Mount Anvil,
better city living

REMEDIATION VERIFICATION REPORT

Kampus, Aytoun Street, Manchester

Mount Anvil,
better city living

Revision History

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1. Introduction

1.1. General

This report has been prepared by Mount Anvil Limited as main contractor on the Kampus project, on behalf of Aytoun Street Developments Limited.

The report is intended to provide a record and verification of the remedial measures undertaken on the project. This version of the report includes the verification details of the foundations and raft slabs to Blocks C, E & F. Further details of the verification of the landscaping will follow on completion of the landscaping works.

1.2. Planning Conditions

The report is intended to address planning Condition 8(b) of planning application reference 112034/FO/2016/C2, the wording of which is included below.

Before the development hereby approved commences, a report (the Preliminary Risk Assessment) to identify and evaluate all potential sources and impacts of any ground contamination, groundwater contamination and/or ground gas relevant to the site shall be submitted to and approved in writing by the City Council as local planning authority. The Preliminary Risk Assessment shall conform to City Council's current guidance document (Planning Guidance in Relation to Ground Contamination).

In the event of the Preliminary Risk Assessment identifying risks which in the written opinion of the Local Planning Authority require further investigation, the development shall not commence until a scheme for the investigation of the site and the identification of remediation measures (the Site Investigation Proposal) has been submitted to and approved in writing by the City Council as local planning authority.

(a)The measures for investigating the site identified in the Site Investigation Proposal shall be carried out, before the development commences and a report prepared outlining what measures, if any, are required to remediate the land (the Site Investigation Report and/or Remediation Strategy) which shall be submitted to and approved in writing by the City Council as local planning authority.

b) When the development commences, the development shall be carried out in accordance with the previously agreed Remediation Strategy and a Completion/Verification Report shall be submitted to and approved in writing by the City Council as local planning authority.

In the event that ground contamination, groundwater contamination and/or ground gas, not previously identified, are found to be present on the site at any time before the development is occupied, then development shall cease and/or the development shall not be occupied until, a report outlining what measures, if any, are required to remediate the land (the Revised Remediation Strategy) is submitted to and approved in writing by the City Council as local planning authority and the development shall be carried out in accordance with the Revised Remediation Strategy, which shall take precedence over any Remediation Strategy or earlier Revised Remediation Strategy.

Reason - To ensure that the presence of or the potential for any contaminated land and/or groundwater is detected and appropriate remedial action is taken in the interests of public safety, pursuant to Section 11 of the National Planning Policy Framework and policy EN18 of the Core Strategy

Condition 8(a) was discharged prior to commencement of the works on 30th June 2017 (ref. CDN/17/0137)

1.3. Previous Reports

The following reports were submitted to the LPA in order to discharge condition 8(a):

- Site Investigation Factual Report, Kampus, Manchester, ECUS, Reference: AL/8080/160824/SI, Dated: September 2016.
- Buildings Civils Ground Design Note (BCG_DN-001), Kampus, Aytoun Street, Buro Happold Engineering, Reference: 034592, Dated: 26 May 2017.
- Ground Contamination Design Note (BCG_DN_002), Kampus, Aytoun Street, Buro Happold, Reference: 034592, Dated: 31 May 2017.
- Performance Specification - Gas membrane, Kampus, Buro Happold, Reference: 034592, Dated: 11 April 2017.

Buro Happold Design Notes 1 & 2 summarised the findings of the ECUS site investigation report and provided an outline remediation strategy in response.

