Environmental
Geotechnical
Specialists

RGS

PHASE 3

REMEDIATION STRATEGY REPORT

job number	C2446/22/E/4492
date	September 2022
site address	LandAdjacent to Holmfirth Fresh Fish, Berry Bank Lane, Holmfirth, HD9 7LN
written by	S. Alexander
checked by	R. Palmer
issued by	S. Alexander

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<ENVIRONMENTAL><GEOTECHNICAL>

Contents

Phase 3: Remediation Statement

Location:	Land Adjacent to Holmfirth Fresh Fish, Berry Bank Lane, Holmfirth,HD9 7LN
For:	Mr G & R Bowden
Consultants:	Hinchcliffe Architecture & Design Ltd
Report No.	C2446/22/E/4492 Report date: September 2022

For and on behalf of **Rogers Geotechnical Services Ltd**

Scott Alexander BSc FGS
Geo-environmental Engineer

Rob Palmer MSc FGS ACIEH
Senior Geo-environmental Engineer

1. Introduction

Further to the site-specific risk assessment provided within the geo-environmental report (C2446/22/E/3791, June 2022), it is considered that the site is generally uncontaminated with respect to soil and leachate risks. However, from the results of the gas monitoring presented within the geo-environmental report, it was determined that Characteristic Situation Level 2 should be adopted for the site. Thus, protection from bulk ground gasses (CO2 and CH4) is required and some remediation will be required at this site to protect against hazardous ground gases. This report provides the strategy for that remediation.

2. Remediation Strategy

2.1 Remediation Objectives

Based on the site-specific risk assessment provided in the geo-environmental report, the object of remediation at the site is as follows:

Based on the site-specific risk assessment the objectives are to be as follows.

- To protect the site operatives during the construction process from the ingestion of soil or dust, dermal contact with the soil and inhalation of dust and vapours.
- To protect site workers from exposure to hazardous ground gases.
- To protect the end user from the elevated levels of hazardous ground gases.
- To protect neighbours from the inhalation and ingestion of dust during the construction process.

- To ensure that contamination, either on site or introduced cannot reach controlled waters via surface run-off or permeable strata.
- To ensure that contamination cannot enter the former services occupying the site which may return to controlled waters.
- To protect plastic services from being penetrated by, or degrading due to potentially aggressive ground conditions.

On completion of the ground-works a careful site inspection of the sub-grade would be required. Should visual or olfactory evidence of contamination be revealed then further testing may become necessary.

2.2 Development Requirements.

It is expected that the final development will comprise the development of a new steel portal frame warehouse building for a commercial end use. It is expected the surrounding area will comprise service yards comprising hardstanding. No landscaped or garden areas are expected as part of the development with a commercial end use.

3. Scope

In order to fulfill the objectives defined above the following strategy will be utilised. A pragmatic approach will be undertaken, with observational techniques being employed at each stage of the work.

3.1 Groundworks

During the ground-works phase of the development, protection to the site operatives is required. The risk to site operatives is considered under the Health and Safety at Work Act 1974, together with regulations made under the act, which includes the Control of Substances Hazardous to Health (COSHH) regulations. Therefore the risks to site personnel will be considered under the Construction Design and Management (CDM) regulations at the planning stage and be included in the contractor's Health and Safety Plan and site specific Method Statements. These documents shall include the following main elements.

- Site operatives at all levels will be made aware of the hazards of working with made ground.
- Site operatives entering into confined spaces, or excavations will be provided with a personal gas monitor to monitor the levels of potentially hazardous gases including carbon monoxide, carbon dioxide, methane, hydrogen sulphide and oxygen.
- Personal hygiene facilities, including washing and messing, must be provided and site operatives must be encouraged to use them.
- Where work is undertaken in dry weather the site will be dampened down to avoid dust. In addition, dust masks must be provided to all site operatives for use in dry weather.
- Where breaking out or demolition occurs, measures will be implemented to limit dust escape from the site to site workers or neighbouring receptors.
- Where soils are to be removed for offsite disposal, Waste Acceptance Criteria (WAC) testing will be carried out at source in accordance with BS EN 12457.
- Any stockpiles of material will be placed upon impermeable sheeting and sheeted to prevent excessive amounts of airborne dust and cross contamination.

- Where vehicles are transferring soil to the landfill site they must be covered to prevent contamination of the surrounding area by dust.
- Where work is undertaken in wet weather, vehicle and wheel washing facilities will be required to ensure that the vehicles leaving the site do not transfer contamination to surrounding areas.

On completion of the ground-works a careful site inspection of the sub-grade will take place. Should visual or olfactory evidence of contamination be revealed, then suitably qualified specialists will be consulted. Further testing and updates to the site specific ground model, risk assessment, and remediation strategy will be undertaken where necessary

3.2 Construction

During the construction phase of the contract the following items are required to protect the end user from the potential contaminants revealed at this site.

- Beneath buildings, pavements and hard-standings clean inert granular sub-base shall be employed.
- New plastic services will be constructed in a surround of clean inert material and a risk assessment will be carried as instructed by the statutory water authority for the area. Where necessary testing as recommended in the United Kingdom Water Industry Research (UKWIR) website under Report Ref. No. 10/WM/03/21 - 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites' will be carried out.
- The redundant services revealed at this site will be de-commissioned and piped services sealed. Any existing services that are to be employed in the new development will be carefully inspected to ensure that they are serviceable and will not allow the ingress of contamination.
- Buried concrete placed at the site will conform to the guidance given in BRE Special Digest 1 in accordance with a design class of DC-1.

3.3 Gas Protection Measures

In order to assess the protection measures required BS8485: 2015: Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings has been employed. In accordance with Table 3, Building types, of the code, the development may be considered to conform to Type D. Therefore, on the basis of Table 4 Gas protection score by CS and type of building, the minimum gas protection score (points) is 1.5. The gas protection system will consist of at least two different elements. The elements work independently and collaboratively, and a single element should not be used because there would be no redundancy to allow for defects in the component.

In order to achieve this score the following shall be undertaken in line with the outlined ground gas protection measures in "*Proposed Section X-X, Drawing No. 037-21-BR03, Rev. A"*. A copy of the technical drawing is presented in Appendix 2.

Table 1: Combination of Protection Elements (BS8485: 2015) for CS2		
Reference	**Protection Element**	**Score**
Table 5	Precast beam and block floor suspended between pile cap locations.	0
Table 6[1]	Passive sub-floor dispersal layer with vents and a clear sub-floor void.	1.5
Table 7	Gas resistant membrane complying with the requirements given in Table 7 (**Note 1**)	2
	Total Score	**1.5**

Note 1:
The gas resistant membrane shall meet the following criteria (from Table 7, BS 8485: 2015):

- Sufficiently impervious (methane gas transmission rate <40.0ml/day/m2/atm (average) BS ISO 15105-1 manometric method).
- Sufficiently durable and strong to remain serviceable for the anticipated life of the building, to withstand in-service stresses and installation process.
- Capable, after installation, of providing a complete barrier to the entry of the relevant gas.
- Verified in accordance with CIRIA C735: 2014: *Good practice on the testing and verification of protection systems of buildings against hazardous ground gasses.*
- Chemically resistant to degradation by other contamination that might be present.

