

**FLOOD RISK ASSESSMENT
&
SUDS Strategy for Planning**

Compliant with LLFA SUDS Guidance
NPPF & EA Compliant

**Retain existing structure
Minor vertical extension to permit non-habitable
space (gym / pool)
Flood designed with significant betterment
All sleeping remains above the extreme flood level
including for worse case climate change
A better protected and flood future-proofed dwelling
than existing**

**This is a residual risk in accordance with NPPF (Paragraph: 041 Ref ID: 7-041-20140306);
the proposed operation is site and scheme specifically appropriate**

**CRITICAL: All site users have access to above the extreme flood level for the
lifetime of the scheme including for 2021 climate change allowances uplift**

at:

208 Southwood Road, PO11 9QL

November 2021

ARK Environmental Consultancy Ltd

Table of Contents

If this report has been released electronically, the appendices referred to herein can be found in the annexed zip folder/s as .pdf or .dwg files. If this report has been released in hard copy the appendices will be bound into the back of this report. Plans may be annexed separately as A1 or A0 copies where a bound-in A3 copy is not appropriate.

1.0	Scope.....	4
2.0	Executive Summary.....	4
3.0	Introduction	5
4.0	Purpose of the Report.....	5
5.0	Report Information Sources.....	5
6.0	Consultation	5
7.0	Overview of British Legislation	6
7.1	National Planning Policy	6
8.0	Site Status and Environmental Setting.....	6
8.1	Site Location and Status.....	6
8.2	Existing Flood Risk.....	6
8.3	Geology (for SUDS) and Topography	7
8.4	Surface Water Risk and Hazard Summary	8
8.5	SFRA / LFRMS Surface Water Mapping & Hazard.....	8
8.6	EA / Coastal Team Data & New Climate Change	9
8.7	Design Response: Topography, Site Levels vs EA Data	9
8.9	Breach Flood Scenario	9
9.0	Assessment of Proposed Development	10
9.1	Proposed Development	10
9.2	Drainage Connections	11
9.3	SUDS Specifications.....	11
9.4	Pipe sizes /Manholes / Pipe runs	11
9.5	SUDS Hierarchy Check: site and scheme specific.....	12
9.6	Flood Resilience	13
9.7	Refuge and Evacuation	14
9.8	Annual Monitoring.....	14
9.9	Surface Water Runoff – Flood Risk from the Development	14
9.10	Climate Change including New Allowances	15

9.11	Flood Storage	15
10.0	Exception Test (included for technical support)	15
12.0	Conclusion	16
12.0	Appendices	16

1.0 Scope

This report contains the details of a Flood Risk Assessment carried out by Ark Environmental Consultancy Limited ("ARK Ltd") for 208 Southwood Road, PO11 9QL, henceforth referred to as "the site" in this report. This report has been prepared for Rob Steul and must not be relied upon by any other party without the explicit written permission of ARK Ltd. All parties to this report do not intend any of the terms of the Contracts (Right of Third Parties Act 1999) to apply to this report. Please note this report does not purport to provide definitive legal advice nor can it be used to demonstrate that the site will never flood in the future. The Executive Summary contains an overview of key findings and conclusions. However, no reliance should be placed on the Executive Summary until the whole of the report has been read. Other sections of the report may contain information which puts into context the findings noted within the Executive Summary.

All rights reserved. No part of this report may be copied, edited, transmitted, reproduced, hired, lent, sold or disclosed without the prior written consent of ARK Ltd. Any action taken or omitted to be taken in reliance upon the content of this report is not permitted and may be unlawful. Copyright © ARK Ltd 2021.

2.0 Executive Summary

This FRA&SUDS Strategy for Planning has been carried out in accordance with the National Planning Policy Framework & NPPG to assist the council and EA in their assessment of the planning application. The proposed development is to retain the existing dwelling; extend the existing lower ground floor vertically and horizontally to permit non-habitable uses (i.e. pool, gym and storage), alterations to north main entrance; remaining landscaping to be retained / new porous and permeable areas.

- EA approved worse case new 2125 extreme climate change design flood level of 4.67mAOD
 - This is greater than the PUSH SFRA 2115 extreme flood level
- Upper Ground floor remains at 5.45mAOD which is 730m above the 2125 extreme event
- All habitable areas are above the extreme flood event
 - Bedrooms on the upper ground floor are appropriate
- No works that will have an impact on sea wall structures / drainage operations of the site
- All site users have access to above the extreme flood level for the lifetime of the scheme
- The residual risks are not unacceptable based on the assessment of the data, site and scheme and as per the PUSH SFRA analysis and guidance (including new climate change allowances)
- Within NO - VERY LOW surface water hazard based on site specific mapping
- REDUCES FLOOD RISK OVERALL
 - Resilient and resistant measures: additional protection measures are feasible
 - **Results in better protected and flood future proofed dwelling than existing**
- This assessment considers the Exception Test is passed regardless, based on the site and scheme specifics

The hazard is a confirmed residual risk in accordance with NPPF (Paragraph: 041 Ref ID: 7-041-20140306); the proposed operation is site and scheme specifically appropriate. Given the residual risk flood setting, the level, extent and depth of flooding on the site can be managed in terms of site levels, the scheme design specifics, resistant and resilient measures and precautionary mitigation measures. Based on the likely flooding risk and small scale of the proposed development, it is considered that the proposed development can be constructed and continue to be operated safely in flood risk terms, without increasing flood risk elsewhere; it is therefore considered appropriate development in accordance with the NPPF / PPG.

3.0 Introduction

The FRA combined a desktop study, review of available information, consultations and an assessment of all sources of flooding posed to and from the site and proposed development, in accordance with NPPF & NPPG. Appropriate flood mitigation measures were then considered, either as already incorporated within the scheme or recommended for inclusion at detailed design stage. The suitability of the proposed development was also reviewed in the context of the NPPF/NPPG and any relevant technical guidance accompanying the NPPF.

4.0 Purpose of the Report

This FRA has been carried out in accordance with National Planning Policy Framework (NPPF) & PPG. The report provides the following information in accordance with the NPPF:

- An assessment of the flood risk posed to the site based on flood information and mapping provided by the EA and Strategic Flood Risk Assessment (SFRA);
- An assessment of the proposed development in terms of surface water run-off; and
- Proposals for measures to mitigate the flood risks posed to and from the development where appropriate.

5.0 Report Information Sources

The information source used to undertake this FRA has been collected from the following sources:

- British Geological Survey Website & iGeology App
- EA Website & Data
- Havant Council Strategic Flood Risk Assessment (2018 Plan Allocations and as updated)
- PUSH SFRA & climate change mapping (2016 Update and as updated)
- **Havant Flood Risk Sequential Test & Exception Test Guidance for Development Management Havant Borough Council - Planning Policy October 2020**
- Havant Preliminary Flood Risk Assessment (2011 and as updated);
- Hampshire County Council as the Lead Local Flood Authority (LLFA) SUDS Policies and Guidance
- North Solent Shoreline Management Plan
- HAYLING ISLAND EMERGENCY PLANNING FRAMEWORK
- Internet mapping and searches.

6.0 Consultation

Where appropriate, the EA and local council will have been contacted to request any available and relevant flooding data.

7.0 Overview of British Legislation

7.1 National Planning Policy

The National Planning Policy Framework (NPPF) and NPPG supercede all Planning Policy Statements (PPS's) and Planning Policy Guidance (PPG's). Flood risk is retained as a key development consideration.

The Sequential and Exception Tests are retained. The accompanying NPPF Technical Guidance / NPPG also include Tables 2 and 3 to assist with flood risk vulnerability classifications and development suitability.

New Climate Change Allowances and Government SUDS guidance compliant.

7.2 Local Policy

The Strategic Flood Risk Assessment (SFRA) is a key source of flood risk specific information for the area. The SFRA provides a more detailed review of flood risks and recommendations for ensuring developments can be constructed and operated safely in accordance with the NPPF. Greater detail of the SFRA is provided in the report where appropriate.

LLFA SUDS guidance compliant.

8.0 Site Status and Environmental Setting

8.1 Site Location and Status

The site is a Brownfield site, currently occupied by an existing dwelling, soft and hard landscaping. The dwelling has access to the south and north (away from the flood source).

The location plan is included in Appendix A.

8.2 Existing Flood Risk

Flood Sources	Site Status	Comment on flood risk posed to / from the development
Fluvial / Tidal	Site is within EA FZ3 Site is within PUSH SFRA climate change extents - Not in a breach extent - Not in a rapid inundation zone Tidal floodplain; easy access to unrestricted FZ1 even in climate change extents EA official LOW risk	Dwelling remains appropriate for FZ3 tidal and the scheme can incorporate suitable mitigation measures to address future extreme events and residual hazard. Upper ground floor and first floor as refuge above extreme event for lifetime of the scheme Results in better protected and flood future proofed dwelling than existing dwelling
Groundwater	SWMP indicates site not in potential elevated future groundwater risk	The proposed development will not increase the risk of groundwater flooding; New slabs can be engineered / waterproofed appropriately to industry standard Non return valves and sump Low Risk
Artificial Sources	No artificial sources within 250m	Low Risk
Surface Water / Sewer Flooding	Site is in NO – VERY LOW hazard area	Scheme can REDUCE FLOOD RISK OVERALL: see main sections below

	Evacuation route which is to the north always in NO – VERY LOW hazard Condition, depth and location of surrounding infrastructure uncertain	Scheme incorporates new SUDS Development will utilise existing connection to sewers, gravity drainage and non-return valves Development will not increase the peak flow or volume of discharge from the site: Low Risk No further drainage assessment required
Climate Change including new allowances	Included in the flood modelling extents Site not within climate change flood extent area	Development will not increase the peak flow and volume of discharge from the site Low risk posed to and from the development



8.3 Geology (for SUDS) and Topography

Based on BGS mapping and surrounding adjacent boreholes:

- Bedrock: Wittering Formation – Sand, Silt And Clay.
- Superficial: Storm Beach Deposits – Gravel

No lost / underground rivers documented at the site or near the site nor identifiable by the local geology mapping.

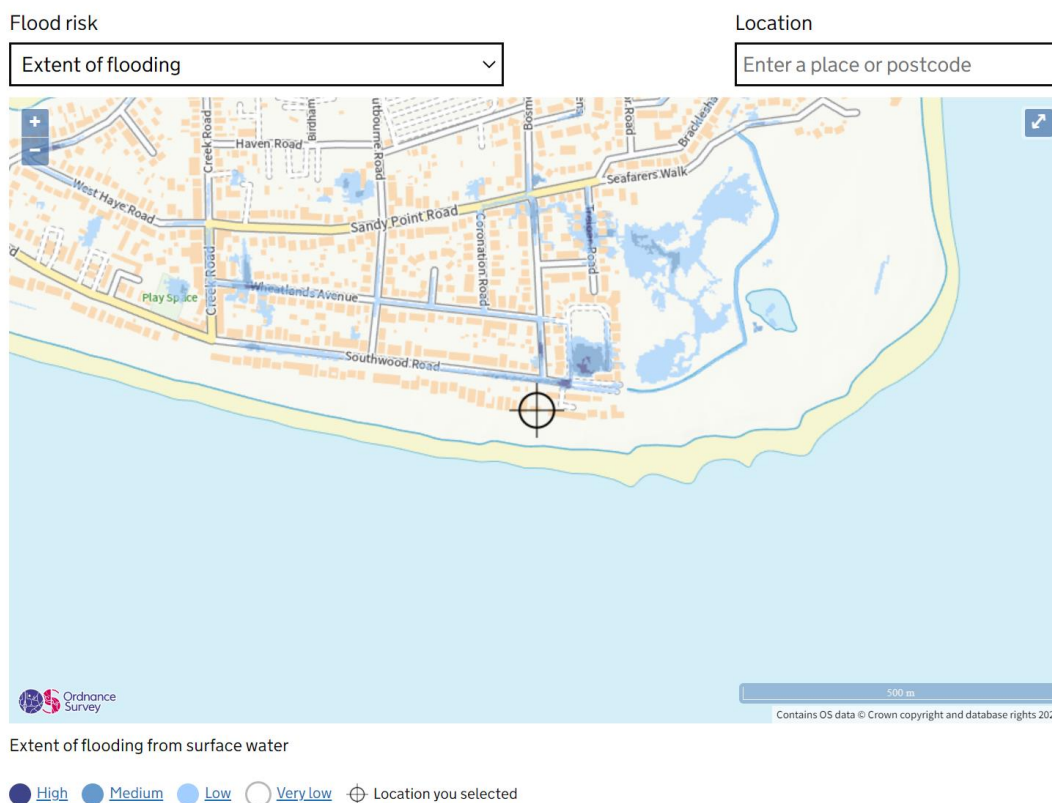
Topography

See the topographic survey in Appendix A.

