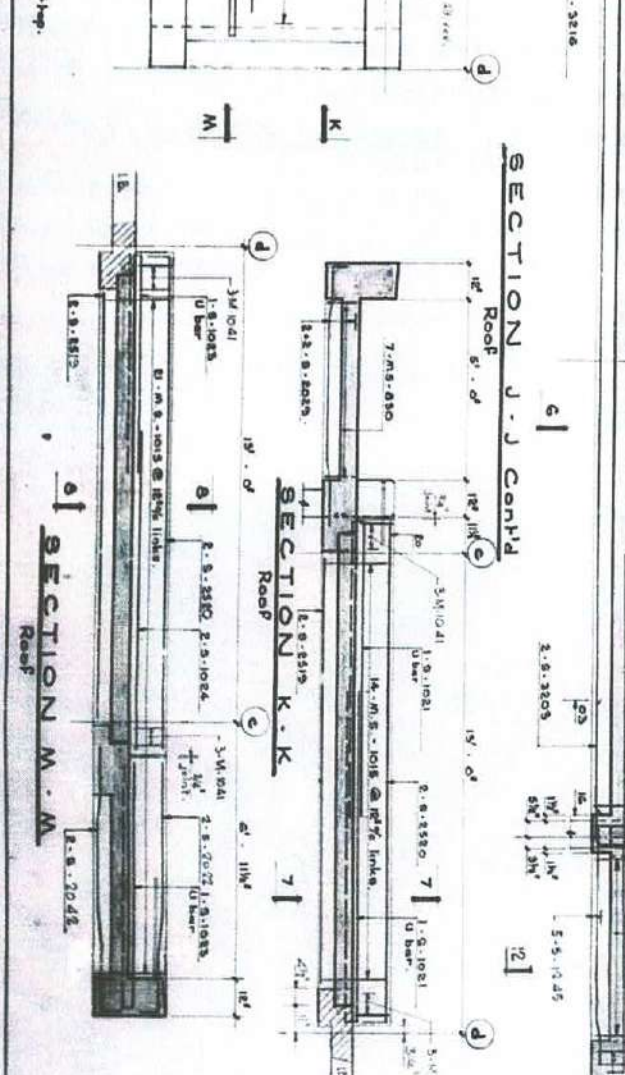
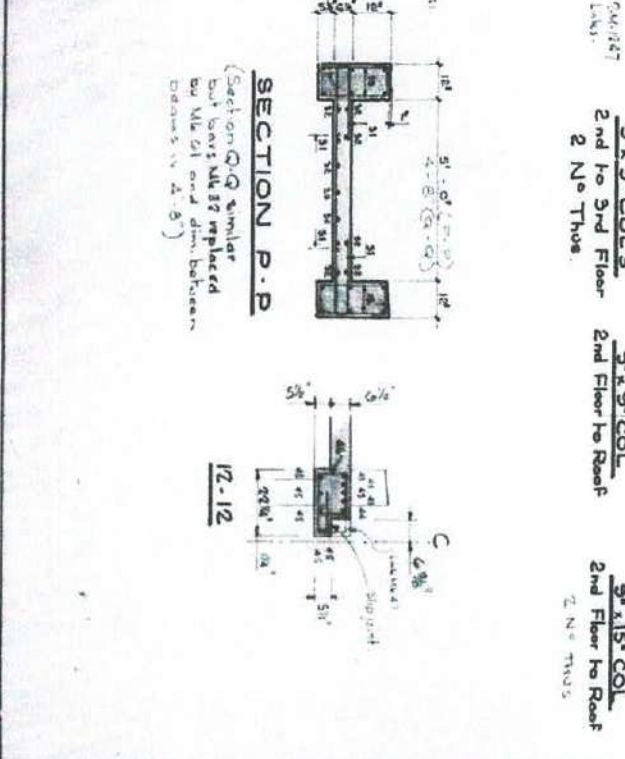
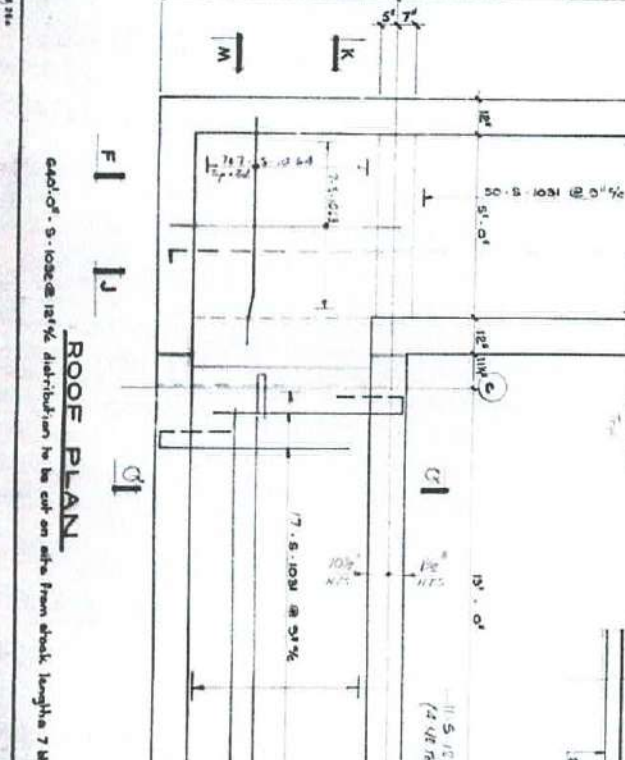
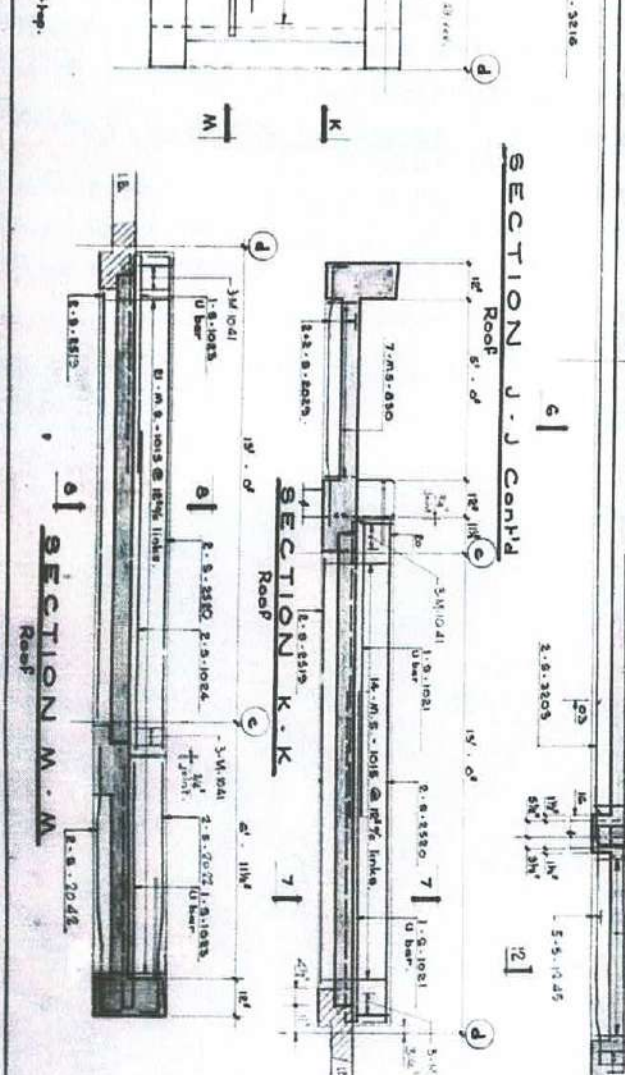
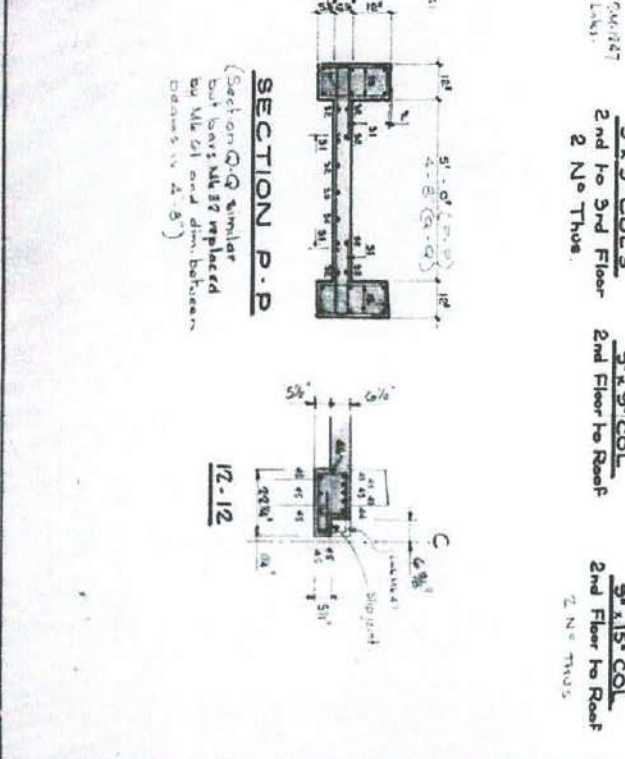
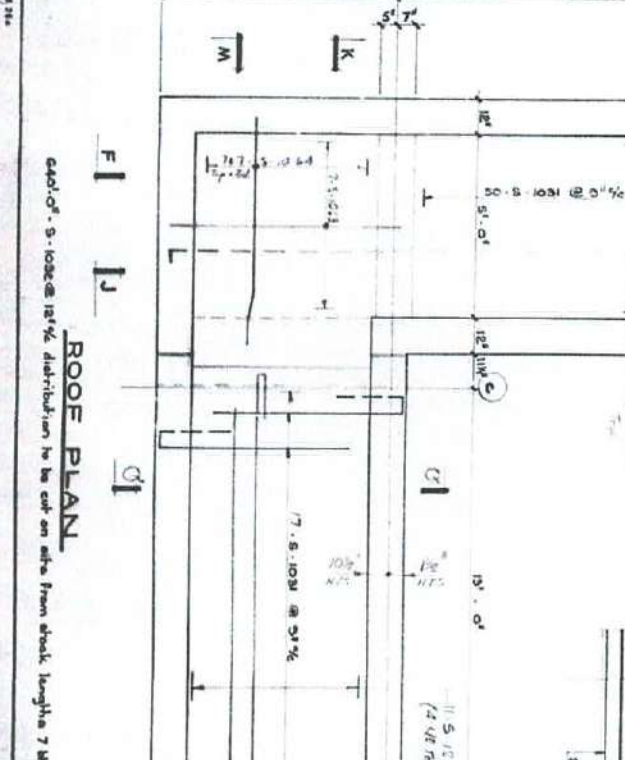
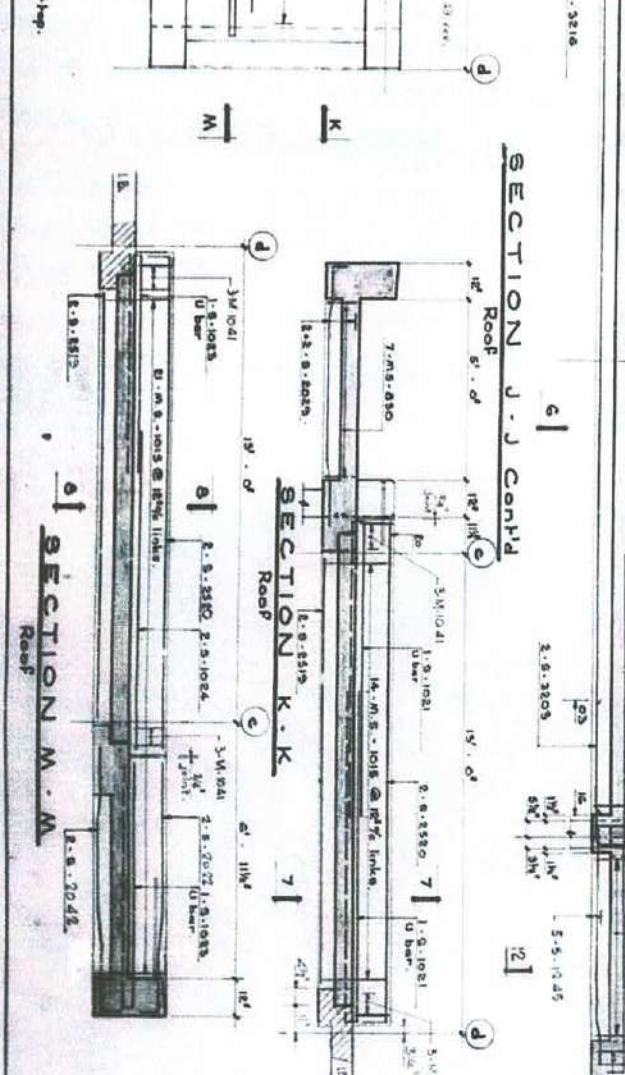
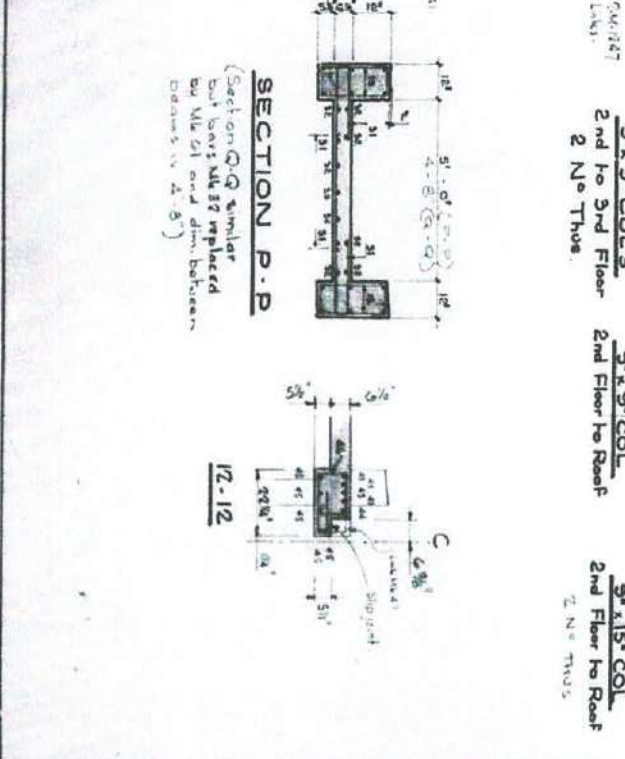
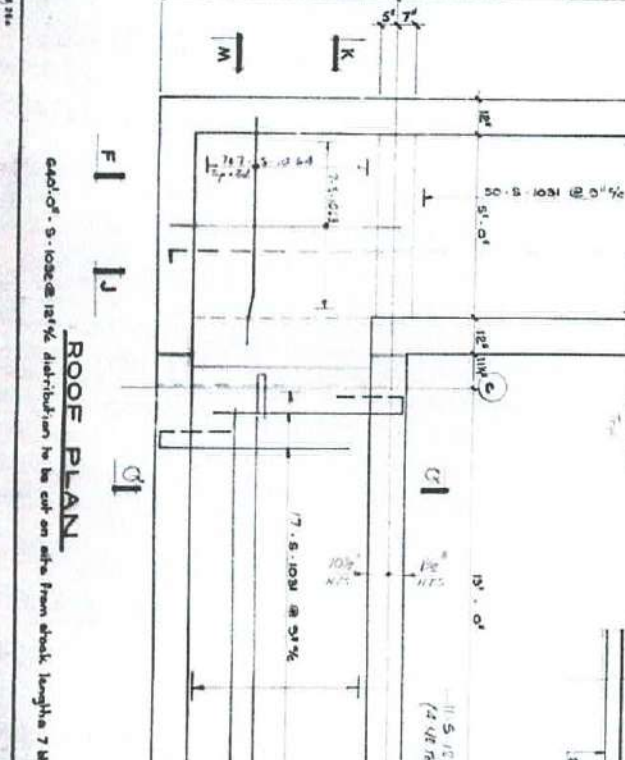
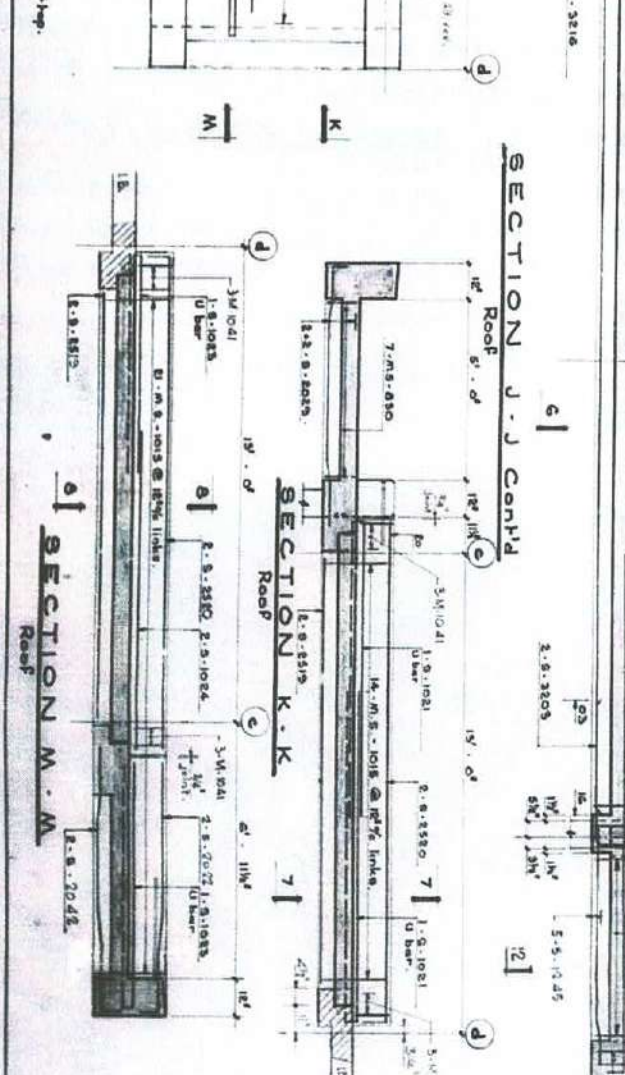
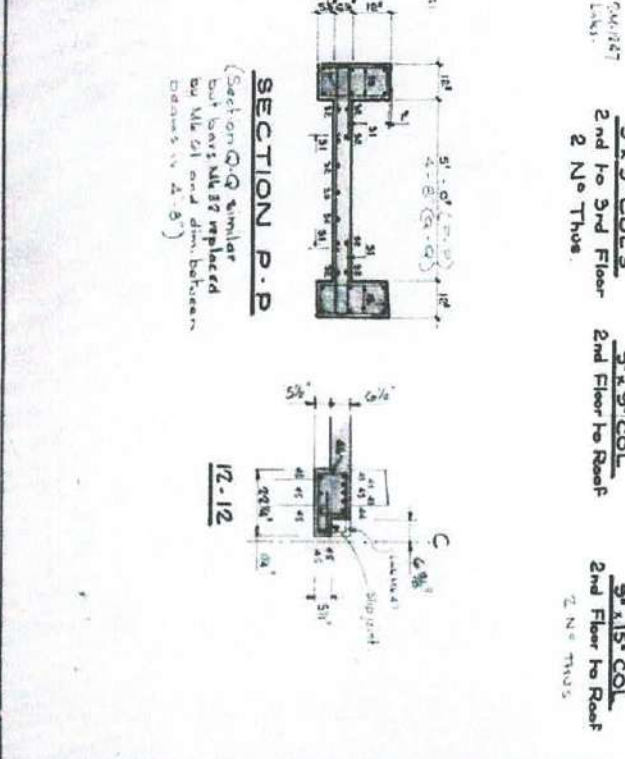
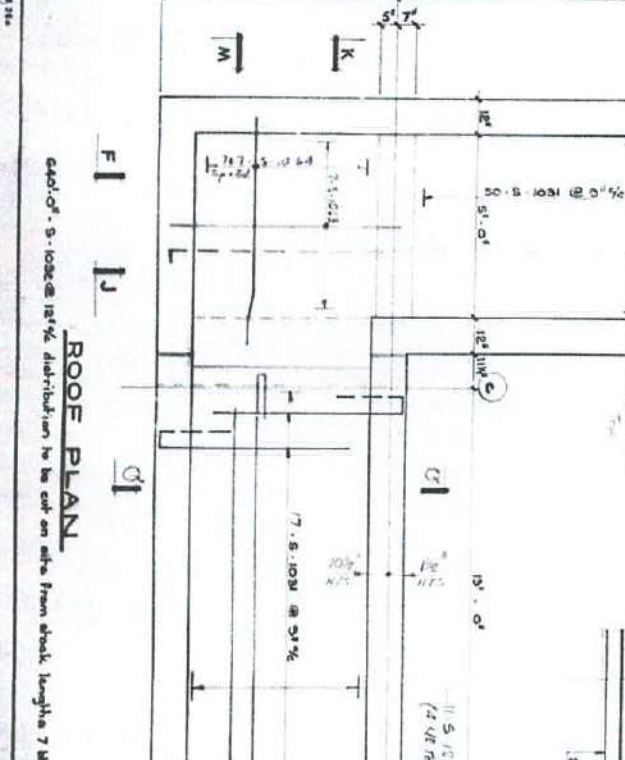
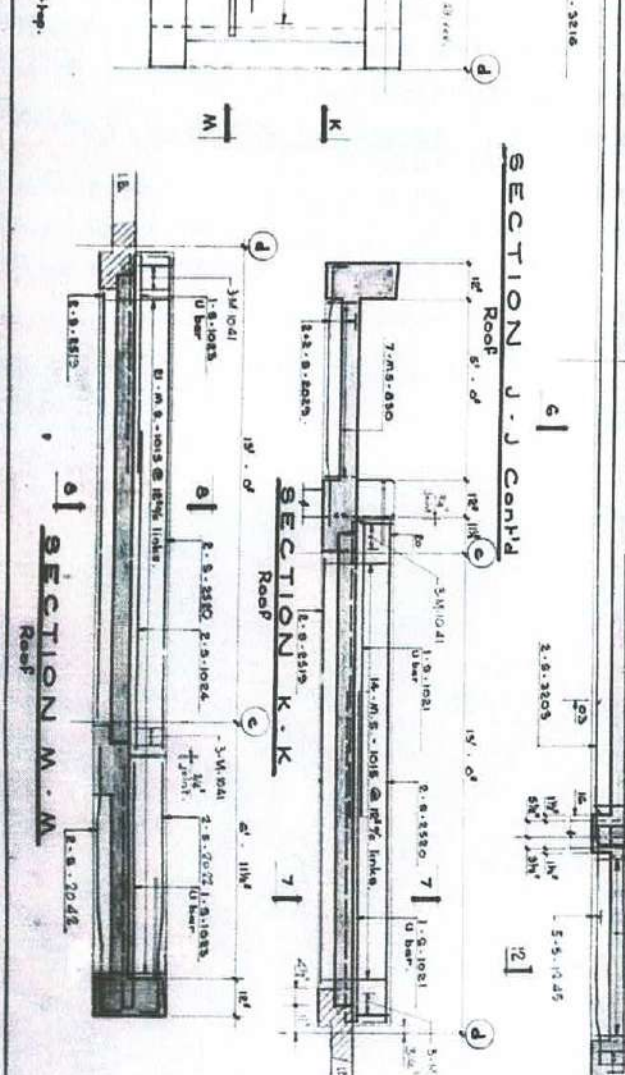