2. Remediation and verification requirements

2.1. Remediation Requirements

In accordance with the recommendations of Buro Happold Design Note 2 and the BH Excavation and Filing Specification, the following remediation measures have been implemented:

- Localised removal of site materials to allow development
- Soft landscaping is minimal and localised; appropriate build up's for tree pits/planters are lined/separate from the existing material
- A gas protection membrane has been installed

2.2. Verification Requirements

This report includes the following verification of the remediation measures implemented on the project:

- Waste transfer records for the removal of made ground
- Confirmation from the sub-contractors that no additional contamination was found on site during the works
- Landscaping plans and sections showing the extent of soft landscaping, depths of topsoil and treatments of planters and tree pits.
- Records of imported topsoils and testing of topsoils
- Photographic record of earthworks
- Confirmation from sub-contractors that earthworks were undertaken in accordance with the BH Excavation and Filing Specification
- Confirmation of the installation of gas protection measures, including
    - Technical datasheet for the installed gas protection membrane
    - Typical membrane installation details
    - Cross sections through the foundations and ground slab
    - Installation check sheets
    - Installation certification
    - Photographic record of the installed membrane
- Details of the structural design of the slab.

2.3. Variations

Mount Anvil confirm that there were no unexpected findings during excavation of the site and the works were completed according to the design and specifications.

3. Remediation Verification

3.1. Removal of site materials

The post-demolition earthworks were carried out by JRL Group limited as part of their scope of works to complete the substructure and superstructure for the new buildings on the development.

JRL confirmed that no additional evidence of contamination or asbestos was found during excavation and earthworks. A letter of confirmation along with evidence of validation sampling has been included in Appendix 1.

Evidence of validation testing for site materials has been provided within Appendix 1. Validation testing of crushed concrete for use on site has also been provided, along with waste transfer records for the site.

3.2. Minimal soft landscaping

The landscaping design for the development is being carried out in accordance with the approved landscaping plans, submitted to Manchester City Council under condition 16a attached to planning approval 112034/FO/2016/C2.

The landscaping design includes localised soft landscaping areas within predominantly hard landscaped areas. Plans showing the extent of hard and soft landscaping, along with sections through the site and typical details of landscaping build-ups, tree pits and planters are included in Appendix 2.

Imported topsoils are being used to complete the scheme and validation testing of those materials are included within Appendix 3. Further evidence of the landscaping, including photographic records shall be provided on completion of the landscaping works.

3.3. Gas protection membrane installation

The installation of the gas protection membrane was carried out by UK Membranes Ltd on behalf of JRL Group Limited.

The membrane installed beneath the new raft foundations of the buildings is the Juta GP1 gas membrane. Joints and junctions with pipes, cylinders and pile caps have been sealed with self-adhesive and heat-welded in accordance with manufacturers instructions. Records of inspections prior to hand-over were kept, recording the number of penetrations through the membrane, confirmation that the membrane was probe tested, and the extent to which the works were completed. A certificate of conformity has been provided to confirm that the gas membrane was installed to the required standard.

The technical datasheet, typical details, inspection sheets and certificates of conformity are included within Appendix 4.

The structural design warranted a 1200mm deep raft foundation underneath large sections of the building. The full extent of the slab depths can be seen on the structural drawings within Appendix 5.

4. Conclusion

Based on the evidence provided by their sub contractors, Mount Anvil are satisfied that the remediation measures have been completed and verified in accordance with the guidelines set out in Buro Happold Design Note 002.

No further remediation measures are considered necessary for Blocks C, E & F. Final verification of the landscaping design shall be provided on completion of the works.

5. Appendices

Appendix 1

Contamination declaration and sampling records
Validation testing of soils
Validation testing of crushed concrete
Waste Transfer records

Appendix 2

Exterior Architecture landscaping drawings

Appendix 3

Records of imported soils
Validation testing of topsoil
Validation testing of sand
Soil specification

Appendix 4

Juta GP1 technical datasheet
Juta GP1 typical details
Gas membrane inspection sheets
Gas membrane certificates of conformity

Appendix 5

Structural drawings

Appendix 6

Photographic Records

Appendix 1A: Contamination declaration and sampling records

Appendix 1B: Validation Testing of Soils

Appendix 1C: Validation testing of crushed concrete

Appendix 1D: Waste Transfer records

Appendix 2: Exterior Architecture landscaping drawings

Appendix 3A: Records of imported topsoils

Appendix 3B: Validation testing of imported topsoils

Appendix 3C: Validation testing of imported sand

Appendix 3D: Soil Specification

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Appendix 4B: Juta GP1 typical details