- The site is at 4.0mAOD – 5.0mAOD in the south (adjacent to sea wall)
- The property itself sits existing with a raised upper ground floor level at 5.45mAOD
- Lower ground floor level existing is 3.3mAOD
- The north (main access) is at 3.2mAOD down to 2.4mAOD in the far north with an access adjacent west of Number 206 and thence to Southwood Road itself

8.4 Surface Water Risk and Hazard Summary

- Property itself is not inundated:
 - In No hazard in all EA risk scenarios
- Access & Egress is always in LOW hazard



8.5 SFRA / LFRMS Surface Water Mapping & Hazard

NOTE: the resolution of the SFRA and SWMP mapping is not appropriate to be site specific.

The mapping corroborates the data in the more detailed mapping and EA data.

8.6 EA / Coastal Team Data & New Climate Change

The Partnership for South Hampshire's Strategic Flood Risk Assessment (PfSH SFRA) in their responses to other applications have indicated the 2115 1in200year including for climate change extreme event flood level of 4.5mAOD.

We deliberately take a precautionary approach and consider the scheme needs to address the hazard of 2125 as the lifetime year of the scheme.

It is the detailed site specific topographic survey vs the EA data that provide the site specific assessment and design requirements to justify the betterment afforded by the scheme.

EA Data:

Tidal flood levels for the 0.5% (1:200) and the 0.1% (1:1000) annual exceedance probabilities relevant to your site are provided in the table below. These levels have been taken from the East Solent Coastal Model which was produced in 2018 by JBA Consulting.

Year	Tide Level (mAOD*)	
	0.5% annual exceedance probability/1 in 200 Year (Flood Zone 3)	0.1% annual exceedance probability/1 in 1000 Year (Flood Zone 2)
2015	3.32	3.55
2070	3.70	3.86
2115	4.13	4.32

* Levels in metres above Ordnance Datum Newlyn.

The UKCP18 Sea Level Rise Allowances for the South East are used to account for the impacts of climate change. This suggest sea levels in this area to rise by c. 1.12m over the lifetime of the proposed development (Higher Central allowance from 2015 to 2125).

This would result in a design (0.5% AEP) flood level of 4.44mAOD in the 2125 epoch.

The 0.1% AEP (2125 epoch) flood level is estimated to be 4.67mAOD.

8.7 Design Response: Topography, Site Levels vs EA Data

1in1000year+NEWcc for Year 2125 = 4.67mAOD

- Upper Ground floor is to be retained at 5.45mAOD: fully compliant with the data and EA guidance
 - 750mm freeboard above the 2125 extreme event
 - Upper Ground floor bedrooms are considered appropriate
- Lower ground floor for non-habitable uses only

8.9 Breach Flood Scenario

There are no raised defences in this area; no breach scenarios need to be assessed.

9.0 Assessment of Proposed Development

9.1 Proposed Development

The proposed development can be seen in Appendix B.

The proposed development comprises:

- Brownfield site of existing dwelling
- No change of use required: remains “More Vulnerable”

Scheme is alterations and extensions:

- Vertical and horizontal extension at lower ground
- Lower ground to remain as non-habitable uses i.e. pool, gym and storage
- Upper Ground floor retained as 5.45mAOD: fully compliant with the data and EA guidance
 - 750mm freeboard above the 2125 extreme event
 - All habitable areas to be a minimum of 1.0m above the 2125 extreme flood event including for climate change
- Alterations to the main entrance in the north
 - New covered porch area
- Internal changes to enable stair access to upper ground floor (5.45mAOD) and to lower ground non habitable areas
- No works required to the sea wall
- No impacts on any other structures
- **Additional protection measures appropriate to the tidal setting are considered appropriate i.e. flood gates for the thresholds to the lower ground and upper ground**
- **All site users have access to above the extreme flood level for the scheme lifetime**
 - The increase in footprint below the flood level includes non-habitable areas and this footprint is not counted in the habitable footprint for flood compensation hence there is no increase in footprint overall that would require flood compensation
 - Regardless; this is tidal and there is no displacement that requires compensation based on EA guidance
- **Reduces flood risk overall**
 - Fully flood resistant
 - Full new modern flood resilience – see below
 - New porous / permeable and SUDS

As an appropriate response, the site will operate as existing with an improvement based on the design:

- 1) robust resilient construction techniques in order to minimise the damage caused by water entry and also to reduce the time taken to return the property to use after a flood (see later sections)
- 2) Reduce flood risk overall with new lower water demand white goods: betterment of surface water management on the site as a result of the scheme where feasible

Drainage

The existing connections will be retained / additional secured with the water company; non-return valves can be utilized as standard.

9.2 Drainage Connections

Foul

The existing connections will be retained / new connections installed subject to agreement with the water company.

Surface Water

100% SUDS Storage on site using gravels and retain the emergency restricted overflow connection to the sewer

9.3 SUDS Specifications

Retained and new permeable front parking area and front new gravel areas (take rainwater direct from roof areas).

Example of areas:

- Use the existing porous / permeable access / parking area to north = 73.5m²
 - This area is shown on the scaled drawings in Appendix B
- Using just extra 0.30m depth of granular angular storage in the make-up = 22.05m³ of storage using EA specifications:
- Assume 30% void ratio
 - Total SUDS storage of 6.62m³

Landscaped gravel areas to side and front: sufficient storage capacity for the full roof areas.

New permeable surfacing to be constructed using the following EA guidance:

- Use the EA's specific "Guidance on the permeable surfacing of front gardens"

<http://www.communities.gov.uk/publications/planningandbuilding/pavingfrontgardens>

- Additional formal extensive SUDS would not be commensurate with the scale and sensitivity of the scheme.
- Retain all existing porous grassed / planting areas

9.4 Pipe sizes / Manholes / Pipe runs

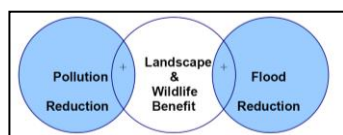
These will be confirmed as part of detailed designs; specifications of landscaping and drainage products need to be confirmed through Buildings Regs. Not required at this stage to demonstrate scheme can accommodate the surface water flows or meet LLFA requirements.

9.5 SUDS Hierarchy Check: site and scheme specific

The scheme offers tangible benefit in that it maximises permeable / porous areas and includes one of the highest forms of discharge: to soakaway.

Concept SUDS Strategy

The following diagram indicates the philosophy behind the proposed SUDS strategy, and is taken from the EA's SUDS guidance:



(Source: Environment Agency, 2009)

Table 2 indicates the SUDS Hierarchy Appraisal for the site and proposed development:

Table 2: Site Specific SUDS Appraisal

SUDS Hierarchy	SUDS Technique	Potential Benefits			Site Specific	
		Flood Reduction	Pollution Reduction	Landscape & Wildlife Benefit	?	Scheme Specific SUDS Suitability Appraisal and Comment
Most Sustainable ↑ ↓ Least Sustainable	Living Roofs	•	•	•	*	To reduce the amount of underground storage SUDS but not likely feasible given nature of existing building
	Ponds / Basins	•	•	•	X	Site is a single dwelling plot; not necessary
	Swales	•	•	•	X	Site is a single dwelling plot; not necessary
	Infiltration Techniques	•	•		*	Scheme is located in known large gravel area. New gravel storage areas and as a back-up the scheme also has a viable existing alternative connection to sewer. Tests to be undertaken as pre-commencement.
	Permeable and Porous Surfaces with discharge to informal soakaway / sewer	•	•		✓	The scheme significantly oversizes the SUDS storage on site. Existing connections can be used: utilize soakaway if feasible / restricted overflow to sewer as necessary.
	Tanked Systems	•			*	Incorporated as necessary by drainage strategy to meet and better the LLFA requirements

Key:

Potentially suitable at the site: * Incorporated in the scheme: ✓ Not suitable / possible at the site: X

9.6 Flood Resilience

The proposed development will utilize the flood resilient techniques recommended in the NPPF Technical Guidance where appropriate and also the recommendations that have previously been issued by various local authorities. The FRA provides the recommended resilient measures that can be incorporated, it will depend on the construction team as to what construction will actually need to be undertaken and what materials are used exactly. This does not invalidate the point and recommendations of this FRA. The FRA cannot simply specify the exact measures that need to be incorporated; they are not required of planning.

- Where feasible given scope of the scheme: all new electrics to be installed roof to floor (top down) where feasible
- Use low smoke halogen free (LSHF) type twin and earth cables rather than PVC cables and solid conductors rather than stranded conductors.
- Any new units eg: boilers and ancillary wiring (programmer and stats) to be on upper ground floor but if required to be placed on the lower ground floor will all be located as high within the lower ground floor level as feasible
- Wiring for telephone, TV, Internet and other services will be protected by suitable insulation to minimise damage.
- Non-return valves as standard for lower and upper ground
- Lower ground to be fully waterproofed (tanked) and waterproofing to be tied in to upper ground floor slab as appropriate; details to be provided at detailed design to building regulations requirements: to reduce the turnaround time for returning the property to full operation after a flood event.
- Waterproofing to be installed above upper ground level as appropriate
- Plasterboards will be installed in horizontal sheets on lower ground and upper ground levels rather than conventional vertical installation methods to minimise the amount of plasterboard that could be damaged in a flood event
- Wall sockets will be raised to as high as is feasible and practicable in order to minimise damage if flood waters inundate the property
- Any wood fixings on lower ground and upper ground floor will be robust and/or protected by suitable coatings in order to minimise damage during a flood event
- Airbricks as necessary will be raised to as high as is feasible (i.e. telescoping if practicable)
- The Damp Proof Membrane / ground waterproofing will be installed above the main floor slab and tied in to the walls where appropriate, to reduce the turnaround time for returning the property to full operation after a flood event.
- As necessary: the extended and new concrete sub floor will likely be laid to fall to drains or gullies which will remove any build-up of ground water to a sump pump where it will be pumped into the mains sewer. This pump will be fitted with a non-return valve to prevent water backing up into the property should the mains sewer become full
- Insulation to the external walls will be specified as rigid board which has impermeable foil facings that are resistant to the passage of water vapour and double the thermal resistance of the cavity.

9.7 Refuge and Evacuation

HAYLING ISLAND EMERGENCY PLANNING FRAMEWORK

EA Flood Warning

Based on the likely flood risk and associated warning time, evacuation is usually preferred and feasible at this site, floodwaters are also not likely to enter the building; refuge is a preferred flood response.

Range of Flood Events

- Not in a breach extent
- Not in a rapid inundation zone

All site users have access to the ground and upper floors; all are above the extreme event for lifetime of the scheme.

- Egress from the rear to Southwood Road
- Continue west on Southwood Road towards Eastoke and north towards Mengham
- Into unrestricted FZ1

It is therefore considered likely that there would be sufficient time to seek refuge and/or evacuate to an area outside of the extreme flood event for the lifetime of the scheme.

The property itself will be a modern protected and resilient dwelling as a result of the scheme and based on the available mapping is not likely to be inundated hence the site users can remain dry within the property for the duration of the likely flood event.

Future management: Follow Hayling Island Emergency Plan and follow the emergency routes as directed by the EA / emergency services

9.8 Annual Monitoring

It is recommended that tenants should contact the EA on an annual basis to confirm the flood status of the property.

If the flood status has changed, the evacuation and refuge plan should be reviewed and updated by suitable flood risk consultants as appropriate.

9.9 Surface Water Runoff – Flood Risk from the Development

In accordance with the NPPF / NPPG, this FRA also considers the risks posed from the development to surrounding areas.

The scheme is **compliant with LLFA SUDS policy – new oversized SUDS strategy**: maximise porous and permeable areas with new SUDS storage on site and discharge to gravel “soakaway” if found to be feasible / restricted overflow to sewer.

The proposals will incorporate new low-water demand devices such that despite no likely increase in peak flow and volume of flow, this can be managed appropriately for the lifetime of the scheme.

Given the small scale of the proposed development it is considered likely that the development will have a negligible effect on surrounding infrastructure. There will not be any significant increase in overland flow from the site.

9.10 Climate Change including New Allowances

The impact of climate change in accordance with the NPPF / PPG is likely to be an increase in the rainfall intensity in the future, which will increase peak storm flows to sewer. The proposed development will incorporate low flush and reduced water demand showers and toilets, such that the combined flows to sewer are likely to have a negligible impact. It is considered therefore that flows in the future are not likely to have a significant impact, even with an allowance for climate change.

There is unlikely to be an unacceptable impact on the receiving sewers owing to the small scale of the development and the fact that the scheme reduces discharge rates from the site.

The scheme includes new porous / permeable areas to address residual surface water risk and to encourage storage within the site. The EA data, this assessment and the PUSH SFRA include the required climate change tidal extents and the scheme is appropriately designed.

9.11 Flood Storage

It is considered that flood compensation is not required given the footprint is wholly within FZ1 or the future tidal floodplain.