It should be appreciated that if the membrane installed does not meet all the criteria above, then the score for the membrane is considered to be zero.

In addition to the above, the following points shall be considered.

- Technical drawings of the incorporation of the gas protection measures into the sub-structure will be provided by a suitably qualified engineer/architect and produced in accordance with the guidance given in BRE 414.
- The sequence of construction indicating when the gas protection system will be installed will be presented in a method statement for laying the gas membrane. Where possible the installation of membranes will take place as a unique activity on site and shall not take place until sub-structure construction is complete.
- During and following the installation of the membrane, all parties in attendance at the site shall be made aware that a gas protection system is to be employed within the construction. Such communications should include, but not be limited to, the CDM documentation for the site and site inductions.
- The installation of the membrane shall be carried out only by suitable personnel and the qualifications or experience/training will be provided within the chosen contractors method statements. The suitability of personnel will be assessed in accordance with Annex 1 of CIRIA C735.
- The installation shall be in strict accordance with manufacturer specifications and recommendations, which shall also be included as part of the remediation statement.
- The membrane system employed will not be an ensemble (i.e. a system comprising a mixture of products from different manufacturers will not be employed).
- Membranes shall be supplied to site on a single wound roll, creased product will not be accepted or employed.

[1] For details on the criteria for good and very good performance see Annex B of BS84845: 2015.

- Whilst membranes are exposed, signage will be provided to indicate the access to the installation area is prohibited unless authorised. Footwear will be checked prior to accessing the membrane surface to ensure no sharp objects are apparent, such as stones caught in treads. The use of sharp objects or hot-works around the exposed membrane will be strictly prohibited unless the risk of damaging the membrane has been full assessed and mitigated.
- Non-conformance of manufacturer recommendations shall be discussed and agreed as acceptable, in writing, with a suitably qualified person from the manufacturer.

3.4 Fill Materials

Any materials to be used as fill at the site, will be subjected to the following assessment to determine its suitability.

Fill materials will be initially screened, by a suitably qualified engineer, for the following.

- It is free from obvious contamination i.e. visual or olfactory evidence.
- It has not come from areas where Japanese Knotweed or other invasive or injurious plants are suspected to be growing.
- It is not a statutory nuisance, such as being odorous.
- It is free from unsuitable material.

It should also be appreciated that any fill will be subjected to validation testing to assess its suitability. The following table has been taken from YALPAG[2] documentation and will be used in the first instance. Depending on the origin and nature of the material, not all fill will require the sampling frequency and testing indicated, although this will be in agreement with any regulatory bodies (such as the Local Authority).

Table 2: Validation Sampling and Testing

Fill Type	Frequency	Minimum Determinands
Virgin Quarried Material	1 or 2 depending on the type of stone (to confirm the inert nature of the material)	Standard metals/metalloids (As, Cd, Cr, Cr^{VI}, Cu, Hg, Ni, Pb, Se, Zn)
Crushed Hardcore, Stone, Brick	Minimum 1 per 1000m³	Standard metals/metalloids as above plus PAH (16 USEPA) and Asbestos
Greenfield/ Manufactured Soils	The greater of a minimum of 3 or 1 per 250m³	Standard metals/metalloids as above plus PAH (16 USEPA) and Asbestos
Brownfield/ Screened Soils	The greater of a minimum of 6 or 1 per 100m³	Standard metals/metalloids as above plus PAH (16 USEPA), TPH (CWG banded) and Asbestos Any additional analysis dependant on the history of the donor site.

It should be noted that screening values for the above regime have been included within Appendix 1 of this report. The screening values will need to be agreed with any regulatory bodies. It is anticipated, for example, that 1% SOM values will be employed for typical granular fill and 6% SOM for topsoil. However, organic matter testing will determine which screening values are appropriate for each material. Moreover, testing will comply with UKAS and MCERTS, where applicable, and undertaken by an accredited laboratory.

[2] *YALPAG Technical Guidance for Developers, Landowners and Consultants – Verification Requirements for Cover Systems V3.3* Appendix 1a, October 2016.

Where the material has been derived from a commercial company, certificates or other industry quality protocol compliance i.e. WRAP shall be obtained. However, it will be necessary to ensure that this documentation is specifically related to the material being imported, is no more than two months old and complies with the screening and frequency requirements given above.

Suitable fill materials will either be placed immediately or sufficiently quarantined to prevent cross-contamination. If it is necessary, the quarantined material will be placed on appropriate sheeting and covered to prevent it becoming mixed with contaminated soils or dust, or penetrated by mobile contaminants.

4. Verification Report

In order to demonstrate that the remediation has been sufficiently carried out and risks highlighted in the conceptual ground model are mitigated, a verification report will be produced and submitted to any statutory authorities.

The report will be produced by a suitably qualified engineer or engineers and will include the following:

4.1 Ground Works

- A record of the measures taken to cap and seal any disused services.
- Verification of any materials imported to site for use as construction or fill material.
- Location, and waste certificates of any material removed for disposal offsite

4.2 Ground Gas Protection System

- The qualifications or relevant experience/training of the persons carrying out the installation.
- The independence of the person carrying out the verification, along with evidence of their qualifications or relevant experience/training.
- Details of the verification process including the dates of inspections and findings.
- Signed statements to confirm that protection measures were constructed as agreed. These statements shall also include confirmation that:
    - Membranes were free from tears and punctures, and installed in accordance within manufacturer guidelines.
    - Underfloor voids were clear and free from debris.
- Clear photographic evidence of the construction of membranes and underfloor voids, which should include key details such as air vents, membrane penetrations etc.
- Details of non-conformances and how they were rectified.
- A declaration that remedial objectives set out in the conceptual site model have been achieved.

We trust that this information is of interest, clearly Rogers Geotechnical Services Ltd would be happy to offer advice with respect to the above and assist where necessary.

Appendix 1

Screening Levels Summary Sheet

Rogers Geotechnical Services Ltd.