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Appendix 4D: Gas membrane certificates of conformity

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Appendix 6: Photographic Records

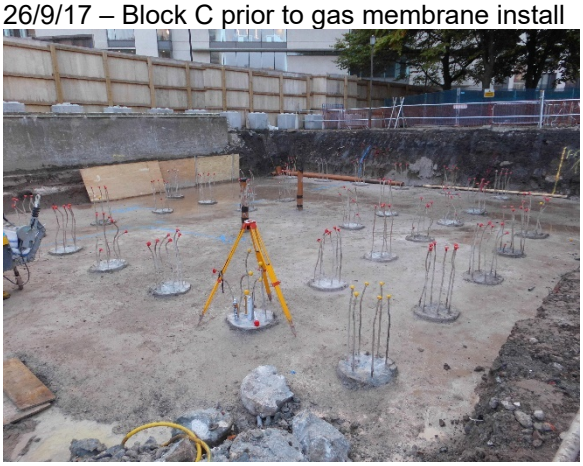
19/7/17 – Block C Pile mat laid

19/7/17 – Block C Pile mat laid

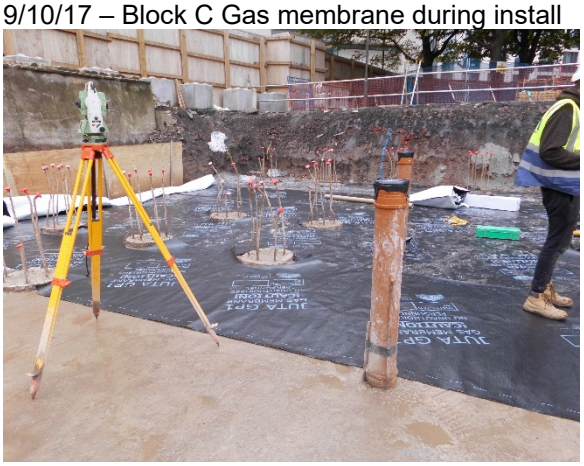
19/7/17 – Block C Pile mat laid

20/7/17 – Block C Piling underway

26/9/17 – Block C prior to gas membrane install

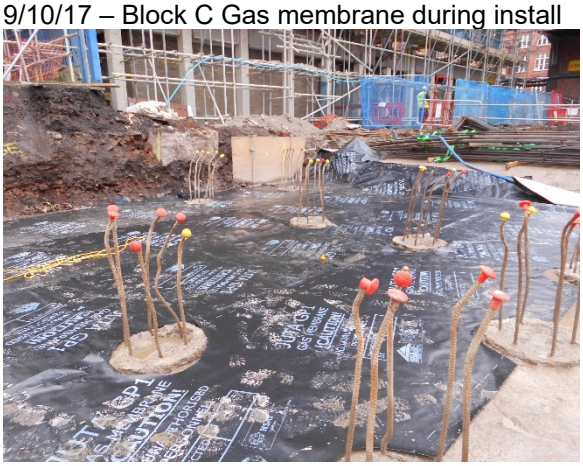


9/10/17 – Block C Gas membrane during install



9/10/17 – Block C Gas membrane during install

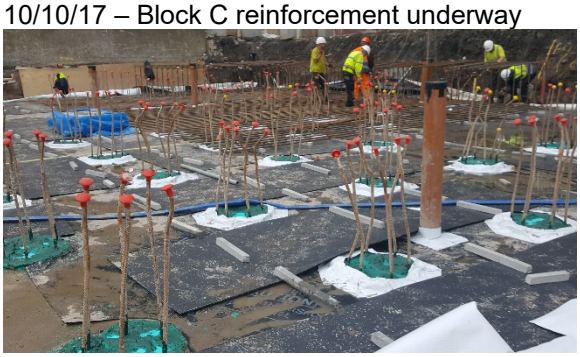
9/10/17 – Block C Gas membrane during install