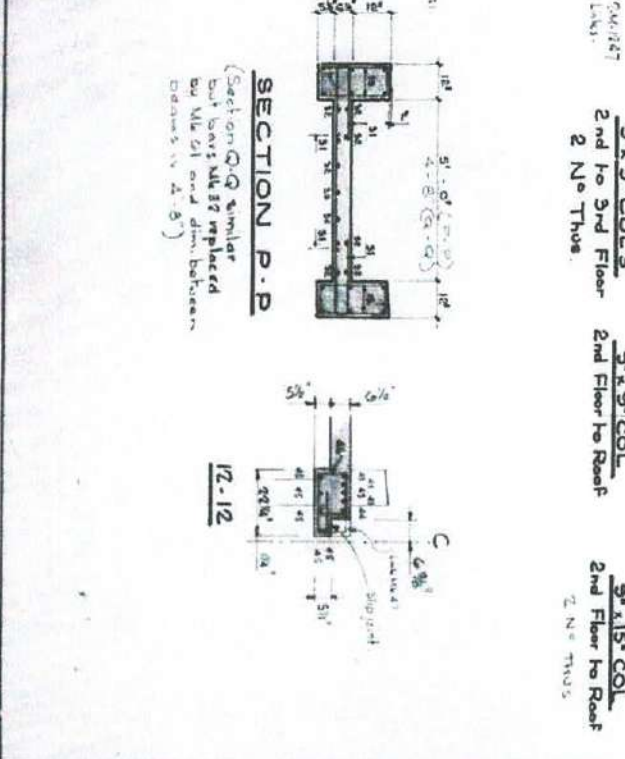
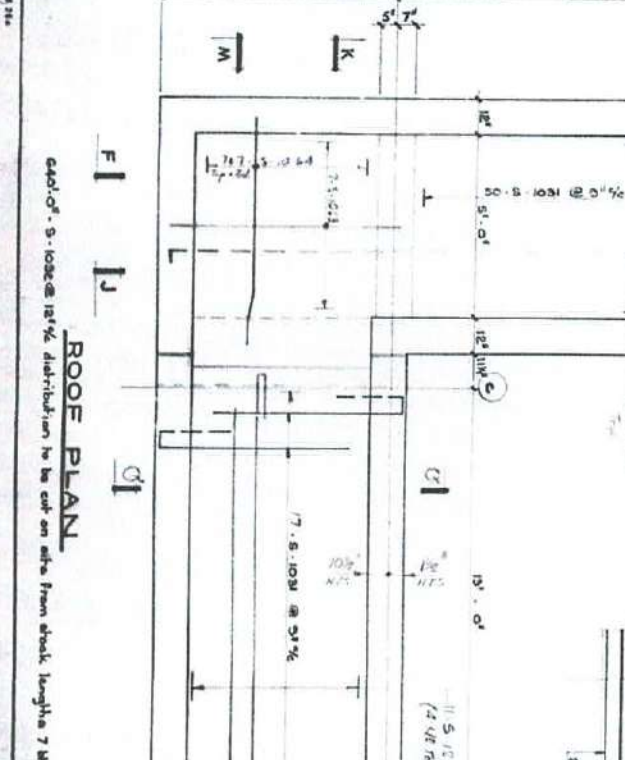
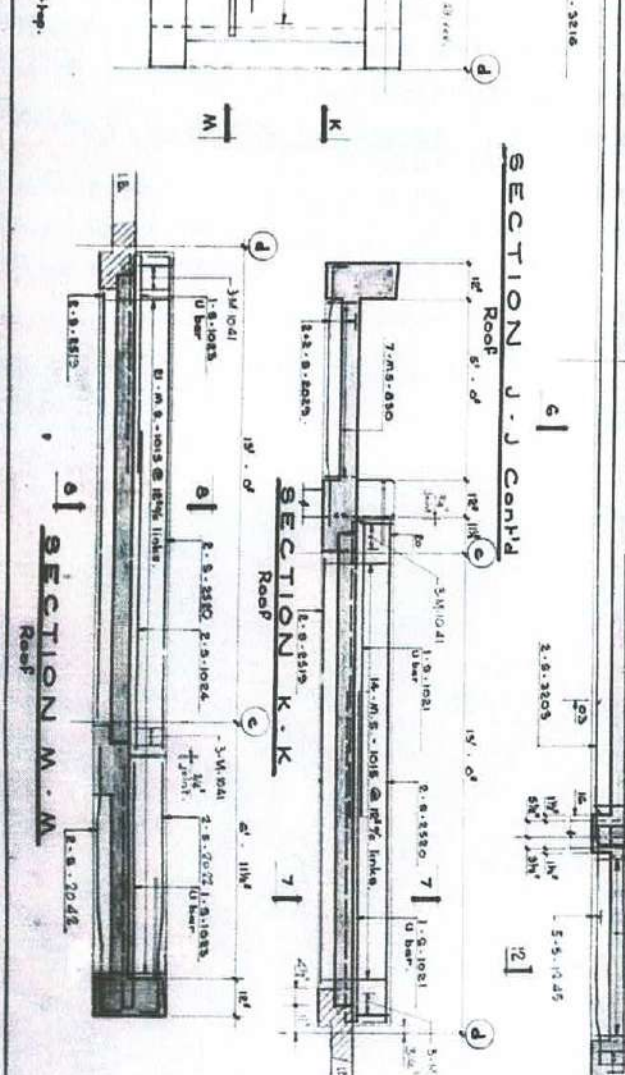
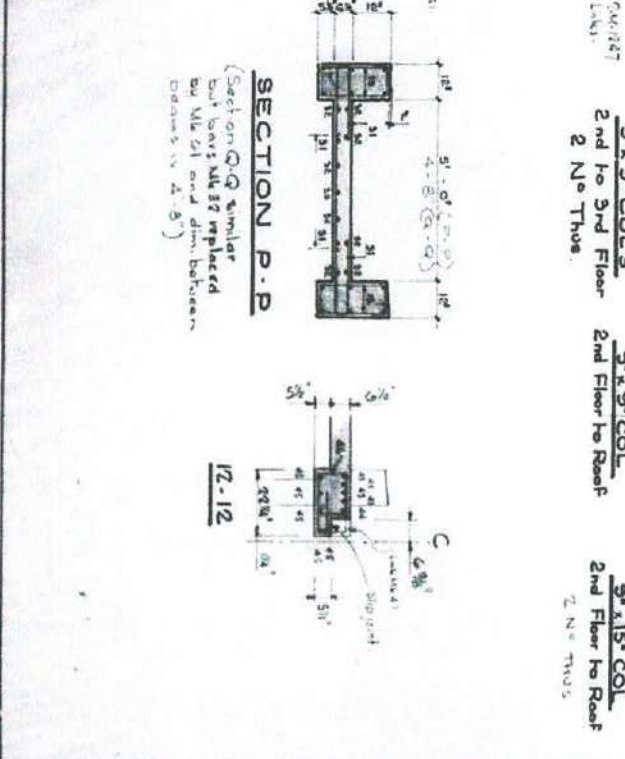
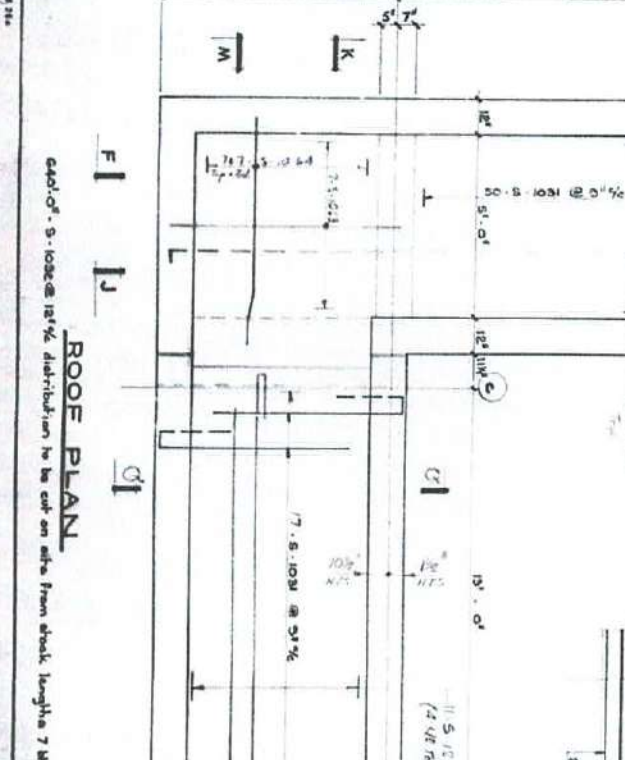
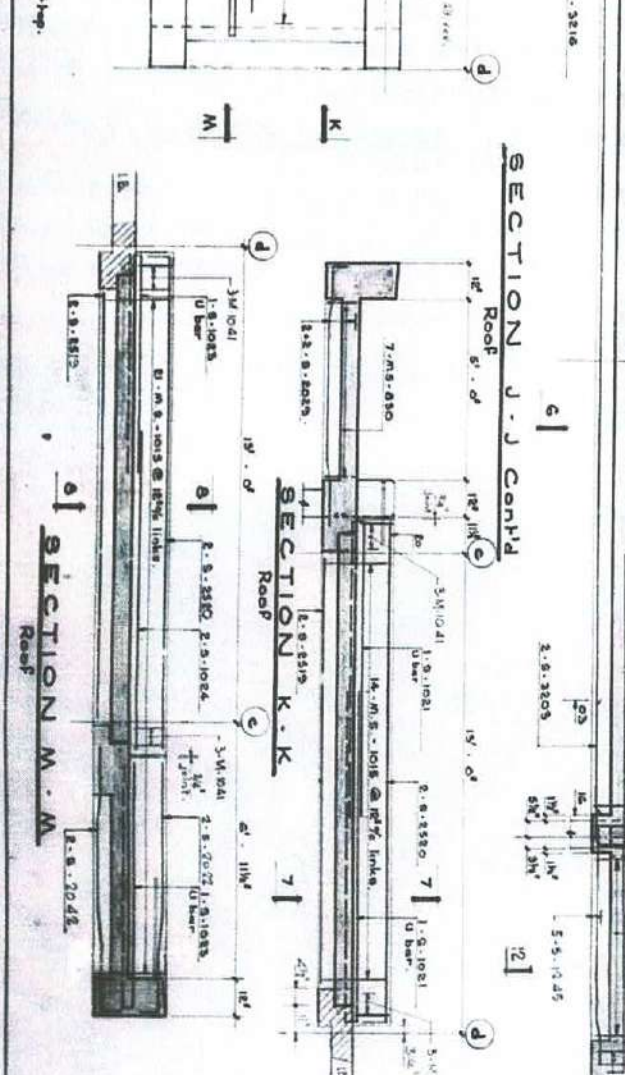
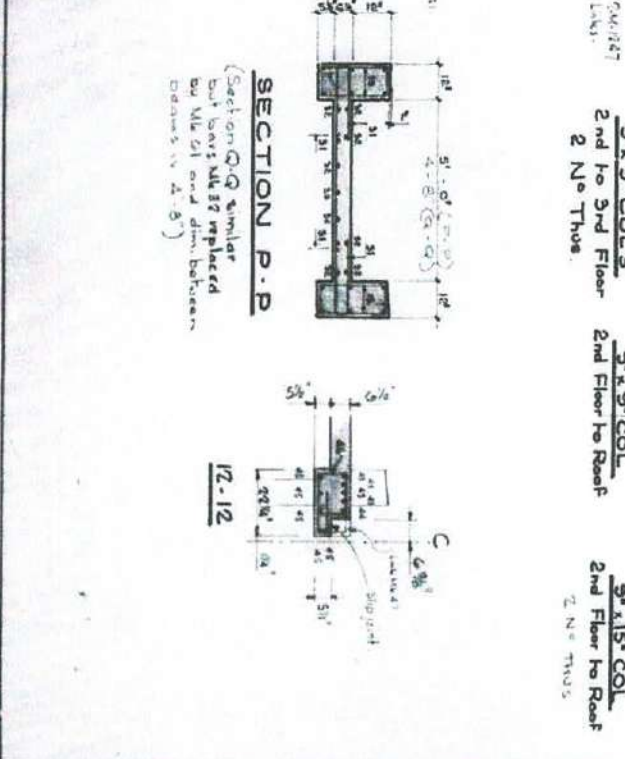
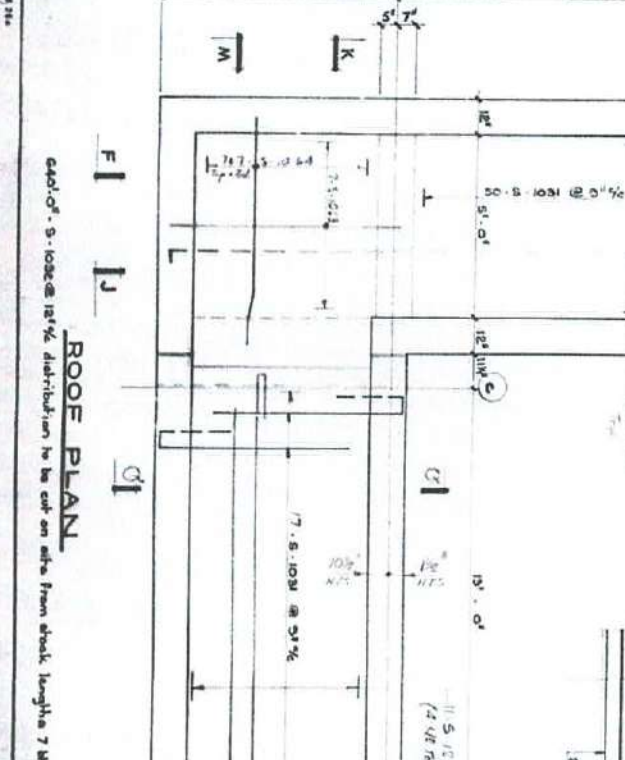
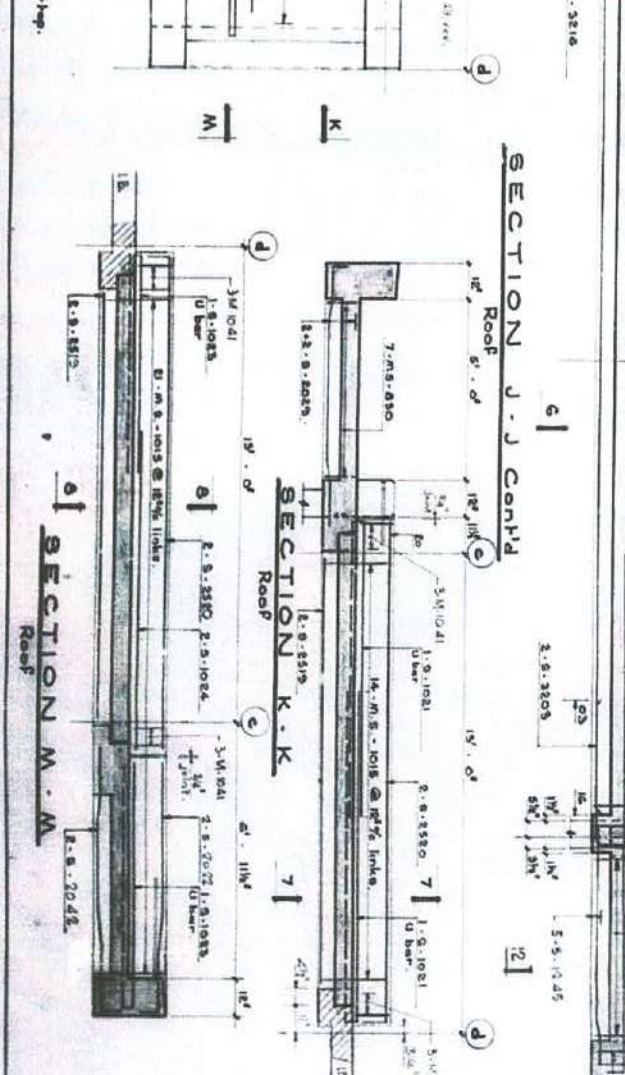
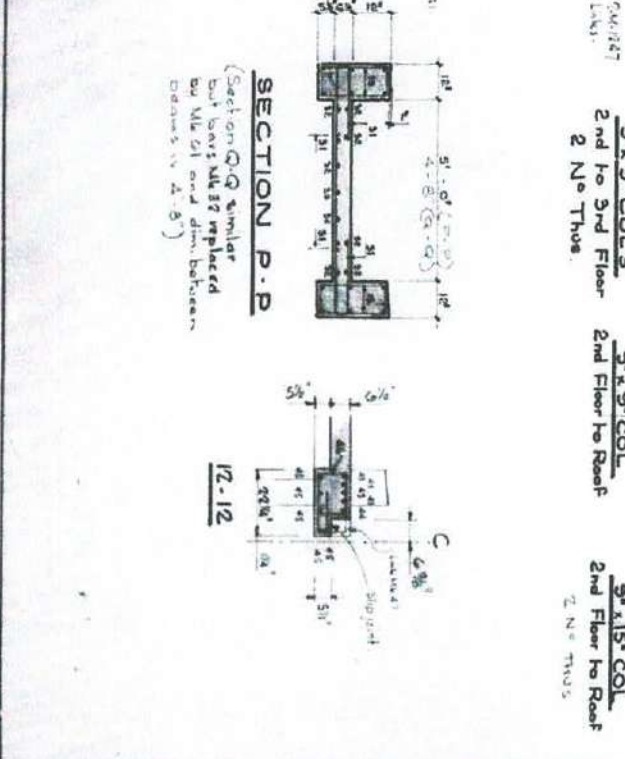
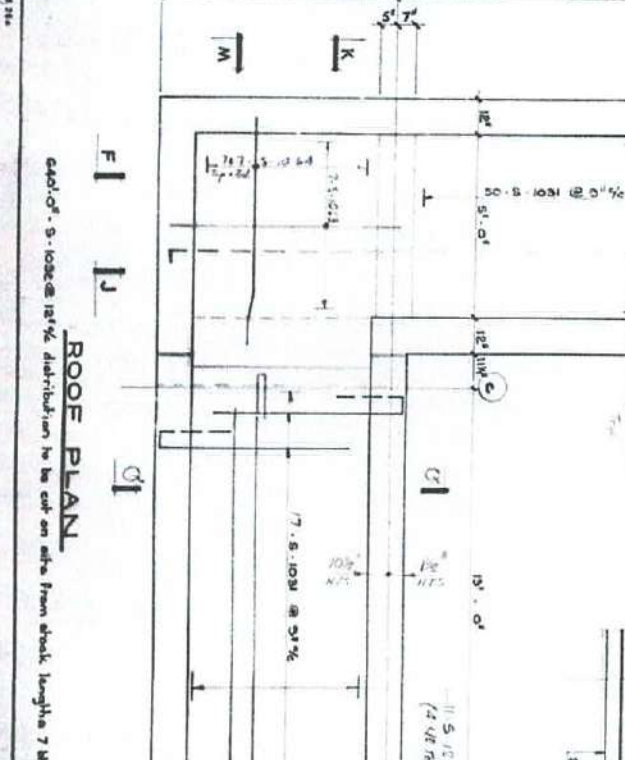
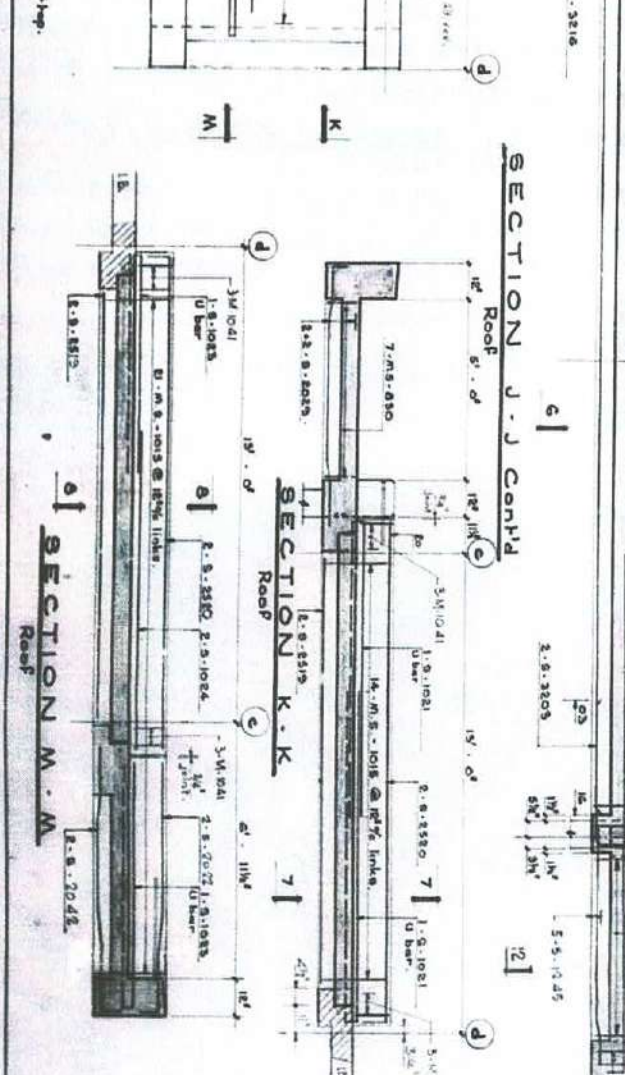
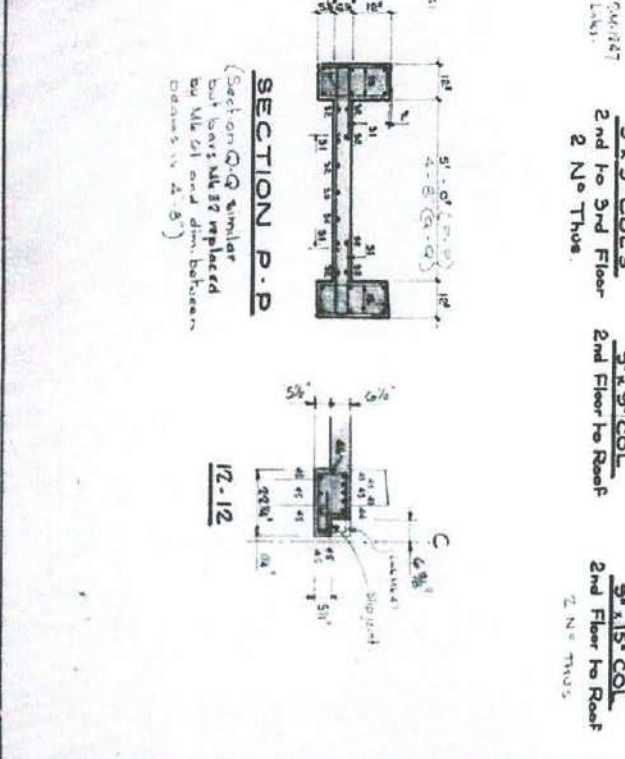
