

**FLOOD RISK ASSESSMENT
FOR
59-61 WEST STREET,
HAVANT, HANTS**



FLOOD RISK ASSESSMENT FOR 59-61 WEST STREET, HAVANT, HANTS

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1 INTRODUCTION

- 1.1 Instructions were received from Mrs Sarah Mulley to undertake a Flood Risk Assessment (FRA) in support of a planning application for redevelopment and refurbishment of a light industrial builders yard and offices at 59-61 West Street, Havant, Hants to 24 residential dwellings.
- 1.2 The assessment has been undertaken in compliance with National Planning Policy Framework, Chapter 10, Meeting the challenge of climate change, flooding and coastal change.
- 1.3 This assessment has been prepared by A P Traves BSc CEng MStructE MCIHT
- 1.4 The client's attention is drawn to the conditions and limitations contained in Appendix D.

2 DEVELOPMENT DESCRIPTION & LOCATION

- 2.1 The development site comprises 0.4 Ha of existing light industrial builders yard and offices at 59-61 West Street, Havant, Hants (grid reference SU 714 062). The land is identified on HGP Architects drawing number 12.071_001 rev - a copy of which is contained in Appendix A of this report.
- 2.2 The site use currently comprises a builders yard, workshops/stores and offices. Historically the site has previously supported a glove factory and parchment works.
- 2.3 It is proposed to redevelop the site for 24 residential dwellings, 8 within a refurbishment of the old glove factory (building towards the centre of West Street frontage) and the remaining 16 as new build. The proposed layout is identified on HGP Architects drawing number 12.071.005 rev -, a copy of which is contained in Appendix A of this report.

3 LOCAL DEVELOPMENT DOCUMENTS & STRATEGIC FLOOD RISK ASSESSMENT

- 3.1 The Partnership for Urban South Hampshire (PUSH) Strategic Flood Risk Assessment (SFRA) has been reviewed and this indicates the following. Copies are contained in the Appendix.
- 3.2 SFRA map set 1C indicates the site is not in an area benefiting from flood defences.
- 3.3 SFRA map set 1D indicates the site is not in a breach risk area.
- 3.4 SFRA map set 1E indicates the site lies in 2115_{AD} Climate change FZ3.
- 3.5 SFRA map set 1F2 indicates the site overlies high permeability bedrock but is not in an historic groundwater flooding area.

- 3.6 SFRA map set 1F5 indicates no observed sewer flooding incidents at the site.
- 3.7 Flood mapping and level data has also been obtained from the EA and is contained in the Appendix. This indicates the following:
- 3.8 The EA mapping indicates the site is in FZ1 and that the main river bordering the western side of the site is FZ3. The flood modelling levels associated with this mapping are indicated for the channel adjacent the northwest corner of the site to be:
- | | |
|----------------------------|-----------|
| Current 1% AEP | 6.79m AOD |
| 2113 _{AD} 1 % AEP | 6.80m AOD |
- 3.9 Reference has also been made to EA web mapping which indicates the following:
- 3.10 The EA mapping indicates the site is not in an area at risk of flooding from reservoirs.
- 3.11 The EA mapping indicates the site is located an inner Source Protection Zone SPZ1.
- 3.12 The EA mapping indicates the site is in a 'Not at Risk Area' for surface water drinking water protected areas, and is not within a safeguarded zone for drinking water from surface water.
- 3.13 The EA mapping indicates the site lies in a groundwater safeguard zone.

4 CATCHMENT FLOOD MANAGEMENT & SHORELINE MANAGEMENT PLANS

- 4.1 The site is at an elevation of some 7.5m AOD and is remote from the influence of tidal flooding. Shoreline Management Plans are not applicable to this location.
- 4.2 The South East Hampshire Catchment Flood Management Plan summary – December 2009 (CFMP) indicates the site falls within Policy sub-area 5 for Havant and Denmead. The CFMP states that Policy 4 is the preferred policy approach:
- *"Areas of low to moderate or high flood risk where we are already managing the flood risk effectively but where we may need to take further actions to keep pace with climate change. This policy will tend to be applied where the risks are currently deemed to be appropriately managed, but where the risk of flooding is expected to significantly rise in the future. In this case we would need to do more in the future to contain what would otherwise be increasing risk. Taking further action to reduce risk will require further appraisal to assess whether there are socially and environmentally sustainable technically viable and economically justified options."*
- 4.3 Flooding in Havant is predominantly from a combination of high groundwater levels and run-off from heavy rainfall. The historic flood record suggests that surface water flooding is of great concern and more frequent in nature than fluvial flooding, particularly in Havant.
- 4.4 The CFMP aims to:
- improve channel capacity and conveyance through Havant

- Improve maintenance to reduce blockages of grills
- Expect new developments to manage drainage so there is no net increase in flood risk

4.5 Overall the CFMP does not present any issues that would prohibit the development of this site with respect to flood issues provided the surface water drainage is based on SuDS principles.