10/10/17 – Block C penetrations sealed

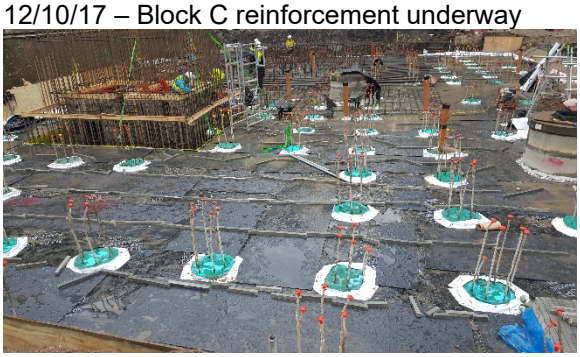
12/10/17 – Block C penetrations sealed

10/10/17 – Block C reinforcement underway



12/10/17 – Block C reinforcement underway

12/10/17 – Block C reinforcement underway



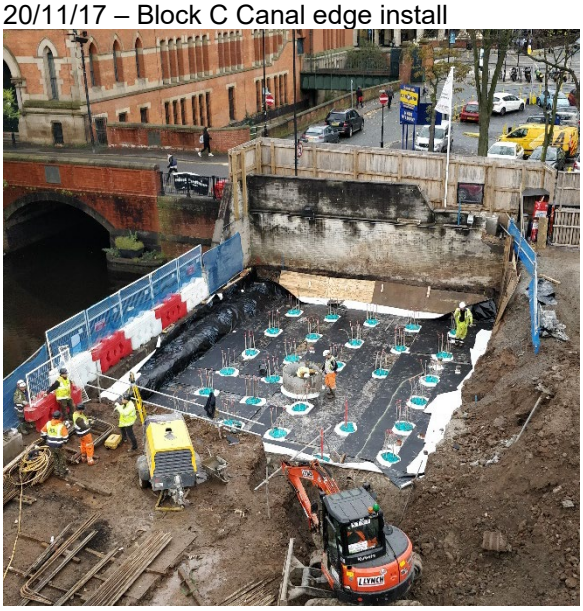
13/10/17 – Block C reinforcement underway

10/11/17 – Attenuation tank excavation

14/11/17 – Attenuation tank installation

22/11/17 – Attenuation tank infill

20/11/17 – Block C Canal edge install



20/11/17 – Block C Canal edge install

20/11/17 – Block C Canal edge install

18/12/17 – Block C canal edge concrete slab

18/12/17 – Block C Concrete slab edge

22/11/17 – Block F pile mat laid

22/11/17 – Block F pile mat laid

26/4/18 - Block F – Dukes Tunnel

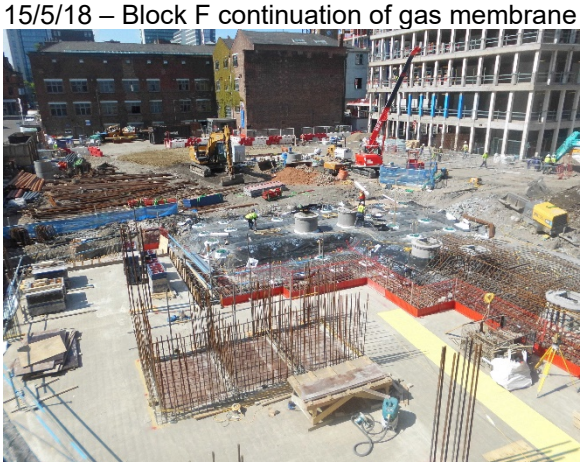
1/5/18 – Block F Gas membrane install

1/5/18 – Block F ground works progress

14/5/18 – Block F Concrete slab pour

14/5/18 – Block F Concrete slab pour

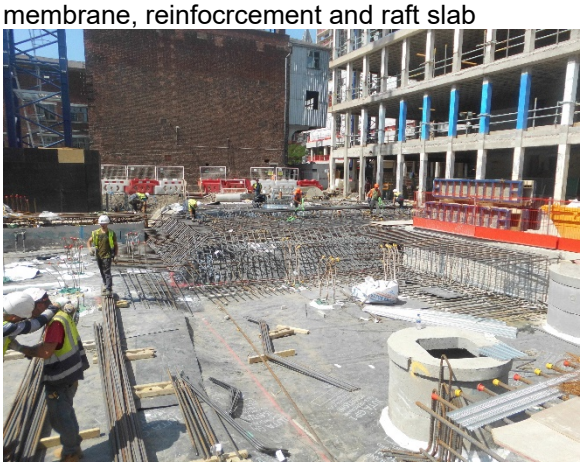
15/5/18 – Block F continuation of gas membrane