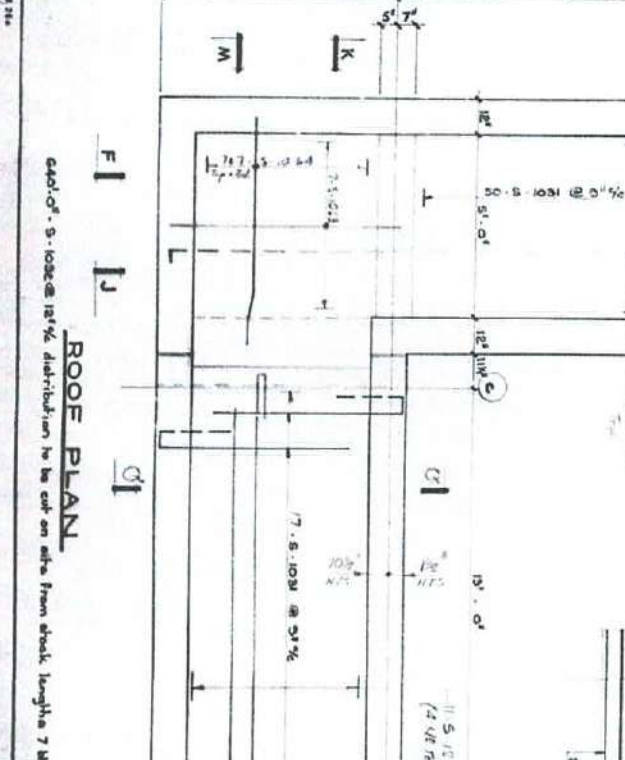
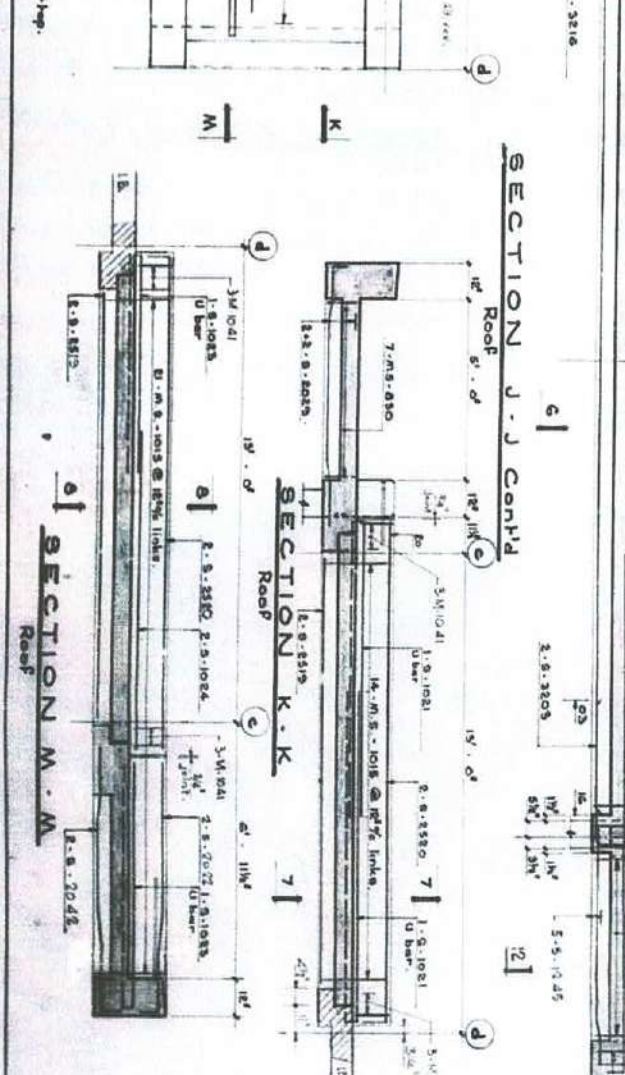
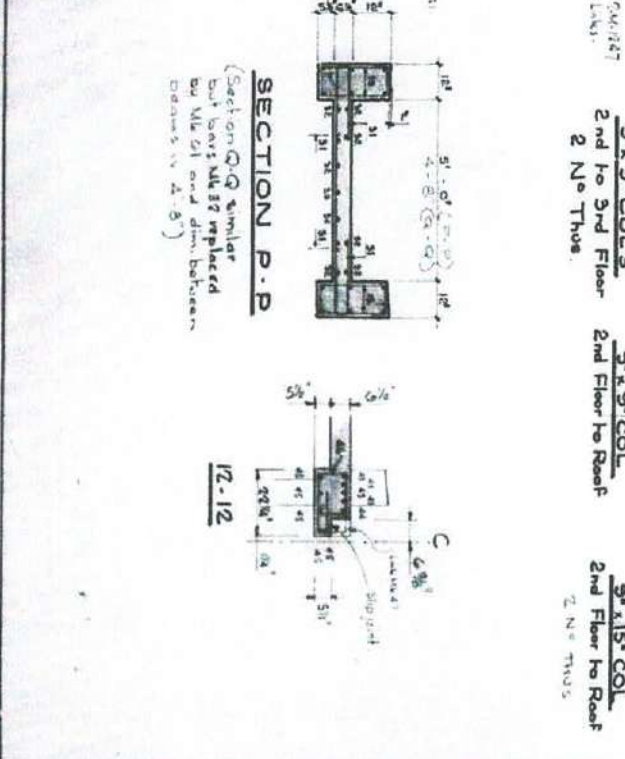
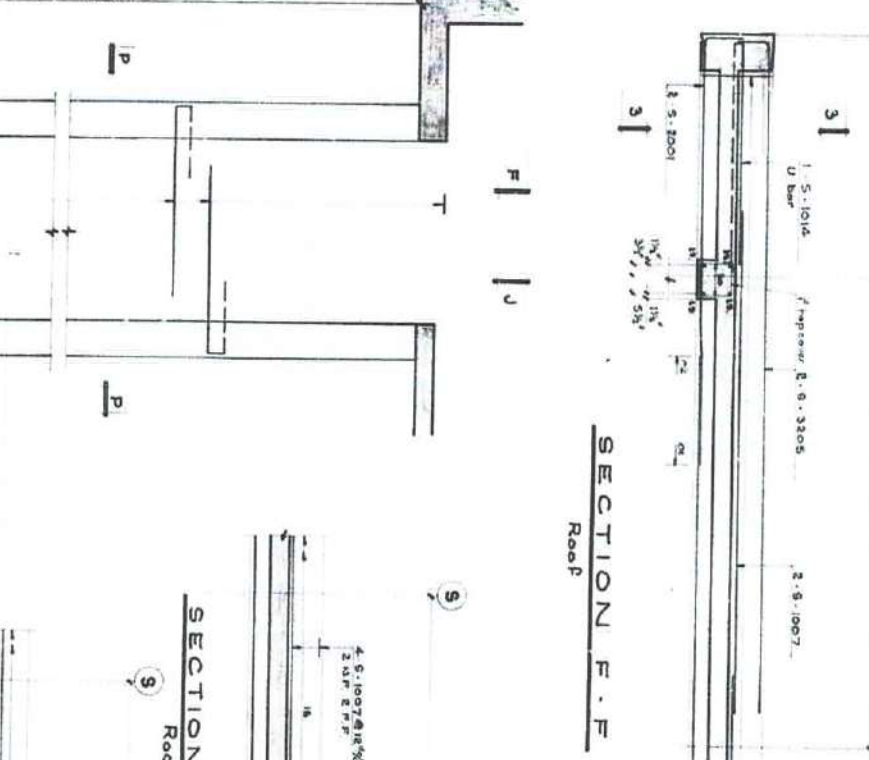
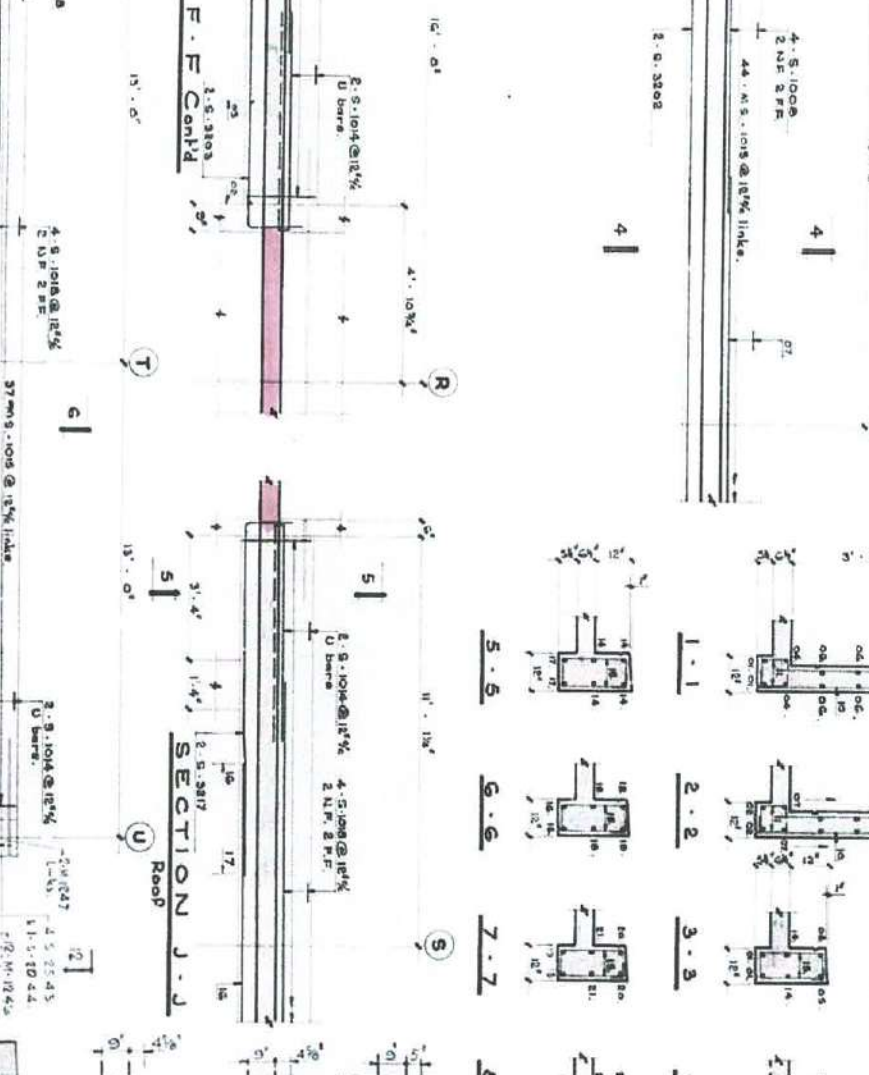
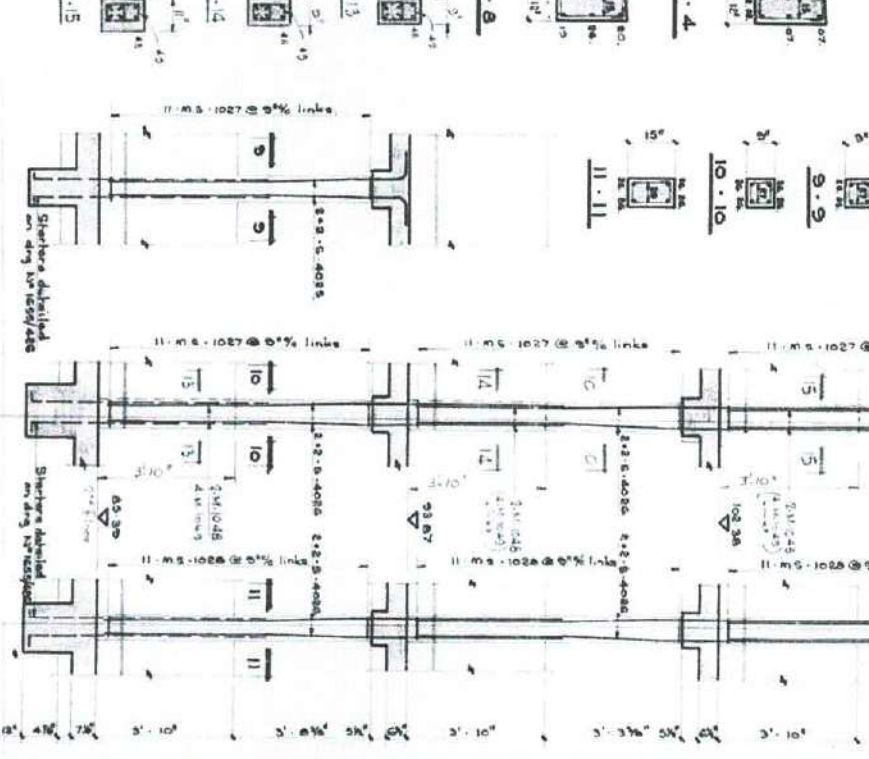
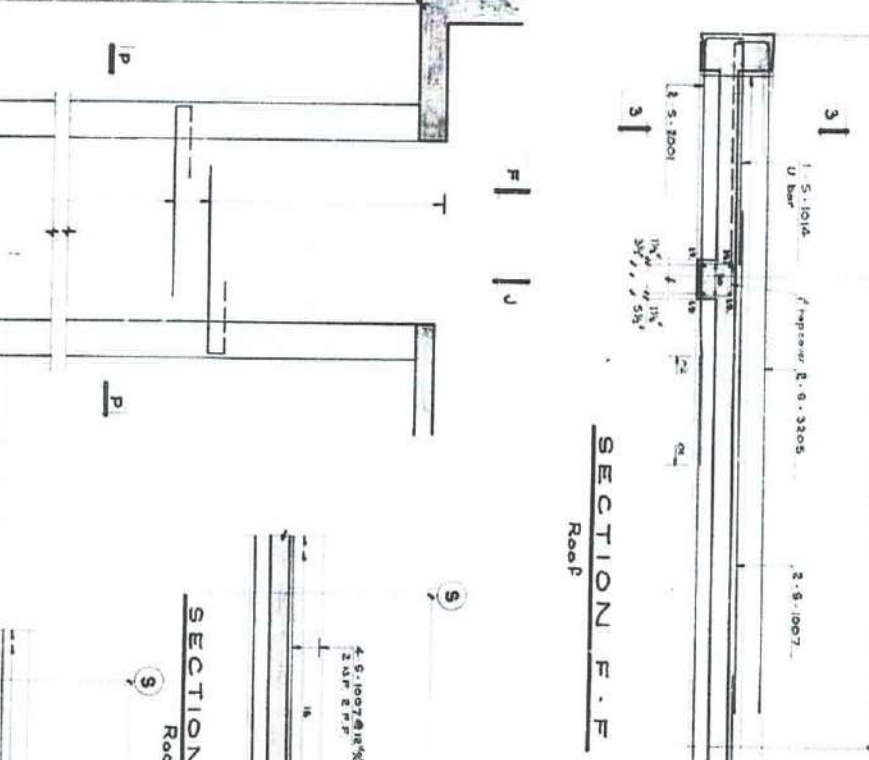
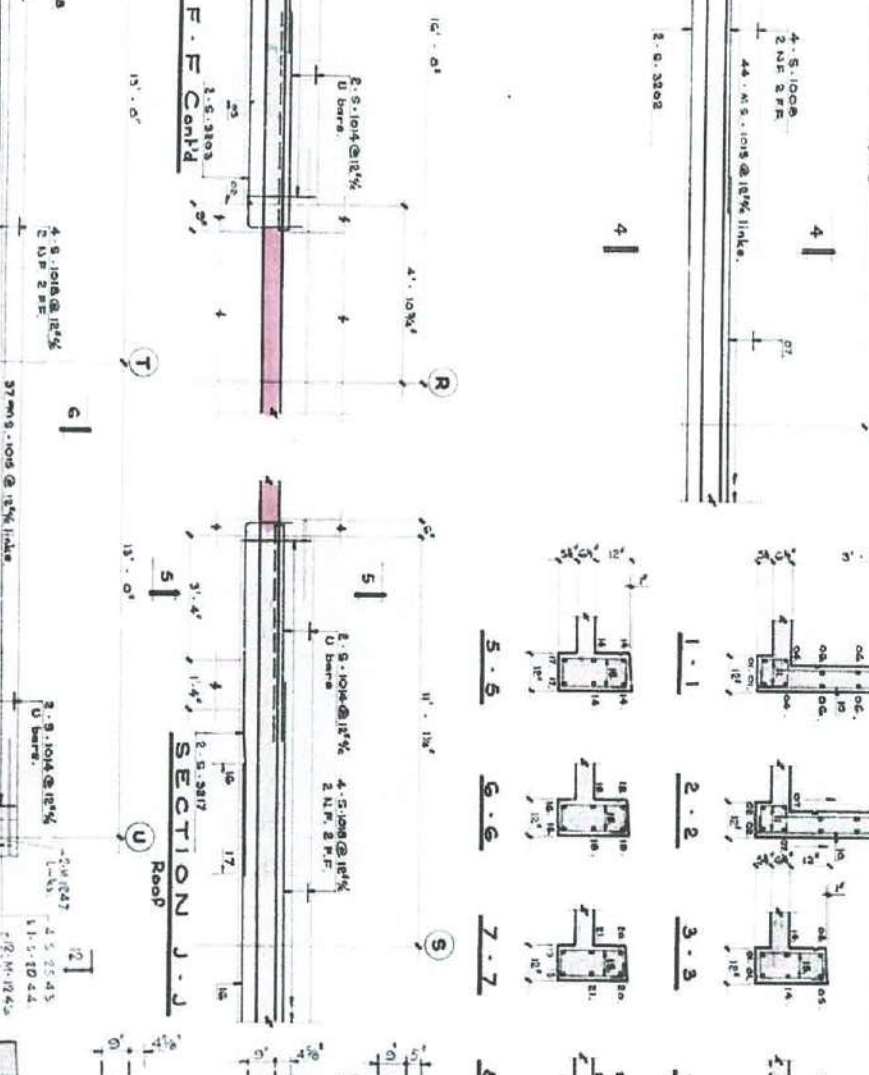
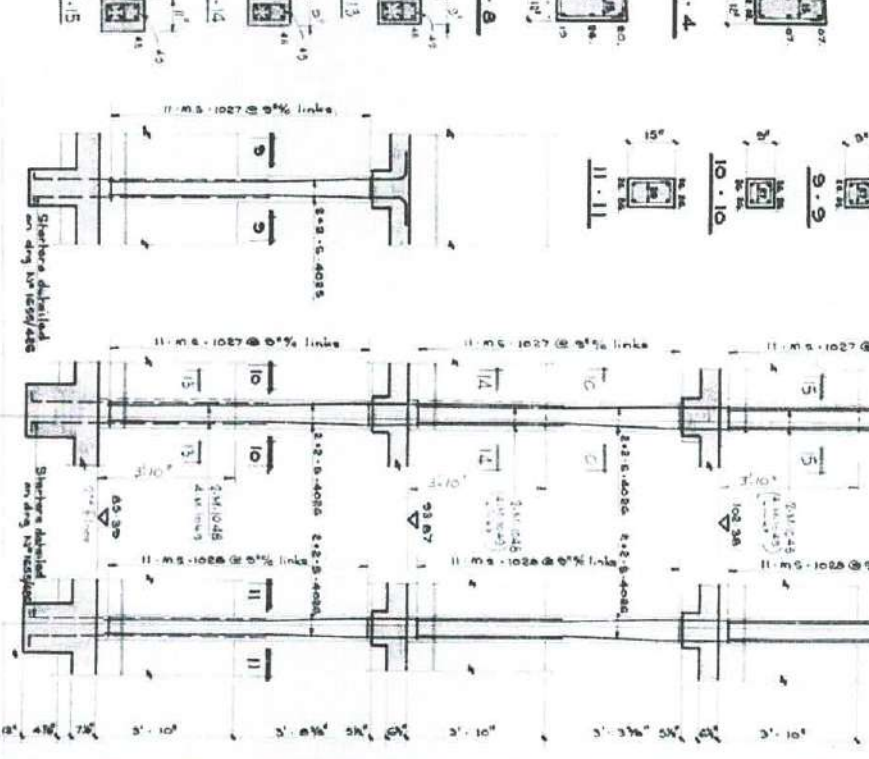
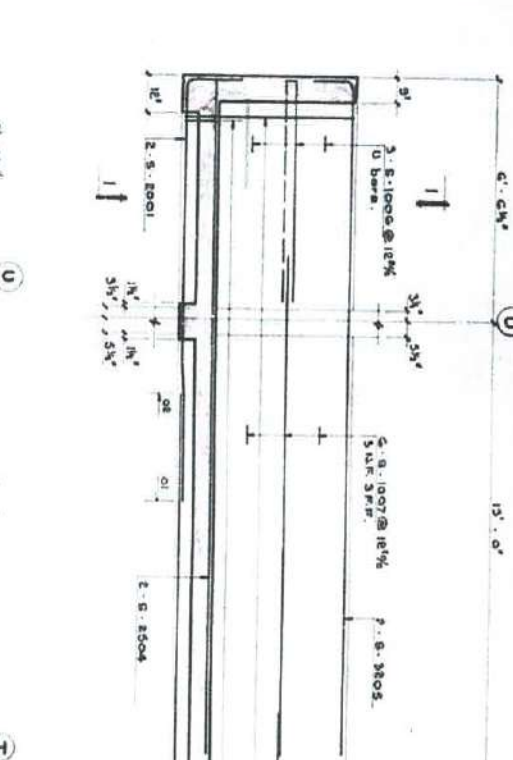
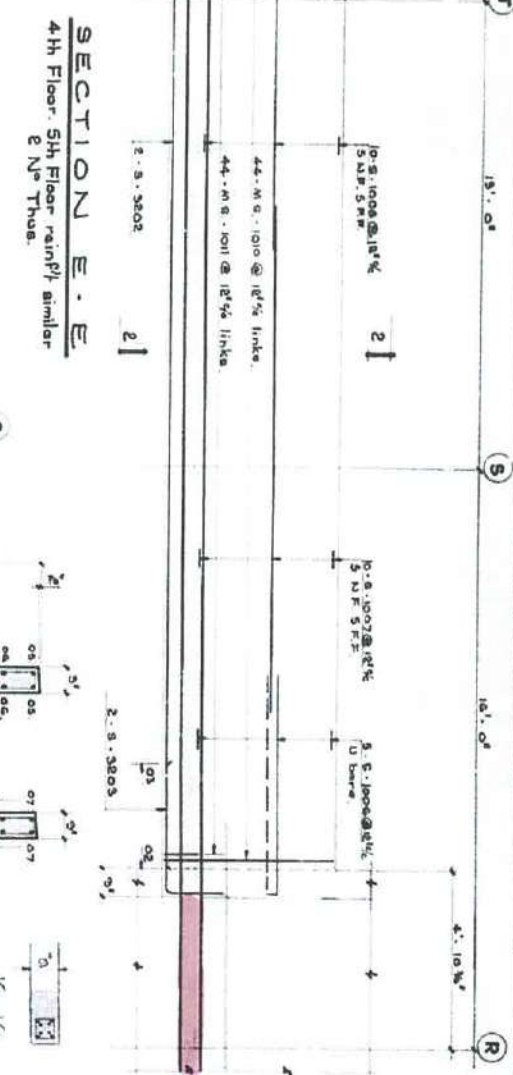
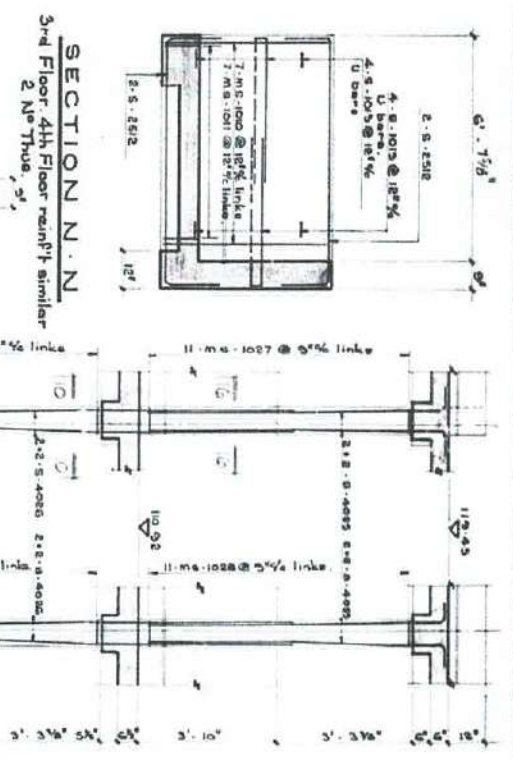
PLAN ON 'F-F'