5 CATCHMENT DATA

5.1 The Lavant Stream has an NFRA gauging station (ID 42025) upstream of the site at Leigh Park (Grid Ref 41 (SU) 721 072)

- Total catchment 54.5 km²
- Q95 exceedance 0.003 m³/sec
- Q10 exceedance 0.154 m³/sec

5.2 The gauging station catchment description indicates a largely impervious catchment, substantially urbanised below the head waters.

5.3 BGS mapping indicates the site geology to comprise superficial deposits of Head (Clayey gravel) overlying Upper Chalk.

5.4 At the site location the depth of superficial deposits over the Chalk is low. The site lies immediately adjacent the Portsmouth Water Brockhampton Springs works. There are 9 springs between 10 and 150m west of the site and one 10m south of the site. The location of these is shown on the Portsmouth Water plan in the Appendix. The springs are used as the primary drinking water supply for the local area and the site is located in SPZ1 (Source Protection Zone).

5.5 A desk study was undertaken by Wilson Bailey (ref J12129). This identifies the sensitivity of the groundwater receptor together with potential contaminative activities sources of parchment works, tannery, glove factory, fuel storage and workshops using oils and solvents. The current pathway to the shallow groundwater would be restricted by the degree of hard surfacing insitu at present. The construction works would increase the risk of potential contaminants mobilising and impacting upon the groundwater. The report also notes that routine monitoring by Portsmouth Water is not understood to have indicated concentrations of concern of an assumed wide range of potential ground contaminants.

6 SEWERAGE AUTHORITY DATA

6.1 The site is connected to the 225mm DN public foul sewer running under West Street which affronts the site. (Refer to Southern Water plan in the Appendix)

6.2 There is also a short length (70m) of 150-225mm DN surface water sewer beneath the West Street frontage, running East to West and discharging into the 300 x 6000mm culvert passing Lavant Stream mill race beneath West Street. It is thought that the site (save for

the elements of roof which discharge direct into the mill race) discharges to this surface water sewer. The old glove factory roof discharges to the highway and given the high groundwater levels and immediate proximity of the mill race it is certain that site surface water run-off has always discharged into the mill race within a few minutes of rainfall. Whether this be by direct discharge, surface water flow, discharge out to the highway and then into the surface water sewer, or discharge direct into the surface water sewer is somewhat academic. (see also 7.3)

7 WALKOVER SURVEY

- 7.1 The site is fully developed land, comprising a builders yard with offices, workshops, storage and hard standing. There are a few small areas of grass, gravel and unmade surface.
- 7.2 The majority of the site is walled or bounded by sheet metal fencing, providing an impervious perimeter save for the main and secondary entrance gates out to West Street.
- 7.3 The yard areas between the buildings are relatively flat (approx. 9.95-10.15m Local Datum- approx. 7.35-7.55m above OS datum) There are a series of manhole covers to both the eastern and western yards. Some of the RWPs discharge to the yard and public footway (historic Glove factory RWPs) others discharge to underground pipework and roof elements abutting the Lavant mill race bordering the western side of the site and some discharge direct to the watercourse. It is not known if any of the run-off entering the piped network on site discharges to soakaways. This is however considered unlikely due to the high groundwater levels beneath the site and low relative elevation above the Lavant stream mill race.
- 7.4 The land south of the site comprises mainly commercial light industrial and retail premises and is generally in excess of 95% paved/roofed.
- 7.5 The land to the north and east of the site comprises a mixture of residential properties and commercial properties. The residential properties have some areas of rear garden, but otherwise much of the area is heavily paved/roofed.
- 7.6 The land to the west of the site comprises residential dwellings along the West Street frontage and the Portsmouth Water Company Brockhampton springs waterworks immediately to the west of Lavant stream mill race. (see also 5.4)
- 7.7 The Lavant Stream (main channel) is located approximately 50m west of the site and flows from north to south. The off take to the mill race channel is located approximately 100m north east of the site. The mill race channel runs east-west parallel to the site and approximately 50m north of the site then becomes culverted as it turns south. It issues on the south side of West Street and forms the western boundary of the site and becomes culverted again from adjacent the south west corner of the site. The open channel section alongside the site has a dished concrete invert and is 'walled in' by the flank wall of the buildings on site, the Portsmouth Water boundary wall and the wall affronting West Street. There is pedestrian access to a trash screen at the southern end of this open channel

section. The main channel also has a trash screen as it becomes culverted to pass beneath West Street.

