

# 60 KEYMER ROAD, HASSOCKS

## FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY

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Client : Star Garages (Brighton) Ltd

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## 1.0 INTRODUCTION

- 1.1 HOP Consulting Limited (HOP) has been instructed by the Client, Star Garages (Brighton) Ltd, to prepare a Flood Risk Assessment (FRA) for a new mixed use residential and commercial development proposed at 60 Keymer Road, Hassocks.
- 1.2 The site lies entirely within Flood Zone 3, as classified by the Environment Agency (EA), and a site-specific FRA is required to accompany the planning application for the proposed development.
- 1.3 This report has been undertaken in accordance with guidance and information provided by the Mid Sussex District Council (MSDC) Strategic Flood Risk Assessment (SFRA) produced by MSDC in 2015 and is in line with the guidance on Development and Flood Risk, as laid out in the National Planning Policy framework (NPPF) and its associated Planning Policy Guidance. Site details and proposals have been provided by the Client and their agents, to show the extent of the development and confirm the existing site layout.
- 1.4 Information in this report has been received from a number of external parties and HOP does not accept liability for the accuracy of this information. Should there be a material change to the development proposals or a change in end use, this report will need to be revised accordingly.



Figure 1.1 - Site Location Plan

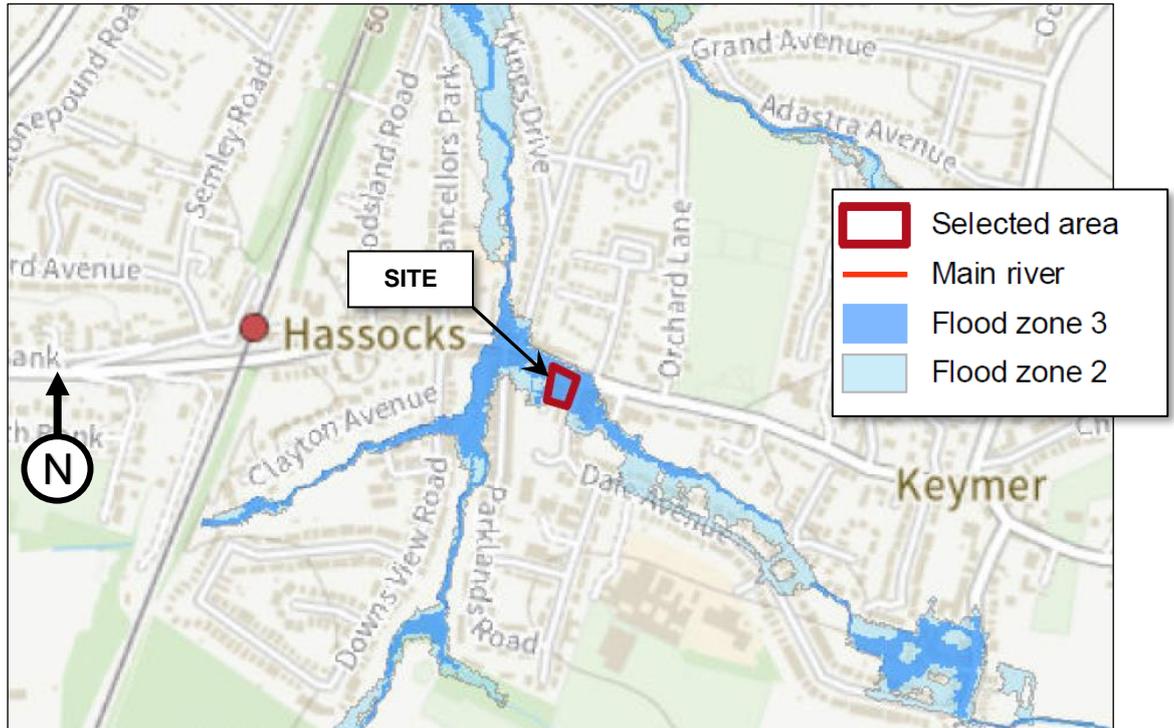
## 2.0 SITE DESCRIPTION AND LOCATION

- 2.1 The site is located in the centre of Hassocks, on the corner of Keymer Road and Dale Avenue, approximately 400m east of Hassocks railway station. The site is broadly rectangular in plan, bounded by Keymer Road to the north, Dale Avenue to the east, and residential properties to the south and west. The wider area is characterised by a mixture of commercial and residential land use. A site location plan is included in Appendix A, with a location map shown in Figure 1.1.
- 2.2 The site is currently occupied by a car servicing business. The single storey building housing garages and offices, occupies the majority of total site area, with areas of external hardstanding along the northern and eastern boundaries. The entire site area is currently impermeable.
- 2.3 The site can be accessed from the north via Keymer Road or the east via Dale Avenue. It is proposed that the site entrance from Dale Avenue will be maintained following the development.
- 2.4 A topographical survey was completed by SE Surveying in March 2021 and is included in Appendix B. This survey has been referenced to levels above Ordnance Datum (AOD). The site is shown to be generally flat with a slight fall in topography from south-east to north-west. The highest point in the south-eastern corner of the site is approximately 43.50m AOD and the lowest in the north-western corner is approximately 42.90m AOD.
- 2.5 Based on the British Geological Survey (BGS) online mapping, the underlying geology is indicated as being Folkestone Formation (sandstone) bedrock, with no overlying superficial deposits recorded.
- 2.6 According to EA online map data, the site does not lie within a groundwater Source Protection Zone (SPZ).
- 2.7 The nearest surface water feature is the Herrings Stream running through the centre of Hassocks from south to north approximately 100m to the west of the site at its closest point. Hassocks has a network of culverted watercourses that feed into the Herrings Stream and the routes of these culverted watercourses run close to the development site.
- 2.8 The development proposals comprise demolishing the existing building, clearing the site and redeveloping with mixed-use residential units and commercial space, including a library. Architectural proposals are included in Appendix C and are discussed in more detail in Section 4.0 of this report.

### 3.0 FLOOD HAZARD AND PROBABILITY

#### Fluvial Flooding

3.1 Detailed flood risk modelling data has been obtained from the EA which is included in Appendix D. An extract of the Flood Zone Map is shown in Figure 3.1. All data is taken from the Hassocks modelling, completed in 2013 and Hassocks Climate Change Allowances 2016, both completed by JBA Consulting.



Contains Environment Agency information © Environment Agency and database right.

Figure 3.1 EA Flood Zone Map

- 3.2 It can be seen in Figure 3.1 and data provided by the EA that the site lies entirely within Flood Zone 3 (FZ3) and does not benefit from the protection of flood defences.
- 3.3 Flood levels have been modelled at nodes local to the site as shown in Figure 3.2; with corresponding flood levels including the 1% (1 in 100 year) annual exceedance probability (AEP) and 0.1% AEP (1 in 1000 year) undefended scenarios shown in Table 3.3.