30/5/18 – Block F continuation of gas membrane

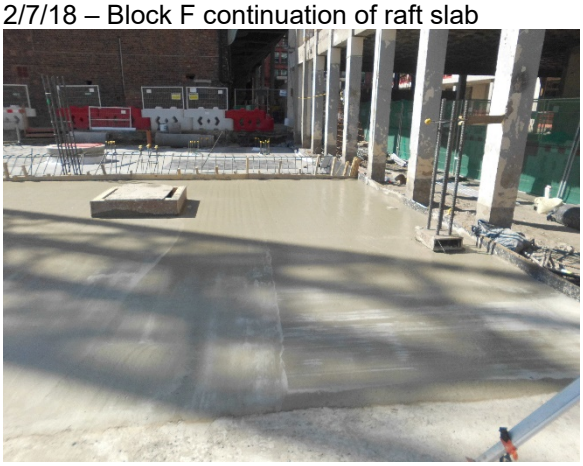
14/6/18 – Block F continuation of gas membrane, and raft slab

28/6/18 – Block F continuation of gas membrane, reinfocrcement and raft slab



28/6/18 – Block F continuation of gas membrane, reinfocrcement and raft slab

2/7/18 – Block F continuation of raft slab



4/7/18 – Block F continuation of gas membrane

9/7/18 – Block F continuation of gas membrane, reinfocrcement and raft slab

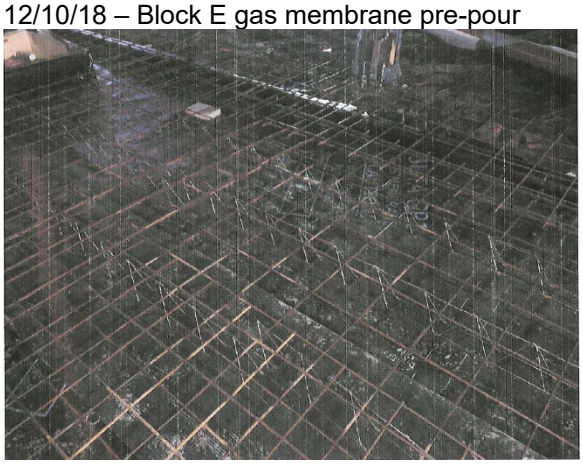
10/7/18 – Block F continuation of gas membrane, reinfocrcement and raft slab

10/7/18 – Block F continuation of gas membrane, reinfocrcement and raft slab

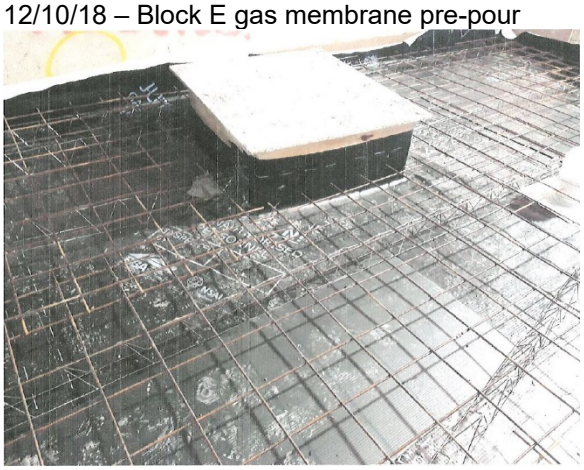
18/7/18 – Block F continuation of gas membrane, reinfocrcement and raft slab