FOR DETAILS OF
WALKWAYS SEE DRGS.
427, 428 & 429.

NOTE 1
SECTIONS AS PLANNED - E-E'

[illegible]



NOTES
THIS DRAWING TO BE INTERPRETED
IN CONJUNCTION WITH
ARCHITECT'S DRAWINGS
CONTRACT TO CHECK ALL
DIMENSIONS TO BE REPORTED TO
THE ENGINEER

NO.	DATE	REVISION
1	1/11/53	AS SHOWN
2	1/11/53	AS SHOWN
3	1/11/53	AS SHOWN
4	1/11/53	AS SHOWN
5	1/11/53	AS SHOWN
6	1/11/53	AS SHOWN
7	1/11/53	AS SHOWN
8	1/11/53	AS SHOWN
9	1/11/53	AS SHOWN
10	1/11/53	AS SHOWN

For sections A.A.,
B.B., C.C., D.D.,
E.E., G.G., H.H.,
L.L., N.N.,
See drawing No. 1655/430
431

A	Working method of construction
B	Working method of construction
C	Working method of construction
D	Working method of construction
E	Working method of construction
F	Working method of construction
G	Working method of construction
H	Working method of construction
I	Working method of construction
J	Working method of construction
K	Working method of construction
L	Working method of construction
M	Working method of construction
N	Working method of construction
O	Working method of construction
P	Working method of construction
Q	Working method of construction
R	Working method of construction
S	Working method of construction
T	Working method of construction
U	Working method of construction
V	Working method of construction
W	Working method of construction
X	Working method of construction
Y	Working method of construction
Z	Working method of construction

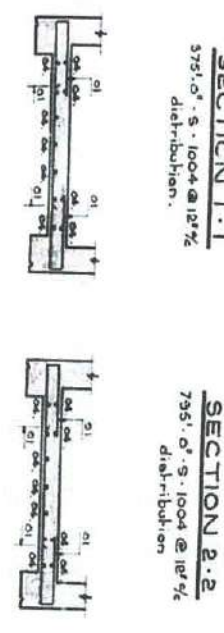
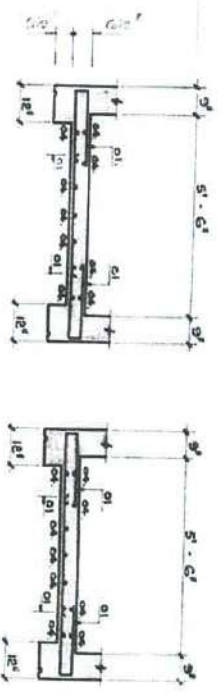
HARINGEY
BROADWATER
FARM

ZIGURAT
2nd, 3rd, 4th & 5th
FLOOR WALKWAY
SLABS (WALKWAY)
REINFORCEMENT
DETAILS

ARCHITECT
C.E. JACOB, A.R.B.A.
BOROUGH ARCHITECT
LONDON BOROUGH OF
HARINGEY

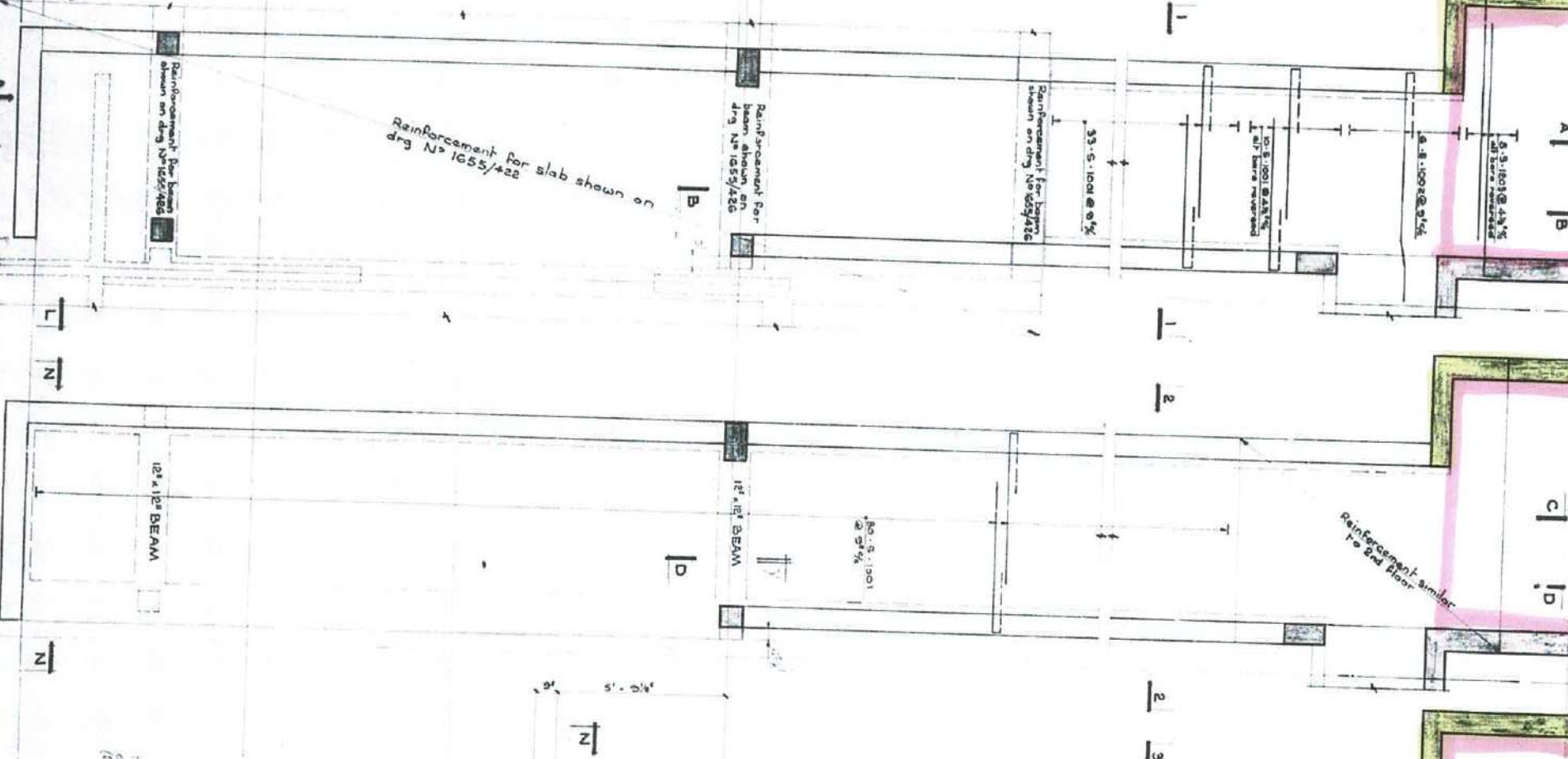
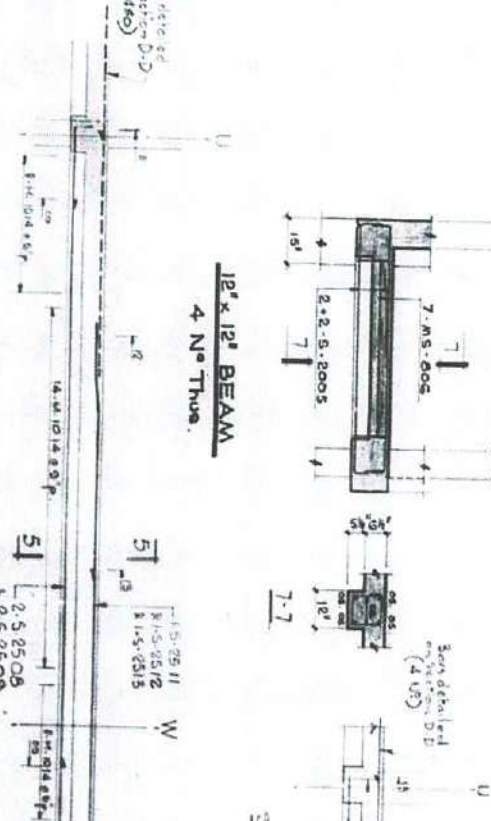
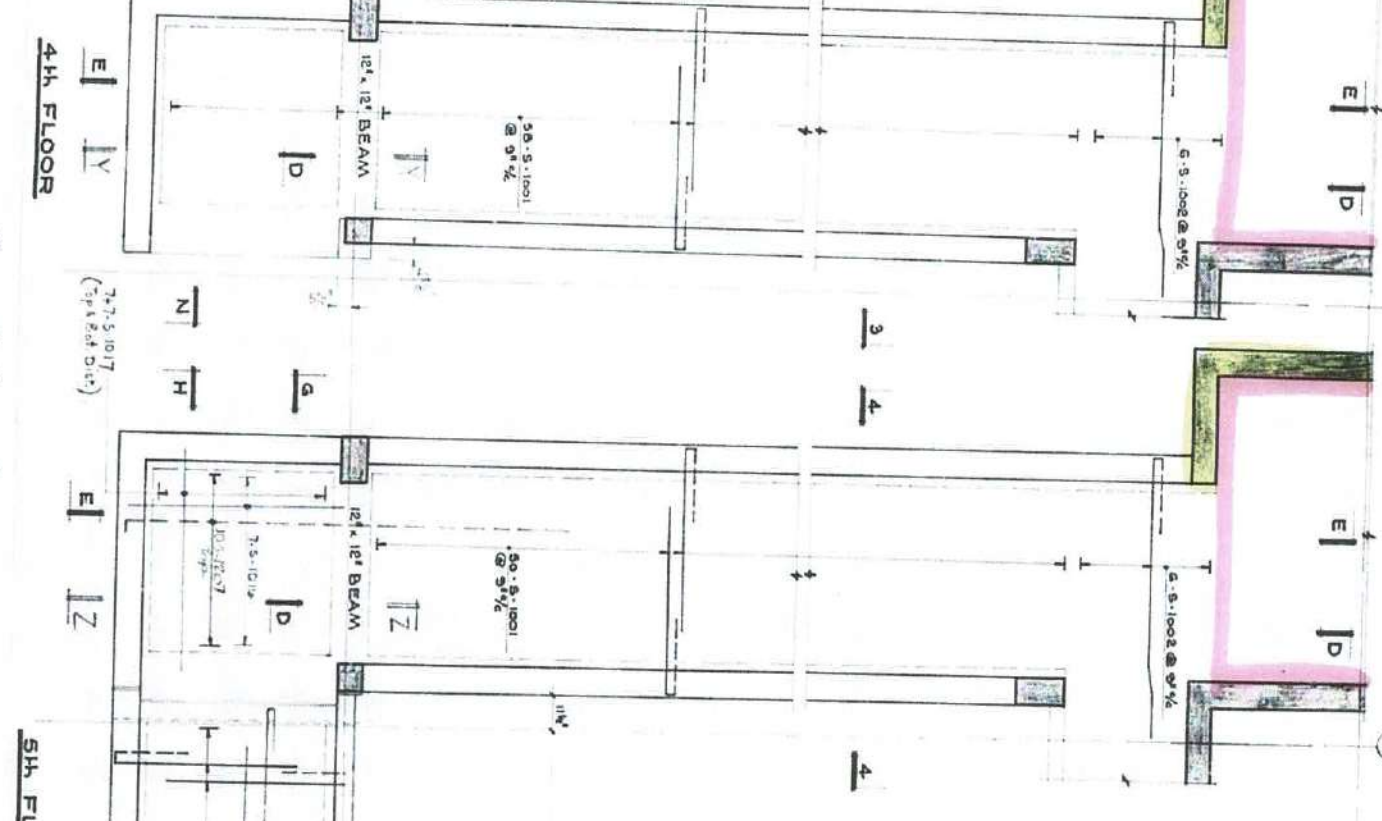
CLARKE
NICHOLS
MARCEL