10.0 Exception Test (included for technical support)

Exception Test Criteria	Proposed Development
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA where one has been prepared.	Pass. Existing dwelling with flood betterment for lifetime proven Results in a better protected and flood future-proofed structure than existing and surrounding properties Re-uses an existing brownfield site: sustainable. Scheme includes SUDS to reduce flood risk overall for the lifetime of the scheme. Scheme can operate safely even in the extreme event Appropriate mitigation is flood resilient and resistant measures
A FRA must demonstrate that the development will be safe, without increasing flood risk elsewhere, and, where possible will reduce flood risk overall.	Pass. All habitable areas are above the future extreme flood level Results in a better protected and flood future-proofed structure than existing and surrounding properties Scheme also reduces flood risk overall As long as the flood resilient measures are incorporated, and the future occupiers sign up to the EA flood warning and understand the flood response required, it is considered likely that the proposed development can be constructed and operated safely in flood risk terms, without increasing flood risk elsewhere and is therefore appropriate development in accordance with the NPPF.

12.0 Conclusion

- EA approved worse case new 2125 extreme climate change design flood level of 4.67mAOD
 - This is greater than the PUSH SFRA 2115 extreme flood level
- Upper Ground floor remains at 5.45mAOD which is 730m above the 2125 extreme event
- All habitable areas are above the extreme flood event
 - Bedrooms on the upper ground floor are appropriate
- No works that will have an impact on sea wall structures / drainage operations of the site
- All site users have access to above the extreme flood level for the lifetime of the scheme
- The residual risks are not unacceptable based on the assessment of the data, site and scheme and as per the PUSH SFRA analysis and guidance (including new climate change allowances)
- Within NO - VERY LOW surface water hazard based on site specific mapping
- REDUCES FLOOD RISK OVERALL
 - Resilient and resistant measures: additional protection measures are feasible
 - **Results in better protected and flood future proofed dwelling than existing**
- This assessment considers the Exception Test is passed regardless, based on the site and scheme specifics

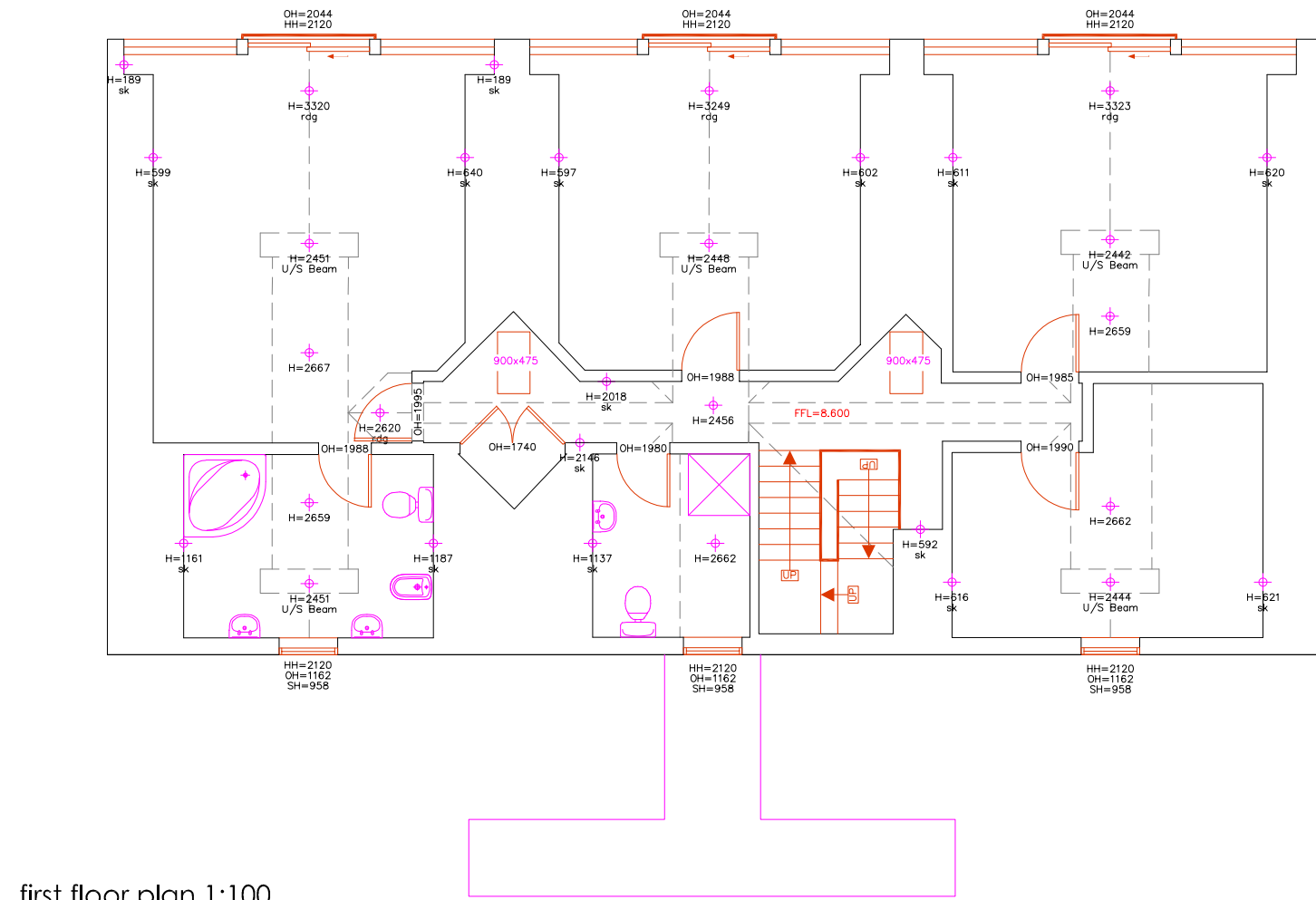
The hazard is a confirmed residual risk in accordance with NPPF (Paragraph: 041 Ref ID: 7-041-20140306); the proposed operation is site and scheme specifically appropriate. Given the residual risk flood setting, the level, extent and depth of flooding on the site can be managed in terms of site levels, the scheme design specifics, resistant and resilient measures and precautionary mitigation measures.

Based on the likely flooding risk and small scale of the proposed development, it is considered that the proposed development can be constructed and continue to be operated safely in flood risk terms, without increasing flood risk elsewhere; it is therefore considered appropriate development in accordance with the NPPF / PPG.

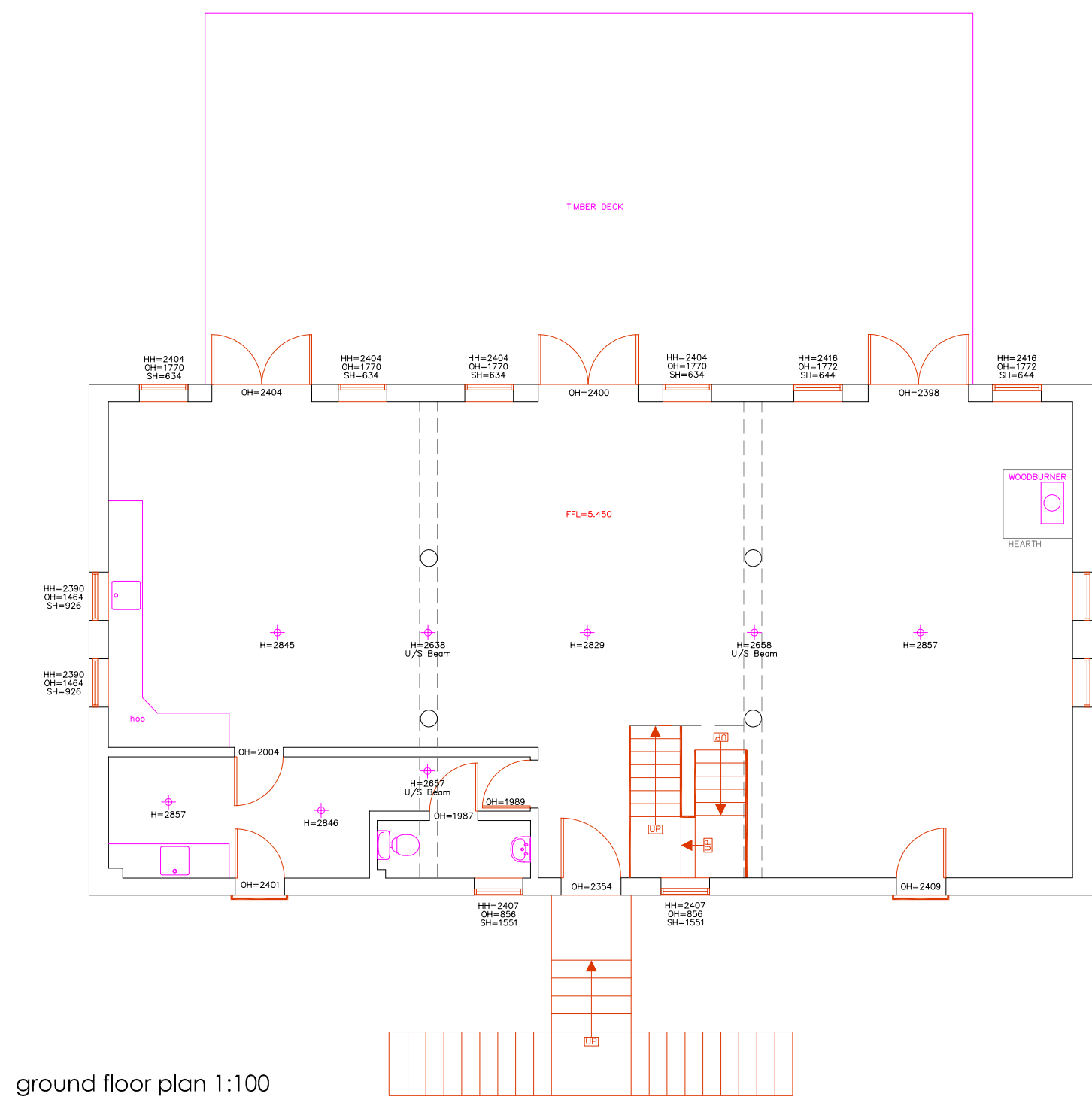
12.0 Appendices

- A. Site Location & Existing Layout & Topo
- B. Proposed Development Plans & EA Specification for SUDS