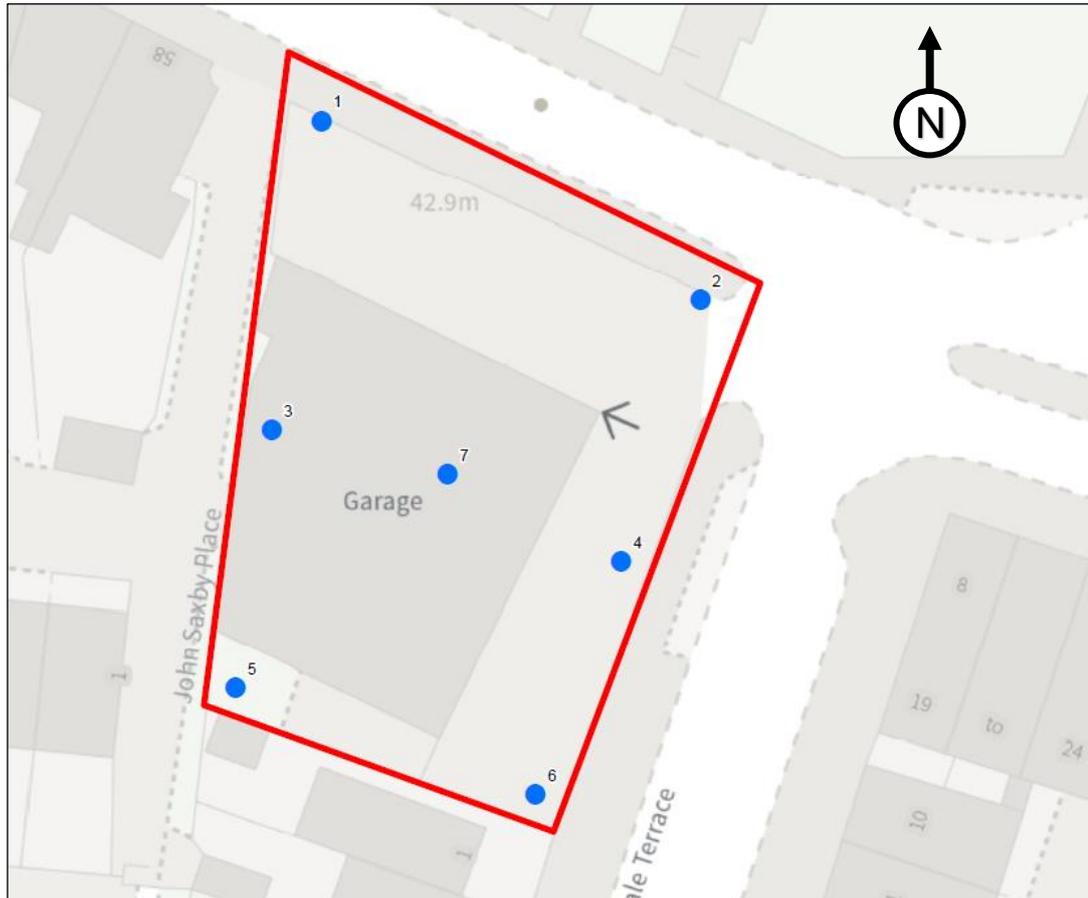


Figure 3.2 Modelled Node Locations from EA

Table 3.3 Flood Levels: Fluvial Undefended

Node Ref	NGR		Modelled Flood Levels in Metres AOD					
			Undefended Annual Exceedance Probability					
			5%	1%	1%+CC (35%)	1%+CC (45%)	1%+CC (105%)	0.1%
1	530806	115478	-	42.61	42.63	42.63	42.65	42.64
2	530832	115465	-	43.15	43.18	43.18	43.20	43.20
3	530802	115456	-	43.26	43.27	43.28	43.29	43.29
4	530827	115446	43.22	43.30	43.36	43.37	43.42	43.41
5	530800	115438	-	43.36	43.39	43.40	43.42	43.41
6	530821	115430	-	43.39	43.43	43.46	43.49	43.48
7	530815	115453	-	43.28	43.32	43.33	43.37	43.36

Table 3.4 Flood Depths: Fluvial Undefended

Node Ref	NGR		Modelled Flood Levels in Metres AOD					
			Undefended Annual Exceedance Probability					
			5%	1%	1%+CC (35%)	1%+CC (45%)	1%+CC (105%)	0.1%
1	530806	115478	-	0.01	0.02	0.03	0.04	0.04
2	530832	115465	-	0.04	0.06	0.07	0.09	0.08
3	530802	115456	-	0.01	0.01	0.01	0.02	0.02
4	530827	115446	0.01	0.10	0.16	0.17	0.22	0.21
5	530800	115438	-	0.04	0.06	0.07	0.09	0.09
6	530821	115430	-	0.01	0.03	0.06	0.08	0.08
7	530815	115453	-	0.03	0.06	0.07	0.11	0.10

- 3.4 As can be seen in Tables 3.3 & 3.4, flood levels are provided for undefended scenarios, including increases in flow due to climate change. Nodes 1, 2 & 4 are located within the proposed commercial units and residential block entrance. The maximum predicted water depth of 220mm occurs at Node 4 for the 1% AEP + 105% CC level at which is shown at 43.42m AOD, this is considered to be the design flood level for the development.
- 3.5 The flood modelling as detailed above considers the primary risk of fluvial flooding to the site. Other sources of flood risk are considered below with information taken from the EA's online mapping service and MSDC's SFRA.
- 3.6 A plan has been produced to illustrate the existing and proposed flood extent (see Appendix I). The identified flood level of +43.49m AOD has been applied to identify zones of flooding and conclude that by allowing the lower level car park to partially flood, the new layout will provide the same flood storage volume as the existing arrangement, thereby not increasing risk of flooding to any of the surrounding buildings or properties due to a fluvial flood event. This provides evidence that adequate flood storage compensation has been allowed for in the proposed development. This is a key principle of the flood risk mitigation strategy.

#### **Tidal Flooding**

- 3.7 Detailed flood risk data has been obtained from the EA. This states that the site is unaffected by tidal modelling scenarios. Risk of tidal flooding is therefore considered to be very low.

#### **Groundwater Flooding**

- 3.8 The SFRA states that 'the majority of the district is considered to have medium potential for groundwater flooding, however a small area within the South Downs National Park is considered to have high potential for flooding from this source.'
- 3.9 Nearby BGS borehole scans do not show records of groundwater, however the site is underlain by Folkestone Formation Sandstone, which is classified as a Principal Aquifer. These are defined by the EA as rocks with 'high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale'.
- 3.10 Risk of groundwater flooding is considered to be moderate.

#### **Reservoir Flooding**

- 3.11 EA maps show that the site is outside any flood risk zone associated with reservoirs or any other artificial sources of flooding. Therefore, the risk from this source is considered to be low.

#### **Surface Water and Sewer Flooding**

- 3.12 There are no public sewers within the site boundary, with the closest being a foul water sewer in the adjacent road to the east beneath Dale Avenue, and to the north beneath Keymer Road (refer to Figure 5.1).
- 3.13 The local arrangement of surface water culverts, which have been historically constructed to allow development close to former open watercourses, are indicated in Figure 3.3. None are shown within the site boundary. A drainage survey has been undertaken at the existing property and has demonstrated that surface water runoff from the site currently discharges to the culvert running south to north beyond the western boundary.



Figure 3.3 Surface water culvert network from MSDC.

3.14 As can be seen in Figure 3.4, the EA’s surface water flood mapping shows the level of risk on-site to generally be ‘medium’, with a small ‘high’ risk area to the east of the building. Surface water flows are shown to travel northwards along Dale Avenue, before joining Keymer Road and flowing to the west towards the Herrings Stream, which represents the topographic low spot in central Hassocks. The EA surface water flood map shows flood waters to be contained within the local highway extents during the ‘low’ risk scenario.