Atkins ATRISK Soil Screening Values (SSVs) - Commercial Landuse

Tox Data Report No.	Compound	Commercial (mg/kg)				Reference
	Metals	1% SOM		6% SOM		
3	Cadmium	410		410		C
4	Chromium VI	19.7	49.1	19.7	49.1	B/C
	Copper	106000		106000		A+
7	Mercury	350.00		405.00		A/D
8	Nickel	1770		1770		A+
	Lead	2310		2310		C
	Zinc	1100000		1100000		A+
	Vanadium	7490		7490		A+
	Semi and Non Metals					
1	Arsenic	635		635		C
10	Selenium	13000		13000		A
	Free Cyanide	373		373		A
9	Phenols (total)	685		3170		A
	Poly Aromatic Hydrocarbons	Free product	No free produc	Free product	No free product	
20	Naphthalene	75	90.1	432	1050	A+
	Acenaphthene	156.8	83600	106000		A+
	Fluorene	66500		72000		A+
	Anthracene	535000		544000		A+
	Fluoranthene	72200		72600		A+
	Pyrene	54100		54400		A+
	Benzo(a)anthracene	1.71	131	10.3	142	A
2	Chrysene	0.44	14000	2.64	14300	A
2	Benzo(b)fluoranthene	1.22	142	7.29	144	A
2	Benzo(k)fluoranthene	0.686	1430	4.12	1440	A
2	Benzo(a)pyrene	26.1	76.3	26.2	76.3	B/C
2	Dibenz(a,h)anthracene	0.00393	14.3	0.0236	14.4	A*
2	Indeno(1,2,3-cd)pyrene	0.0614	142	0.368	144	A*
2	Benzo(g,h,i)perylene	0.0187	1440	0.112	1450	A*
	Petroleum Hydrocarbons					
	Aliphatic C5-C6	327	4490	1100	29400	A+
	Aliphatic C6-C8	157	10400	769	98200	A+
	Aliphatic C8-C10	82.4	1370	476	14800	A+
	Aliphatic C10-C12	49.9	7900	297	69500	A+
	Aliphatic C12-C16	20.9	34000	126	139000	A+
	Aliphatic C16-C21	3620000		3620000		A+
	Aliphatic C21-C35	3620000		3620000		A+
	Aromatic C5-C7 (Benzene)	12.5		98		A+
	Aromatic C7-C8 (Toluene)	834	27900	4360	183000	A+
	Aromatic C8-C10	613	2210	3600	20800	A+
	Aromatic C10-C12	369	12300	2190	53800	A+
	Aromatic C12-C16	155	41300	65400		A+
	Aromatic C16-C21	28400		28400		A+
	Aromatic C21-C35	28400		28400		A+
	Others					
	pH	-		-		-
	Organic Content (%)	-		-		-
	Soluble Sulphate (mg/l)	-		-		-
	Total Sulphate (%)	-		-		-
	Asbestos	-		-		-

A = WS ATKINS PLC, ATRISK SOIL SCREENING VALUES BASED ON 1% SOIL ORGANIC MATTER

A+ = Values updated June 2017.

A* Atrisk's SSV is lower than Chemtest's detectable limit for this compound.

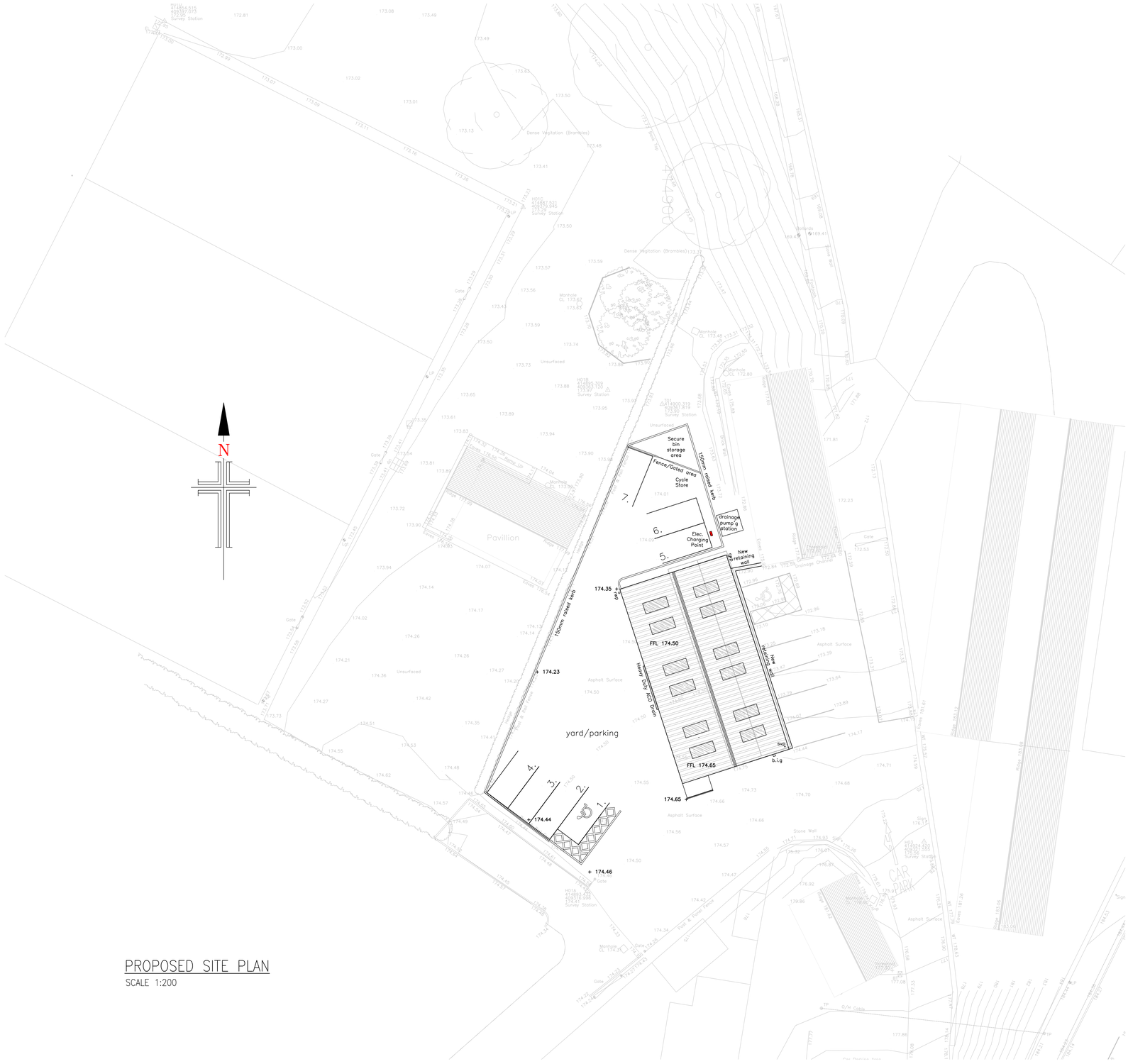
B = health criterion values, which are available from toxicological reviews published in the C4SL project methodology report.

C = Category 4 Screening Levels (C4SLs) based on 1% soil organic matter.

D - Value provided is based on Methyl Mercury. Should elemental mercury be observed or a source be known then a limit of 7.95 should be used.