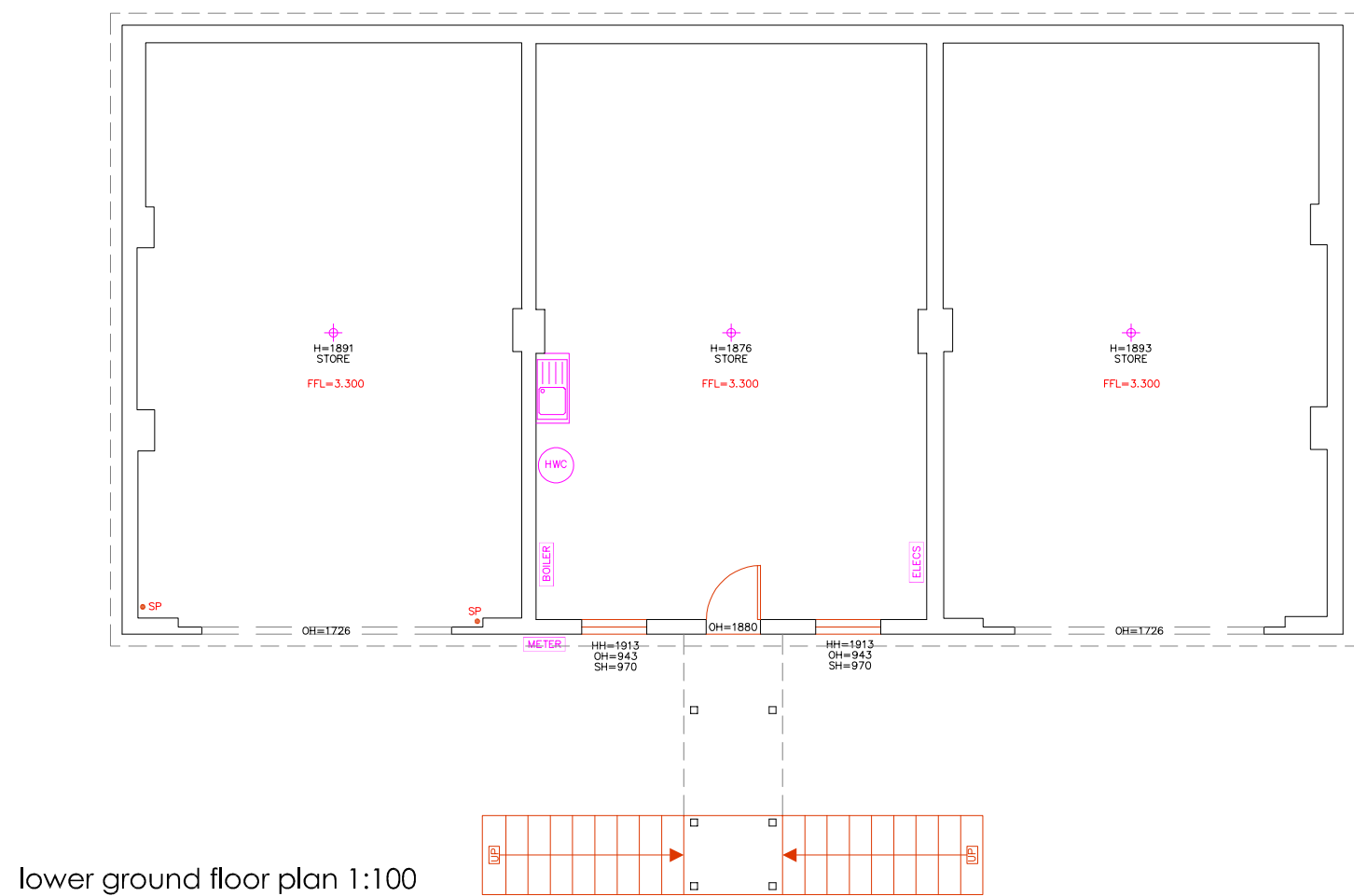
Appendix A



first floor plan 1:100



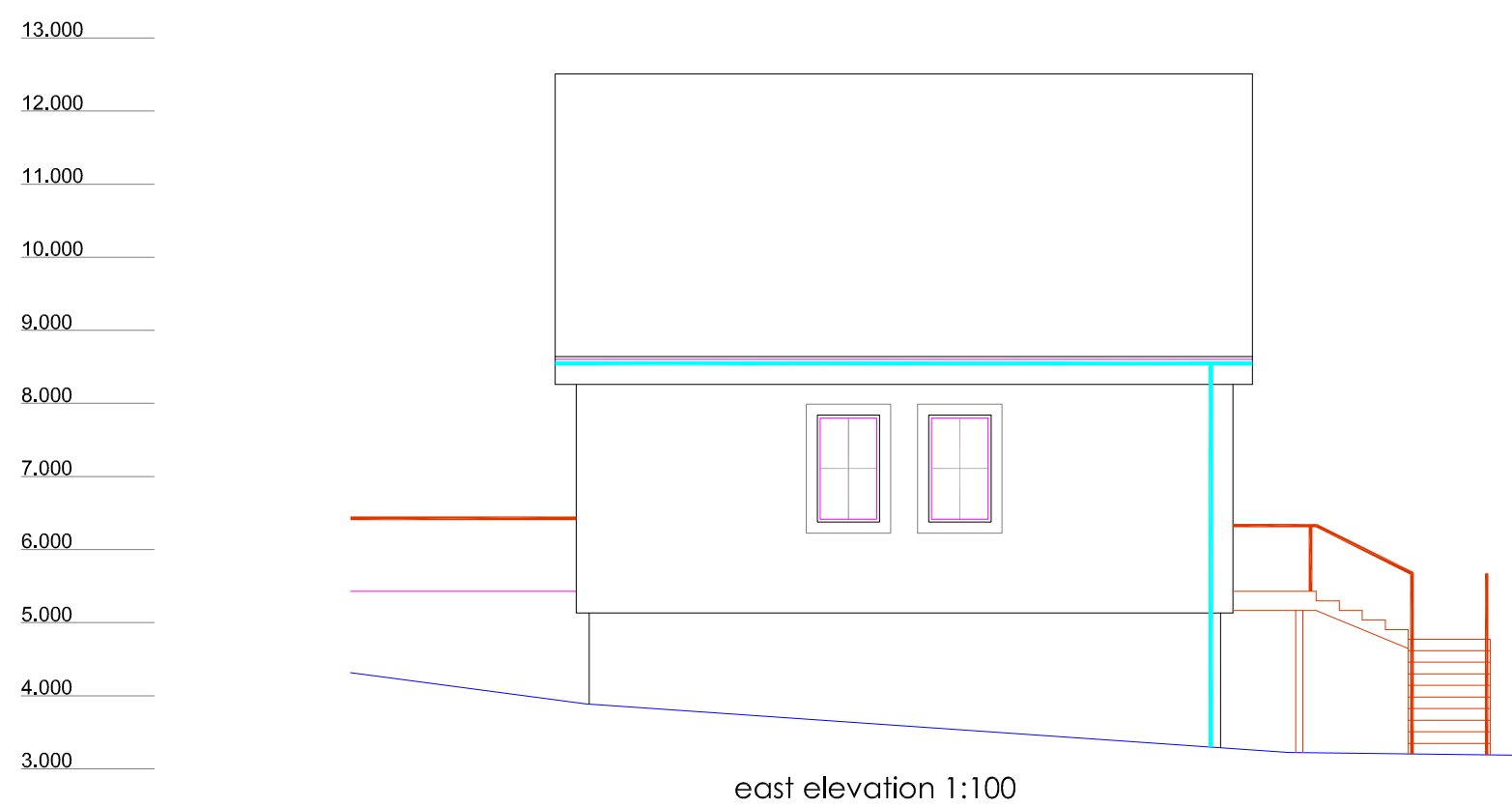
ground floor plan 1:100



lower ground floor plan 1:100



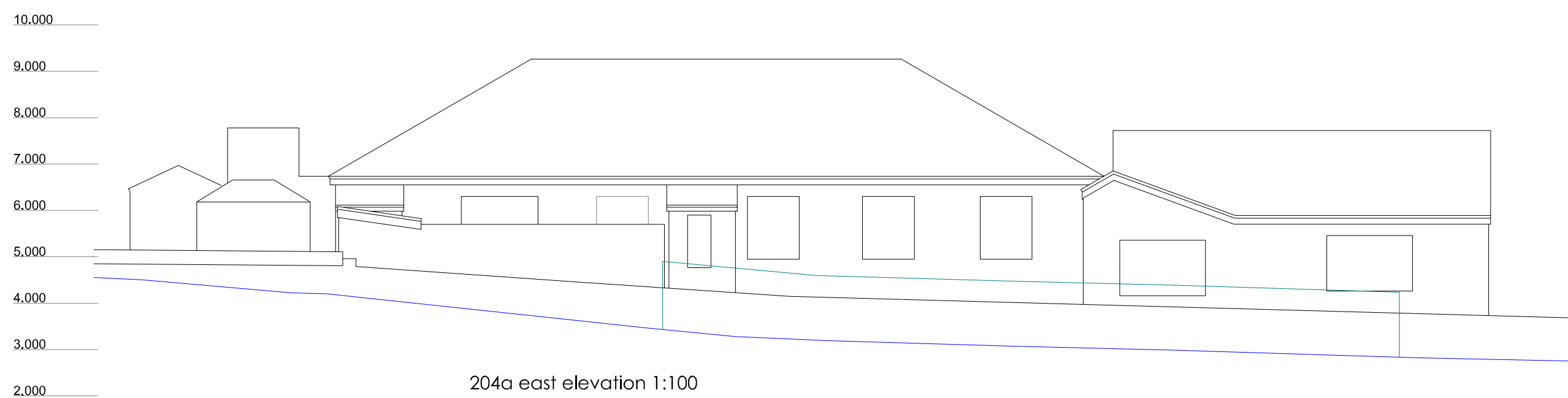
208
south elevation 1:100



east elevation 1:100



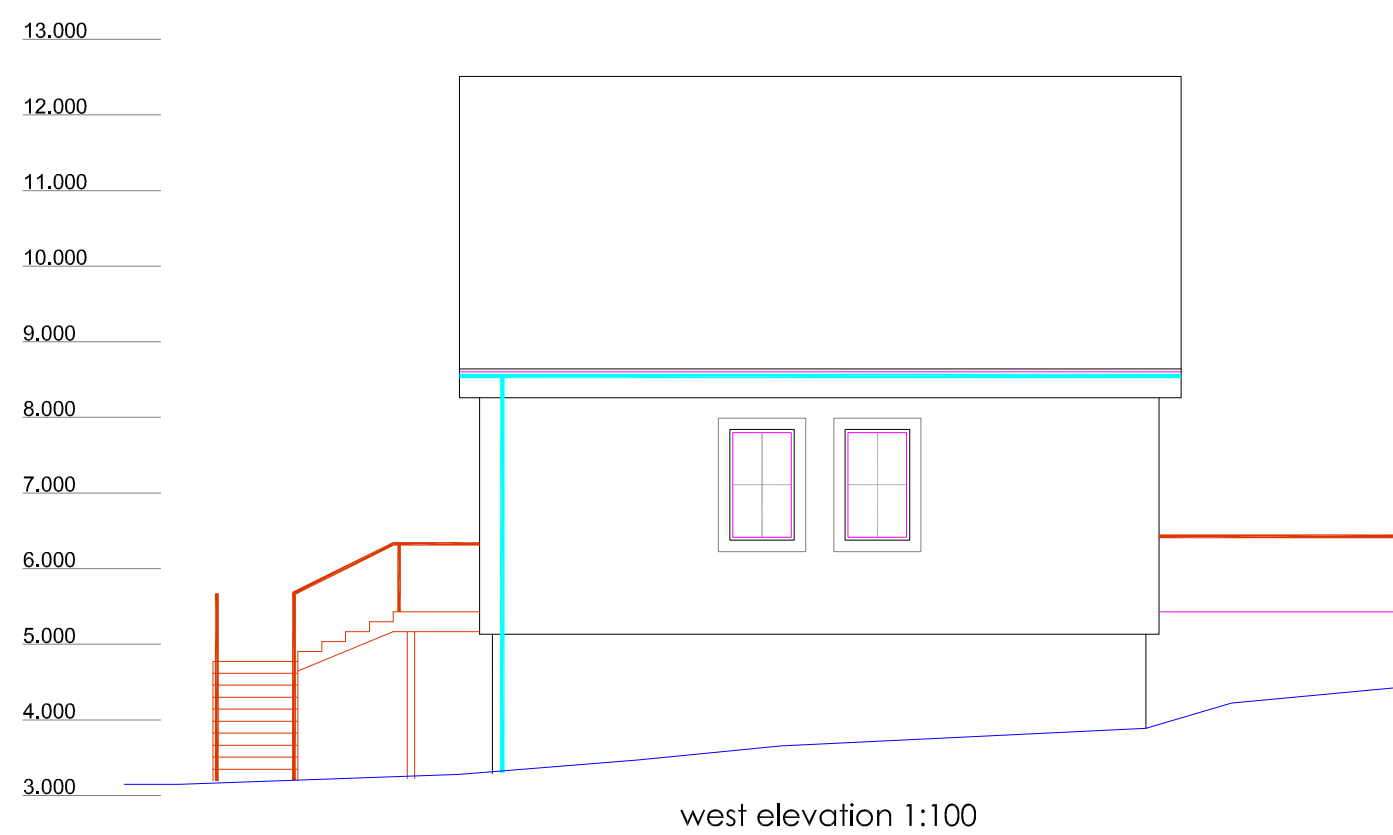
north elevation 1:100



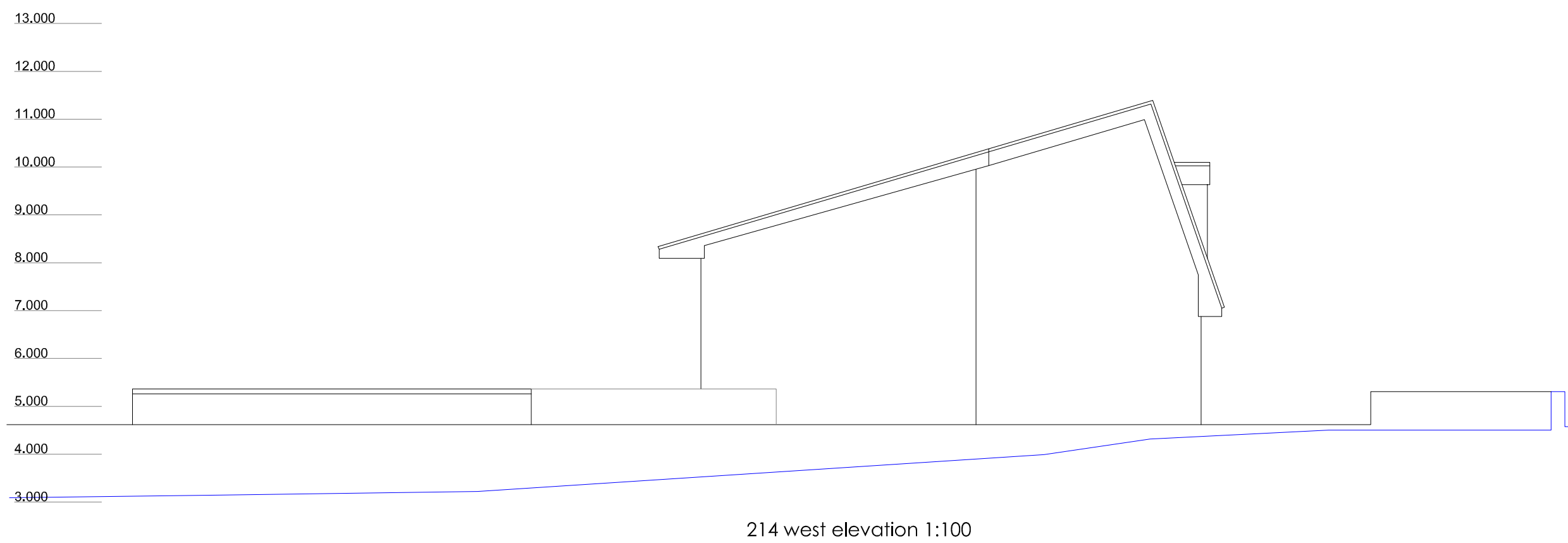
204a east elevation 1:100



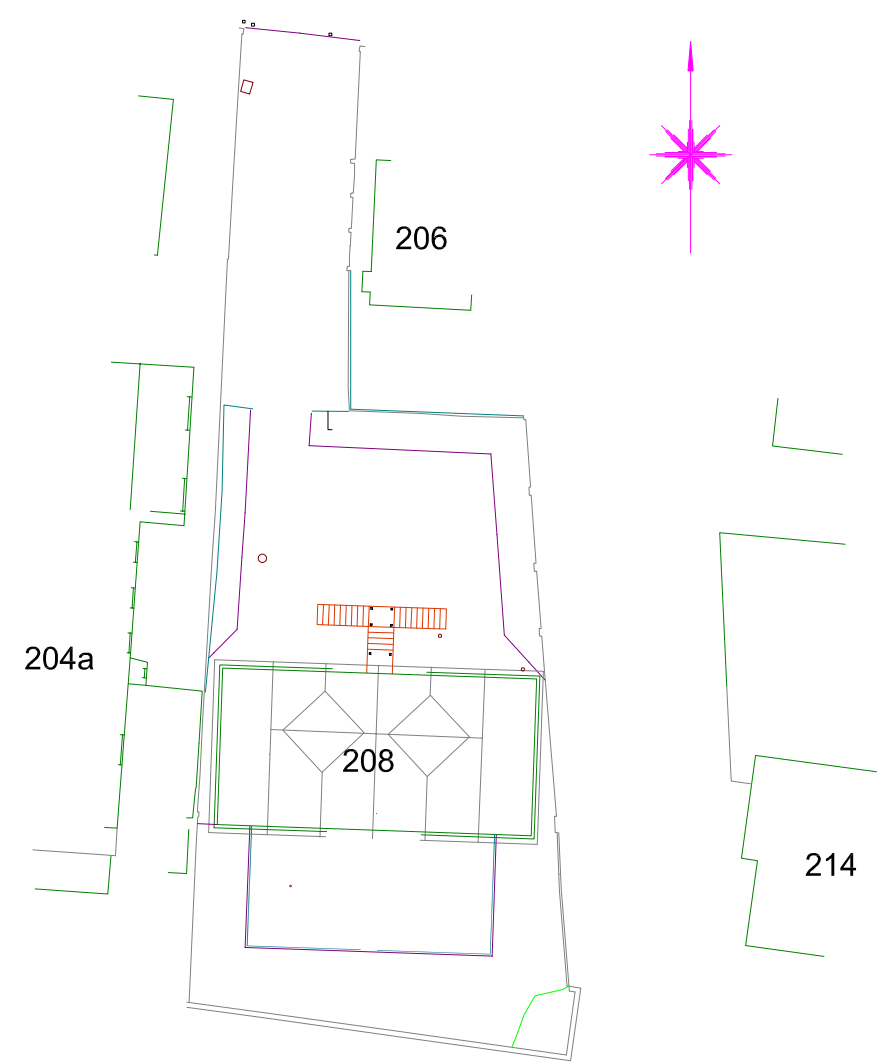
206 south elevation 1:100



west elevation 1:100



214 west elevation 1:100



NOTES
Survey accurate at time of site attendance. Do not scale from printed drawings except for planning purposes.

Grid is based on ordnance survey national grid fixed by GPS satellite active network. Levels are related to the ordnance survey GPS active Network and transformed using the OSGM15 & OSTN15 model.

Drainage pipe sizes (where shown) have been gauged from the surface for safety reasons and should be regarded as approximate only.

Tree species (where shown) should be treated with caution and expert identification is advised.

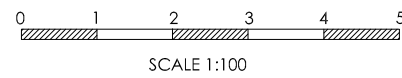
Although this is a digital survey the accuracy and amount of detail shown is only commensurate with the graphical scale of mapping as specified. Care should be exercised when working to larger scales.

Visible features in the vicinity of the boundaries as shown above, may not represent the extent of legally conveyed ownership.

Whilst every effort has been made to achieve accuracy on this plan, CRUCIAL clearance dimensions, levels and invert levels should be checked prior to design and construction.

Areas of dense undergrowth cannot be surveyed in detail, these areas will be shown in outline only and marked as 'dense undergrowth' on the plan.

Kerb levels have been taken on the top of the channel.



medlams
surveys limited

www.medlams-surveys.co.uk
becky@medlams-surveys.co.uk
07717 205 388

project: 208 Southwood Road, Hayling Island

client: B.Meehan

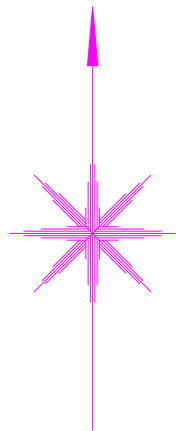
job ref: S1502

title: Measured Survey

scale: 1:100 @A1

date: June 2021

dwg no: EX02 rev:



NOTES

Survey accurate at time of site attendance. Do not scale from printed drawing except for planning purposes.

Grid is based on Ordnance Survey national grid fixed by GPS satellite active network. Levels are related to the Ordnance Survey GPS active Network and transformed using the OSGM15 & OSN15 model.

Drainage pipe sizes (where shown) have been gauged from the surface for safety reasons and should be regarded as approximate only.

Tree species (where shown) should be treated with caution and expert identification is advised.

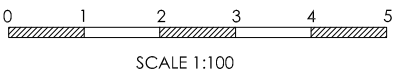
Although this is a digital survey the accuracy and amount of detail shown is only commensurate with the graphical scale of mapping as specified. Care should be exercised when working to larger scales.

Visible features in the vicinity of the boundaries as shown above, may not represent the extent of legally conveyed ownership.

Whilst every effort has been made to achieve accuracy on this plan, CRUCIAL clearance dimensions, levels and invert levels should be checked prior to design and construction.

Areas of dense undergrowth cannot be surveyed in detail, these areas will be shown in outline only and marked as 'dense undergrowth' on the plan.

Kerb levels have been taken on the top of the channel.



ABBREVIATIONS (where applicable)

AV	Air Valve	MH	Manhole Cover
BK	Brick	MK	Marker
BL	Bollard	MS	Milestone
BS	Bus Stop	MT	Meter
BT	British Telecom	MY	Mercury
CB	Control Box	OH	Overhead
C/B	Close Boarded	PAV	Paving
CL	Cover Level	PB	Post Box
CLK	Chainlink	PE	Pipe
CO	Column	PM	Parking Meter
Conc	Concrete	P/R	Post and Rail
CP	Catch Pit	PT	Post
CPS	Concrete Paving Slabs	P/W	Post and Wire
CATV	Cable Television	RE	Rodding Eye
DC	Drainage Channel	RET	Retaining
DP	Drain Pipe	RS	Road Sign
EC	Electricity Cover	RSJ	Rollled Steel Joist
ER	Earthing Rod	SC	Stop Cock
FB	Flower Bed	SK	Soakaway
FE	Fence	SP	Signpost
FH	Fire Hydrant	ST	Silt Trap
FL	Floor Level	SV	Stop Valve
FP	Flag Pole	SVC	Security Video Camera
GP	Gate Post	TCB	Telephone Call Box
GV	Gas Valve	TK	Tank
GY/G	Gully	TL	Traffic Light
HT	Height	TP	Telegraph Pole
IC	Inspection Cover	UG	Underground
IL	Invert Level	UTF	Unable To Trace Further
IN	Interceptor	UTL	Unable To Lift
I/R	Iron Railings	VP	Vent Pipe