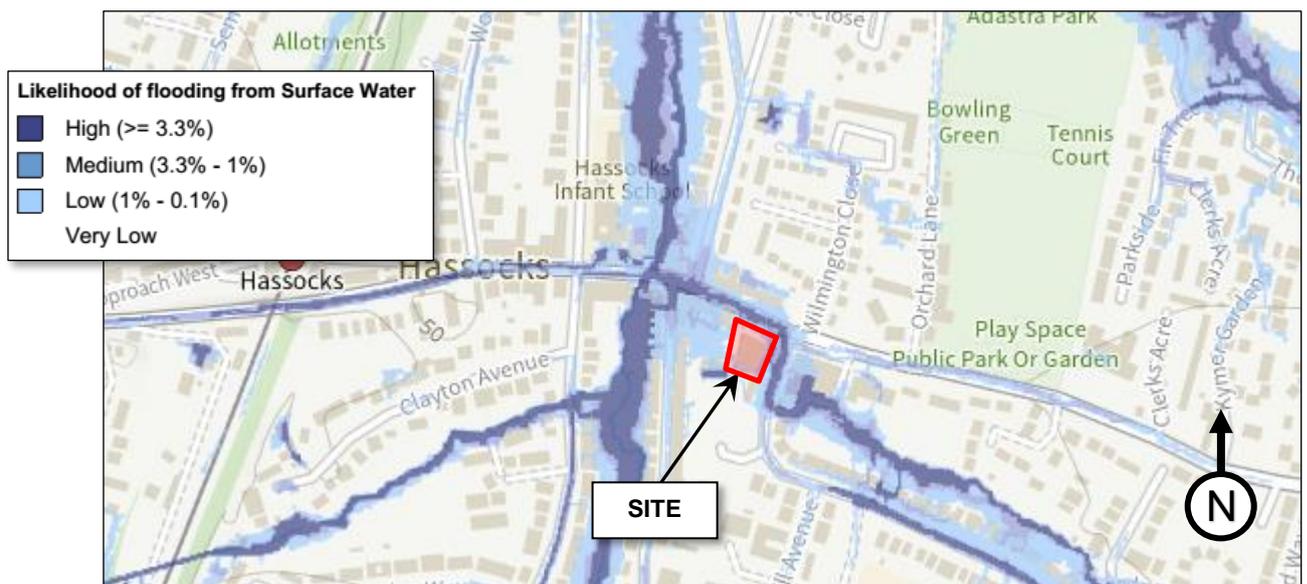


Figure 3.4 EA Surface Water Flood Map

- 3.15 The site is shown to be at a slightly higher level than the adjacent roadway, with site ground levels falling towards Keymer Road to the north. The new development is proposed to have residential accommodation from first floor up. Only commercial space is proposed on the ground floor, which will have a floor level elevated above the design flood level, further reducing the risk of flooding from localised surface water runoff from private drainage networks or overland flow. Levels around the new building should be engineered so that runoff is directed away from the building openings.
- 3.16 With the redevelopment of the site, the opportunity is presented to provide a drainage system to manage surface water runoff at source through Sustainable Drainage Systems (SuDS) to ensure surface water runoff from the developed site does not increase the risk of flooding to the site or neighbouring and downstream properties. SuDS methods suitable for the site are discussed in Section 5.

## 4.0 DETAILED DEVELOPMENT PROPOSALS

- 4.1 The development proposals involve demolishing the existing building, clearing the site and redeveloping with mixed-use residential units and commercial space including a public library.
- 4.2 The residential element of the development will comprise 27No. apartments and 1No. guest room from the first floor up. 2No commercial units will be located at ground floor level adjacent to Keymer Road, totalling 188m<sup>2</sup> of commercial floor space.
- 4.3 28No. undercroft car parking spaces, 4No. mobility scooter spaces and a two tier bike rack (14 No. bikes) will be provided beneath the flats at ground level. Vehicular access will be afforded directly from Dale Avenue on the eastern boundary. The Architect's proposed site layout plan is included as Appendix C, with an extract shown in Figure 4.1.

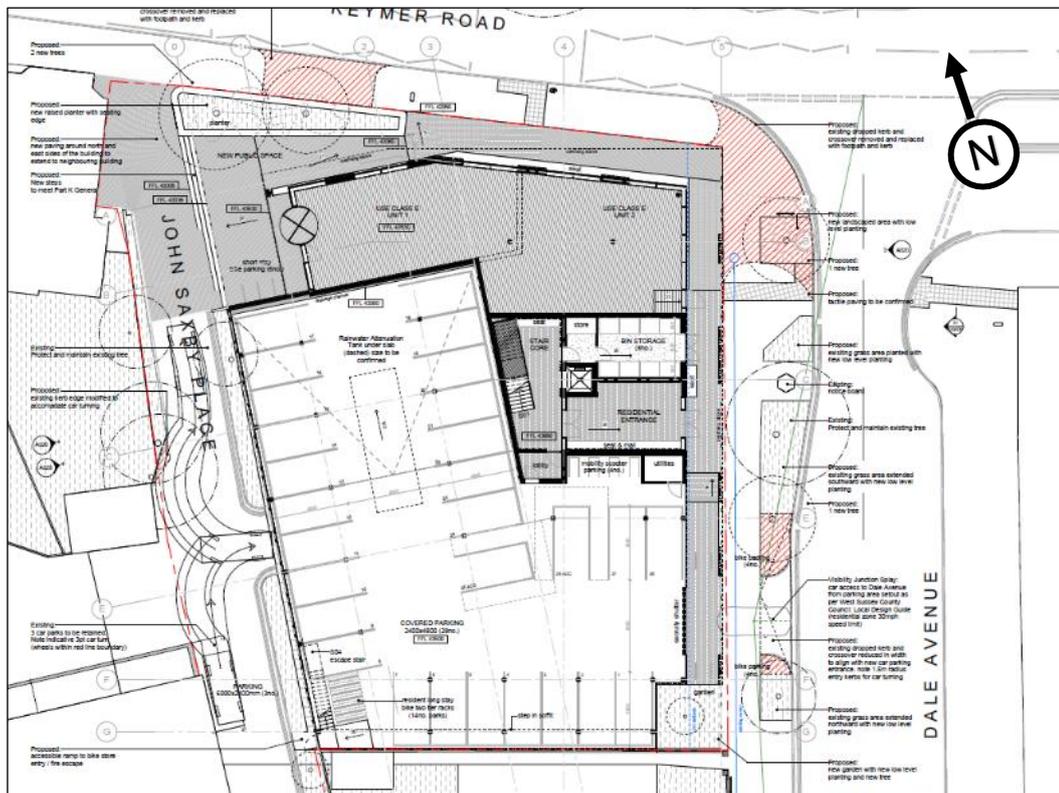


Figure 4.1 Proposed Site Layout Plan

- 4.4 As discussed in Section 3, the design flood level has been modelled at 43.42mAOD which considers an allowance for 105% CC. This design only needs to consider the Upper end allowance, which is 1% AEP + 45%CC. Therefore, giving a flood level at Node 4 (ref Figure 3.2 and Tables 3.3 & 3.4) of +43.37mAOD. The proposed building will comprise commercial premises only on the ground floor, with residential from the first floor and above.
- 4.5 It is proposed to set the ground floor level access to the residential accommodation at 43.68mAOD, which allows for a 310mm 'freeboard' above the design flood level to allow for any anomalies in the flood model and wave action during flood conditions. Habitable accommodation is proposed on the first floor and above, which is significantly higher than the design flood level.
- 4.6 For clarity, the development proposals are based on the following architectural levels; the ground floor commercial units floor level is set at 43.53mAOD, which is 330mm above the 1%+CC (105%) Flood Level for Keymer Rd (43.200mAOD at Node 2). This level is also 40mm above the 1%+CC (105%) Flood Level for Dale Avenue (43.490mAOD at Node 6). The entrance to the residential entrance is 43.680 AOD, which is 190mm above the 1%+CC (105%) Flood Level for Dale Avenue (43.490mAOD at Node 6). Additionally, these levels place the ground floor above the currently modelled 0.1% extreme Flood Levels for all nodes.

#### **Sequential Test**

- 4.7 The Sequential Test requires the consideration of reasonably available alternative sites, however, in this instance, the developer can only be reasonably expected to develop land within their ownership. The Local Planning Authority are expected to take these factors into account when applying the Sequential Test to the development.
- 4.8 Guidance states that development should be considered sequentially within the site to ensure areas that are more vulnerable to flood risk are placed in compatible zones. As demonstrated above, this approach has been applied to the ground floor level of the proposed building, with ground floor levels set 300mm above the design flood level for the 1 in 100-year fluvial event over the lifetime of the development.
- 4.9 Residential properties are considered in Table 2 of the Planning Practice Guidance to the NPPF as 'More Vulnerable' development, with commercial space classed as 'Less Vulnerable'. The site lies within Flood Zone 3, therefore the Exception Test will need to be applied.
- 4.10 Additional details regarding the application of the Sequential Test have been provided by Lewes & Co. Planning Consultants, as follows;

*As part of their evidence for the Council's emerging District Plan 2021 – 2039 the Council have undertaken a sequential test to consider all suitable sites. This work identified only 9 suitable sites wholly located within low flood risk areas, and therefore in order for local housing needs to be met further sites in areas of potential flood risk will need to come forward for development in a manner consistent with nationally policy requirements for flood risk. The Plan therefore includes allocations for sites which, like the application site, are not located in areas of lower flood risk on the basis that there are no suitable, reasonably available, lower risk sites to which development could be steered in order to to achieve wider sustainable development objectives for Mid Sussex*

*The Council's emerging District Plan 2021 – 2039 does not allocate the site (SHELAA reference 375) on the basis that a policy compliant development can be achieved without allocation. It is therefore implied that the redevelopment of the site is capable of meeting the sequential and exceptions tests, with the Site Selection Paper concluding:*

*“Site is within or adjacent to the Built-Up Area Boundary; it is therefore considered that a policy compliant development is possible without the need for the site to be allocated.”*