10/8/18 – Block F continuation of gas membrane, reinfocrcement and raft slab

12/10/18 – Block E gas membrane pre-pour

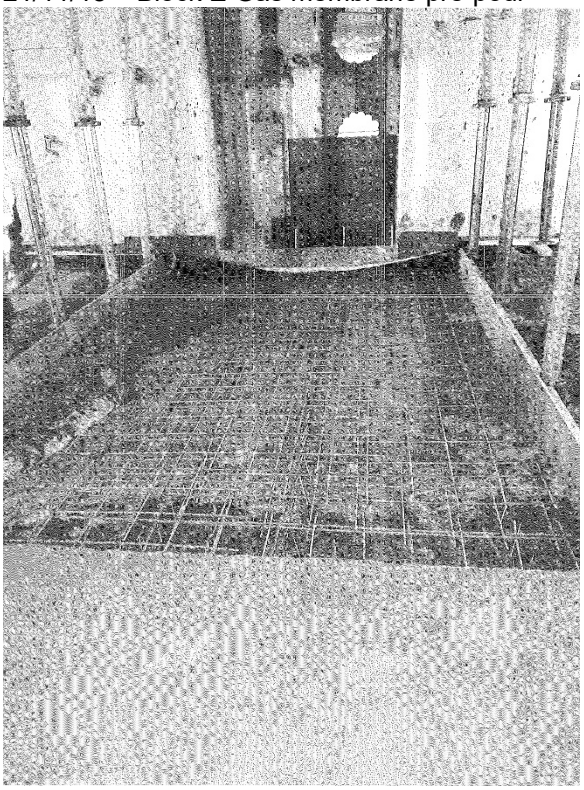


12/10/18 – Block E gas membrane pre-pour

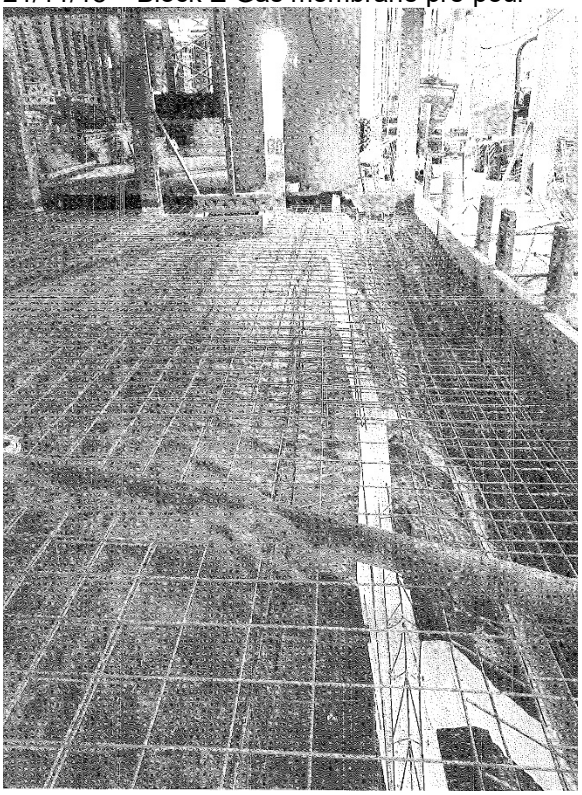


12/10/18 – Block E gas membrane pre-pour

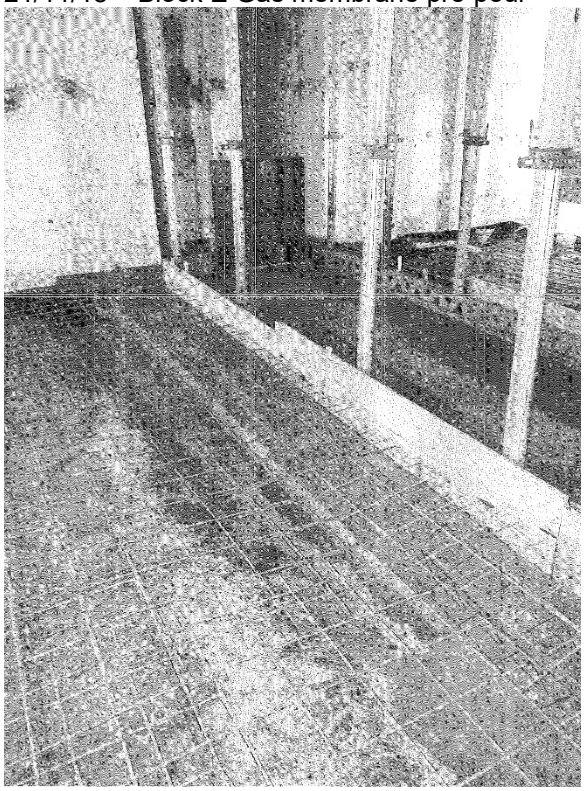
21/11/18 – Block E Gas membrane pre-pour