KO	Kerb Outlet	WL	Water Level
LB	Litter Bin	WM	Water Meter
LP	Lamp Post	WO	Wash Out

Appendix B

Architectural floor and site plan for a building. The plan includes the following details:

- Rooms and Features:** WATER-SPORTS STORE, GYM, STORE, SHOWER ROOM, LAUNDRY, GAMES ROOM, ENTRANCE HALL, LGF 2.58, PLANT ROOM, ELGF 3.30, POOL (12.5M LENGTH), COVERED PORCH, PLANTERS, LOW WALL, BLOCK WALL, TIMBER FENCE 1.2mh, SHINGLE, COURTYARD GARDEN, COURTYARD, IC, STAIR, and various other structural elements.
- Site Plan Details:**
 - Three car parking spaces, each labeled "4.8 x 2.4M CAR PARKING SPACE".
 - Dimensions and elevations: 2.901, 2.870, 2.877, 2.912, 2.753, 2.682, 2.602, 2.454, 2.440, 2.413, 2.314, 2.315, 2.316, 2.317, 2.318, 2.319, 2.320, 2.321, 2.322, 2.323, 2.324, 2.325, 2.326, 2.327, 2.328, 2.329, 2.330, 2.331, 2.332, 2.333, 2.334, 2.335, 2.336, 2.337, 2.338, 2.339, 2.340, 2.341, 2.342, 2.343, 2.344, 2.345, 2.346, 2.347, 2.348, 2.349, 2.350, 2.351, 2.352, 2.353, 2.354, 2.355, 2.356, 2.357, 2.358, 2.359, 2.360, 2.361, 2.362, 2.363, 2.364, 2.365, 2.366, 2.367, 2.368, 2.369, 2.370, 2.371, 2.372, 2.373, 2.374, 2.375, 2.376, 2.377, 2.378, 2.379, 2.380, 2.381, 2.382, 2.383, 2.384, 2.385, 2.386, 2.387, 2.388, 2.389, 2.390, 2.391, 2.392, 2.393, 2.394, 2.395, 2.396, 2.397, 2.398, 2.399, 2.400, 2.401, 2.402, 2.403, 2.404, 2.405, 2.406, 2.407, 2.408, 2.409, 2.410, 2.411, 2.412, 2.413, 2.414, 2.415, 2.416, 2.417, 2.418, 2.419, 2.420, 2.421, 2.422, 2.423, 2.424, 2.425, 2.426, 2.427, 2.428, 2.429, 2.430, 2.431, 2.432, 2.433, 2.434, 2.435, 2.436, 2.437, 2.438, 2.439, 2.440, 2.441, 2.442, 2.443, 2.444, 2.445, 2.446, 2.447, 2.448, 2.449, 2.450, 2.451, 2.452, 2.453, 2.454, 2.455, 2.456, 2.457, 2.458, 2.459, 2.460, 2.461, 2.462, 2.463, 2.464, 2.465, 2.466, 2.467, 2.468, 2.469, 2.470, 2.471, 2.472, 2.473, 2.474, 2.475, 2.476, 2.477, 2.478, 2.479, 2.480, 2.481, 2.482, 2.483, 2.484, 2.485, 2.486, 2.487, 2.488, 2.489, 2.490, 2.491, 2.492, 2.493, 2.494, 2.495, 2.496, 2.497, 2.498, 2.499, 2.500, 2.501, 2.502, 2.503, 2.504, 2.505, 2.506, 2.507, 2.508, 2.509, 2.510, 2.511, 2.512, 2.513, 2.514, 2.515, 2.516, 2.517, 2.518, 2.519, 2.520, 2.521, 2.522, 2.523, 2.524, 2.525, 2.526, 2.527, 2.528, 2.529, 2.530, 2.531, 2.532, 2.533, 2.534, 2.535, 2.536, 2.537, 2.538, 2.539, 2.540, 2.541, 2.542, 2.543, 2.544, 2.545, 2.546, 2.547, 2.548, 2.549, 2.550, 2.551, 2.552, 2.553, 2.554, 2.555, 2.556, 2.557, 2.558, 2.559, 2.560, 2.561, 2.562, 2.563, 2.564, 2.565, 2.566, 2.567, 2.568, 2.569, 2.570, 2.571, 2.572, 2.573, 2.574, 2.575, 2.576, 2.577, 2.578, 2.579, 2.580, 2.581, 2.582, 2.583, 2.584, 2.585, 2.586, 2.587, 2.588, 2.589, 2.590, 2.591, 2.592, 2.593, 2.594, 2.595, 2.596, 2.597, 2.598, 2.599, 2.600, 2.601, 2.602, 2.603, 2.604, 2.605, 2.606, 2.607, 2.608, 2.609, 2.610, 2.611, 2.612, 2.613, 2.614, 2.615, 2.616, 2.617, 2.618, 2.619, 2.620, 2.621, 2.622, 2.623, 2.624, 2.625, 2.626, 2.627, 2.628, 2.629, 2.630, 2.631, 2.632, 2.633, 2.634, 2.635, 2.636, 2.637, 2.638, 2.639, 2.640, 2.641, 2.642, 2.643, 2.644, 2.645, 2.646, 2.647, 2.648, 2.649, 2.650, 2.651, 2.652, 2.653, 2.654, 2.655, 2.656, 2.657, 2.658, 2.659, 2.660, 2.661, 2.662, 2.663, 2.664, 2.665, 2.666, 2.667, 2.668, 2.669, 2.670, 2.671, 2.672, 2.673, 2.674, 2.675, 2.676, 2.677, 2.678, 2.679, 2.680, 2.681, 2.682, 2.683, 2.684, 2.685, 2.686, 2.687, 2.688, 2.689, 2.690, 2.691, 2.692, 2.693, 2.694, 2.695, 2.696, 2.697, 2.698, 2.699, 2.700, 2.701, 2.702, 2.703, 2.704, 2.705, 2.706, 2.707, 2.708, 2.709, 2.710, 2.711, 2.712, 2.713, 2.714, 2.715, 2.716, 2.717, 2.718, 2.719, 2.720, 2.721, 2.722, 2.723, 2.724, 2.725, 2.726, 2.727, 2.728, 2.729, 2.730, 2.731, 2.732, 2.733, 2.734, 2.735, 2.736, 2.737, 2.738, 2.739, 2.740, 2.741, 2.742, 2.743, 2.744, 2.745, 2.746, 2.747, 2.748, 2.749, 2.750, 2.751, 2.752, 2.753, 2.754, 2.755, 2.756, 2.757, 2.758, 2.759, 2.760, 2.761, 2.762, 2.763, 2.764, 2.765, 2.766, 2.767, 2.768, 2.769, 2.770, 2.771, 2.772, 2.773, 2.774, 2.775, 2.776, 2.777, 2.778, 2.779, 2.780, 2.781, 2.782, 2.783, 2.784, 2.785, 2.786, 2.787, 2.788, 2.789, 2.790, 2.791, 2.792, 2.793, 2.794, 2.795, 2.796, 2.797, 2.798, 2.799, 2.800, 2.801, 2.802, 2.803, 2.804, 2.805, 2.806, 2.807, 2.808, 2.809, 2.810, 2.811, 2.812, 2.813, 2.814, 2.815, 2.816, 2.817, 2.818, 2.819, 2.820, 2.821, 2.822, 2.823, 2.824, 2.825, 2.826, 2.827, 2.828, 2.829, 2.830, 2.831, 2.832, 2.833, 2.834, 2.835, 2.836, 2.837, 2.838, 2.839, 2.840, 2.841, 2.842