*The Council’s emerging and adopted District Plan (2014 – 2031) also seek to maximise the use of previously developed land and buildings within the built-up area. However, the Council’s Urban Capacity Study (2022) identifies very limited capacity across the district for additional housing delivery on these urban/brownfield sites. Despite this ‘brownfield-first’ approach to development, the Urban Capacity Study only identifies a potential future supply of 1,233 new homes on brownfield land.*

*The Government’s standard methodology for housing need identifies a local housing need of 1,356 new homes per annum and therefore brownfield sites will only be able to meet less than a single year’s housing needs within Mid Sussex. Other sources of supply (primarily greenfield sites) are also constrained by environmental factors, with the Council’s draft District Plan 2021 – 2039 adopting a capacity/supply-led housing requirement. On this basis, all suitable brownfield sites are required in order for the Council to meet local housing needs, as required by paragraph 11 (b) of the National Planning Policy Framework.*

### **Exception Test**

- 4.11 The NPPF requires that, where it has not been possible to locate development in zones of lower flood risk probability, the Exception Test should be applied. For the Exception Test to be passed, the guidance states that;
- 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; and
  - a site-specific FRA must demonstrate that the development will be safe for its lifetime considering the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.
- 4.12 It is considered that the first element of the Exception Test is passed, as the development meets housing demand within the district.
- 4.13 The second element of the Exception Test is demonstrated throughout this report in that the development plans do not represent an increase in the flood risk to the site, or to neighbouring or downstream properties. The proposal to raise ground floor levels to 300mm above the design flood level provides mitigation to the primary sources of flooding for the development’s lifetime. Flood risk management measures, discussed in the following section, provide additional sustainability to the proposals.
- 4.14 Additional details regarding the application of the Exception Test have been provided by Lewes & Co. Planning Consultants, as follows;

*The proposals would regenerate a vacant, brownfield site within the village centre. Paragraph 125 of the NPPF gives ‘substantial weight’ to the value of using such sites for the delivery of new homes and other identified needs.*

*In addition to high-quality new homes and employment/community space in a sustainable village centre location, the redevelopment of the site will also regenerate a site identified within the Hassocks Village Townscape Appraisal as adversely impacting the sense of place within the Village Centre. The Appraisal is critical of the character, scale form, colour and facing materials of the existing site, which undermines local distinctiveness. The proposed design has the ‘full support’ of the Mid Sussex Design Review Panel and would*

*provide a significant visual enhancement and public realm improvements in a key village centre location.*

*The proposed building is highly sustainable, utilising prefabricated cross-laminated timber panels, renewable technologies, low embodied carbon and high energy and carbon performance. All proposed dwellings will be built to at least M4 (2) accessibility standards, exceeding the usual 20% requirement set out within policy. All parking spaces will feature electric vehicle charging and vehicle trips to/from the site are anticipated to reduce by over 40% compared to the lawful existing use.*

## 5.0 DRAINAGE STRATEGY

### FOUL WATER

#### Existing

- 5.1 Southern Water sewer records have been obtained, which show an existing public foul sewer adjacent to the eastern site boundary beneath the pavement along Dale Avenue. This is shown to flow to the north-east where it joins a manhole before flowing to the north-west beneath Keymer Road. A foul water manhole is identified adjacent to the site entrance, with reference 8404. The Southern Water sewer records are included in Appendix E, with an extract shown below in Figure 5.1.
- 5.2 A CCTV drainage survey was undertaken by Aquatech Drain Services (ADS) as part of previous investigation works in May 2021. It is assumed that the arrangement has remained unchanged. This has identified the existing foul drainage to discharge to the east, where it connects to the public foul sewer adjacent to Dale Avenue, upstream of Southern Water manhole ref. 8404. The drain connecting to the public sewer was surveyed, and water was seen to flow freely proving the off-site connection. The CCTV survey has been included as Appendix F.



Figure 5.1 Southern Water Sewer Map extract.

**Proposed**

5.3 Refer to Appendix A for the Drainage Strategy Plan. Utilising Southern Water’s Design Guidance, for the proposed 28No residential units an estimated peak foul water flow rate to the public sewer of 0.32 litres/second has been calculated. The occupancy per unit figure (3 persons) has been estimated as an average across the site. This calculation is shown in Table 5.2.

**Table 5.2 Proposed peak foul flows.**

General housing peak foul flow		
Number of properties, N	28	Units
Occupancy, O	3	Persons / unit
Per capita flow, G (L/D)	125	litres / head / day
Population, P (NxO)	114	People
Storm duration, SD	300	Minutes
Peaking Factor, PF	2.5	
Peak Flow	0.32	l/s

5.4 Foul water peak flows from the commercial accommodation is not considered to coincide with the peak flow period generated from the residential properties and will be at a significantly lower rate than domestic wastewater flows. It is therefore considered that design peak foul water flow rates, discharging to the public sewer can be based on the residential usage only.

5.5 It is considered feasible that foul water can continue to discharge via the existing connection to the public foul sewer infrastructure located in Dale Avenue.

5.6 In accordance with Building Regulations, new drainage at the site should be installed as separate foul and surface water networks. A Connection to a Public Sewer Section 106 application will be required in due course to discharge the foul water to the public sewer.

**SURFACE WATER**

**Existing**

5.7 The ADS CCTV drainage survey identified surface water to currently drain to a surface water culvert beneath John Saxby Place off-site to the west, which flows from south to north.

5.8 The total site area is currently entirely covered by impermeable surfacing. Rainwater downpipes and drainage channels convey surface water from the roofs and hardstanding to the surface water sewer via the on-site private drainage system. Existing surface water runoff rates have been calculated based on a drained hardstanding area of approximately 1,260m<sup>2</sup>. The pre-development runoff for a range of design storms is shown in Table 5.3. Microdrainage results are presented in Appendix G.

**Table 5.3 – Summary of Pre-Development Surface Water Peak Runoff Rates**

Design Storm return period (years)	Pre-development surface water peak rate of runoff (l/s)
1	13.4
2	17.2
30	32.6
100	42.2

### Proposed

- 5.9 Refer to Appendix A for the Drainage Strategy Plan. In line with Building Regulations Part H3, the consideration of the hierarchy of surface water disposal for the site is listed below;
- a) **Discharge to soakaway** – There is a minimum requirement for soakaways to be 5m from structures, and the proposed building will occupy the entire site area. Therefore, the use of soakaways and infiltration at the site is not considered to be a feasible option for surface water management.
  - b) **Discharge to a watercourse** – A culverted watercourse is located approximately 10m to the west of the site. An existing surface water connection from the site has been proven through drainage survey investigations.
  - c) **Discharge to surface water sewer** – there are no public surface water sewers within the locality that would provide a point of connection via this means.
- 5.10 Based on a consideration of the SuDS hierarchy, the surface water drainage proposals are to maintain the existing off-site connection to the surface water culverted watercourse. The total impermeable area will not change following the development. SuDS policies recommend that discharge rates for development on brownfield land should be reduced to greenfield rates where practical.
- 5.11 It is proposed that a maximum discharge rate of 2.0 litres/second (l/s) should be established for the 100-year storm event (1% AEP) plus a 45% allowance. This is a reduction of 88% on the 2-year (50% AEP) design storm. To manage flows off-site, an attenuated SuDS scheme is proposed with surface water runoff being attenuated via storage crates beneath the central car park area beneath the building. This will subsequently discharge via a Hydrobrake to the culverted watercourse beneath John Saxby Place. Attenuation volume calculations are presented in Appendix G.
- 5.12 Through the application of attenuation SuDS for the proposed development, surface water can be managed at source by using positive drainage through rainwater downpipes and conventional pipework directed to the attenuation tank.
- 5.13 In accordance with the Non-Statutory Technical Standards for SuDS, the surface water drainage system should be designed so that flooding does not occur on any part of the site for a 1 in 30 (3.3% AEP) year rainfall event; and so that flooding does not occur during a 1 in 100 (1% AEP) year event in any part of a building or in any utility plant susceptible to water.
- 5.14 Through utilising attenuation SuDS to accommodate the 1 in 100-year rainfall event (+45% allowance for climate change), it can be shown that no part of the site or downstream network is vulnerable to surface water flooding from the managed on-site runoff.