8 SOURCE-PATHWAY-RECEPTOR ASSESSMENTS

- 8.1 The site is at an elevation of approximately 7.5m AOD and remote from the effects of tidal flooding. The site is not therefore at risk of tidal flooding.
- 8.2 EA mapping indicates that the site is wholly FZ1. The site is therefore at low risk of fluvial flooding.
- 8.3 The site is not located in the vicinity of any reservoirs and EA flood risk from reservoirs mapping does not indicate any reservoir flood risk to the site.
- 8.4 The site is not located in the vicinity of any previous sewer flooding incidents. A comparison of existing and proposed foul discharge indicates the development would not place any additional load on the current network
- 8.5 The bedrock permeability for the underlying Chalk is considered to be high. The groundwater table is in close proximity to the surface as indicated by the Brockhampton Springs serving the adjacent water works. The site is however elevated slightly above the adjacent ground levels and the issue from the springs is tapped and continuously removed by the operations of the adjacent waterworks. The site current has no basement constructions and is not therefore considered to be at risk of ground water flooding, as no basement constructions are proposed.
- 8.6 The SFRA and EA mapping indicates that parts of West Street, including that to the front of the site is at medium risk of surface water flooding-pluvial. It also indicates that the surface water flooding-pluvial low risk area extends westwards to approximately the junction with union Park Way and eastwards to approximately the junction with Park Road North. It also indicates the low risk area to include the site. Comparison of the flood extents for this mapping with the topographic survey and OS levels suggests:
- | | |
|-------------|----------------------|
| Medium risk | 7.35m AOD (9.95m LD) |
| Low risk | 7.6m AOD (10.2m LD) |
- Surface water flooding, rather than fluvial flooding reflects the ability of run-off to be able to acquire the watercourses rather than overflow out from the watercourses (fluvial). In practice water would stand on West Street when mill race water levels exceed highway levels. Water in this area of West Street would can only flow away above ground once this reaches the West Street/Brockhampton Lane junction level (approx. 7.55m AOD, 10.15m LD) as conveyance is otherwise constrained by buildings and boundary walls present.
- 8.7 The critical flood source is surface water pluvial flooding and run-off within the site and overland flow path dictated by local topography. The site surface water system will accord with the principles of CIRIA C697. The layout of the development would allow the central parking area and new build FFLs to be set appropriately to avoid the surface water-pluvial flood risk and allow DDA compliant access from within the development rather than from

the West Street frontage. It is noted that whilst the old glove factory (to be retained and refurbished) has a current GFL of 10.07m LD (approx. 7.45m AOD) it has no access off West Street, is to be accessed from the central car park area and has a storey height of some 3.18m to 1ST FL. There are no records of any previous flooding of this building. It would therefore appear that there is likely to be geometric scope to raise or over floor the existing ground floor construction to reduce potential risk from more extreme surface water-pluvial flooding.

- 8.8 The new flood receptors of the development would be.
- new dwellings
 - residents in the dwellings
- 8.9 The proposed development and existing site classifications to Table 2 of NPPF Technical Guidance are as follows:
- | | |
|----------------------------|-----------------|
| • Existing industrial use | Less vulnerable |
| • Proposed residential use | More vulnerable |

9 **FLOOD PROBABILITY**

- 9.1 The Environment Agency (EA) flood zones shown on the outputs and included in the Appendix represents current best estimates of zone 2 and zone 3 flooding as defined in Table 1 of the Technical Guidance to the National Planning Policy Framework. It does not take account of potential climate change impacts.
- Zone 2 Medium Probability of tidal flooding (0.5%-0.1%)
 - Zone 3a High Probability of tidal flooding (>1%)
 - Zone 3b Functional Floodplain (>5% probability of flooding)
- The flood map does not differentiate between zones 3a and 3b.
Zone 3b is only considered appropriate for water-compatible development
Zone 3a is additionally considered appropriate for less vulnerable uses.
- 9.2 The site is located in flood Zone 1 (low risk <0.1%)

10 **CLIMATE CHANGE**

- 10.1 Assuming a design life of 100 years, increase in rainfall (Table 5 of NPPF Technical Guidance.) due to climate change is +30% to current rates. The SFRA mapping indicates the site would fall into FZ3 by 2115_{AD}.
- 10.2 Surface water drainage strategy is discussed in section 11. The volumes and flows for this strategy have been derived in accordance with CIRIA C697 and include for climate change effects.