Rev B: 2021/11/15 Existing house retained with new basement and interior remodeling

Rev A: 2021.08.19 Parking and dimensions to boundary shown

RS
ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE: Proposed Lower Ground
and Site Plan

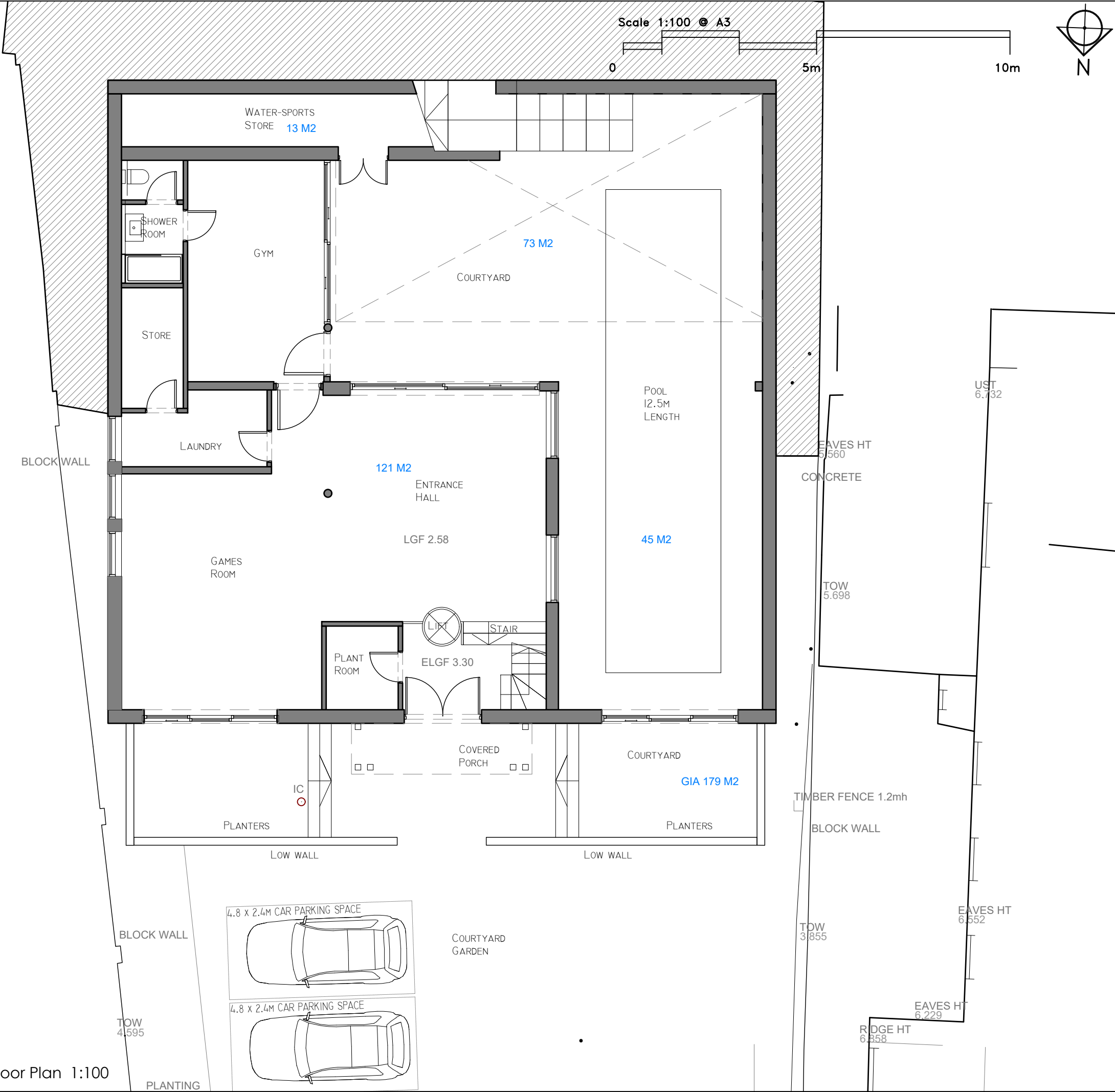
DRAWING NUMBER : 111.b
Scale : 1:200 @ A3

DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

Proposed Lower Ground Floor & Site Plan 1:200

Proposed Lower Ground Floor Plan



Proposed Lower Ground Floor Plan 1:100

PLANNING

Rev B. 2021/11/15 Existing house retained with new basement and interior remodeling
Rev A: 2021.08.19 Parking and dimensions to boundary shown

RS
ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE: Proposed Ground Plan

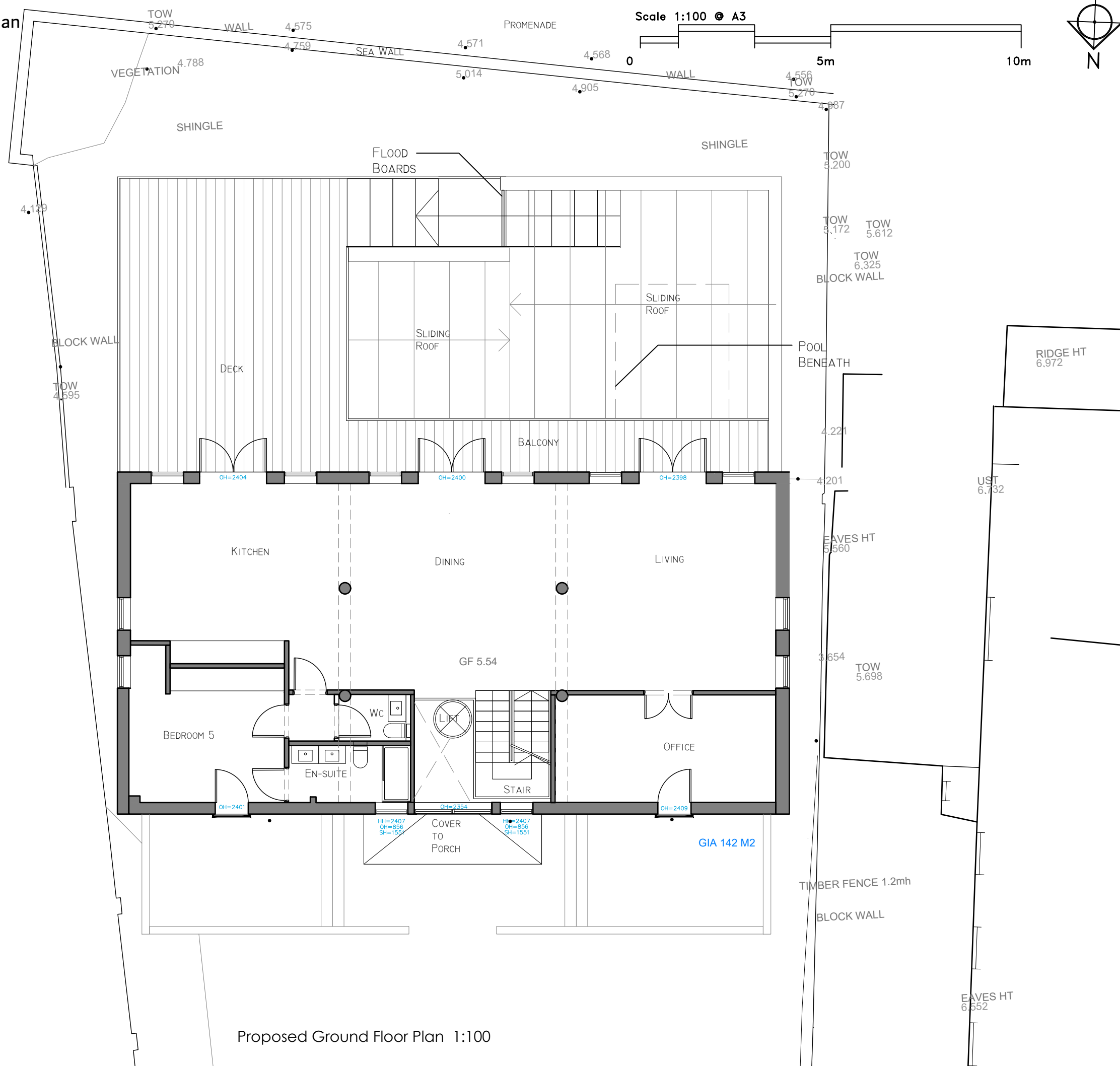
DRAWING NUMBER : 112.b

Scale : 1:100 @ A3

DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

Proposed Ground Floor Plan



PLANNING

Rev A. 2021/11/15 Existing house
retained with new basement and
interior remodeling

RS
ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE:
Proposed Ground Floor Plan

DRAWING NUMBER : 113.a

Scale : 1:100 @ A3

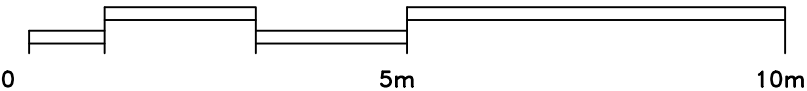
DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