### Water Quality

- 5.15 Both the SuDS Manual (CIRIA C753) and guidance from the EA, as outlined in the recently withdrawn Pollution Prevention Guidance 3 (PPG3), state that rainwater runoff from roof areas is considered to be at very low risk of containing contaminants and does not require any pollution control to be implemented prior to discharge, outside of the removal of gross solids and sediments only.

- 5.16 Further reference to Table 26.2 of the SuDS Manual shows that the proposed land use at the Keymer Road site comprises residential car parking which represent a low risk of pollution hazard level. Although this is undercroft parking, gullies or channel drains will still be required to drain residual surface water that may be brought in from outside. The guidance for this level of risk is to use the simple index approach to pollution control requirements for discharging to the public sewer.
- 5.17 The notes to Table 26.2 state that extra measures may be required for discharges to protected resources, the guidance clarifies that in England and Wales, protected groundwater resources are represented by the catchment of an SPZ 1 classification. As discussed in paragraph 2.5, the development does not lie within an SPZ but is underlain by a Principal Aquifer. However as neither infiltration nor discharge to a watercourse is proposed, no additional pollution control measures are required in this regard.
- 5.18 The simple index approach is outlined in the SuDS Manual and provides pollution hazard indices for different land use classifications. An extract applicable to the development site is provided in Table 5.5.

Table 5.5 Extract of Table 26.2 from the SuDS Manual.

Pollution hazard indices for different land use classifications				
Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very low	0.2	0.2	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4

- 5.19 These hazard indices are to be compared against mitigation indices for individual SuDS components, as provided in Table 26.3 of the SuDS Manual, an extract of which showing the mitigation indices for permeable paving options is provided in Table 5.6.

Table 5.6 Extract of Table 26.3 from the SuDS Manual.

Indicative SuDS mitigation indices for discharges to surface waters			
Type of SuDS component	Mitigation indices <sup>1</sup>		
	TSS	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4 <sup>2</sup>	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond <sup>4</sup>	0.7 <sup>3</sup>	0.7	0.5
Wetland	0.8 <sup>3</sup>	0.8	0.8
Proprietary treatment systems <sup>5,6</sup>	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

5.20 The SuDS Manual also allows for proprietary systems such as oil interceptors, smart filters, membranes and silt/debris traps to be utilised to minimise the risk of pollution. These products must demonstrate that they can address each of the contaminant types as described in Table 5.5. The use of proprietary water quality control systems will be determined at the detailed design stage.

**SuDS Maintenance and Management Plan**

5.21 Details of SuDS operation and maintenance activities are provided within Chapter 32 of the SuDS Manual. A summary of typical key SuDS components is given in Table 5.7.

Table 5.7 Extract of Table 32.1 of the SuDS Manual

Typical key SuDS components operation and maintenance activities (for full specifications, see Chapters 11–23)													
Operation and maintenance activity	SuDS component												
	Pond	Wetland	Detention basin	Infiltration basin	Soakaway	Infiltration trench	Filter drain	Modular storage	Pervious pavement	Swale/bioretention/trees	Filter strip	Green roofs	Proprietary treatment systems
<b>Regular maintenance</b>													
Inspection	■	■	■	■	■	■	■	■	■	■	■	■	■
Litter and debris removal	■	■	■	■	□	■	■	□	■	■	■		□
Grass cutting	■	■	■	■	□	■	■	□	□	■	■		
Weed and invasive plant control	□	□	□	□		□	□		□		□	■	
Shrub management (including pruning)	□	□	□	□					□	□	□		
Shoreline vegetation management	■	■	□										
Aquatic vegetation management	■	■	□										
<b>Occasional maintenance</b>													
Sediment management <sup>1</sup>	■	■	■	■	■	■	■	■	■	■	■		■
Vegetation replacement	□	□	□	□						□	□	■	
Vacuum sweeping and brushing									■				
<b>Remedial maintenance</b>													
Structure rehabilitation /repair	□	□	□	□	□	□	□	□	□	□	□	□	
Infiltration surface reconditioning				□	□	□	□		□	□	□		

**Key**  
 ■ will be required  
 □ may be required

**Notes**  
 1 Sediment should be collected and managed in pre-treatment systems, upstream of the main device.

- 5.22 As can be seen, all SuDS components require regular inspection and for the first year the guidance states that monthly inspections are carried out and documented to inform the ongoing maintenance regime of the site drainage. SuDS components at the site are not to be adopted and will be maintained for their lifetime by the managing company of the development.
- 5.23 The key maintenance procedure for the attenuation tank and Hydrobrake is the management of sediment. The risk of sedimentation to these features can be mitigated through the use of silt traps prior to gullies discharging to the system and regular sediment removal.
- 5.24 Further operational activities for the SuDS components described for the site include regular litter and debris removal to reduce the risk of the drainage systems becoming blocked.
- 5.25 Contractors should protect SuDS components from adverse sediment runoff during the construction phase and an initial pre-handover inspection as required to ensure that the drainage system has been constructed as designed. A SuDS Maintenance and Management Plan is included as Appendix H.

## **6.0 FLOOD RISK MANAGEMENT MEASURES**

- 6.1 The ground levels for the development should be designed so that potential overland conveyance routes direct water around and away from the building to less vulnerable areas. Existing levels show that surface water runoff in a flood event would be directed via the site topography, beyond the site's northern boundary.
- 6.2 Road levels to the north are lower than the external site levels, therefore flood risk from surcharging of the public sewer in Keymer Road is considered to be low, as overland flows would be constrained by the highway extents and directed to lower lying areas to the west.
- 6.3 Surface water runoff is to be managed through attenuation SuDS, with a continued discharge to the surface water sewer beneath John Saxby Place, at a restricted flow rate of 2.0 l/s. SuDS features have been designed to accommodate the 1 in 100-year storm event with an allowance of an additional 45% increase in rainfall intensity to mitigate the predicted effects of climate change. This will minimise the risk of surface water flooding at the site by ensuring that surcharged pipework does not manifest in surface flooding up to this storm design parameter.
- 6.4 Detailed drainage design is outside the scope of this report and it is assumed that connection approvals will be sought for the foul water connection to the public sewer in due course and that Infrastructure Charges imposed by the sewerage undertaker should ensure sufficient capacity in the local sewerage network to accommodate the foul flow from the development.
- 6.5 All ground floor levels are to be set a minimum of 300mm above the 1% AEP flood level to mitigate the risk from overland flows entering the building. No runoff from external areas should be directed towards the building entrance. Mitigation of residual risk could be built into the building fabric by proposing raised electrical wall sockets, telescopic air vents, concrete or tiled ground floor finishes and flood resistant doors for the finished building.
- 6.6 The new layout will provide the same flood storage volume as the existing arrangement (see Section 3.6), thereby not increasing risk of flooding to any of the surrounding buildings or properties due to a fluvial flood event. This provides evidence that the flood storage compensation has been allowed for in the proposed development. This has considered a flood level of 1% AEP + 105% CC.

- 6.7 Future owners and residents should be signed up to the EA's Floodline Warnings Direct Service, which aims to provide forewarning of potential flooding. The town of Hassocks falls within an area covered by a Flood Plan, and as the primary source of flooding is associated with the nearby stream it may be possible to provide the future occupants of the property with precautionary advice regarding potential flooding ahead of the event, in order for appropriate procedures to be initiated.

## **7.0 OFF SITE IMPACT**

- 7.1 As discussed in Section 4, the development is considered to provide a significant betterment in surface water runoff over the existing situation, due to the proposed use of attenuation SuDS to manage surface water runoff with a Hydrobrake to restrict the rate of discharge to the adjacent culverted watercourse. Therefore, the development is not considered to adversely affect neighbouring properties in terms of flood risk.
- 7.2 Overland flow paths are currently established through the site. Allowance in the design has been made to maintain these flow paths, refer to Section 3.6.
- 7.3 Detailed drainage design is outside the scope of this report and it is assumed that the management of the foul water discharge using existing or new infrastructure is an appropriate means of communicating foul flows from the proposed development to the public sewer.
- 7.4 Through the use of SuDS to manage surface water runoff at source, the peak rate of runoff from the site to the surface water sewer will be reduced by 88%. These proposed measures ensure the long-term sustainability of the development, and that flood risk to neighbouring and downstream properties will not be adversely affected.