Appendix 2

Gas Protection Measures Technical Drawings



PROPOSED SITE PLAN

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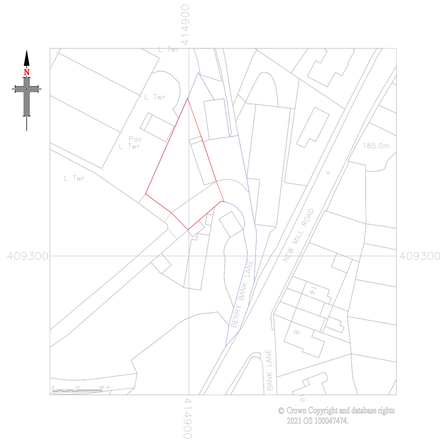

LOCATION PLAN

SCALE 1:1250

NOTES

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Rev.	Date	Description

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Project: LAND ADJ. HOLMFIRTH FRESH FISH, BERRY BANK LANE, NEW MILL ROAD, HOLMFIRTH, HD9 7LN

Drawing Title: PROPOSED SPECULATIVE INDUSTRIAL UNIT, PROPOSED SITE PLAN

Scale (at A1)	Date
AS SHOWN	DEC 2021

Drg. no.	Rev.
037–21–BR01	–

THANK YOU NHS

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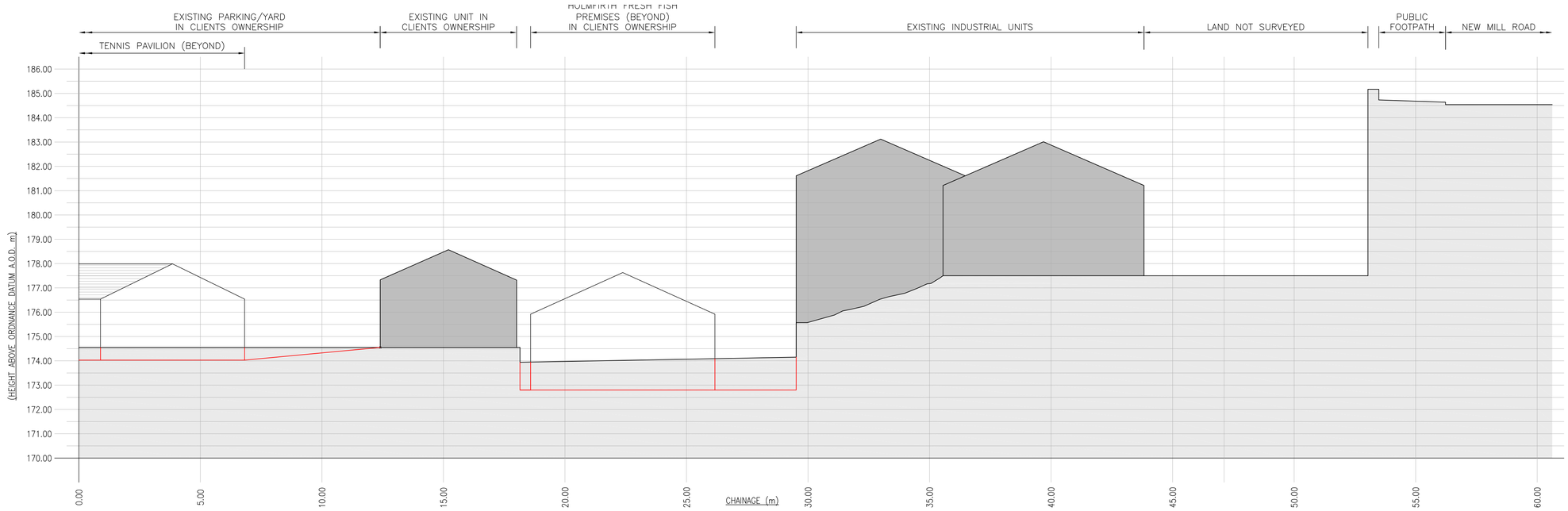
ORIGINAL DRAWING SIZE 841 x 594



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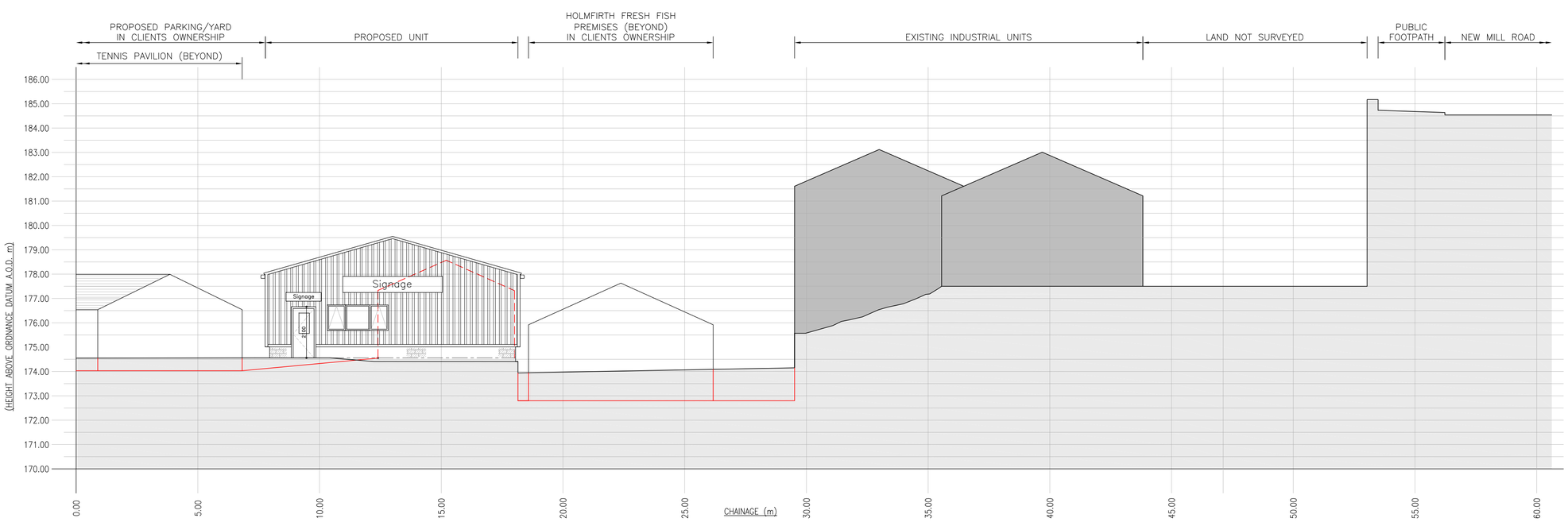

PROPOSED SECTION A – A
SCALE 1:100

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MR R & G. BOWDEN

Project
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BERRY BANK LANE
NEW MILL ROAD
HOLMFIRTH, HD9 7LN