11 DETAILED DEVELOPMENT PROPOSALS & SURFACE WATER DRAINAGE STRATEGY

- 11.1 It is currently assumed in this assessment that due to the high groundwater levels, the potential contaminants indicated by the desk study and from the immediate proximity of the adjacent water works, fed from surface springs (SPZ1 zoning) that discharge to ground by infiltration SuDS would not be permitted. Therefore the proposed strategy does not utilise infiltration SuDS. However if the potential contamination is not present or could be appropriately remediated then shallow infiltration SuDS such as permeable pavements may be accepted, particularly if constructed with a bio-membrane such as Imbitex ® . the strategy below should therefore be reviewed following the outcome of site soils investigations and any remediation.
- 11.2 Given the limited elevation of the site above the surface water sewer in West Street and above the invert of the adjacent Lavant Stream mill race options for storage are extremely limited. At times of high rainfall/high flow water levels in the mill race will rise. Furthermore, and as discussed in paragraph 7.7, at present all run-off from the site enters the mill race virtually instantaneously as this is the receptor of all the surface water discharge with a transmission distance of a few metres. At present the site is approximately 90% hard surfaced. The proposed development will reduce this to approximately 70%. Therefore without specific storage the development would provide betterment to the current run-off regime. In practice hard SuDS storage options will be limited to oversized pipes or sealed sub-base replacement systems. The spatial plan availability for areas to install this will be limited by the need for utility distribution corridors, root zones for the landscape planting and potential cultivation depths within the gardens. The surface water strategy therefore examines storage provision and discharge rates against both the existing arrangement and a hypothetical greenfield scenario.
- 11.3 Similar to above there is limited scope to address discharge water quality. As identified in paragraph 5.5 the indications from the reported routine testing by Portsmouth Water suggest there is not currently a groundwater quality problem. The proposed residential end use is a lower risk than the current and historic light industrial use. The potential risk is that the construction process may mobilise potential existing material or expose it to percolation from the surface in areas currently covered by surfacing.
- 11.4 CIRIA C697 SUDs Manual Table 3.3 identifies the number of treatment train components generally required for various usage types. This varies according to the sensitivity of the receiving waters. A discharge water quality assessment tool is provided on the UK Sustainable Drainage page of HR Wallingford's website at <http://geoservergisweb2.hrwallingford.co.uk/uksd/>
Hereafter referred to as the UKSuds WQ assessment. This identifies that roof run-off generally requires only 1 treatment stage and residential roads require 2. As discussed above, without the ability to utilise infiltration SuDS, and with the site constraints effectively limiting options to hard SuDS then options to deal with water quality are very constrained. It is therefore proposed that runoff from parking areas would be collected by gulleys fitted with Smart Sponge® or similar technology and then passed through an oil/silt interceptor. The roof water would generally connect to the system upstream of the interceptor. The RWPs

affronting West Street would continue to discharge direct downstream of the interceptor. The existing frontage RWP's to the glove factory would be left intact as part of the historic building fabric.

- 11.4 Assessments have been made for the site using both CIRIA C697 brownfield assessment and hypothetical greenfield assessment using EA research and development technical report W5-074/A/TR/1 rev E January 2012, Preliminary Rainfall Runoff Management for Developments (W5-revE):

- Form ASV1 greenfield estimation of peak flow rate of run-off
- Form ASV2 assessment of attenuation storage volume
- Form LTV initial sizing of long term storage volume
- Form TV initial sizing of treatment volume

A copy of these assessments is contained in Appendix C to this flood risk assessment.

- 11.5 A class 3 run-off potential has been used for the site soil attribute, based on the Winter Rainfall Acceptance Potential (WRAP).