## **8.0 RESIDUAL RISK**

- 8.1 Residual risk is primarily concerned with a fluvial flood event exceeding the capacity of the local river network. This risk is mitigated through the ongoing maintenance and inspection programme undertaken by the EA and the Floodline Warnings Direct scheme which advises of potential flood risk to which the future owners of the property should be signed up.
- 8.2 Further residual risk is generated by potential drainage infrastructure blockage or failure, or from a storm event exceeding the design parameters for the design life of the development. As discussed in Section 3.6, allowance for storage of the equivalent flood water to that already existing has been allowed for in the design and therefore any exceedance case would be no worse than the current arrangement.
- 8.3 The main mitigation from residual risk is addressed through placing habitable accommodation from the first floor up and designing the commercial units at ground floor with finished floor levels 300mm above the modelled design flood level.

## **9.0 CLIMATE CHANGE**

- 9.1 Increased rainfall intensity, longer storm durations and rising sea levels are all attributed to global climate change. The effects of climate change have been considered when sizing SuDS features by allowing for an additional 45% in rainfall intensity as required by the Planning Practice Guidance to the NPPF. Peak river flow increases of 105% have been considered in the calculations presented for compensatory flood storage volumes.

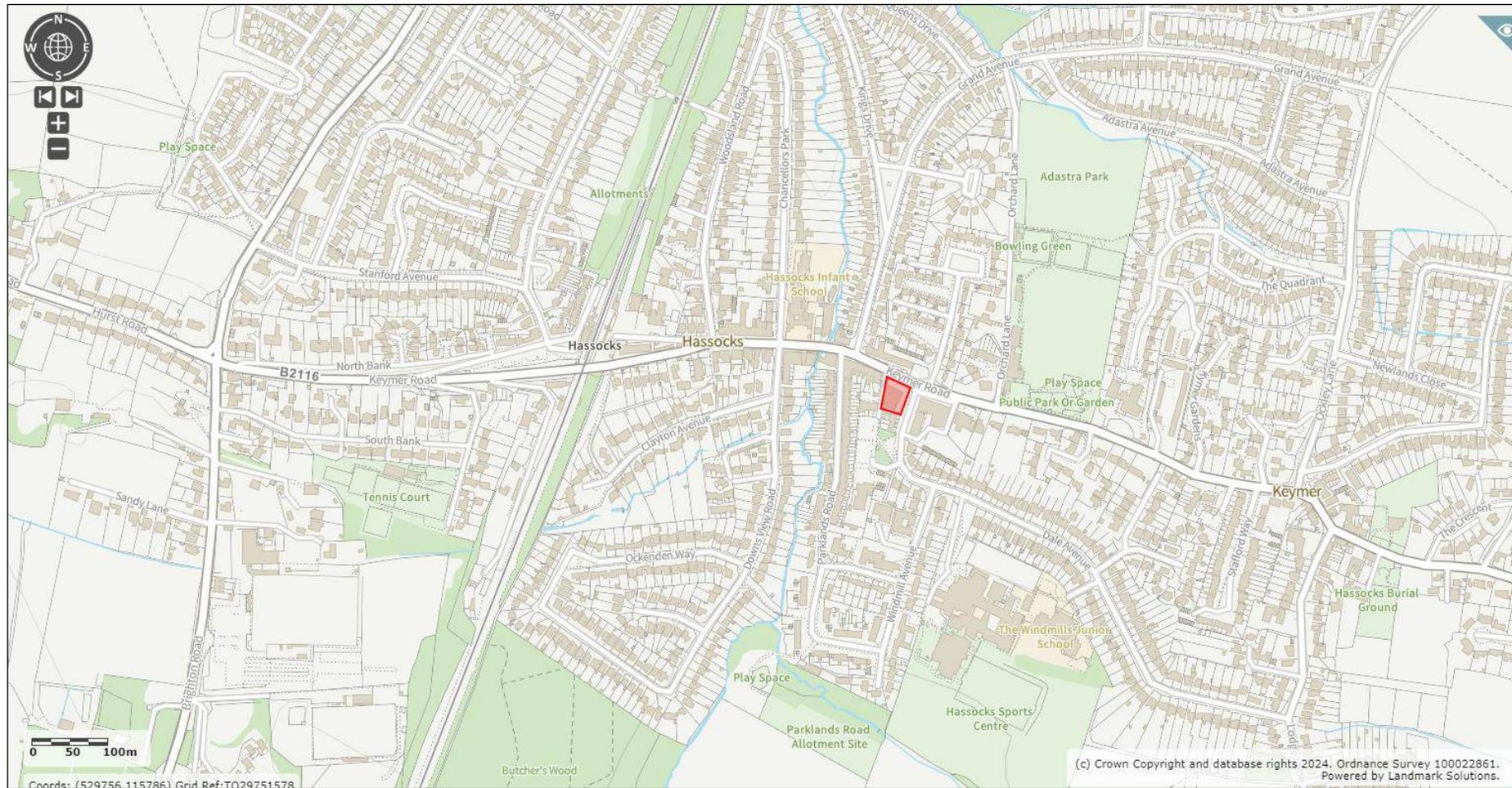
## 10.0 CONCLUSIONS

- 10.1 The site lies within Flood Zone 3 and this site-specific FRA is required to accompany the Planning submission. This report has been produced in compliance with the NPPF and its accompanying Planning Practice Guidance concerning development and flood risk.
- 10.2 Primary flood risk at the site has been shown to be from the Herrings Stream located approximately 100m to the west. The EA flood data indicates a design flood level of 43.46mAOD for Dale Avenue (Node 6) and 43.18mAOD for Keymer Road (Node 2). The proposed building will comprise of commercial premises on the ground floor, with residential from the first floor up. It is proposed that the commercial ground floor level is set at 43.53mAOD and the access to the residential accommodation set at 43.68mAOD to mitigate flood risk. Habitable accommodation is sited on the first-floor level and above, well in excess of the design flood level for the site.
- 10.3 Compensatory flood volumes have been demonstrated to be achieved through the level strategy at the site, accommodating a like-for-like volume within the site boundary to match the existing modelled scenario for the 1 in 100 year event plus allowance for CC.
- 10.4 Risk from a fluvial flood event may be forewarned and prepared for with future occupants signed up to the EA's Floodline Warnings Direct service. The proposed development has allowed for fluvial flood water to continue to be conveyed through the site as per the existing arrangement, with the less vulnerable undercroft parking area at risk of managed inundation.
- 10.5 Risk of groundwater flooding is considered to be moderate and mitigated through natural flow paths in the local topography conveying any flow generated from this source away from the building entrances. Risks from other sources of flooding are considered to be low or very low.
- 10.6 Surface water runoff is proposed to drain to an 84m<sup>3</sup> attenuation tank beneath the central car park area of the building, with a Hydrobrake restricting the discharge rate to achieve an 88% reduction in peak flows off-site at a rate of 2.0 l/s. SuDS features have been designed to accommodate the 1 in 100-year storm event plus an allowance of an additional 45% increase in rainfall intensity due to climate change.
- 10.7 Foul drainage has been shown to currently connect to the public foul sewer in Dale Avenue, which will be maintained. Flows from the proposed development will be subject to a Section 106 connection agreement with Southern Water.
- 10.8 This report highlights the potential flood issues at the Keymer Road site and how the development proposals mitigate the risk to people and property from an extreme flood event. This report has shown that development proposals can be considered appropriate for the site and the designated Flood Zone classification.
- 10.9 In light of the above, it is considered that the proposed development is safe and does not increase the flood risk at the site or to neighbouring or downstream properties. It has been shown that the proposals for a mixed-use residential and commercial development can be successfully implemented and managed to provide comfort and safety to residents in regard to flood risk for the lifetime of the development, thereby demonstrating compliance with the second element of the Exception Test.



## APPENDIX A – Site Location Plan & Drainage Strategy

LOCATION MAP FOR: **60 KEYMER ROAD, HASSOCKS, BN6 8AR**



1. GENERAL

- (i) This drawing is not to be scaled, work to figured dimensions only, confirmed on site.
- (ii) This drawing is to be read in conjunction with all relevant architectural drawings, detailed specifications where applicable and all associated drawings in this series.
- (iii) Any discrepancy on this drawing is to be reported immediately to the partnership for clarification.
- (iv) The contractor is responsible for all temporary works and for the stability of the works in progress.