Drawing Title
PROPOSED SPECULATIVE INDUSTRIAL UNIT,
SITE SECTIONS

Scale (at A1)	Date
AS SHOWN	DEC 2021

Drg. no.	Rev.
037–21–BR02	–

THANK YOU NHS

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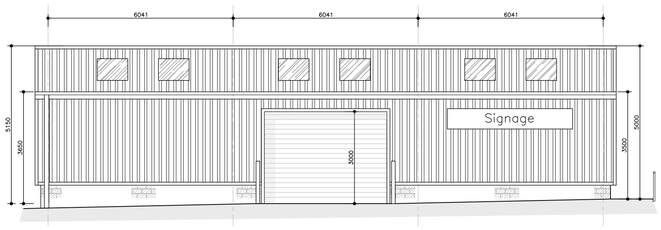
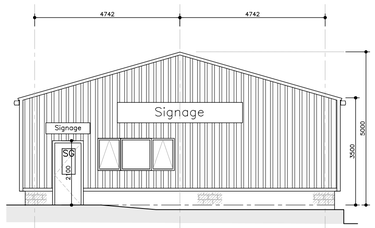
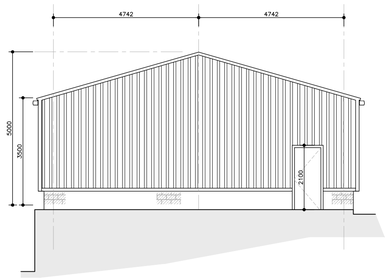