CONSULTING CIVIL AND
STRUCTURAL ENGINEERS
THE TOWER, 10 THE BROADWAY,
LONDON, W.C.1
TEL. 01 - 406 8111
M.M.W.
SCALE TO 1/4" = 1'-0"
1655, 1655-1670
1655/432 C



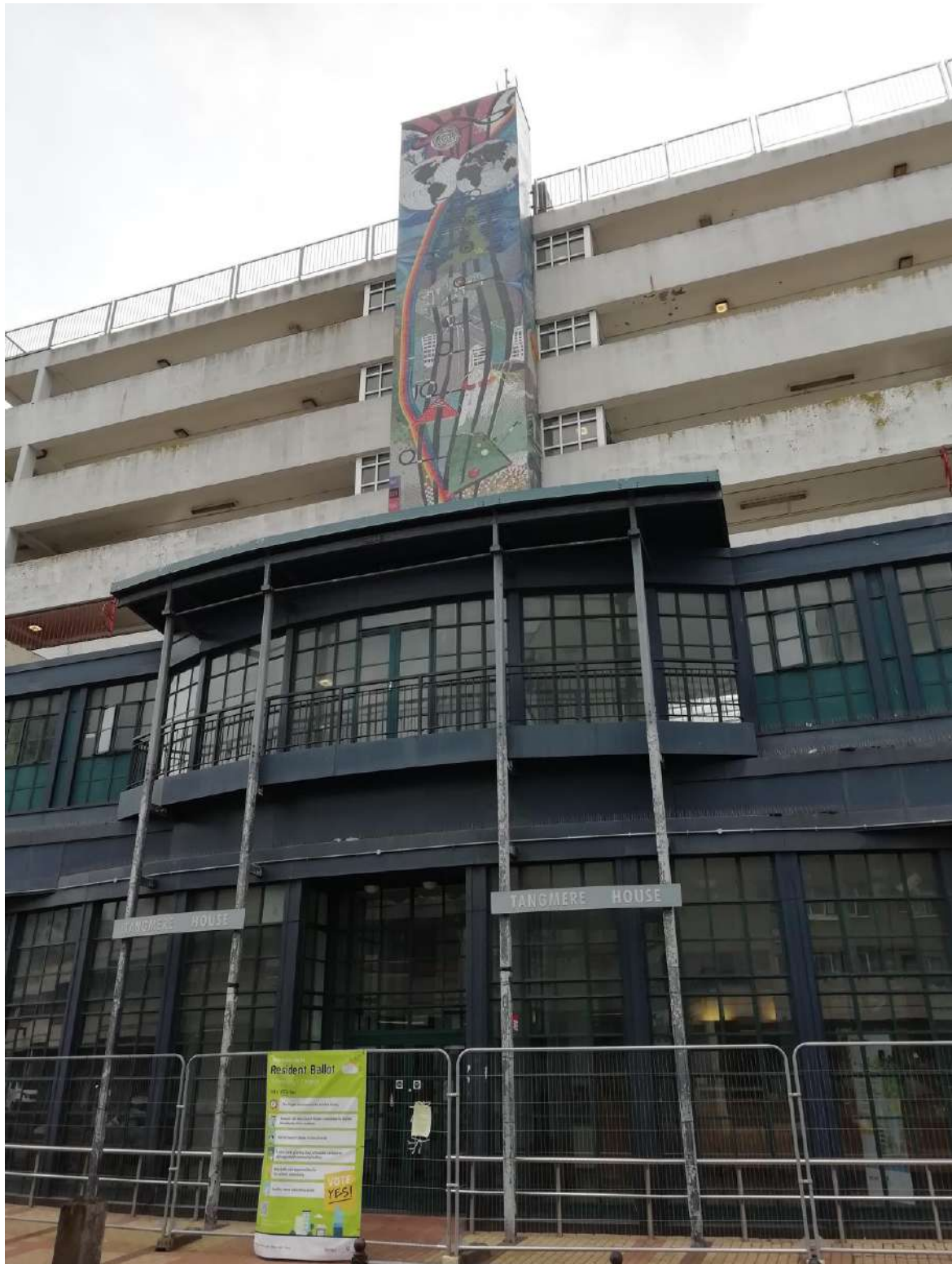
SECTION 3-3
530' - 0" S. 1004 @ 12" %
distribution.

SECTION 4-4
655' - 0" S. 1004 @ 12" %
distribution.



Appendix B

Photographs



Mosaic – External 3rd to 6th Floor Level



In-situ-reinforced concrete panel supporting mosaic at roof level



6th Floor Level – Viewed from Walkway



Landing Slab/Walkway Junction



Ground Floor

Picreator Enterprises Ltd.

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II
Version 4 Revision Date 4.9.2020

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Vulpex Liquid Soap

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Professional liquid soap/degreaser concentrate

1.3 Details of the supplier of the safety data sheet

Company : Picreator Enterprises Limited
44 Park View Gardens
Hendon
London
NW4 2PN
UNITED KINGDOM

Telephone : 0208 2028972
Internet : www.picreator.co.uk

1.4 Emergency telephone number

Emergency Phone # : 0208 2028972 (09:00 – 17:00 Monday to Friday)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Skin irritation (Category 2)

Eye irritation (Category 2)

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



Signal word : Warning

Hazard statement(s)

H315 : Causes skin irritation.

H319 : Causes serious eye irritation

Precautionary statement(s)

P280 : Wear protective gloves/ protective clothing.

Supplemental Hazard Statements : None

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

CAS No.	EC No.	Index No.	Classification	Concentration
Aqueous potassium methyl cyclohexyl oleate solution				
n/e	n/e	[-]	Skin Irrit. 2; Eye Irrit. 2 H315, H319	100%

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled

If vapour or mists are breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water. If irritation persists seek further medical attention.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and seek further medical attention.

If swallowed

Do not induce vomiting. Give plenty of water to drink. Beware of aspiration if vomiting occurs. Seek prompt medical attention.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties of the mixture have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

5.3 Advice for firefighters

Do not breathe decomposition products and fumes. Use approved self-contained breathing apparatus. Wear fire retardant clothing. Do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Use water spray to cool containers. Use water fog to disperse vapours and leaks that have not ignited. Prevent runoff from fire control from entering waterways. Large fires should only be dealt with by trained personnel.

5.4 Further information

No data available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use suitable personal protective equipment (refer to Section 8 for details). Avoid breathing vapours or mists. Ensure adequate ventilation.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains or watercourses.

6.3 Methods and materials for containment and cleaning up

Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

No data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Use in well ventilated areas. Use mechanical ventilation in poorly ventilated areas.

Personal protective equipment

Eye/face Protection

Use equipment for eye protection tested and approved under appropriate standards such as EN 166.

Skin Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with good practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Recommended glove types include Polythene, PVC and Nitrile gloves.

Body Protection

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection

Where risk assessment in accordance with the hierarchy of controls established within the Chemical Agents Directive shows a requirement for respirators as a means of control use a particulate filter type P.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Appearance | Form: Opaque liquid. |
| b) Odour | Menthol |
| c) Odour Threshold | no data available |
| d) pH | 11-12 |
| e) Melting point/freezing point | no data available |
| f) Initial boiling point and boiling range | >100°C |
| g) Flash point | no data available |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure | no data available |
| l) Vapour density | no data available |
| m) Relative density | 1.02 |
| n) Water solubility | Miscible in water and hydrocarbon solvents |

- o) Partition coefficient: no data available
(n- octanol/water)
- p) Auto-ignition temperature no data available
- q) Decomposition no data available
temperature
- r) Viscosity no data available
- s) Explosive properties None
- t) Oxidizing properties None

9.2 Other safety information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available on mixture.

10.2 Chemical stability

Expected to be Stable at normal temperatures and under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

High temperature (>50°C), sources of ignition & direct sunlight.

10.5 Incompatible materials

Strong oxidising agents, acids.

10.6 Hazardous decomposition products

No hazardous decomposition products when stored and handled correctly.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD₅₀ (Dermal) >2000 mg/kg

LC₅₀ (Inhalation) >20mg/litre/4h

Skin corrosion/irritation

No data available on mixture. Primary skin irritant.

Serious eye damage/eye irritation

No data available on mixture. Primary eye irritant.

Respiratory or skin sensitization

No data available on mixture. Not expected to have sensitisation potential.

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

No data available on mixture.

Specific target organ toxicity - repeated exposure

No data available.

Aspiration hazard

No data available on mixture. Will not pose an aspiration hazard.

Potential health effects

Inhalation	Unlikely to cause harm or irritation if inhaled in any normal conceivable use.
Ingestion	May be harmful if swallowed.
Skin	Causes skin irritation.
Eyes	Causes severe eye irritation.

Signs and Symptoms of Exposure

Contact with eyes can cause: redness, blurred vision, provokes tears.; Contact with skin may cause skin irritation and irritation/ dermatitis. Ingestion will cause nausea, vomiting and severe gastric pain.

Additional Information

Not available.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

No data available on mixture. Not expected to be harmful to aquatic organisms

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber. Material is classified as hazardous waste under the Hazardous Waste Regulations 2005 (as amended). Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**14.1 UN number**

ADR/RID: -	IMDG: -	IATA: -
------------	---------	---------

14.2 UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -	IMDG: -	IATA: -
------------	---------	---------

14.4 Packaging group

ADR/RID: -	IMDG: -	IATA: -
------------	---------	---------

14.5 Environmental hazards

ADR/RID: no	IMDG Marine Pollutant: no	IATA: no
-------------	---------------------------	----------

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Health & Safety at Work etc. Act 1974

Control of Substances Hazardous to Health Regulations 2002 (as amended)

Classification, Labelling and Packaging of Substances and Mixtures Regulations 2008 (as amended)

EH40/2005 Workplace Exposure Limits (as amended)

Environmental Protection Act 1990

Hazardous Waste Regulations 2005 (as amended)

15.2 Chemical Safety Assessment

No data available.

16. OTHER INFORMATION**Further information**

None

Recommended restrictions on use

Use in accordance with manufacturer's technical instructions.

Revision History

Review to revision of 20.6.2018 Addition of Section 14.7.

The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, management and for people working with or handling these products. This information is believed to be reliable and updated at Revision Date and represents the best information currently available and known by Picreator Enterprises Limited. However, Picreator makes no guarantee or warranty, express or implied, with respect to such information and we assume no liability resulting from its use. The information related herein is based on proper handling and anticipated uses and is for the material without chemical additions or alterations. Users should make their own investigations to determine the suitability of the information for their particular purposes. It is the responsibility of the user to undertake a suitable risk assessment/COSHH assessment prior to using this material.

Technical Data Sheet: PARALOID B72 P422-9000

Product Description

Ethyl methacrylate co-polymer. Also known as **Acraloid B72**.

Properties

Non-crosslinking, medium to hard thermoplastic acrylic resin which is light proof and has good age resistance. Glass Transition Temperature is approximately 40°C (104°F). Ultimate hardness as expressed in Khn units: 10-11. Density: gms/ml: 1.15gm (i.e. 1ml volume of resin = 1.15 gms).

Uses (typical percentages shown in brackets)

Paraloid B72 (acrylic polymer) can be used in the consolidation of wall paintings (1-5%); ground and pigment layers on oil paintings (5-10% in either toluene or isopropanol); fragile wood in furniture, polychrome sculpture etc (5-20%); to consolidate worm holes in wooden artifacts (30%); to consolidate plaster on ceilings (ideally two coats at 15% solids or one coat of 25% solids); as a fixative for chalk, charcoal and pencil marks (2-4% in toluene or isopropanol); as an adhesive for glass and ceramics (in acetone); as a varnish to fix identity markings on historical artifacts (20% in acetone); and with microballoons as a filler.

Solubility of Paraloid/Acraloid B72

Soluble in Acetone, Amyl Acetate, n-Butanol, Cellosolve, Diacetone Alcohol, Dimethyl Formamide, Ethyl Alcohol, Ethylene Dichloride, Isopropanol, Methylene Chloride, Methyl Ethyl Ketone, Toluene, Trichloroethane (see now Leksol) and Xylene. B72 is insoluble in White Spirit.

Mix thoroughly using a glass rod and bowl, if using a stirrer ensure all parts are fully solvent vapour protected. For best results extract a small amount of the dissolved solution using a glass rod and spread onto a glass slide. Check that the resin has fully dissolved before application. If storing ensure the mixture is placed in an airtight container preferable made of glass or metal. If metal, periodically invert the sealed container to reduce dry zones inside and in doing so minimise any moisture penetration.

User tips on applications

Markings on museum objects – Paraloid/Acraloid B72 is commonly used as a varnish to seal identification markings onto furniture and artifacts on display with acetone being the commonly used solvent for this purpose. To apply ensure the area to be treated is clean. Using a fine brush apply 20% weight/volume of B72 dissolved in acetone (i.e. 20g of B72 to 100ml Acetone) and allow to dry up to 15 minutes. On particularly rough surfaces a second coat may be preferable to form an even surface on which to apply the marking.

Using an appropriate rotring isograph style pen (a typical nib size is 010 or 020) and drawing ink (water based ink: white, red or black) apply the reference marking and allow to dry. Apply a further top coat of B72 in Acetone as the sealant and allow to dry. Your reference marking is now sealed in place. If necessary Acetone (or the solvent used to dissolve B72) may be used to remove the varnish.

Sealing fine cracks by capillary action - Mixed to a non-viscous state and through capillary action (approximately 10% or less solids) Paraloid/Acraloid B72 can be used to seal cracks within tightly formed objects (vases etc). After application the solvent evaporates to leave sufficient solids to form an adhesive bond. A 15% solids concentration may be preferable when applying B72 as a consolidant on site.

For more manageable working/drying times both Xylene and Butyl Acetate may prove preferable to Acetone. Used as an adhesive (i.e. 50/50%) B72 once fully dried (up to 7 days) should not be effected by contact with water, condensation etc.

Consolidating wormholes in furniture – A 5 to 10% concentration in Acetone applied by syringe works well to penetrate and consolidate worm holes. Keeping the item in a sealed container after treatment greatly assists in penetration. Small holes can be filled using a combination of microballoons and B72. Larger holes can be filled using polyethylene foam shaped to fit recesses and then covered with a mixture of microballoons and B72 tinted with dry pigments if necessary.

N.B. More volatile solvents may create surface films trapping the solvent within the structure for longer than solvents that are slower/less volatile. We recommend the use of Paraloid/Acraloid B67 (30%) for the treatment of worm holes wherever practical. B67 is soluble in White Spirit, and has the advantage of being a slower evaporating solvent, much easier to work with on a health and safety front.

Plaster sealant – Paraloid B72 has been used as a pre treatment sealant on certain friable plaster covered walls prior to the re-application of original spirit based stumple glazes. Allow surface coating to dry fully before applying over-painting on surface.

Filling voids in bone – Paraloid B72 has been used very effectively to fill voids on bone. A 20% working solution in acetone should be used initially as an adhesive for the void filler,

follow with a 40% concentration in acetone (2:1 by volume) with glass microballoons to fill any voids. Ideally allow 4 days for the void fill to harden.

[Further reading: 'The use of Paraloid B72 as an Adhesive; Its application for Archaeological Ceramics and other Materials' by Stephen Koob, Studies in Conservation 31, 14/07/1986]

General Health & Safety Information (consult full MSDS sheet prior to use)

Mild acrylic odour, auto ignition temperature 393°C (close to 750°F), not hazardous according to EEC directives 67/548/EEC and 88/379/EEC. Burns vigorously with intense heat. Vapour from heated product can irritate the nose, throat and lungs, cause headache, drowsiness, dizziness and nausea, and may cause eye and skin irritation. Scoop or shovel material into suitable container for recovery or disposal.

When mixed with solvent **always** evoke appropriate health and safety guidelines. Always use adequate means of extraction and personal protection and **never** use electric mixers. We would recommend using a glass rod and bowl for mixing.

Disposal & Ecological Considerations

Incinerate at a facility that complies with local, state and federal regulations. No applicable data is available in respect of ecological considerations.

Transportation

Not regulated, not considered hazardous. Commodity code: 39069090

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT IDENTIFICATION

Paraloid® B-72 100% Acrylic resin

Paraloid® is a trademark of Rohm and Haas Company or one of its subsidiaries or affiliates.