2. DRAINAGE GENERAL

- (i) All foul and storm water drains which are not to be adopted as public sewers under a section 104 Agreement must be constructed in accordance with the Building Regulations, BS EN 752 and where appropriate the relevant agreement certificates.
- (ii) Manholes, gullies, gully connections, sewers and other sewerage structures intended to convey surface water are to be constructed in accordance with the Water Authorities Association Specification 'Sewers for Adoption' 7th Edition and relevant Council Design Guide.
- (iii) All concrete used in drainage works to comply with BRE Digest 363 for Class 2 sulphate conditions.

3. BELOW GROUND DRAINAGE

- (i) Pipework to be UPVC-U pipes to BS 4660 : 2000 and Inspection Chambers to BS 7158 : 2001.
- (ii) All adoptable drainage to be constructed in accordance with 'Sewers for Adoption' 7th Edition and the relevant Council Design Guide.
- (iii) All private surface water sewers to be laid at 1 in 80 unless otherwise stated on the drawing.
- (iv) All private foul water sewers to be laid at 1 in 40 at the head of pipe runs and 1 in 80 elsewhere unless otherwise stated.
- (v) All private foul sewer pipes to be 100mm diameter unless otherwise stated on the drawing. All private surface water sewer pipes to be 100mm diameter from downpipes and 150mm diameter elsewhere unless otherwise stated on the drawing.
- (vi) Allow for rodding access above ground where rainwater downpipes do not have a direct connection to an inspection chamber.
- (vii) Existing sewer pipe to be re-used to be surveyed and levelled prior to commencement of the drainage works and refurbished if necessary.
- (viii) Connections to an adopted sewer only to be made following approval from the relevant adopting Authority.
- (ix) All drains, sewer pipes and manholes to be cleaned and tested for water tightness on completion of construction.

4. PIPES

- (i) Plastic pipes shall be of unplasticised polyvinyl chloride (UPVC) complying with the requirements of BS EN 1401-1:2009.
- (ii) Concrete pipes shall be spun by a centrifugal process or be vertically pressed. They shall possess self inverting sockets and shall comply with the requirements of and be tested in accordance with BS 5911:2002.

LEGEND	
	PROPOSED SURFACE WATER DRAIN
	PROPOSED FOUL WATER DRAIN
	EXISTING SURFACE WATER DRAIN
	EXISTING SURFACE WATER DRAIN TO BE ABANDONED
	EXISTING FOUL WATER DRAIN
	EXISTING FOUL WATER DRAIN TO BE ABANDONED
	PROPOSED CONCRETE MANHOLE
	PROPOSED PLASTIC INSPECTION CHAMBER (PPIC)
	HIGHWAY GULLY
	YARD/BINSTORE GULLY
	SOIL AND VENT PIPE
	RAIN WATER PIPE
	RODDING EYE
	PROPOSED CHANNEL DRAIN
	PROPOSED THRESHOLD DRAIN
	SITE BOUNDARY

ISSUED FOR PLANNING	PCA AK	16.12.24	P01
Description	By	Appt. Date	Rev.

FOR PLANNING

NOT FOR CONSTRUCTION

DRAINAGE DESIGN

Project  
60 KEYMER ROAD  
HASOCKS

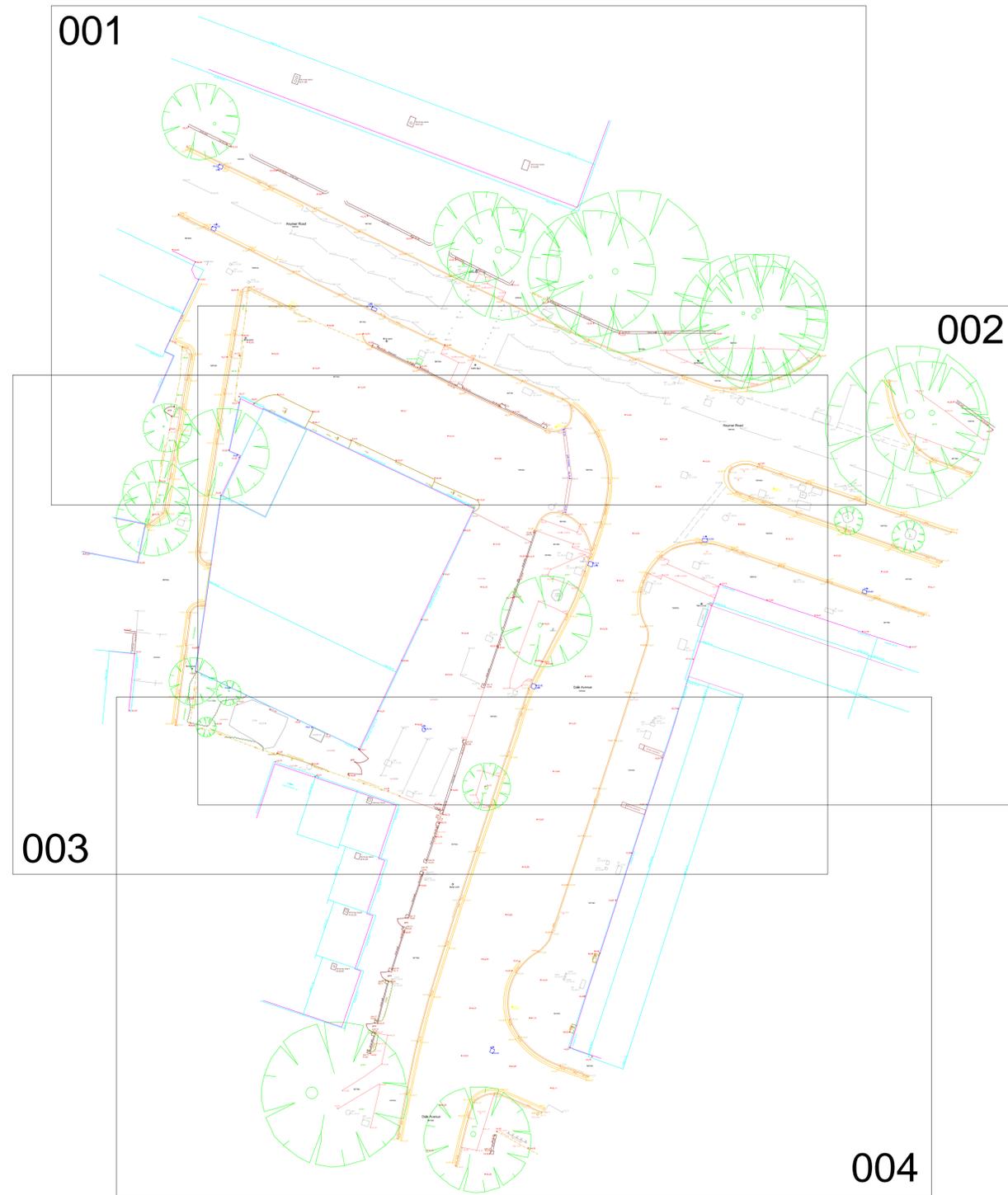
Client  
STAR GARAGES (BRIGHTON) LIMITED

**HOP** CONSULTING CIVIL AND STRUCTURAL ENGINEERS  
HOP House, 41 Church Road  
Hove, East Sussex BN3 2BE  
www.hop.uk.com  
ask@hop.uk.com  
+44 (0)1273 223900