PROPOSED SOUTH WEST FACING ELEVATION
SCALE 1:50

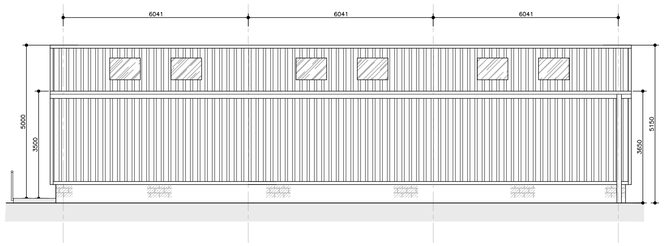


SG denotes Safety Glass required

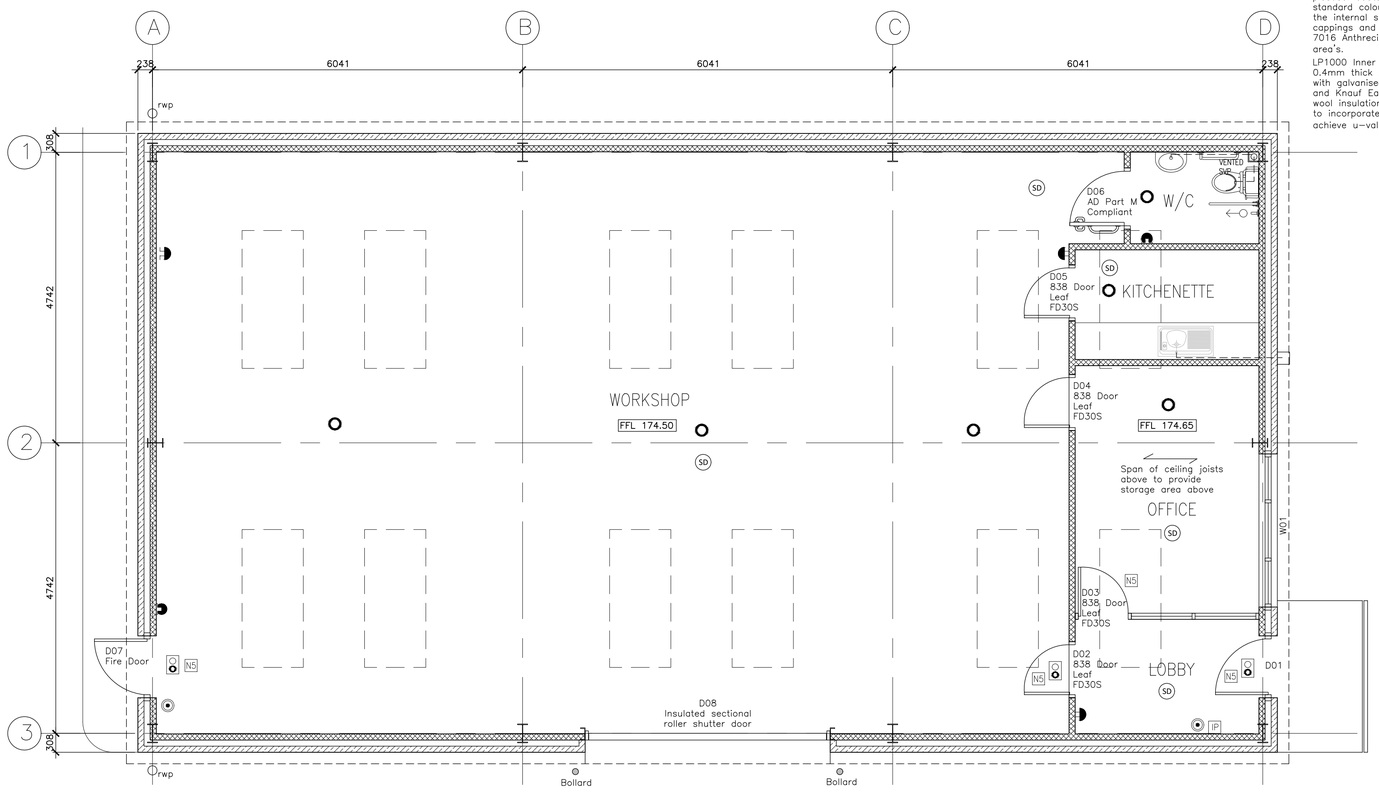
PROPOSED SOUTH EAST FACING ELEVATION
SCALE 1:50



PROPOSED NORTH WEST FACING ELEVATION
SCALE 1:50



PROPOSED NORTH EAST FACING ELEVATION
SCALE 1:50

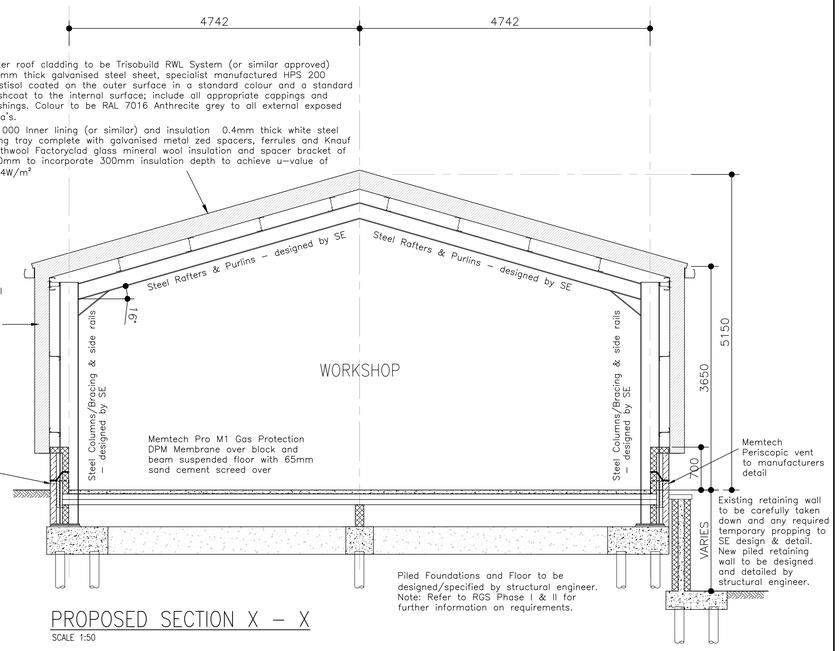


PROPOSED FLOOR PLAN
SCALE 1:50

Outer wall cladding above dado cavity wall to be Trisobuild VW System Profile C32 (or similar approved) 0.7mm thick galvanised steel sheet, specialist manufactured HPS 200 plastisol coated on the outer surface in a standard colour and a standard washcoat to the internal surface; include all appropriate cappings and flashings. Colour to be RAL 7016 Anthrecite grey to all external exposed area's.

LP1000 Inner lining (or similar) and insulation 0.4mm thick white steel lining tray complete with galvanised metal zed spacers, ferrules and Knauf Earthwool Factoryclad glass mineral wool insulation and spacer bracket of 240mm to incorporate 240mm insulation depth to achieve u-value of 0.18W/m²

Memtech Periscopic vent to manufacturers detail



PROPOSED SECTION X – X
SCALE 1:50

PROPOSED MATERIALS

• WALLS	– NATURAL COURSED STONE
	– ANTHRACITE GREY PROFILED CLADDING
• ROOF COVERING	– ANTHRACITE GREY PROFILED CLADDING
• RAINWATER GOODS	– ALUMINIUM
• DOORS	– ANTHRACITE GREY ROLLER SHUTTERS

NOTE: CONTRACTOR TO CHECK ALL DIMENSIONS ON SITE PRIOR TO ANY FABRICATION OR CONSTRUCTION

NOTE: DRAWING TO BE READ STRICTLY IN CONJUNCTION WITH ALL STRUCTURAL ENGINEERS INFORMATION AND SKETCHES.

NOTE: ALL FOUNDATIONS, STEEL & TIMBER SIZES SHOWN ARE TO STRUCTURAL ENGINEERS DESIGN & CALCULATION. REFER TO STRUCTURAL CALCULATIONS & SKETCHES.

NOTES

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KEY TO FIRE DETECTION SYMBOLS

SD	Smoke alarm - mains powered and interconnected
HD	Heat Detector - mains powered and interconnected
N3	Notice on door "THIS DOOR TO BE KEPT LOCKED SHUT WHEN NOT IN USE"
N5	Notice on door "FIRE EXIT - KEEP CLEAR"
N7	Notice on door "FIRE DOOR - KEEP SHUT"
IP	Fire alarm indictor panel
	Fire alarm call point
	audiable warning device
	visual warning device
	emergency assistance call point
	emergency light point
	illuminated exit sign
	illuminated exit sign - directional
	fire extinguisher - water type
	fire extinguisher - foam type
	fire extinguisher - foam type
	fire extinguisher - dry powder
	fire blanket
	alarm sounder
	Beam detectors

Rev.	Date	Description
A	08.09.2022	Pile & Ground beam foundations and Gas Protection measures added

Status: BUILDING REGS

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Client: MR R & G. BOWDEN

Project: LAND ADJ. HOLMFIRTH FRESH FISH, BERRY BANK LANE, NEW MILL ROAD, HOLMFIRTH, HD9 7LN

Drawing Title: PROPOSED SPECULATIVE INDUSTRIAL UNIT, ELEVATIONS & FLOOR PLAN

Scale (at A1)	Date
AS SHOWN	DEC 2021

Drg. no.	Rev.
037–21–BR03	A

THANK YOU NHS

10 0 10 20 50 100mm NATURAL SCALE

ORIGINAL DRAWING SIZE 841 x 594

GENERAL NOTES

This specification should be read in conjunction with Hinchliffe Architecture & Design drawings and sketches as listed below:

037–21–BR01 – Site Lyaout & Location Plan

037–21–BR02 – Existing & Proposed Site Sections

037–21–BR03 – Proposed Floor Plan, Elevations & Section

Kirklees MBC Planning Decision Notice – XXXX in relation to conditions as part of the approval.

Construction to be in accordance with the Building Regulation approved documents together with relevant British Standards and if applicable, the published guidance from the relevant approval body e.g. LABC/NHBC / Premier.

Where British Standards and Codes of Practice are referred to, these shall be the most recently published editions including all relevant amendments, unless specifically noted otherwise. Where a BS EN document is referred to, this shall be the current edition including all relevant amendments and the relevant UK National Annex.

Do not scale drawings. All dimensions shown on drawings are in millimeters. Where dimensions are not shown Contractor to refer to the relevant Architects drawings. Dimensions marked thus *are to be confirmed on site be contractor and any discrepancies should be reported to the designer immediately.

The Contractor shall be responsible for the design, erection and maintenance of all temporary supports, needles and shoring necessary to support and maintain the stability of structures and earthworks. The Contractor must also ensure that no parts of the existing or new structures are over stressed during the works, either by temporary construction loads or by the application of loads to part of the structure before these have gained sufficient strength. Temporary works should be arranged so as not to impede construction of the permanent works.

All proprietary products and systems shall be used in strict accordance with the manufacturers/suppliers instructions UNO.

Existing Services: Prior to commencement of all building works, positions of all cables, pipes, conduits and cabling and apparatus should be identified and marked on–site and recorded on plans.

Any discrepancies between the drawings and specification should be notified to Hinchliffe Architecture & Design

All relevant construction materials shall carry the CE Mark in accordance with the provisions of the Construction Products Regulations.

Fire vehicle access to within 45m of all points within building to be provided.

FOUNDATIONS

Foundations

Pile and Ground beam Foundations to be designed by structural engineer

All excavations shall be kept free from water, loose material and rubbish etc. The formation level shall not be exposed until the day of the concrete pour.

The layout of any existing drainpipes or services is to be confirmed upon excavation.

The Building Inspector / Engineer are to be given the opportunity of inspecting the formation level of any foundations prior to the placing of the concrete. Allow a minimum 24 hours' notice for inspection.

Works below d.p.c.

Blockwork used in external walls to outer leaf below ground level and inner leaf below d.p.c. level to have density exceeding 1500 kg/m³ or a compressive strength not less than 7 N/mm². Cavities to be filled below ground level with weak mix concrete.

WALLS

External Walls

100mm coursed stone to outer leaf / 50mm clear cavity /60mm Kingspan Thermawall TW50 insulation partial fill cavity boards held back to inner leaf with plastic clips fixed to wall ties with 100mm lightweight blockwork inner leaf min.