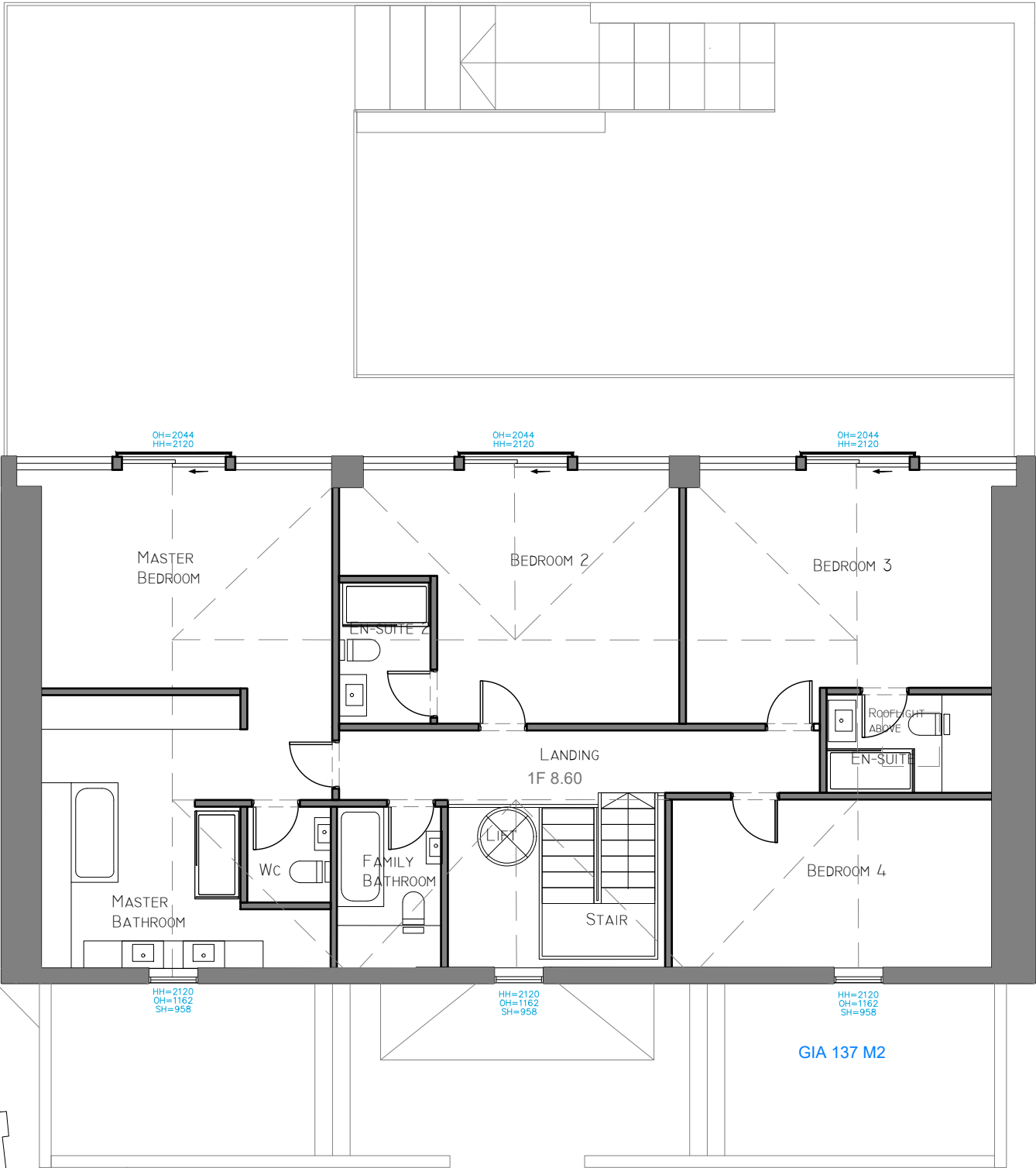
Proposed Ground Floor Plan 1:100

Proposed First Floor Plan

Scale 1:100 @ A3



PLANNING



RIDGE HT
6.972

UST
6.732

Rev A. 2021/11/15 Existing house
retained with new basement and
interior remodeling

RS

ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE:
Proposed First Floor

DRAWING NUMBER : 114.a

Scale : 1:100 @ A3

DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

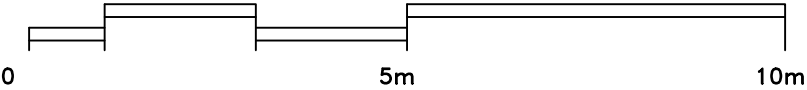
194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

EAVES HT
6.552

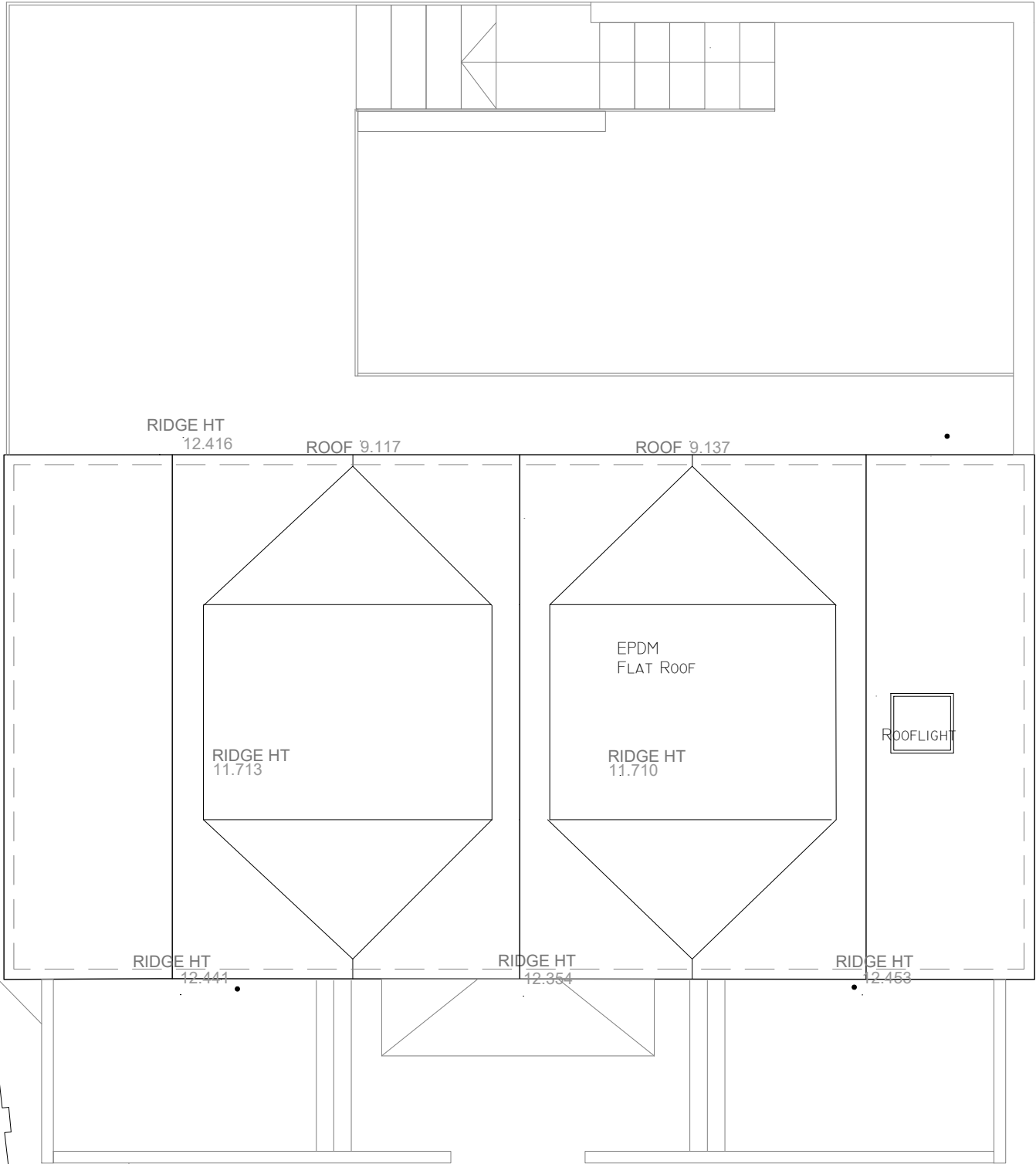
Proposed First Floor Plan 1:100

Proposed Roof Plan

Scale 1:100 @ A3



PLANNING



RIDGE HT
6.972

RIDGE HT
12.416

ROOF 9.117

ROOF 9.137

EAVES HT
8.276

UST
6.732

RIDGE HT
11.713

RIDGE HT
11.710

ROOFLIGHT

RIDGE HT
12.441

RIDGE HT
12.354

RIDGE HT
12.453

EAVES HT
6.552

Rev A. 2021/11/15 Existing house retained with new basement and interior remodeling

RS

ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE:
Proposed Roof Plan

DRAWING NUMBER : 115.a

Scale : 1:100 @ A3

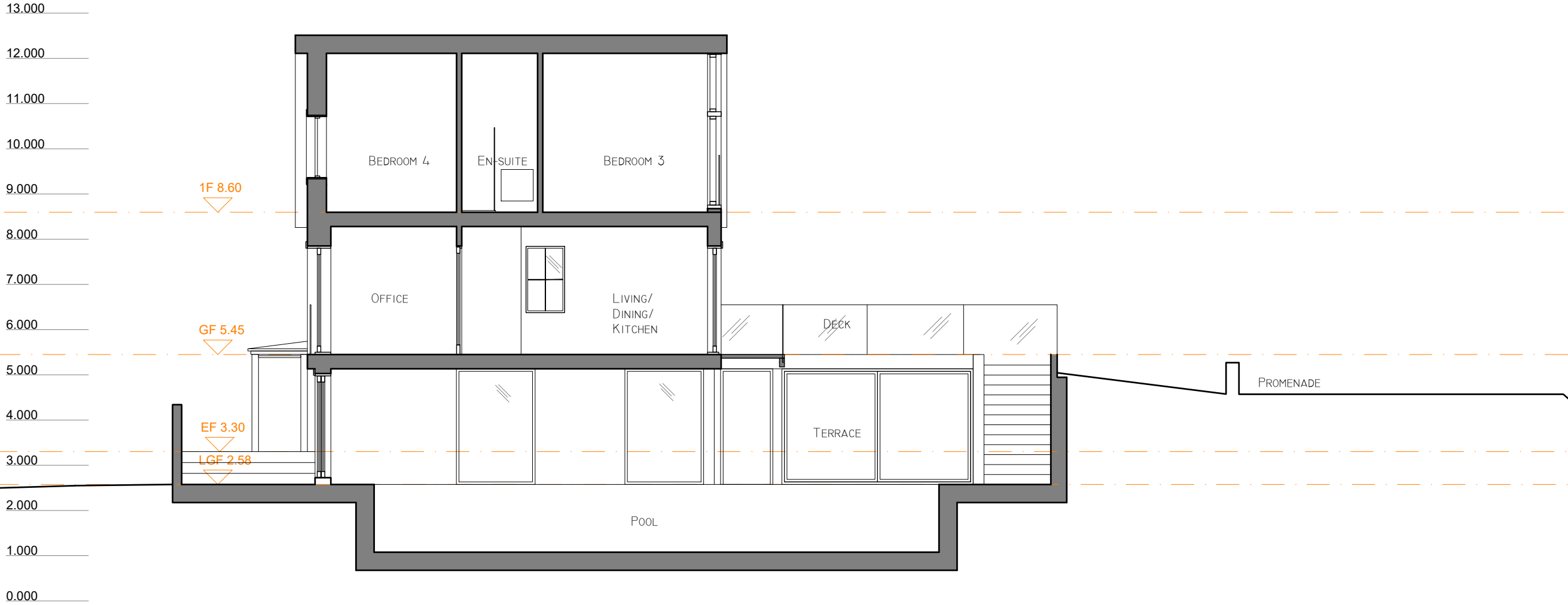
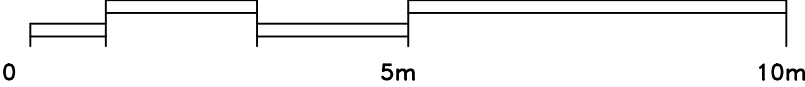
DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

Proposed Roof Plan 1:100

Proposed Short Section

Scale 1:100 @ A3



Proposed Short Section 1:100

PLANNING

Rev A. 2021/11/15 Existing house retained with new basement and interior remodeling