- 11.6 The W5 rev E assessment is contained Appendix C but is academic in view of the small size of the site (0.4 Ha << 6 Ha approx. threshold) and the practicalities of achieving an operationally viable discharge of less than 5 l/sec. The key value is that the assessment indicates a 100 year attenuation storage requirement of around 77 m³.

- 11.7 A brownfield assessment has been made in accordance with CIRIA C697. This indicates the following raw pre and post development comparative figures:

	<u>Pre-development</u>	<u>Post development</u>	<u>Reduction</u>
• Q ₁ peak flows (l/s)	94.3	64.3	30.0
• Q ₁₀₀ peak flow (l/s)	301.3	205.7	95.6
• V _{100 6hr} (m ³)	303.3	260.0	43.3

- 11.8 There will be no increase in post development run-off as there is a net reduction in hard surfacing irrespective of other parameters.

- 11.9 A calculation assessing the required storage for the site is also contained in Appendix C. This uses the 5.0 l/sec minimum throttle rate directed by W5 rev E and Code for Sustainable Homes. This shows that the critical event is the 2 hour storm. This generates a requirement of 106 m³ of storage regulated by a 5.0 l/sec outlet throttle. This accords with the approximate 77 m³ value discussed in paragraph 11.6. If infiltration were to be permitted these figures would reduce accordingly.

- 11.10 The yield demand ratio for non-potable rainwater harvesting in domestic properties of this size is not suited to deriving storage and flow regulation benefit to surface water discharge as the tanks would need to be of an adverse size. Rainwater harvesting could be installed for other purposes but as discussed above would not make any material contribution to regulation of critical run-off.

- 11.11 Water butts should be installed to intercept roof water run-off. These will reduce the annual volume of surface water discharge but will not make any material contribution to regulation

of critical run-off as these tend to be full during winter months as there is minimal demand for garden irrigation in these months.

11.12 In summary source control will be provided by:

- Reduction in hard surfacing.
- Provision of water butts as outlined in paragraphs 11.11
- Underground storage and attenuation throttle as outlined in paragraphs 11.6-11.9

11.13 Overall the main principle of the surface water drainage strategy is that:

- The redevelopment provides betterment to reduce current discharge volumes and rates
- Due to high ground water levels, SPZ1 status and potential contaminated soils infiltration has been ruled out at present so hard SuDS storage and an attenuation throttle is proposed
- The site is too small to throttle discharge to impractically small levels and will therefore be limited to 5 l/sec
- detailed design will accord with the requirements of CIRIA C697 SUDs Manual.

11.14 The SUDS treatment train is also required to address discharge water quality.

11.15 There are not considered to be any potential pollution risk hot spots from the proposed usage comprising residential roofs and a significant reduction in the paving/parking area and nature of use. As discussed in the foregoing paragraphs the surface water solutions for the site is hard SuDS storage and throttling system.

11.16 Pavement gullies should be fitted with silt traps and 'Smart Sponge' ® or similar products which would provide the appropriate level of treatment to deal with the low level of hydrocarbons spillage risk for the development. The attenuation storage should also be fitted with a silt sump.

11.17 The proposed solution is independent of any potential soil contamination. The geo-environmental engineer will advise on any measures required outside of formally drained areas ie garden spaces.

11.18 Given the small size of the site and the scope for using other forms of treatment infrastructure assessment using UKSuDS water quality tool is inappropriate. It is however clear that:

- There is a reduction in the usage risk level by increased grass area, increased roof area and significant reduction in vehicular parking area and particularly a change in use from light industrial to residential.
- There is a decrease in the peak discharge rate and discharge volume
- There is an increase in the treatment quality infrastructure.
- The proposals provide significant benefit and will significantly improve discharge quality as much as practically possible and reasonable. The development is sufficiently large enough that a oils interceptor could possibly be considered rather than smart sponge ®. However this is unlikely to be warranted unless there is a risk of an upward path developing from any potential contaminated soils beneath the site.

12 SEQUENTIAL & EXCEPTIONS TESTS

- 12.1 The site is located within FZ1. The development therefore accords with paragraph 4 of the Technical Guidance to the NPPF. The proposals are therefore considered to meet the sequential test.
- 12.2 Application of the Exceptions Test is not required.