100mm wide cavity with stainless steel wall ties to BS1243 in staggered formation @ 450c/c vertically and 750mm horizontally.

Lateral restraint provided by 50 x 5 x 1000mm galvanised mild steel straps

Weak mix cavity fill to be provided to all cavities 225mm below ground floor level, weep hole left at ground level @ 900mm c/c.

All openings in cavity wall constructed to be protected with horizontal DPC's, cavity trays, stop ends, weap holes and insulated.

Outer wall cladding above dado cavity wall to be Trisobuild VW System Profile C32 (or similar approved) 0.7mm thick galvanised steel sheet, specialist manufactured HPS 200 plastisol coated on the outer surface in a standard colour and a standard washcoat to the internal surface; include all appropriate cappings and flashings. Colour to be RAL 7016 Anthrecite grey to all external exposed area's.

LP1000 Inner lining (or similar) and insulation 0.4mm thick white steel lining tray complete with galvanised metal zed spacers, ferrules and Knauf Earthwool Factoryclad glass mineral wool insulation and spacer bracket of 240mm to incorporate 240mm insulation depth to achieve u–value of 0.18W/m²

Cladding Outer and Inner facings to have class 1 surface spread of flame to BS476: Part 7: 1987, class 0, as defined by building regulations.

Side cladding rails and fixings to be specified by structural engineer.

Cavity to be closed around all openings by fitting insulated cavity closures to avoid thermal bridging. Eaves and verge closed with mineral wool cavity closure.

Wall ties to be s.s. type B double triangular built in at 450mm vertical centres and 750mm horizontal centres and at every block course at reveals.

Lateral restraint to be provided to external walls at verge where cladded above.

All blockwork walls to be dry lined with 9.5 mm tapered edge gyproc wallboard with filled and taped joints and gyproc drywall top coat or 9.5mm standard wallboard and skim. When dry lining provide a continuous ribbon of gyproc adhesive perimeter seal around openings at room corners and around socket boxes.

Provide horizontal dpc's to all external cavity walls positioned min. 150mm above external ground level. Step as necessary to maintain min. clearance. Damp proof course to be 'Hyload' or equal approved. Laps to be min. 150mm.

At openings provide insulated vertical and horizontal dpc's to cills 'Damcore or similar approved, built in as work proceeds.

Provide pressed metal colour coated flashings to ridges, verges, eaves, heads, cills, jambs, wall corners and at junction between brickwork and cladding, all to be fitted in accordance with manufacturers recomendations.

Internal Walls

Internal load–bearing walls to be constructed of 100mm/140mm lightweight concrete blockwork with dry lining.

Non–load bearing partition walls to be constructed of 70 x 50mm softwood studding or 70 mm Gyproc metal framing with 12.5mm Gyproc Fireline plasterboard and skim each side and 25mm insulation quilt between studs (min density 10kg/m²).

External Wall Lintels

Keystone SB/K galvanised steel lintel to outer leaf and reinforced concrete lintel or Keystone Box/K–100 to inner leaf to all new openings.

Ensure cavity wall insulation continues down to cavity closer.

Structural Masonry

All masonry to be in accordance with the requirements of BS 5628:2005 parts 1,2 and 3 and specified by Structural Engineer

Movement joints are not shown and should be set out with agreement by The Engineer. Movement joints to be filled with suitable flexible filler and polysulphide sealant, where required.

FLOORS

Floor to be proprietary 175mm Longley system of prestressed concrete beams with 100mm Infill Blocks (3.5 N/mm² min.) grouted with sand and cement to manufacturers design and specification with 65mm sand/cement screed on Memtech Pro M1 gas protection membrane to manufacturers specification and detail.

Memtech periscope vents to be installed at regulars intervals to manufacturers guidance and detail

d.p.m below floor screed to be linked with d.p.c. in walls.

1200 gauge Visqueen Radon Barrier over in situ slab and through outer wall, stepped down to outer leaf with Butyl taped joints

Ceiling above office area to be used as storage and therefore adequately specified to withstand imposed loading – ceiling/floor joists to be designed by structural engineer on 22mm Safedek P5 moisture resistant chipboard.

ROOFS

Outer roof cladding to be Trisobuild RWL System (or similar approved) 0.7mm thick galvanised steel sheet, specialist manufactured HPS 200 plastisol coated on the outer surface in a standard colour and a standard washcoat to the internal surface; include all appropriate cappings and flashings. Colour to be RAL 7016 Anthrecite grey to all external exposed area's.

LP1000 Inner lining (or similar) and insulation 0.4mm thick white steel lining tray complete with galvanised metal zed spacers, ferrules and Knauf Earthwool Factoryclad glass mineral wool insulation and spacer bracket of 300mm to incorporate 300mm insulation depth to achieve u–value of 0.14W/m²

Cladding Outer and Inner facings to have class 1 surface spread of flame to BS476: Part 7: 1987, class 0, as defined by building regulations.

Purlins and fixings to be specified by structural engineer.

Cladding Outer and Inner facings to have class 1 surface spread of flame to BS476: Part 7: 1997, class 0, as defined by building regulations.

Roof lights double walled to 10% of roof area with matching flashings, all on cold rolled steel purlins.

Rainwater Goods

Pre–galavanised pressed steel boundary wall gutters complete with supports, stopends, outlets and with overflows, designed to accomodate a maximum rainfall rate per hour under EA guidance. All gutters to be connected to rwps. min 150mm dia. PVC downpipes with brackets, clips and access points at floor level. Downpipes to connect into existing drainge system designed by engineer.

TIMBERWORK

All softwood timber to be Grade C16 to BS 5268 unless noted otherwise. The Maximum moisture content should be based on the average value indicated in Table 1 of BS 5268–2 for its proposed use in service.

All timber components should be treated with a preservative treatment set out to BS 8417 and in accordance with Building Regulation guidelines.

Notches and holes to be in accordance with TRADA guidelines unless noted otherwise. All other holes and notches shall be referred to S.E.

STEELWORK

Fabrication, workmanship and erection to be in accordance with BS 5950–2 and SCI / BCSA National Structural Steelwork Specification for Building Construction. If there is a conflict between these documents, the stricter of the two will apply.

The steelwork fabricator is to check all dimensions on site and report any discrepancies to the Engineer.

The steelwork subcontractor will be fully responsible for temporary stability of the steelwork until hand over is achieved. The Fabricator will be responsible for provision of temporary lateral restraints unless confirmed otherwise.

CEILINGS AND PROTECTION

All Doors indicated FD 30, fitted with intumescent smoke seals, glazing within doors to be 'Pyran S'.

Any pipes/ducts passing through compartment walls/floors to have GYPROC FS firewrap fitted in accordance with manufacturers instructions.

All steelwork to be encased in 15 mm Gyproc Fireline Board and skim to provide half hour fire resistance or two coats of intumescent paint.

Suspended ceiling to be installed by specialist.