RS

ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE:
Proposed Short Section

DRAWING NUMBER : 201.a

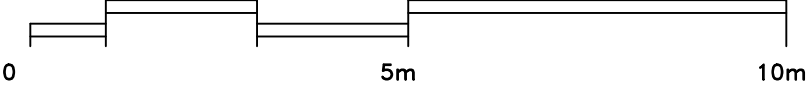
Scale : 1:100 @ A3

DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

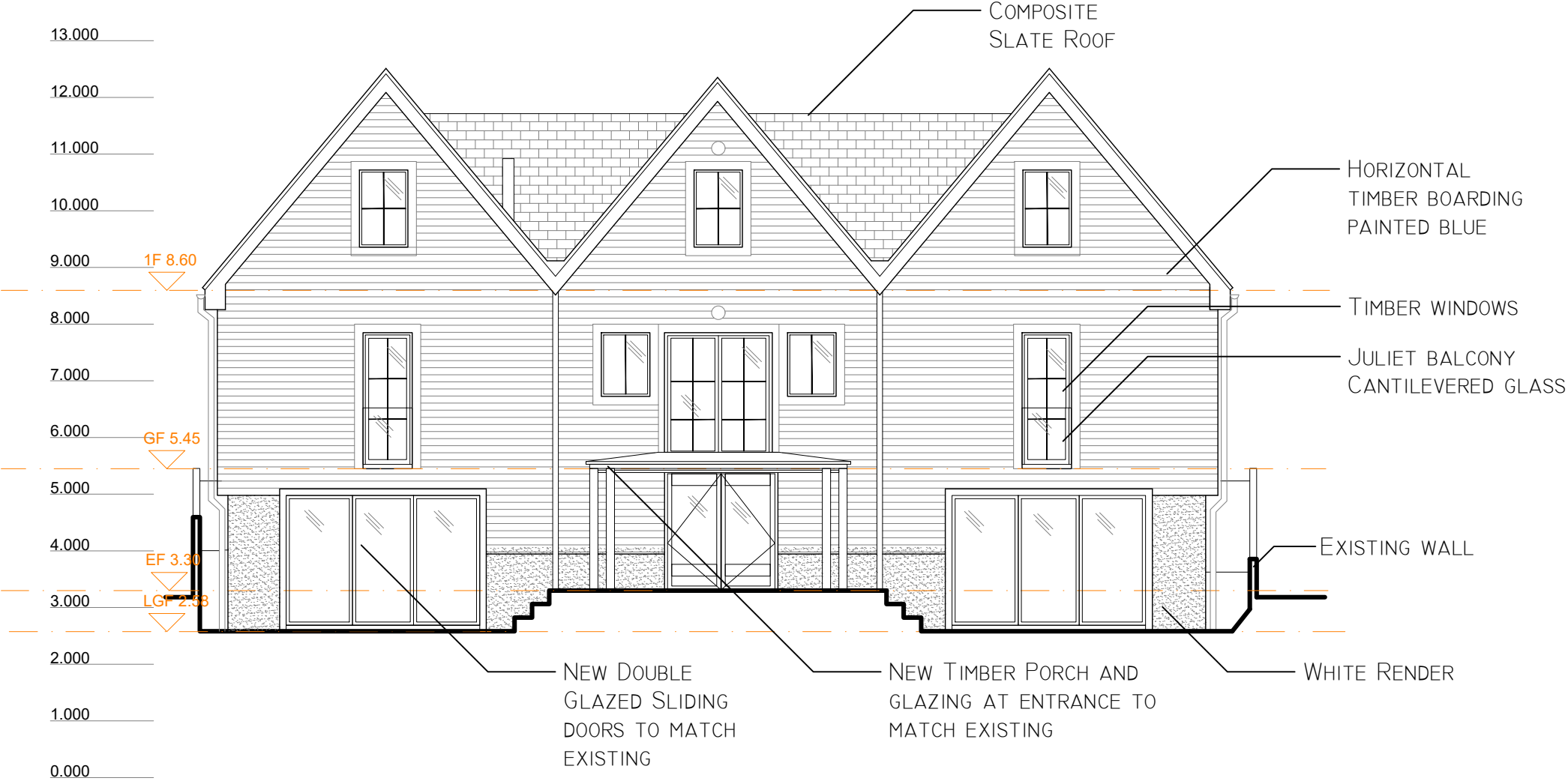
194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

Proposed North Elevation

Scale 1:100 @ A3



PLANNING



Proposed North Elevation 1:100

Rev A. 2021/11/15 Existing house retained with new basement and interior remodeling

RS

ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE:
Proposed North Elevation

DRAWING NUMBER : 202.a

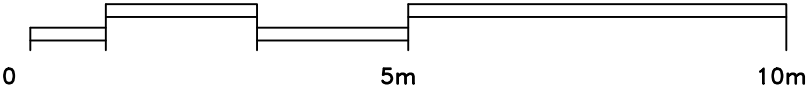
Scale : 1:100 @ A3

DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

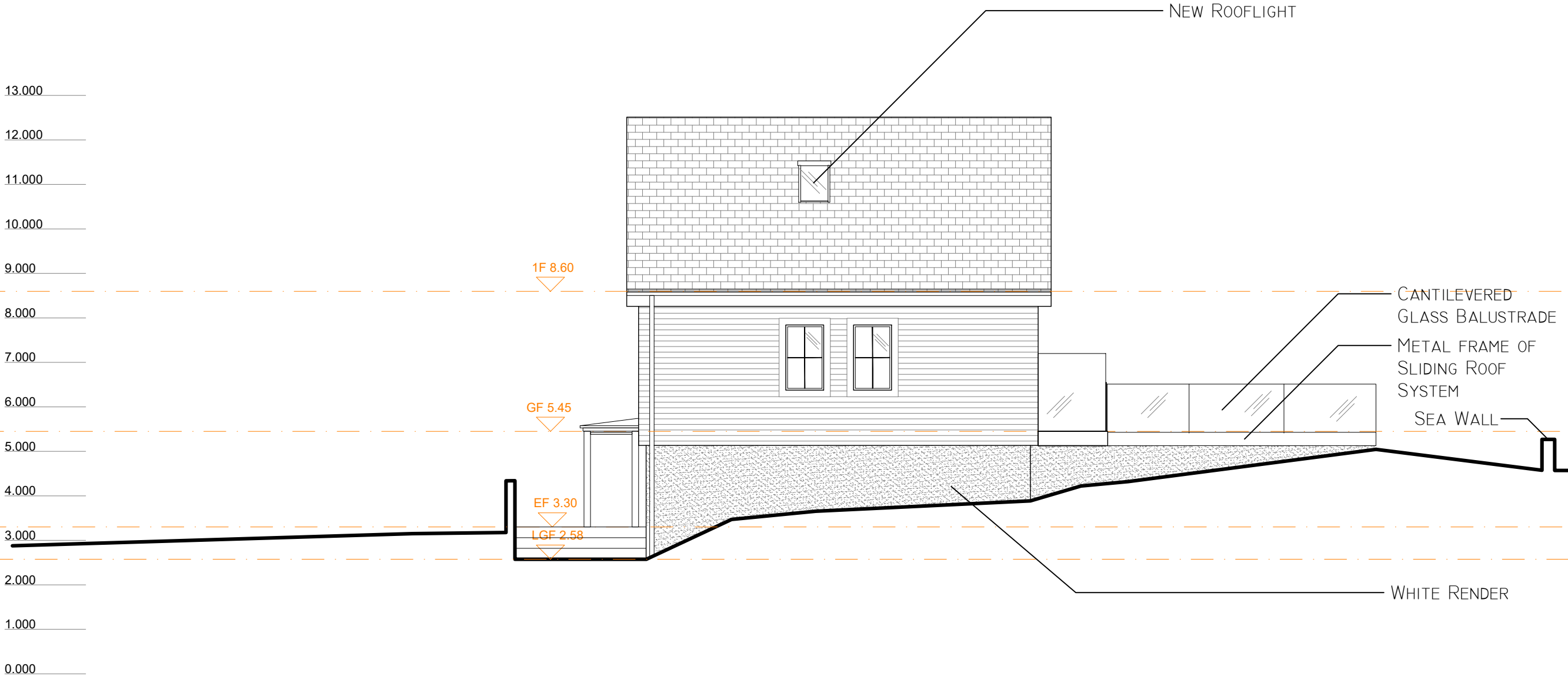
194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

Proposed West Elevation

Scale 1:100 @ A3



PLANNING



Proposed West Elevation 1:100

WHITE RENDER

SEA WALL

METAL FRAME OF
SLIDING ROOF
SYSTEM

CANTILEVERED
GLASS BALUSTRADE

NEW ROOFLIGHT

Rev A. 2021/11/15 Existing house retained with new basement and interior remodeling

RS

ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE:
Proposed West Elevation

DRAWING NUMBER : 203.a

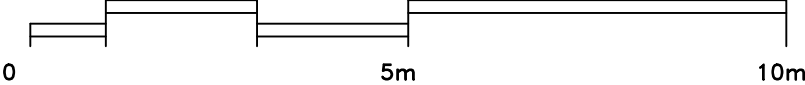
Scale : 1:100 @ A3

DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

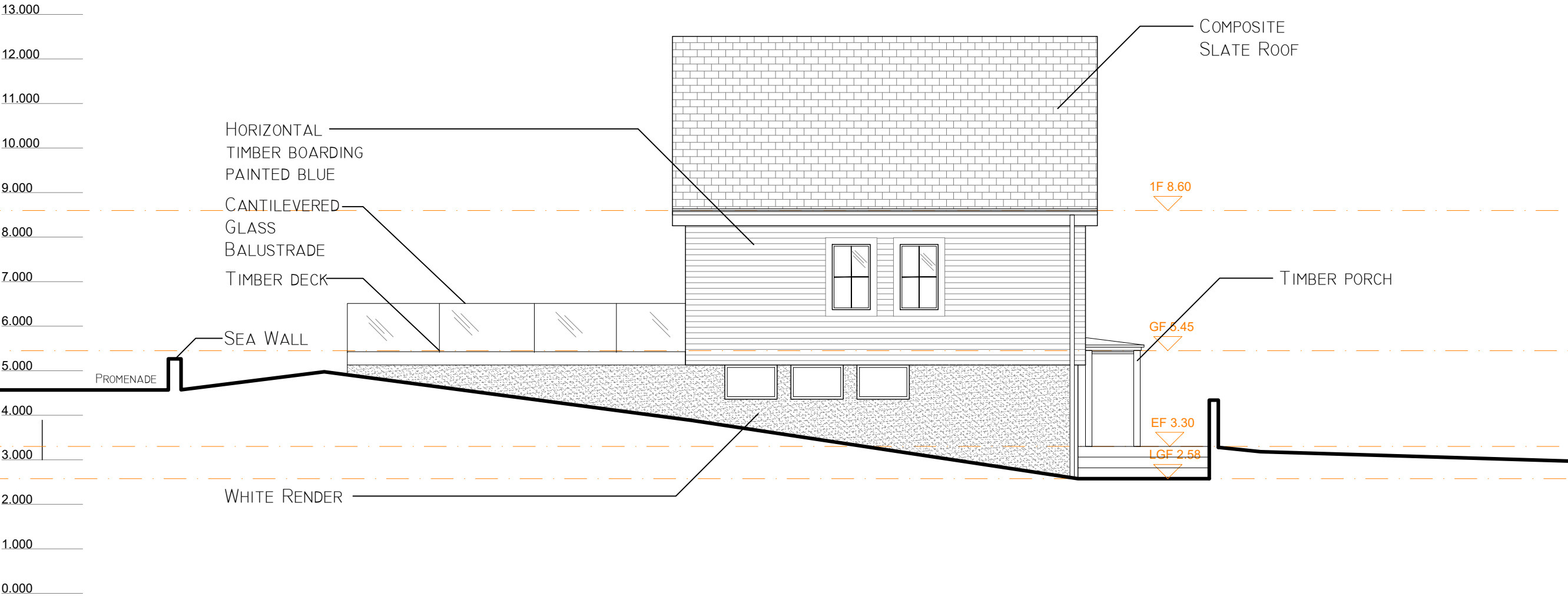
194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

Proposed East Elevation

Scale 1:100 @ A3



PLANNING



Rev A. 2021/11/15 Existing house retained with new basement and interior remodeling

RS

ARCHITECTURE

CLIENT:

PROJECT:
208 Southwood Road

TITLE:
Proposed East Elevation

DRAWING NUMBER : 204.a

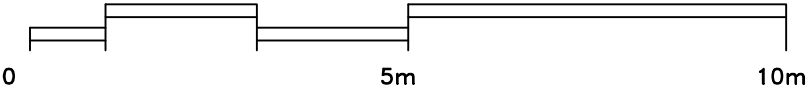
Scale : 1:100 @ A3

DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS

194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

Proposed South Elevation

Scale 1:100 @ A3



PLANNING



Rev A. 2021/11/15 Existing house retained with new basement and interior remodeling

RS

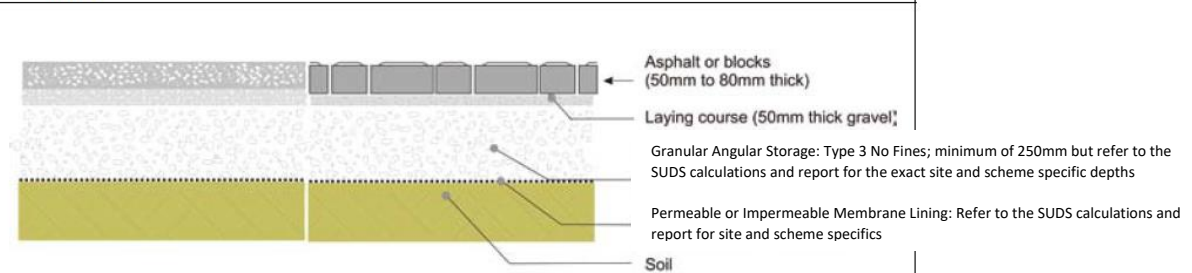
ARCHITECTURE

CLIENT:
PROJECT:
208 Southwood Road
TITLE:
Proposed South Elevation
DRAWING NUMBER : 205.a
Scale : 1:100 @ A3
DATE: 20/07/2021
DRAWN BY: AS APPROVED BY: RS
194 Southwood Road, Hayling Island,
Hampshire, PO11 9QL
07887933281
rob@rs-architecture.co.uk
www.rs-architecture.co.uk

Proposed South Elevation 1:100

Hard permeable and porous surfaces

Hard surfacing which allows water to soak into it can be built with porous asphalt, porous concrete blocks, concrete or clay block permeable paving. The material has open voids across the surface of the material or around the edges of blocks that allow water to soak in. The surface is constructed over a permeable sub-base. Systems are available from a variety of manufacturers. Sources of further information are provided in Section 6.



Pros	Cons
Hard and durable with a very long service life if correctly constructed	Can be more expensive than other options
Require the least amount of maintenance	Require knowledgeable contractor to construct correctly (especially porous asphalt which should be provided and laid by a specialist company)
Wide variety of shapes and colours available for concrete blocks	