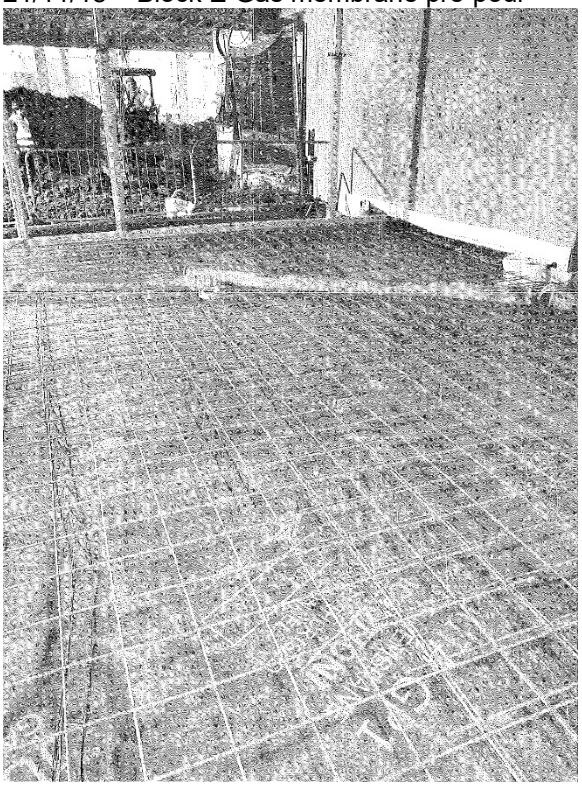
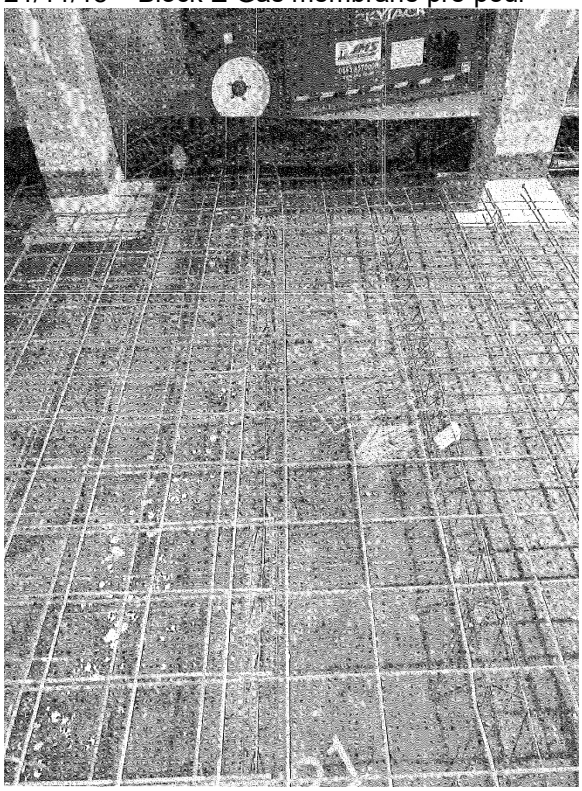
21/11/18 – Block E Gas membrane pre-pour



21/11/18 – Block E Gas membrane pre-pour



21/11/18 – Block E Gas membrane pre-pour



21/11/18 – Block E Gas membrane pre-pour