WINDOWS AND DOORS

Any glazing to windows within 800 mm of floor level, any glazing to doors within 1500 mm of floor level and 300 mm either side to be laminated or toughened glass unless in small panes not exceeding 0.05m².

Easily accessible doors and windows will be of a design that has been certified to PAS 24 or equivalent security standard, and installed in accordance with manufacturers design.

All windows to be draught sealed and fitted with sealed double glazing with 16mm air gap and low E glass, with 0.05mm soft coating, to achieve average 1.6 U value. All new external doors to be draught sealed opaque doors to achieve a U Value of 1.4

Internal doors within lobby area to be FD30S half hour fire resistant self closing.

All new doors have an unobstructed space of at least 300mm to the leading edge of the door.

Opening Force as leading edge of doors not to exceed 20N.

Insulated roller shutter/sectional door to be installed in accordance with BS/EN 13241 and BS/EN 10077–1 with an overall u–value of 4.5W/m².

ELECTRICAL AND MECHANICAL VENTILATION

The electrics are to be designed, installed, tested, commissioned and certified by a person competent to do so and shall be to 17th Edition of IEE Wiring Regulations and BS7671:2018.

The ventilation systems are to be tested and commissioned, air flow rate to be provided to Building Control and an O & M manual provided to occupier.

All ductwork to be rigid and lagged with foil backed Rockwool insulation or to be thermal ducting. Flexible ducting not to be used.

Any ductwork which passes through the enclosure to a protected stairway or entrance hall to be fire stopped as it.

Where no openable window provided to wc fan equivalent to 6 litres/sec controlled automatically to be provided and to have 15 minute overrun passes into the enclosure.

Provide 100% energy efficient lighting.

External lighting to be controlled by daylight and movement sensors and max 100w.

All electric switches and socket outlets to be located between 450mm and 1200mm from floor level.

Emergency assistance alarm to be fitted in sanitary accommodation

Emergency Lighting

Emergency lighting system to BS 5266: Part 1: 2016 and BS 5266: Part 7: 2013 Emergency lighting to be provided to all exit doors and exit routes to BS 5266: Part 1: 2016 and BS 5266: Part 7: 2013

The emergency lighting system shall be extended so that if the normal lighting fails, irrespective of cause, the system will:

a. Indicate clearly and unambiguously the escape routed

b. Provide illumation along such routes (including external routes) to allow safe movement towards and through the fire exit.

c. Enable fire alarm call points and firefighting equipment provided along escape routes to be seen.

On completion, the system shall be tested and certified on the enclosed inspection and a test certificate shall be issued by a certified electrical engineer as fully complying with the relevant current british standards. The certificate shall be forwarded to the relevant fire officer.

All exit doorways and routes shall be clearly indicated by exit signs. All such signs shall be clearly illuminated by maintained emergency lighting, together with other supplementary points as necessary to ensure safe egress from the premises in the absence of daylight and in case of failure of normal lighting.

Fire Escape

All doors within/accessing escape routes are to be fitted with intumescent strips, smoke seals and self closing devices.

All doors on escape routes not to be fitted with lock latch or bolt fastenings, or to only be fitted with simple fastenings that can be readily operated from the side approached by people making an escape and without the use of a key.

All emergency exit doors to be sufficiently recessed to enable its swing to be great enough to prevent it from encroaching on the effective width of the exit route.

Every doorway or other exit providing access to a means of escape, other than exits in ordinary use to be distinctively marked by an exit sign in letters of adequate size to BS5499: Part 1: 2002.

A Conspicuous "FIRE EXIT – KEEP CLEAR" sign should be provided to all outward opening fire exits doors except the main entrance.

Fire Detection

Smoke detectors to be provided, as indicated on Drawings 037–21–BR03 – Proposed Ground Floor Plan.

The fire alarm and detection systems should be designed, installed, commissioned and serviced by a person competent to do so and preferably by a firm listed as complying with LPS1014, BAFE SP203 or equivalent standard.

Fire Alarm system to BS 5839:1:2017.

The main shop area (access room) is fitted with an automatic fire detection and alarm system to warn occupants of the inner rooms if a fire starts.

If the alarms are monitored the receiving centre should comply with LPS1020, BS5979 or equivalent standard.

Commissioning certificates to be provided upon completion.

Fire extinguisher to be 9litre water extinguisher (or equivalent 13A fire rating extinguisher) located at required locations to fire officers recommendation to BS5306

Fire exit notices shall be illuminated by emergency lighting and provided in positions indicated on drawings 037–21–BR03 – Proposed Ground Floor Plan.

All fire safety signs to comply with EC directive 92/58/EEC.

The fire alarm system shall be carried out in accordance with the relevant current british standard and, on completion, the system shall be certified on the test certificate by the commissioning engineer as fully complying with that standard. The certificate shall then be forwarded to the fire officer.

The fire alarm system shall incorporate automatic fire detectors of the type indicated and the locations shown.

HEATING & HOT WATER

General

Air source heating to be installed to clients specification.

Hot water pipes and cylinders to be insulated in accordance with Part L1.

The hot water system should be able to resist the effects of temperature and pressure during normal operation and foreseeable failure modes.

DRAINAGE

Above Ground Drainage

40mm diam. sink wastes.

All fittings to have anti–syphon resealing traps with 75mm deep seals to wash hand basins and sinks.

Below Ground Drainage – private drains

Where less than 600mm deep vitrified clay pipes to have 100mm concrete surrounding with 13mm compressible filler at each joint, and UPVC pipes to have reinforced concrete bridging.

Manholes to be constructed with 150 mm concrete base, precast concrete rings or g.r.p. inspection chambers set in concrete. Manhole sizes to be in accordance with H1 Tables 11, 12 with heavy duty covers in highly trafficed areas and medium duty covers within pathways.

Drainage pipework to be either flexible jointed earthenware pipes or u.p.v.c. installed and laid to falls strictly in accordance with manufacturers recommendations.

All existing drainage to be investigated and inoperative drainage to be cut back, capped and filled with grout or removed.

ACCESS

Entrance Door (Level Approach) – provide an accessible threshold max. 15mm high and door with min. 1000mm clear opening.

No gradients to exceed 1:20

NOTES

1. No dimensions to be scaled. IF IN DOUBT ASK.

2. All dimensions must be checked and verified on site by the Contractor prior to the commencement of works and Hinchliffe Architecture & Design Ltd. to be notified of any discrepancies.

3. The copyright of these drawings remains the property or Hinchliffe Architecture & Design Ltd. They must not be reproduced in any way without prior written consent from the originator (Hinchliffe Architecture & Design Ltd.)

4. Any works undertaken on site prior to obtaining full written approval from Kirklees Planning Department & Kirklees Building Control is at the Contractor/Clients own risk. Works should not commence until ALL approvals are granted.

Rev.	Date	Description
A	08.09.2022	Pile & Ground beam foundations and Gas Protection measures added

Status: BUILDING REGS

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