13 FLOOD RISK MANAGEMENT MEASURES

- 13.1 The source pathway receptor assessment is contained in Chapter 8.
- 13.2 Paragraph 8.7 identifies that management of the overland flow from surface run-off is the governing flood source. The management of the storage and conveyance of these volumes and flows is provided for by the surface water strategy set out in Chapter 11. The strategy accords with CIRIA C697 SUDs Manual.
- 13.3 Paragraph 8.7 identifies that there appears to be geometric potential to raise or over floor the existing glove factory ground floor. This is recommended if possible as it is acknowledged that the building has some historic value.
- 13.4 The surface water strategy betters the existing run-off and infiltration regime. There will therefore be no adverse impact on flood flow rates outside the site.

14 OFF SITE IMPACTS

- 14.1 The surface water strategy betters the existing run-off and infiltration regime. There will therefore be no adverse impact on flood flow rates outside the site. The reduction in run-off rates and volumes will provide net betterment and an overall reduction in flood risk.

15 RESIDUAL RISKS

- 15.1 The proposed surface water strategy for the development provides for flood events up to 1:100 year 2013_{AD} +30% rainfall. The residual flood risk is therefore events in excess of 1:100 year 2013_{AD} +30% rainfall

APPENDIX A:

Existing & Proposed Site Layout



Aerial view on site



Main channel and trash screen below offtake and just upstream of West Street



Mill race off take(LHS) from main channel



View along mill race just below offtake



Looking up mill race alongside site (site = RHS buildings)



Trash screen adjacent SW corner of site



West Street frontage (eastern half)



West Street frontage (western half)



Western yard area on site



Eastern yard area on site

APPENDIX B:
**SFRA Map Data and EA Data
& Sewer Data**

APPENDIX C:
Assessment calculations

APPENDIX D:
Conditions & Limitations

OPUS

ENGINEER'S INSPECTION

CONDITIONS AND LIMITATIONS

1. The report is a record of a visual inspection carried out by, or under the direction of a Chartered Structural Engineer and must not be misinterpreted as a Structural Survey such as would be carried out by a Chartered Surveyor. The report is not a Valuation Survey.
2. The inspection is strictly limited to the items requested and these will be detailed in Clause 1 of the report. No consideration will be given to any other aspects or parts of the building.
3. The report is confidential to the Client(s) stated in Clause 1 and has been prepared to their instructions for their own purposes only and it is not permitted to disclose this report to any other parties (except the Clients own Solicitors, Surveyors, Building Societies or Estate Agents) without the prior consent of Opus.
4. The copyright of this report remains the property of Opus.
5. No liability for the contents of this report is accepted to any parties other than the Client(s) stated in Clause 1.1. No parties other than the client stated in Clause 1.1 should rely upon this report.
6. Unless specifically stated otherwise:-
 - a) Trial holes will not be excavated prior to the preparation of the report and the depth and construction of the foundations and type of sub-soil will not be inspected.
 - b) All external observations will be carried out by eye from the ground level only. Internal inspection is made within the limits of ready accessibility and it is not normal practice to lift floor coverings or floor boards, remove fixtures, panels or plaster, or move heavy items of furniture or bulky goods or materials.
 - c) No inspection will be made of any roof voids, floor joists, wall cavities, drainage pipework or any other hidden or inaccessible parts.
 - d) No timbers will be checked for damp, rot, infestation by wood-boring insects or other defects.
 - e) It should not be construed that any parts of the construction comply with the requirements of the Building Regulations Act or standard practice either current or as current at the time of original construction. No enquiries to any Authorities will be made.
 - f) No testing or enquiries into the presence of or susceptibility to pollution, contamination, radiation, methane, radon or other gases or hazardous substances has been carried out.
7. Unless specifically stated otherwise in the report, any recommendations for works given in the report are outline only and are to be confirmed or modified as appropriate at detailed design stage.
8. Where trial holes are specifically included in our instructions the condition of the footing and the founding soil relates only to the point of excavation and does not necessarily confirm a continuation of the same conditions throughout the non-inspected areas of the structure. Whilst such trial pits will usually provide a reasonable indication as to the general state of the foundations and ground conditions, these can not be determined with complete certainty.
9. Under the Construction (Design & Management) Regulations latest edition, the Client has obligations for ensuring Health and Safety arising from any construction work. If it is proposed to proceed with construction work based upon information or recommendations contained in this report, these regulations probably apply. Further details of any issues arising from our report or the Clients obligations generally are available on request.
10. Unless dealt with more specifically above the Association of Consulting Engineers Conditions of Engagement Short Form Agreement 2002 apply.