See section 16, for European Emergency Contact Information

2. COMPOSITION/INFORMATION ON INGREDIENTS

No.		CAS REG NO.	WEIGHT(%)
1.	Acrylic polymer	Not Hazardous	98-100
2.	Residual monomers	Not Required	0.15MAX
3.	Toluene	108-88-3	1.0MAX

See section 8, Exposure Controls / Personal Protection

EEC Risk Classification

No.	Classification and Hazard Labelling
3.	Toluene F, Xn R: 11-20

See section 15, Regulatory Information

This product is a preparation.

3. HAZARDOUS IDENTIFICATION

Primary Routes of Exposure

- Inhalation
- Eye Contact
- Skin Contact

Inhalation

Inhalation of monomer vapour from heated product can cause the following:

- Irritation of nose, throat, and lungs – nausea – headache – dizziness

Eye Contact

Monomer vapours from heated product can cause the following:

- Moderate irritation

Skin Contact

Prolonged or repeated skin contact can cause the following:

- Slight skin irritation

Delayed Effects

Repeated overexposure to the solvents in this product can cause the following:

- Enlarged liver – kidney effects – cardiac sensitization – irritation of the respiratory tract

4. FIRST AID MEASURES

Inhalation

Move subject to fresh air

Eye Contact

Flush eyes with a large amount of water for at least 15 minutes. Consult a physician if irritation persists.

Skin Contact

Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation persists.

Ingestion

If swallowed, give 2 glasses of water to drink. Consult a physician.
Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flash Point	Not Applicable
Auto-ignition Temperature	393°C / 739°F Estimate
Lower Explosive Limit	No Data
Upper Explosive Limit	No Data

Unusual Hazards

Material as sold is combustible; burns vigorously with intense heat.

Extinguishing Agents

Use the following extinguishing media when fighting fires involving this material:

- Carbon dioxide – dry chemical – water spray

Personal Protective Equipment

As in any fire, wear self-contained breathing apparatus (pressure-demand, MSHA/NIOSH approved or equivalent) and full protective gear.

Special Procedures

Do not smoke under any circumstances

6. ACCIDENTAL RELEASE MEASURES

Personal Protection

Appropriate protective equipment must be worn when handling a spill of this material. See section 8, Exposure Controls/Personal Protection, for recommendations. If exposed to material during clean-up operations, see section 4, First Aid Measures, for actions to follow.

Procedures

Keep spectators away. Floor may be slippery; use care to avoid falling. Eliminate all ignition sources. Use water spray to keep dusting to a minimum. Transfer spilled material to suitable containers for recovery or disposal.

Caution: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

7. HANDLING AND STORAGE

Storage Conditions

Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Avoid all ignition sources. The minimum recommended storage temperature for this material is -18C/0F. The maximum recommended storage temperature for this material is 49C/120F.

Handling Procedures

Monomer vapours can be evolved when material is heated during processing operations. See section 8, Exposure Controls/Personal Protection, for types of ventilation required.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit Information

No.		CAS REG NO.		WEIGHT (%)			
1. Acrylic polymer		Not Hazardous		98-100			
2. Residual monomers		Not Required		0.15 MAX			
3. Toluene		108-88-3		1.0 MAX			
Comp		ROHM AND HAAS		ACGIH		MAK(Germany)	
No.	Units	TWA	STEL	TWA	STEL	WERT	KAT
1		None	None	None	None	None	None
2		a	a	a	a	a	a
3	ppm	50 b	75 b	50 b	None	50	c

a Not Required

b Risk of skin-absorption

c Maximum Limit: Category II,2

Respiratory Protection

A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit in 'Exposure Limit Information'.

Up to 10 times the TWA/TLV: Wear a MSHA/NIOSH approved (or equivalent) half-mask, air purifying respirator.

Up to 1000ppm organic vapour: Wear a MSHA/NIOSH approved (or equivalent) full-facepiece, air-purifying respirator.

Above 1000ppm organic vapour or Unknown: Wear a MSHA/NIOSH approved (or equivalent) self-contained breathing apparatus in the positive pressure mode,

Or,

MSHA/NIOSH approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Air-purifying respirators should be equipped with MSHA/NIOSH approved (or equivalent) cartridges for protection against organic vapors.

Eye Protection

Use safety glasses (ANSI Z87.1 or approved equivalent).

Hand Protection

Cotton or canvas gloves.

Engineering Controls (Ventilation)

Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5m/sec) at the point of vapour evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommend Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Other Protective Equipment

Facilities storing or utilizing this material should be equipped with an eyewash facility.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear
State	Granular solid
Odour Characteristic	Acrylic odour
Viscosity	Not applicable
Specific Gravity (Water = 1)	1.15g/cm ³
Vapour Density (Air = 1)	Not applicable
Vapour Pressure	Not applicable

Melting Point	No data
Boiling Point	Not applicable
Solubility in Water	Practically insoluble
Percent Volatility	1.15 maximum
Evaporation Rate (BAC=1)	Not applicable

See section 5, Fire Fighting Measures

10. STABILITY AND REACTIVITY

Instability

This material is considered stable. However, avoid temperatures above 260C/500F, the onset of polymer decomposition. Thermal decomposition is dependant on time and temperature.

Hazardous Decomposition Products

There are no known hazardous decomposition products for this material.

Hazardous Polymerization

Product will not undergo polymerization.

Incompatibility

There are no known materials which are incompatible with this product.

11. TOXICOLOGICAL INFORMATION

Acute Data

Oral LD50 – rat: >5000mg/kg
Dermal LD50 – rabbit >3000 mg/kg
Eye Irritation – rabbit: moderate irritation
Skin Irritation – rabbit: slight irritation

Reproductive/Teratology Data

Toluene has been demonstrated to be embryofetotoxic and teratogenic in laboratory animals.

12. ECOLOGICAL INFORMATION

No applicable data

13. DISPOSAL CONSIDERATIONS

Procedure

For disposal, incinerate this material at a facility that complies with local, state and federal regulations.

Waste Key for the Product as Delivered (Germany)

571 29 waste of other hardened plastic materials

14. TRANSPORT INFORMATION

Label Not regulated

15. REGULATORY INFORMATION

United States

All components of this product are in compliance with the inventory listing requirements of the U.S Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

EEC

This product satisfies all the requirements of the European Inventory of Existing Chemical Substances (EINECS).

EINECS Information

No.	CAS REG NO.	EINECS
1. Acrylic polymer	Not Hazardous	
2. Residual monomers	Not Required	
3. Toluene	108-88-3	2036259

Indication of Danger

This product is not hazardous according to EEC Directives 67/548/EEC and 88/379/EEC

16. OTHER INFORMATION

<u>Rohm and Haas Hazard Rating</u>		<u>Scale</u>
Toxicity	1	4 = Extreme
Fire	1	3 = High
Reactivity	0	2 = Moderate
Special	-	0 = Insignificant

Ratings are based on Rohm and Haas guidelines, and are intended for internal use.

EMERGENCY TELEPHONE NUMBERS

Italia	(39) (0) 2 95250555
United Kingdom	(0) 191 4898181
France	(16) 88 73 60 00
Espana	(9) 48 822 700
Belgique – Belgium	(0) 3 5410016
Sverige	(0) 418 450490
Vienna	(0222) 4064343

ABBREVIATIONS

ACGIH	= American Conference of Governmental Industrial Hygienists
MAK	= Maximum Workplace Concentrations
TLV	= Threshold Limit Value
PEL	= Permissible Exposure Limit
TWA	= Time Weighted Average
STEL	= Short-Term Exposure Limit
BAC	= Butyl acetate

The information contained herein relates only to the specific material identified. Rohm and Haas Company believes that such information is accurate and reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, express or implied, is made as to the accuracy, reliability, or completeness of the information. Rohm and Haas Company urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.

AC300

JESMONITE
MADE FROM

PRODUCT DESCRIPTION

Jesmonite® AC300 is a water-based, two-component, acrylic polymer/mineral resin system. The system is suitable for a wide range of casting and laminating applications where the end user wants to reduce the many risks associated with conventional solvent based systems. A range of ancillary products including decorative and functional fillers, control chemicals, pigments, and glass reinforcements are also provided making the material extremely versatile. The material is designed for internal use only. The material is an economic alternative to Jesmonite AC100 where external durability is not essential.

SPECIFICATIONS

Mix ratio	2.5:1 parts Base to Liquids ratio by weight
Wet density	1845 kg/m ³
Dry density	1745 kg/m ³
Initial set	15 – 20 minutes (18°C, No Retarder)
Expansion on set	0.15%

OTHER PROPERTIES

Compressive strength	30 – 35 Mpa
Tensile strength (UTS)	20 – 25 Mpa
Bending elastic limit (LOP)	15 – 20 Mpa
Bending strength (MOR)	50 – 65 Mpa
Youngs modulus	5 – 6 Mpa
Impact strength (Charpy)	30 KJ/m ²
Moisture movement	<1%
Fire resistance	B.S.476 Part 6&7 – Class 'O'
Freeze/Thaw resistance	Excellent – Test specimens undamaged

APPLICATION AREAS

Jesmonite AC300 is suitable for both cast and laminated decorative mouldings, and with the inclusion of suitable glass reinforcements can be utilised for lightweight, high-impact panels. It also provides a Class 1 fire resistant surface coating for expanded foams for theme parks, theatre props, sculpture etc. The material provides users with a water-based alternative to standard Glass Reinforced Polyester for rigid moulds and tooling.

KEY ATTRIBUTES

Bulk supplied material to reduce costs and maximise transport efficiency.
General purpose material with a wide range of applications.

PACKAGING

AC300 is supplied in kit form in two formats. Small kits of 35kg and 70kg are available in plastic packaging. AC300 is also supplied as Bulk kits of 420kg and 3,500kg. Base in Bulk Kits is supplied in Valve Sacks.

STORAGE

As a basic rule liquid containers should be kept well sealed to prevent water evaporation and skin forming. They should be stored at a constant temperature between 5 – 25°C and used within six months. Freezing must be avoided. Base should be kept dry and stored at 5 – 25°C.

The above information and recommendations are based upon our experience and are offered merely for advice. They are offered in good faith but without guarantee, as conditions and methods of use are beyond our control. It is the responsibility of the end user to determine the suitability of the materials for the particular purpose intended.

Contact details

Jesmonite Limited
Challenge Court
Bishops Castle
Shropshire SY9 5DW
United Kingdom

Tel: +44 (0)1588 630302
Fax: +44 (0)1588 630304
www.jesmonite.co.uk

THE KEY BENEFITS OF USING JESMONITE**Stronger**

Strong, flexible and more durable, making it high impact resistant.

**Finer**

Replicates the very finest detail.

**Greener**

Water-based not solvent-based making it kinder to the environment.

**Lighter**

Lighter than stone, glass-reinforced concrete, sand and cement products – perfect for film sets.

**Safer**

Fire-resistant with a class zero fire rating, reduced smoke density and toxicity characteristics. Solvent free with no VOC's.

**More choice**

Can be pigmented to any colour or RAL reference. It can also mimic any texture and reproduce the effect of materials such as stone, metal, wood, leather and fabric.

**FILA INDUSTRIA CHIMICA S.P.A.**

Revision nr. 16

Dated 21/03/2019

DETERDEK PRO

Printed on 06/06/2019

Page n. 1/14

Replaced revision:15 (Dated: 20/12/2016)

Safety data sheet according to regulation (CE) n. 1907/2006 (REACH), Annex II, and successive adjustments introduced by Commission Regulation (EU) no. 2015/830

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name **DETERDEK PRO**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use **acid descaler.**

Identified Uses	Industrial	Professional	Consumer
Uses	✓	✓	✓

1.3. Details of the supplier of the safety data sheet

Name **FILA INDUSTRIA CHIMICA S.P.A.**
Full address **Via Garibaldi, 58**
District and Country **35018 San Martino di Lupari (PD)**
ITALIA
Tel. **+39.049.9467300**
Fax **+39.049.9460753**

e-mail address of the competent person
responsible for the Safety Data Sheet **sds@filasolutions.com**

1.4. Emergency telephone number

For urgent inquiries refer to **TEL +39.049.9467300 (Monday – Friday; 8.30 - 12.30 and 14.00 - 17.30)**
UNITED KINGDOM: NHS Direct 111 (In England, Scotland North Ireland) 08454647 (Wales); IRELAND 018092166

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.

2.2. Label elements

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16
	DETERDEK PRO	Dated 21/03/2019 Printed on 06/06/2019 Page n. 2/14 Replaced revision:15 (Dated: 20/12/2016)

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: Danger

Hazard statements:

H318 Causes serious eye damage.
H315 Causes skin irritation.

Precautionary statements:

P102 Keep out of reach of children.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P280 Wear protective gloves / eye protection / face protection.
P310 Immediately call a POISON CENTER / doctor / . . .
P101 If medical advice is needed, have product container or label at hand.
P264 Wash hands thoroughly after handling.

Contains: PHOSPHORIC ACID
Alcohols, C12-14, ethoxylates

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

SECTION 3. Composition/information on ingredients

3.1. Substances

Information not relevant

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
PHOSPHORIC ACID		
CAS 7664-38-2	$19 \leq x < 24$	Met. Corr. 1 H290, Skin Corr. 1B H314, Eye Dam. 1 H318, Classification note according to Annex VI to the CLP Regulation: B
EC 231-633-2		

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16 Dated 21/03/2019 Printed on 06/06/2019 Page n. 3/14 Replaced revision:15 (Dated: 20/12/2016)
	DETERDEK PRO	

INDEX 015-011-00-6

Reg. no. 01-2119485924-24

Alcohols, C12-14, ethoxylates

CAS 68439-50-9 $1 \leq x < 2$ Acute Tox. 4 H302, Eye Dam. 1 H318, Aquatic Chronic 3 H412

EC

INDEX -

Benzyl acetate

CAS 140-11-4 $0 \leq x < 0,02$ Aquatic Chronic 3 H412

EC 205-399-7

INDEX -

Reg. no. 01-2119638272-42

The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

4.3. Indication of any immediate medical attention and special treatment needed

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

5.3. Advice for firefighters

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16
	DETERDEK PRO	Dated 21/03/2019 Printed on 06/06/2019 Page n. 4/14 Replaced revision:15 (Dated: 20/12/2016)

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany):
8B

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16
	DETERDEK PRO	Dated 21/03/2019 Printed on 06/06/2019 Page n. 5/14 Replaced revision:15 (Dated: 20/12/2016)

8.1. Control parameters

Regulatory References:

CZE	Česká Republika	Nariadení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	TRGS 900 (Fassung 31.1.2018 ber.) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
DNK	Danmark	Graensevaerdier per stoffer og materialer
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2017
FIN	Suomi	HTP-arvot 2012. Haitallisiksi tunnetut pitoisuudet - Sosiaali- ja terveystieteiden tutkimuskeskus julkaisuja 2012:5
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
GRC	Ελλάδα	ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ - ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 19 - 9 Φεβρουαρίου 2012
HRV	Hrvatska	NN13/09 - Ministarstvo gospodarstva, rada i poduzetništva
HUN	Magyarország	50/2011. (XII. 22.) NGM rendelet a munkahelyek kémiai biztonságáról
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
NLD	Nederland	Databank of the social and Economic Council of Netherlands (SER) Values, AF 2011:18
NOR	Norge	Veiledning om Administrative normer for forurensning i arbeidsatmosfære
POL	Polska	ROZPORZĄDZENIE MINISTRA RODZIN Y, PRAC Y I POLITYKI SPOŁECZNEJ z dnia 12 czerwca 2018 r
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diário da República I 26; 2012-02-06
ROU	România	Monitorul Oficial al României 44; 2012-01-19
SVK	Slovensko	NARIADENIE VLÁDY Slovenskej republiky z 20. júna 2007
SVN	Slovenija	Uradni list Republike Slovenije 04.06.2015 (1602) - Pravilnik o spremembah in dopolnitvah Pravilnika o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu
SWE	Sverige	Occupational Exposure Limit Values, AF 2011:18
TUR	Türkiye	KİMYASAL MADDELERLE ÇALIŞMALARDA SAĞLIK VE GÜVENLİK ÖNLEMLERİ HAKKINDA YÖNETMELİK - Resmi Gazete Tarihi: 12.08.2013 Resmi Gazete Sayısı: 28733
EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2018

PHOSPHORIC ACID Threshold Limit Value

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
TLV	CZE	1		2	
AGW	DEU	2		4	INHAL
MAK	DEU	2		4	INHAL
TLV	DNK	1			
VLA	ESP	1		2	
HTP	FIN	1		2	
VLEP	FRA	1	0,2	2	0,5
WEL	GBR	1		2	
TLV	GRC	1		3	
GVI	HRV	1		2	
AK	HUN	1		2	
VLEP	ITA	1		2	
OEL	NLD	1		2	
TLV	NOR	1			
NDS	POL	1		2	
VLE	PRT	1		2	
TLV	ROU	1		2	
NPHV	SVK	1		2	

	FILA INDUSTRIA CHIMICA S.P.A.			Revision nr. 16
	DETERDEK PRO			Dated 21/03/2019 Printed on 06/06/2019 Page n. 6/14 Replaced revision:15 (Dated: 20/12/2016)

MV	SVN	1	2
MAK	SWE	1	3
ESD	TUR	1	2
OEL	EU	1	2
TLV-ACGIH		1	3

Health - Derived no-effect level - DNEL / DMEL								
Effects on consumers				Effects on workers				
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation			0,73 mg/m3	VND	2 mg/m3	VND	2,92 mg/m3	VND

Benzyl acetate					
Threshold Limit Value					
Type	Country	TWA/8h	STEL/15min		
		mg/m3	ppm	mg/m3	ppm
OEL	EU		10		

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear a hood visor or protective visor combined with airtight goggles (see standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16
	DETERDEK PRO	Dated 21/03/2019 Printed on 06/06/2019 Page n. 7/14 Replaced revision:15 (Dated: 20/12/2016)

open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
Colour	transparent
Odour	Typical prickly smell with floral fragrance
Odour threshold	Not available
pH	1
Melting point / freezing point	Not available
Initial boiling point	Not available
Boiling range	Not available
Flash point	> 60 °C
Evaporation Rate	Not available
Flammability of solids and gases	Not available
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	Not available
Solubility	soluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Not available

9.2. Other information

VOC (Directive 2010/75/EC) : < 0.01 %

SECTION 10. Stability and reactivity

10.1. Reactivity

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16 Dated 21/03/2019 Printed on 06/06/2019 Page n. 8/14 Replaced revision:15 (Dated: 20/12/2016)
	DETERDEK PRO	

There are no particular risks of reaction with other substances in normal conditions of use.

PHOSPHORIC ACID

Decomposes at temperatures above 200°C/392°F.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

PHOSPHORIC ACID

Risk of explosion on contact with: nitromethane. May react dangerously with: alkalis, sodium borohydride.

10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

10.5. Incompatible materials

None.

PHOSPHORIC ACID

Incompatible with: metals, strong alkalis, aldehydes, organic sulphides, peroxides.

10.6. Hazardous decomposition products

Due to thermal decomposition or in case of fire, gases and vapors can be released that are potentially harmful to health.

PHOSPHORIC ACID

May develop: phosphoryl oxides.

SECTION 11. Toxicological information

11.1. Information on toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information

Information not available



FILA INDUSTRIA CHIMICA S.P.A.

Revision nr. 16

Dated 21/03/2019

DETERDEK PRO

Printed on 06/06/2019

Page n. 9/14

Replaced revision:15 (Dated: 20/12/2016)

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

LC50 (Inhalation) of the mixture:
Not classified (no significant component)
LD50 (Oral) of the mixture:
>2000 mg/kg
LD50 (Dermal) of the mixture:
Not classified (no significant component)

PHOSPHORIC ACID

LD50 (Oral) 1530 mg/kg Rat

LD50 (Dermal) 2740 mg/kg Rabbit

LC50 (Inhalation) > 0,85 mg/l/1h Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16
	DETERDEK PRO	Dated 21/03/2019 Printed on 06/06/2019 Page n. 10/14 Replaced revision:15 (Dated: 20/12/2016)

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information

No specific data are available for this product. Handle it according to good working practices. Avoid littering. Do not contaminate soil and waterways. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation. Please take all the proper measures to reduce harmful effects on aquifers.

12.1. Toxicity

PHOSPHORIC ACID

LC50 - for Fish	3,25 mg/l/96h <i>Lepomis macrochirus</i>
EC50 - for Crustacea	> 100 mg/l/48h <i>Daphnia magna</i>
EC50 - for Algae / Aquatic Plants	> 100 mg/l/72h <i>Desmodesmus subspicatus</i>

12.2. Persistence and degradability

PHOSPHORIC ACID

Solubility in water	> 850000 mg/l
Degradability: information not available	

Alcohols C12-14, ethoxylated

Rapidly degradable
95% 14d

12.3. Bioaccumulative potential

Information not available

12.4. Mobility in soil

Information not available

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16
	DETERDEK PRO	Dated 21/03/2019 Printed on 06/06/2019 Page n. 11/14 Replaced revision:15 (Dated: 20/12/2016)

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects

Information not available

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16 Dated 21/03/2019 Printed on 06/06/2019 Page n. 12/14 Replaced revision:15 (Dated: 20/12/2016)
	DETERDEK PRO	

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

SECTION 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Seveso Category - Directive 2012/18/EC: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product

Point 3 - 40

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16
	DETERDEK PRO	Dated 21/03/2019 Printed on 06/06/2019 Page n. 13/14 Replaced revision:15 (Dated: 20/12/2016)

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances

PHOSPHORIC ACID

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Acute Tox. 4	Acute toxicity, category 4
Skin Corr. 1B	Skin corrosion, category 1B
Eye Dam. 1	Serious eye damage, category 1
Skin Irrit. 2	Skin irritation, category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H412	Harmful to aquatic life with long lasting effects.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value

	FILA INDUSTRIA CHIMICA S.P.A.	Revision nr. 16 Dated 21/03/2019 Printed on 06/06/2019 Page n. 14/14 Replaced revision:15 (Dated: 20/12/2016)
	DETERDEK PRO	

- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
 2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
 3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
 4. Regulation (EU) 2015/830 of the European Parliament
 5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
 6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
 7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
 8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
 9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
 10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
 11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
 12. Regulation (EU) 2016/1179 (IX Atp. CLP)
 13. Regulation (EU) 2017/776 (X Atp. CLP)
- The Merck Index. - 10th Edition
 - Handling Chemical Safety
 - INRS - Fiche Toxicologique (toxicological sheet)
 - Patty - Industrial Hygiene and Toxicology
 - N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
 - IFA GESTIS website
 - ECHA website
 - Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 04 / 05 / 08 / 10 / 11 / 15.



SAFETY DATA SHEET

PEELAWAY 7

Page: 1

Compilation date: 14/04/2015

Revision date: 9/11/2017

Revision No: 2

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: PEELAWAY 7

Product code: PEA7GEN

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of substance / mixture: Consumer Use. Industrial Use. Professional Use. Paint, Varnish and Graffiti Remover

1.3. Details of the supplier of the safety data sheet

Company name: J.V. Barrett & Co Ltd

St Ivel way

Warmley

Bristol

BS30 8TY

United Kingdom

Tel: 01179600060

Fax: 01179352437

Email: sales@barrettine.co.uk

1.4. Emergency telephone number

Emergency tel: +44 (0) 1179 672222 (Office hours only 8am - 5pm Mon- Thurs. 8 am - 4.30 pm Fri.)

+44 (0) 1270 502891 (Out of hours emergency number)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Acute Tox. 4: H302+332

Most important adverse effects: Harmful if swallowed or if inhaled.

2.2. Label elements

Label elements:

Hazard statements: H302+332: Harmful if swallowed or if inhaled.

Hazard pictograms: GHS07: Exclamation mark



[cont...]

SAFETY DATA SHEET

PEELAWAY 7

Page: 2

Signal words: Warning

Precautionary statements: * P102: Keep out of reach of children.

P260: Do not breathe fumes, vapours.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P301+310: IF SWALLOWED: Immediately call a POISON CENTER/doctor if you feel unwell.

P501: Dispose of contents/container to local/regional/national/international regulations.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

BENZYL ALCOHOL - REACH registered number(s): 01-2119492630-38-XXXX

EINECS	CAS	PBT / WEL	CLP Classification	Percent
202-859-9	100-51-6	-	Acute Tox. 4: H332; Acute Tox. 4: H302	30-50%

Contains: BENZYL ALCOHOL

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Wash immediately with plenty of soap and water. Remove all contaminated clothes and footwear immediately unless stuck to skin. Consult a doctor.

Eye contact: Bathe the eye with running water for 15 minutes. Consult a doctor.

Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Transfer to hospital as soon as possible.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be mild irritation at the site of contact.

Eye contact: There may be irritation and redness.

Ingestion: There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: Absorption through the lungs can occur causing symptoms similar to those of ingestion.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Treat Symptomatically

Section 5: Fire-fighting measures

[cont...]

SAFETY DATA SHEET

PEELAWAY 7

Page: 3

5.1. Extinguishing media

Extinguishing media: Use water spray to cool containers. Foam. Dry chemical powder. Carbon dioxide. Water spray. Sand. Do not use water jet

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. Do not create dust. Mark out the contaminated area with signs and prevent access to unauthorised personnel. If outside do not approach from downwind.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Ensure there is sufficient ventilation of the area. Avoid the formation or spread of dust in the air. Avoid direct contact with the substance.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed.

Suitable packaging: Must only be kept in original packaging.

7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits: No data available.

DNEL/PNEC Values

[cont...]

SAFETY DATA SHEET

PEELAWAY 7

Page: 4

Hazardous ingredients:

BENZYL ALCOHOL

Type	Exposure	Value	Population	Effect
DNEL	Inhalation (repeated dose)	22 mg/m3	Workers	Systemic
DNEL	Inhalation	110 mg/m3	Workers	Systemic
DNEL	Inhalation (repeated dose)	5.4 mg/m3	General Population	Systemic
DNEL	Inhalation	27 mg/m3	Consumers	Systemic
DNEL	Dermal (repeated dose)	8 mg/kg bw/day	Workers	Systemic
DNEL	Dermal (repeated dose)	4 mg/kg bw/day	General Population	Systemic
DNEL	Dermal	40 mg/kg bw/day	Workers	Systemic
DNEL	Dermal	20 mg/kg bw/day	General Population	Systemic
DNEL	Oral (repeated dose)	4 mg/kg bw/day	General Population	Systemic
DNEL	Oral	20 mg/kg bw/day	General Population	Systemic
PNEC	Fresh water	1 mg/l	-	-
PNEC	Fresh water sediments	5.27 mg/kg	-	-
PNEC	Marine water	100 µg/l	-	-
PNEC	Marine sediments	527 µg/kg	-	-
PNEC	Microorganisms in sewage treatment	39 mg/l	-	-
PNEC	Soil (agricultural)	456 µg/kg	-	-

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: If ventilation is insufficient suitable respiratory protection must be provided.

Hand protection: Protective gloves.

Eye protection: Safety glasses. Safety goggles.

Skin protection: Protective clothing.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: * Solid

Colour: Off-white

Odour: Characteristic odour

Evaporation rate: No data available.

Oxidising: No data available.

Solubility in water: Soluble

Viscosity: No data available.

Boiling point/range°C: No data available.

Flammability limits %: lower: Not applicable.

Flash point°C: No data available.

Autoflammability°C: > 400

Relative density: No data available.

VOC g/l: No data available.

Melting point/range°C: No data available.

upper: Not applicable.

Part.coeff. n-octanol/water: No data available.

Vapour pressure: No data available.

pH: No data available.

[cont...]

SAFETY DATA SHEET

PEELAWAY 7

Page: 5

9.2. Other information

Other information: No data available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.

Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Materials to avoid: Strong acids. Strong bases.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

Section 11: Toxicological information

11.1. Information on toxicological effects

Hazardous ingredients:

BENZYL ALCOHOL

ORAL	RAT	LD50	1620	mg/kg
VAPOURS	RAT	4H LC50	4.178	mg/l

Relevant hazards for product:

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	INH ING	Hazardous: calculated

Symptoms / routes of exposure

Skin contact: There may be mild irritation at the site of contact.

Eye contact: There may be irritation and redness.

Ingestion: There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: Absorption through the lungs can occur causing symptoms similar to those of ingestion.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

[cont...]

SAFETY DATA SHEET

PEELAWAY 7

Page: 6

Section 12: Ecological information

12.1. Toxicity

Hazardous ingredients:

BENZYL ALCOHOL

ALGAE	72H IC50	770	mg/l
Daphnia magna	48H EC50	230	mg/l
FISH	96H LC50	460	mg/l

12.2. Persistence and degradability

Persistence and degradability: Biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No bioaccumulation potential.

12.4. Mobility in soil

Mobility: 0.04 N/m (20oC)

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Avoid release to the environment.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

Waste code number: 20 01 29

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

Transport class: This product does not require a classification for transport.

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Specific regulations: Not applicable.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

[cont...]

SAFETY DATA SHEET

PEELAWAY 7

Page: 7

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: H302: Harmful if swallowed.

H302+332: Harmful if swallowed or if inhaled.

H332: Harmful if inhaled.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

RESTORATIVE IRON STAIN REMOVER**1. Identification of the Substance/Preparation & of the Company/Undertaking****1.1 Product Identifier**

Product Name Restorative Iron Stain Remover

1.2 Relevant Identified Uses of the Substance or Product & Uses Advised Against

Use of Product PC35: Washing & cleaning products (including solvent based products)

1.3 Supplier of the Safety Data Sheet

Company Name Restorative Techniques Limited
Gloucester Road
Rudgeway
Bristol
BS35 3SG
T: 0044 01454 417831
F: 0044 01454 412445
info@restorativetechniques.co.uk

1.4 Emergency Telephone Number

Tel M: 07760 197472

2. Hazards Identification**2.1 Classification of Substance or Product**

CLP Classification: Acute Tox 4: H302 Skin Sens 1: H317

Important Adverse Effects: Harmful if swallowed. May cause an allergic skin reaction

2.2 Label Elements

Label Elements:

Hazard Statements: H302: Harmful if swallowed
H317: May cause an allergic skin reaction

Signal Words: Warning

Hazard Pictogram: GHS07: Exclamation Mark



Precautionary Statement: P261: Avoid breathing spray
P280: Wear eye protection
P301 + 312: If swallowed: Seek medical advice if you feel unwell
P302+P352: If on skin - Wash with plenty of soap & water
P321: Special treatment (see instructions on this label)
P330: Rinse Mouth

2.3 Other Hazards

PBT: This product is not identified as a PBT/vPvB substance

3. Composition / Information of Ingredients

3.1 Chemicals / Mixtures

Mixture: SODIUM MERCAPTOACETATE - REACH registered no. 01-2119968564-24-0000

EC No	CAS	PBT / WEL	CLP Classification	Percentage
206-696-4	367-51-1	-	Acute Tox.3: H331; Acute Tox.4: H312 Skin Sens.1: H317; Met. Corr.1: H290	10 - 30%

SODIUM N-LAUROYLSARCOSINATE

EC No	CAS	PBT / WEL	CLP Classification	Percentage
205-281-5	137-16-6	-	Acute Tox.3: H331; Acute Tox.2: H315 Eye Irrit.2: H319	<1%

4. First Aid Measures

4.1 Description of First Aid Measures

Skin Contact: Wash immediately with plenty of soap & water.

Eye Contact: Bathe the eye with running water for 15 minutes

Ingestion: Wash out mouth with water. DO NOT induce vomiting. If conscious, give half litre of water to drink immediately. Seek medical advice / attention.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. Seek medical advice / attention.

General: Never give anything by mouth to an unconscious person.

4.2 Important Symptoms & Effects, Acute & Delayed

Skin Contact: There may be mild irritation at the site of contact.

Eye Contact: There may be irritation & redness.

Ingestion: There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: Absorption through the lungs can occur causing symptoms similar to those of ingestion.

Delayed / Immediate Effects: Immediate effects can be expected after short term exposure.

4.3 Indication of Any Immediate Medical Attention & Special Treatment Needed

Immediate / Special Treatment: Not applicable.

5. Fire Fighting Measures

5.1 Extinguishing Media

Extinguishing Media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

5.2 Special Hazards Arising from the Product or Chemical

Exposure Hazards: In combustion emits toxic fumes.

5.3 Advice for Fire Fighters

Fire Fighter Advice: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes

6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment & Emergency Procedures

Personal Precautions: Refer to section 8 of HSDS for personal protection details. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak side up to prevent escape of product.

6.2 Environmental Precautions

Environmental Precautions: Do not discharge into drains, waterways or rivers. Contain the spillage using bunding.

6.3 Methods & Materials for Containment & Clearing Up

Clean Up Procedures: Absorb into dry earth, sand or diatomaceous earth as soon as possible. Transfer to a closable, labelled container for disposal by an appropriate method.

6.4 Reference to Other Sections

References to Sections: Refer to section 8 of HSDS

7. Handling & Storage

7.1 Precautions for Safe Handling

Handling Requirements: Avoid direct contact with the substance. Avoid formation or spread of mists in the air.

7.2 Conditions for Safe Storage, Inc Incompatibilities

Storage Conditions: Store in a cool well ventilated area. Keep in original container & tightly closed.

7.3 Specific End Use / Uses

Specific End Use(s): No data available

8. Exposure Controls / Personal Protection

8.1 Control Parameters

Workplace Exposure Limit: No data available

DNEL / PNEC Values

DNEL / PNEC: No data available

8.2 Exposure Controls

Engineering Measures: Ensure there is sufficient ventilation of the area.

Respiratory Protection: Respiratory protection not required

Hand Protection: Protective gloves.

Eye Protection: Safety glasses. Ensure eye bath is to hand.

Skin Protection: Suitable protective clothing.

9. Physical & Chemical Properties

9.1 Information On Basic Physical & Chemical Properties

State: Liquid

Colour: Colourless

Odour: Unpleasant

Evaporation Rate: No data available
Oxidising: Non-Oxidising (by EC Criteria)
Solubility in Water: Soluble
Viscosity: Non-Viscous
Freezing Point: No data available
Boiling Point / Range: No data available
Melting Point / Range: No data available
Flammability Limits% Lower: No data available
Flash Point: No data available
Part.coef N-Octanol / Water: No data available
Autoflammability: No data available
Vapour Pressure: No data available
Relative Density: 1.118 - 1.138
pH: Approx 7
VOC g/l: No data available

9.2 Other Information

Other Information: No data available

10. Stability & Reactivity

10.1 Reactivity

Reactivity: Stable under recommended transport or storage conditions

10.2 Chemical Stability

Chemical Stability: Stable under normal conditions

10.3 Possibility of Hazardous Reactions

Hazardous Reactions: Hazardous reactions will not occur under normal transport or storage conditions.
Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to Avoid

Conditions to Avoid: Heat

10.5 Incompatible Materials

Materials to Avoid: Strong oxidising agents. Strong acids.

10.6 Hazardous Decomposition Products

Hazardous Decomposition Products: In combustion emits toxic fumes.

11. Toxicological Information

11.1 Information On Toxicological Effects

Hazardous Ingredients:

SODIUM MERCAPTOACETATE

DERMAL	RAT	LD50	1.000-2.000	mg/kg
--------	-----	------	-------------	-------

ORAL	RAT	LD50	50-200	mg/kg
------	-----	------	--------	-------

Relevant Hazards for Product:

Hazard	Route	Basis
Acute Toxicity (Acute Tox.4)	ING	Hazardous: Calculated
Respiratory / Skin Sensitisation	DRM	Hazardous: Calculated

11.2 Symptoms / Routes of Exposure

Skin Contact: There may be mild irritation at the site of contact

Eye Contact: There may be irritation or redness

Ingestion: There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: Absorption through the lungs can occur causing symptoms similar to those of ingestion

Delayed / Immediate Effects: Immediate effects can be expected after short-term exposure

12. Ecological Information

12.1 Toxicity

Hazardous Ingredients:

SODIUM MERCAPTOACETATE

ALGAE	72H ErC50	13 mg/l
Daphnia MAGNA (<i>Water Flea</i>)	48H EC50	38 mg/l
GOLDEN ORFE (<i>Leuciscus Idus</i>)	48H LC50	880 mg/l
RAINBOW TROUT (<i>Oncorhynchus Mykiss</i>)	96H LC50	>100 mg/l

12.2 Persistence & Degradability

Persistence & Degradability: Biodegradable

12.3 Bioaccumulative Potential

Bioaccumulative Potential: No bioaccumulation potential

12.4 Mobility in Soil

Mobility: Readily absorbed into soil

12.5 Results of PBT & vPvB Assessment

PBT Identification: This product is not identified as a PBT/vPvB substance

12.6 Other Adverse Effects

Other Adverse Effects: Negligible ecotoxicity

13. Disposal Considerations

13.1 Waste Treatment Methods

Disposal Operations: Transfer to a suitable container & arrange for collection by specialised disposal company.

NB: The users attention is drawn to the possible existence of local, regional or national regulations regarding disposal.

14. Transport Information

Transport Hazard Class(es)

Transport Class: This product does not require a classification for transport

15. Regulatory Information

15.1 Safety, Health & Environmental Regulations / Legislation Specific to Substance or Product

Specific Regulation: Not applicable:

15.2 Chemical Safety Assessment

Safety Assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

16. Other Information

Other Information

Other Information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830

* Indicated text in the SDS which has changed since the last revision

Phrases Used: H290: May be corrosive to metals

H301: Toxic if swallowed

H302: Harmful if swallowed

H312: Harmful in contact with skin

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H319: Causes serious eye irritation

H331: Toxic if inhaled

Legal Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated and should be used as a guide. No warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use. The company shall not be held liable for any damage resulting from handling or from contact with the above product.



Mapegrout Thixotropic

**Shrinkage-compensated
fibre-reinforced mortar
for concrete repair**



WHERE TO USE

Surface repair of deteriorated concrete structures on both vertical and horizontal surfaces.

Some application examples

- Repairing deteriorated areas of concrete, corners of pillars and beams, edges of balconies damaged by the oxidation of reinforcing steel.
- Reconstruction of reinforcing rod covers in reinforced concrete structures.
- Smoothing surface defects, such as gravel nests, new casting joints, holes created by formwork spacers, exposed rods, etc.
- Filling of rigid joints.
- Repair of surfaces subjected to heavy abrasion (canals, industrial floors, ramps, etc.).
- Smoothing of diaphragm walls and tunnels.
- Repairing viaducts for highways, roads and railways.

TECHNICAL CHARACTERISTICS

Mapegrout Thixotropic is a ready-mixed powdered mortar composed of high-strength cements, selected aggregates, special additives and synthetic fibres prepared according to a formula developed in the MAPEI Research & Development laboratories. When mixed with water, **Mapegrout Thixotropic** becomes an easily workable mortar with high thixotropic properties that can be applied on vertical surfaces without sagging even in great thicknesses and with no need for formwork.

If **Mapegrout Thixotropic** is prepared by only adding water, it must be cured under damp conditions in order to guarantee that the product expansive properties develop completely and correctly. Unfortunately, it is

not easy to guarantee that these conditions are created on site.

However, to guarantee that the expansive properties of **Mapegrout Thixotropic** are carried out in the open air, 0.25% of **Mapecure SRA**, a special additive which has the property of reducing both plastic and hydraulic shrinkage, may be used to great advantage when added to the mix.

Mapecure SRA has a very important role to play, in guaranteeing better curing of mortar. Also, when mixed with **Mapegrout Thixotropic**, it may be considered a technologically advanced system, in that the additive has the capacity of slowing down evaporation of the water and of promoting the development of hydration reactions.

Basically, **Mapecure SRA** behaves like an internal curing agent and, thanks to its interaction with some of the main components which make up the cement, it helps to reduce shrinkage by between 20% and 50% compared with the standard values of the product without the additive. This will obviously lead to a reduced risk of cracking.

Once hardened, **Mapegrout Thixotropic** has the following properties:

- very high flexural and compressive strength;
- modulus of elasticity, coefficient of thermal expansion and permeability to water vapour similar to those of high quality concrete;
- waterproof;
- high adhesion to old concrete, provided it has been soaked with water beforehand, and also to reinforcing rods, especially if they have been treated with **Mapecer** or **Mapecer 1K**;
- high resistance to abrasion.

Mapegrout Thixotropic



Application with trowel



Creating the required form with a template



Finishing with a sponge float

Mapegrout Thixotropic meets the requirements defined by EN 1504-9 (*"Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - General principles for the use of products and systems"*) and the minimum requirements claimed by EN 1504-3 (*"Structural and non structural repair"*) for structural mortars of class R4.

RECOMMENDATIONS

- Do not use **Mapegrout Thixotropic** on smooth concrete surfaces: roughen them well, and if necessary add reinforcing rods.
- Do not use **Mapegrout Thixotropic** for anchors (use **Mapefill**).
- Do not use **Mapegrout Thixotropic** to repair structures by pouring into formwork (use **Mapegrout Hi-Flow**).
- Do not add cement, aggregates or additives to **Mapegrout Thixotropic**.
- Do not add water after the mix has started to set.
- Do not apply **Mapegrout Thixotropic** at temperatures below +5°C.
- Do not use **Mapegrout Thixotropic** if the packing has been damaged or if it has been opened beforehand.

APPLICATION PROCEDURE

Preparing the substrate

- Remove deteriorated and loose concrete until the substrate is solid, strong and rough. Any previous restoration work which is not soundly bonded should also be removed.
 - Clean the concrete and reinforcing rods until free of dust, rust, cement laitance, grease, oils and previously applied paints by sand-blasting.
 - Soak the substrate with water.
- Before repairing with **Mapegrout Thixotropic** allow the excess water to evaporate. If necessary, use compressed air to facilitate the removal of water.

Preparing the mortar

- Pour into the mixer the amount of water corresponding to the consistency required for the application (15.5-16.5% of the powder).
- Start the concrete mixer and slowly and continuously pour **Mapegrout Thixotropic** into the water.
- If improved open-air curing of the mortar is required, add **Mapecure SRA** to the final mix at a dosage of 0.25% by weight of the mortar (0.25 kg every 100 kg of **Mapegrout Thixotropic**).
- Mix for 1-2 minutes, checking the homogeneity of the mix while scraping any unmixed powder off the sides of the mixer; remix for another 2-3 minutes.
- Depending on the quantity being prepared, a mortar mixer or a drilling machine with a stirrer attachment can be used. The mixing must be carried out at low speed to avoid entraining an excess of air into the mix.
- Only in exceptional circumstances should the mortar be mixed by hand. In this case prepare small quantities and mix for at least 5-6 minutes until the slurry is completely smooth and even.

It should be remembered that manual preparation requires greater quantities of water which are detrimental to some characteristics of **Mapegrout Thixotropic**, such as mechanical strength, shrinkage, waterproofing, etc.

Mapegrout Thixotropic has a pot life of about 1 hour at +20°C.

The expansion of **Mapegrout Thixotropic** has been calculated to compensate for hygrometric shrinkage.

In order to be effective, the expansion must be countered with suitable reinforcement or formwork around the structure.

Without formwork, **Mapegrout Thixotropic** can only be applied in thicknesses greater than 2 cm if the surface has been roughened and reinforcing rods have been placed, taking care to apply at least 2 cm of cover to the reinforcement.

Smaller thicknesses can be applied without reinforcing rods as long as the substrate is sufficiently rough to be able to counter the expansion. This expansion phase is completed during the first days of curing.

Applying the mortar

The mix can be applied with a flat or gauging trowel with no need for formwork even on vertical surfaces or ceilings; the maximum thickness allowed is 50 mm per coat.

Mapegrout Thixotropic can also be sprayed with a suitable piston or worm screw type rendering machine (Turbosol - Putzmeister), excluding continuous mixing machines.

Apply **Mapegrout Thixotropic** after treating the reinforcing rods with **Mapefer** or with **Mapefer 1K**.

When a further coat of **Mapegrout Thixotropic** is necessary, it must be applied before the previous one has completely set (not more than 4 hours at +23°C).

The repair process is complete when a smoothing coat of **Mapefinish** and a coat of **Elastocolor Paint** have been applied.

PRECAUTIONS TO BE TAKEN DURING AND AFTER APPLICATION

- Only use bags of **Mapegrout Thixotropic** which have been stored on their original pallets.
- In hot weather, store the product in a cool place and use only cold water to blend the mortar.
- In cold weather, store the product in a place which is protected from frost at a temperature of +20°C, and use tepid water to blend the mortar.
- After laying **Mapegrout Thixotropic**, we recommend that it is cured carefully, especially in hot or windy weather, to avoid the water evaporating off too quickly and causing the formation of surface cracks due to plastic shrinkage. Spray water on the surface after 8-12 hours of laying the mortar, and repeat the operation every 3-4 hours for at least the first 48 hours. As an alternative, after tamping the mortar, spread on a layer of **Mapecure E** anti-evaporation treatment in watery emulsion with a low-pressure pump, **Mapecure S** solvent-based curing film for mortar and concrete, or **Elastocolor Primer** solvent-based, high-penetration primer for absorbent substrates and curing

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Strength class according to EN 1504-3:	R4
Type:	PCC
Consistency:	powder
Colour:	grey
Maximum aggregate size (mm):	2.5
Bulk density (kg/m³):	1,250
Dry solids content (%):	100
Chloride ions content: - minimum requirements $\leq 0.05\%$ - according to EN 1015-17 (%):	≤ 0.05

PRODUCT APPLICATION DATA (at +20°C - 50% R.H.)

Colour of mix:	grey
Mixing ratio:	100 parts of Mapegrout Thixotropic with 15.5-16.5 parts water (approx. 3.8-4.1 l per 25 kg bag)
Consistency of mix:	thixotropic
Density of the mix (kg/m³):	2,200
pH of the mix:	> 12.5
Application temperature range:	from +5°C to +35°C
Pot life of the mix:	approx. 1 h

FINAL PERFORMANCE (16% mixing water)

Performance characteristic	Test method	Minimum requirements according to EN 1504-3 for R4 class mortar	Product performance
Compressive strength (MPa):	EN 12190	≥ 45 (after 28 days)	> 20 (after 1 day) > 45 (after 7 days) > 60 (after 28 days)
Flexural strength (MPa):	EN 196/1	not required	> 4.5 (after 1 day) > 7.0 (after 7 days) > 8.5 (after 28 days)
Modulus of elasticity in compression (GPa):	EN 13412	≥ 20 (after 28 days)	26 (after 28 days)
Bond strength to concrete (MC 0.40 type substrate) according to EN 1766 (MPa):	EN 1542	≥ 2 (after 28 days)	> 2 (after 28 days)
Resistance to accelerated carbonation:	EN 13295	depth of carbonation $\leq$ reference concrete (MC 0.45 type with water/cement ratio = 0.45) according to UNI 1766	test passed
Capillary absorption (kg/m²·h ^{0.5}):	EN 13057	≤ 0.5	< 0.20
Thermal compatibility measured as bonding according to EN 1542 (MPa): - freeze-thaw cycles with deicing salts: - storm cycle: - dry thermal cycle:	EN 13687/1 EN 13687/2 EN 13687/4	≥ 2 (after 50 cycles) ≥ 2 (after 30 cycles) ≥ 2 (after 30 cycles)	> 2 > 2 > 2
Reaction to fire:	EN 13501-1	Euroclass	A1



SATTEC adhesion test



Bertini hydroelectric canal - Robbiate (Como) - Italy: spray application

Mapegrout Thixotropic



Bertini hydroelectric canal - Robbiate (Como) - Italy: finishing with a trowel



Bertini hydroelectric canal - Robbiate (Como) - Italy: General view

agent for repair mortar. **Mapecure E** and **Mapecure S**, as with all the best quality products in the same category which are currently available on the market, impede bonding of successive dressing layers. Therefore, if a smoothing layer or paint is to be applied later, they must be completely removed by sandblasting. If **Elastocolor Primer** is used as an anti-evaporation treatment, on the other hand, a final protective layer of **Elastocolor Paint** or **Elastocolor Rasante** may be applied directly on the treated surface without having to remove it.

Cleaning

Before hardening, the mortar can be cleaned from tools with water. After setting, cleaning is very difficult and the mortar can only be removed mechanically.

COVERAGE

19 kg/m² per cm of thickness.

PACKAGING

25 kg bags.

STORAGE

Mapegrout Thixotropic may be stored for up to 12 months in its original packaging. The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

The product is available in special 25 kg vacuum-packed polyethylene bags which may be stored outside for the entire construction phase of the site. Rain has no effect on its characteristics.

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

Mapegrout Thixotropic contains cement that when in contact with sweat or other body fluids causes irritant alkaline reaction and allergic reactions to those predisposed. It can cause damage to eyes.

When applying the product, use protective gloves and goggles and take the usual precautions for handling chemicals.

In case of contact with eyes or skin wash immediately with plenty of water and seek medical attention.

For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.

All relevant references for the product are available upon request and from www.mapei.com



BUILDING THE FUTURE

Kerakover Eco Silicato di Etile

Eco-friendly, high diffusion power consolidant based on ethyl esters from silicic acid, ideal for use in GreenBuilding. Safeguards the health of operators.

Kerakover Eco Silicato di Etile (ethyl silicate) in a solvent solution that consolidates natural and artificial stone materials without altering their breathability. Internal, external.



GREENBUILDING RATING®



RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

PRODUCT STRENGTHS

- Excellent consolidating power
- Deep penetration
- Easy to apply with a brush, roller or spray

AREAS OF USE

Use

Consolidation of vertical surfaces made of:

- modern and historical plasters/renders
- absorbent stones, exposed brickwork

For internal and external use.

Do not use

On gypsum walls, horizontal surfaces or in the presence of water under pressure.

INSTRUCTIONS FOR USE

Preparation of substrates

The continuity of the substrate must be checked before applying the product (eliminating cracks, joints, and disconnections). The surfaces to be treated must be free from traces of solvents, detergents, organic deposits or saline efflorescence.

In the presence of mould, first repair with Kerakover Activ product. Cleaning must be done with water depending on the consistency of the substrate.

After cleaning the surface, it is important to wait until it is completely dry before applying Kerakover Eco Silicato di Etile.

Protect all surfaces that could be damaged.

For the treatment of substrates other than those mentioned and for additional information on the types of intervention to be carried out, we recommend to consult Kerakoll's Guide to decorating and preparing substrates.

Preparation

Kerakover Eco Silicato di Etile is ready-to-use and must not be diluted with either solvents or water.

Application

Apply only to absorbent substrates that are not exposed to direct sunlight, frost or wind. Kerakover Eco Silicato di Etile can be applied with a brush or low pressure spray at a distance of approx. 15 cm from the surface. For vertical surfaces, work from the bottom upwards, wet-on-wet, until saturation point. Protect impregnated surfaces from rain for at least 3 to 4 days. To ensure the long-life of the surface and to prevent fractures, it is recommended that the product penetrate as deeply as possible.

Cleaning

Residual traces of Kerakover Eco Silicato di Etile can be removed from tools using Keradecor Eco Solmix immediately after use.

* ÉMISSION DANS L'AIR INTÉRIEUR Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions).

SPECIAL NOTES

For internal work, adequately ventilate the area.
Do not smoke, do not eat during use.

ABSTRACT

Consolidant of vertical surfaces such as historical and modern plasters/renders, stone materials, exposed brickwork, applied using a brush or low-pressure spray of a non-film-forming impregnating agent based on ethyl esters from silicic acid in solvent solution with high diffusion power, such as Kerakover Eco Silicato di Etile by Kerakoll Spa, GreenBuilding Rating® 1.

TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	transparent liquid
Pack	15 – 5 ℓ drums
Volumetric mass	≈ 0.8 kg/ℓ
Chemical nature	ethyl silicate
Shelf life	≈ 24 months from production in the original sealed packaging
Warning	protect from frost, avoid direct exposure to sunlight and sources of heat
Temperature range for application	from +5 °C to +30 °C
Humidity of the substrate	≤ 6%
Coverage per single coat	≈ 0.2 – 0.4 ℓ/m²

Values taken at +20 °C, 65% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

PERFORMANCE

HIGH-TECH	
Vapour transpiration μ	does not alter the μ of treated substrate
Wettability	high penetration of absorbent substrates
Penetration	
- 0.4 ℓ/m² on clay bricks	≈ 4 mm
- 0.2 ℓ/m² on absorbent stone	≈ 2 mm

Values taken at +20 °C, 65% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

WARNING

- **Product for professional use**
- abide by any standards and national regulations
- use at temperatures between +5 °C and +30 °C
- use polyethylene sheets to protect parts not to be treated with the product (especially glass, aluminium etc.)
- protect the product from frost: store at a temperature above +5 °C
- do not lay on gypsum or on surfaces subject to pressure
- do not apply on dirty or loose surfaces
- if necessary, ask for the safety data sheet
- for any other issues, contact the Kerakoll Worldwide Global Service +39 0536 811 516 - globalservice@kerakoll.com

The Rating classifications refer to the GreenBuilding Rating® Manual 2013. This information was last updated in November 2020 (ref. GBR Data Report - 12.20); please note that additions and/or amendments may be made over time by KERAKOLL SpA, for the latest version, see www.kerakoll.com. KERAKOLL SpA shall therefore be liable for the validity, accuracy and updating of information provided only when taken directly from its institutional website. The technical data sheet given here is based on our technical and practical knowledge. As it is not possible for us to directly check the conditions in your building yards and the execution of the work, this information represents general indications that do not bind Kerakoll in any way. Therefore, it is advisable to perform a preliminary test to verify the suitability of the product for your purposes.



KERAKOLL
The GreenBuilding Company

KERAKOLL S.p.a.
Via dell'Artigianato, 9 - 41049 Sassuolo (MO) Italy
Tel +39 0536 816 511 - Fax +39 0536 816 581
info@kerakoll.com - www.kerakoll.com

tensid uk ltd

Product Data

PROSOCO Weather Seal Siloxane PD (Predilute)

Description and use

PROSOCO Weather Seal Siloxane PD is a ready to use, water based silane/siloxane water repellent. Designed for use on concrete and masonry surfaces, Siloxane PD penetrates more deeply than conventional water or solvent based water repellents. Low odour and alkaline stable, Siloxane PD is ideal for field or in plant application to colour sensitive concrete, GFRC, most masonry and stucco surfaces. Application equipment, window glass and areas affected from overspray are easily cleaned with soap and water.

Recommended as follows. Always test.

Substrate	Type		m ² per litre
Architectural Concrete Block	Smooth	Yes	1.5 – 6
	Split faced	Yes	
	Burnished	Yes	
	Ribbed	Yes	
Marble Travertine Limestone	Polished	No	N/A
	Unpolished	No	N/A
Granite	Polished	No	N/A
	Unpolished	Yes	6 – 10
Sandstone	Unpolished	Yes	2 – 6
Slate	Unpolished	Yes	7 – 11
Fired Clay	Brick	Yes	2 – 5
	Tile	Yes	
	Terracotta	Yes	
	Pavers	Yes	
Concrete	Block	Yes	3 - 7
	Brick	Yes	
	Tile	Yes	
	Precast Panels	Yes	
	Pavers	Yes	
	Cast in place	Yes	
GFRC	Smooth	Yes	3 - 11

Weather Seal Siloxane PD Volatile Organic Compound (VOC) content is less than 200 grams per litre.

Advantages

- Penetrates deeply to produce long lasting protection on vertical or horizontal surfaces.
- Low odour reduces risk of application to occupied buildings
- Alkaline stable – suitable for “green” concrete
- Ideal for field or in plant treatment of concrete or GFRC
- Easy soap and water cleanup from window glass, window frames and application equipment

Limitations

- Will not prevent water penetration through structural cracks, defects or open joints.
- Limited initial surface repellency
- When applied to pH neutral surfaces, optimal performance may take up to 14 days to develop.

Technical Data

Active substance:	Emulsion of silanes and oligomeric alkyl alkoxsiloxanes
Solids	7.0%
Form:	White milky liquid
Specific Gravity:	1.000
Flash point:	93°C
VOC:	<200grams/litre(ASTM D 3960)

Performance Tests

Laboratory testing has shown this product to be a singularly effective general purpose water repellent/chloride screen.

ASTM C97 Reduction of water absorption (compared to untreated control) – 95%

ASTM C140 Reduction of water absorption (compared to untreated control) – 94%

ASTM C67 Reduction of water absorption (compared to untreated control) – 94%

Rilem II Tube test 5.0ml tube – 0.0ml loss

Surface deterioration/discolouration – none

Penetration – 3-35mm

Resistance to:

Sunlight – excellent

Alkalinity – excellent

Surface appearance (after application) – no change

tensid uk ltd

Preparation

Protect surrounding surfaces and beware of wind drift.

Thoroughly clean the surface. Although Siloxane PD may be applied to slightly damp surfaces, best performance is achieved when applied to clean, visibly dry and absorbent surfaces. Excessive moisture will inhibit penetration and reduce the service life and performance of the treatment. Newly constructed and repointed surfaces should be cleaner and cured before application. Siloxane PD will not impair adhesion of most sealing and caulking compounds. Always test.

Equipment

Apply with a low compression sprayer, brush or roller. Ensure all containers and equipment used are clean and uncontaminated.

Pretesting

Always test before overall application to ensure suitability and desired results. Apply test area according to the following application procedures. Allow area to dry thoroughly before inspection and approval.

Dilutions

Do not dilute or alter material.

Application Instructions – Vertical Surfaces

For best results, apply Weather Seal siloxane PD wet on wet to a visibly dry and absorbent surfaces.

1. When applying by spray, apply in a saturating application from the bottom up. Apply sufficient material to create a 15 to 20 cm rundown below the spray contact point.
2. Allow the first application to penetrate the masonry surface for 5 to 10 minutes and then reapply in the same saturating manner. **Note:** less material will be required for the second application.
3. When using a brush or roller, apply uniformly using sufficient material to saturate the surface. Allow Weather Seal Siloxane PD to penetrate the masonry surface for 5 to 10 minutes. Brush out heavy runs and drips that do not penetrate.

Application Instructions – Horizontal Surfaces

1. Apply Weather Seal Siloxane PD in a single saturating application. Apply sufficient material so that surface remains wet for 2 to 3 minutes before penetrating.
2. Broom out all puddles thoroughly until they penetrate the surface.

Treated surfaces will be dry to touch within one hour. Protect surfaces from rainfall for a minimum 6 hours following treatment. Neutral pH surfaces may require several days to achieve full water repellent effectiveness.

Paint Adhesion

Surfaces treated with Weather Seal Siloxane PD may be coated with silicone emulsion paints and many oil based paints. Testing is always necessary to assure adhesion. Adhesion may be improved if surface is pressure rinsed and allowed to dry prior to application.

Adhesion of some cementitious coatings, plaster, stucco etc may be adversely affected. Such surface treatments should be installed and allowed to thoroughly cure before installation of Siloxane PD. Always test.

Coverage Rates

Coverage rates will vary according to surface porosity and texture.

Packing

1 x 25 litre plastic container.

Safety Information

May cause eye irritation. Wear suitable PPE - goggles, gloves to avoid splash to bare skin or eyes. Always refer to material safety data sheet before use.

Technical Data

Contains no hazardous ingredients greater than 1%.

Shelf Life

Weather Seal Siloxane PD may be stored for up to 1 year in a tightly sealed, unopened container.

This Product Data is compiled to be of assistance but is without guarantee. Users are responsible for safe working practices. Always refer to msds for full information before using this product.