1:100  
0 1m 2m 3m 4m 5m

## APPENDIX B – Topographical Survey



**NOTES**  
 SURVEY IS BASED ON OS GRID SYSTEM  
 ORIGINATING FROM STATION 1  
 @ E 530807.552, N 115477.484, RL 42.755

**LAYER INFORMATION**

0	Blank	EMPTY	Overhead cables
1	Bottom of bank	Downed trees	Downed trees
2	Building Lines	Downed trees	Downed trees
3	Edge of Concrete	Downed trees	Downed trees
4	Edge of Road	Downed trees	Downed trees
5	Edge of Footpath	Downed trees	Downed trees
6	Edge of Surface / Footpath	Downed trees	Downed trees
7	Edge of Road	Downed trees	Downed trees
8	Edge of Concrete	Downed trees	Downed trees
9	Edge of Road	Downed trees	Downed trees
10	Edge of Concrete	Downed trees	Downed trees
11	Edge of Road	Downed trees	Downed trees
12	Edge of Concrete	Downed trees	Downed trees
13	Edge of Road	Downed trees	Downed trees
14	Edge of Concrete	Downed trees	Downed trees
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19	Edge of Road	Downed trees	Downed trees
20	Edge of Concrete	Downed trees	Downed trees
21	Edge of Road	Downed trees	Downed trees
22	Edge of Concrete	Downed trees	Downed trees
23	Edge of Road	Downed trees	Downed trees
24	Edge of Concrete	Downed trees	Downed trees
25	Edge of Road	Downed trees	Downed trees
26	Edge of Concrete	Downed trees	Downed trees
27	Edge of Road	Downed trees	Downed trees
28	Edge of Concrete	Downed trees	Downed trees
29	Edge of Road	Downed trees	Downed trees
30	Edge of Concrete	Downed trees	Downed trees
31	Edge of Road	Downed trees	Downed trees
32	Edge of Concrete	Downed trees	Downed trees
33	Edge of Road	Downed trees	Downed trees
34	Edge of Concrete	Downed trees	Downed trees
35	Edge of Road	Downed trees	Downed trees
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37	Edge of Road	Downed trees	Downed trees
38	Edge of Concrete	Downed trees	Downed trees
39	Edge of Road	Downed trees	Downed trees
40	Edge of Concrete	Downed trees	Downed trees
41	Edge of Road	Downed trees	Downed trees
42	Edge of Concrete	Downed trees	Downed trees
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57	Edge of Road	Downed trees	Downed trees
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59	Edge of Road	Downed trees	Downed trees
60	Edge of Concrete	Downed trees	Downed trees
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91	Edge of Road	Downed trees	Downed trees
92	Edge of Concrete	Downed trees	Downed trees
93	Edge of Road	Downed trees	Downed trees
94	Edge of Concrete	Downed trees	Downed trees
95	Edge of Road	Downed trees	Downed trees
96	Edge of Concrete	Downed trees	Downed trees
97	Edge of Road	Downed trees	Downed trees
98	Edge of Concrete	Downed trees	Downed trees
99	Edge of Road	Downed trees	Downed trees
100	Edge of Concrete	Downed trees	Downed trees

**Line types and Symbols**

Building Lines	100.40	Garden Line	Scrub Line	Road Markings	Hedge Line
Rooflines	100.40	Gullies / Waste Water	Man holes & Flow	Walls	Steps
Top & Back of Kerb	100.40	Man holes & Flow	Trees	Plant	Gates
Edge of Surface / Footpath	100.40	Trees	Spot Levels		
Edge of Road	100.40	Spot Levels			
Edge of Concrete	100.40				
Top of bank	100.40				
Bottom of bank	100.40				
Fence / Handrail					
Overhead Cables					

**Control Stations**

Point Number	Ending	Beginning	Elevation	Description
SW1	530807.552	115477.484	42.755	HELVIAAL
SW2	530807.552	115477.484	42.755	HELVIAAL
SW3	530807.552	115477.484	42.755	HELVIAAL
SW4	530807.552	115477.484	42.755	HELVIAAL



Rev.	Date	Description

Client		Hemsley Orrell Partnership	
Drawing Title		Layout	
Scale	Date	Drawn	Checked
Not to Scale	01/04/21	DH	SE
Surveyed by		AR	

**SeSurveying**

Job Title: Star Garages, 60 Keymer Road, Hassocks

Job No: 015 03 21

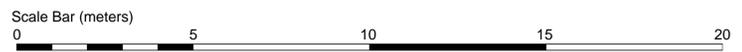
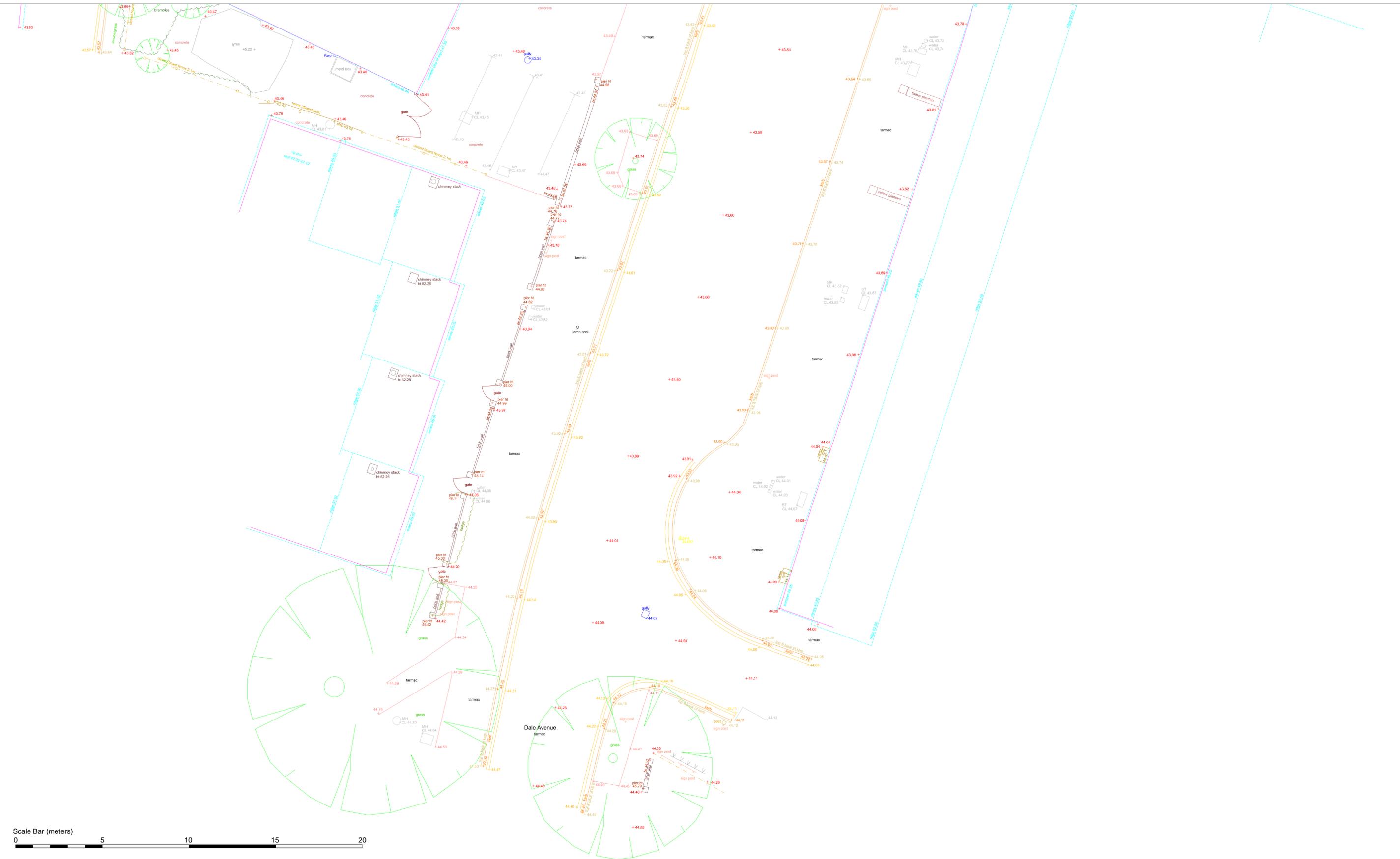
Drawing No: Layout

Rev: -









**NOTES**  
 SURVEY IS BASED ON OS GRID SYSTEM  
 ORIGINATING FROM STATION 1  
 @ E 530807.552, N 115477.484, RL 42.755

**LAYER INFORMATION**

Blank	EMPTTY
Bank of Bank	Banked bank arrows
Boundary	Boundary line
Edge of Concrete	Edge of concrete surface
Edge of Road	Edge of road surface
Edge of Tarmac	Edge of tarmac surface
Edge of Footpath	Edge of footpath surface
Edge of Surface / Footpath	Edge of surface or footpath
Edge of Road	Edge of road surface
Edge of Concrete	Edge of concrete surface
Top of bank	Top of bank
Bottom of bank	Bottom of bank
Fence / Handrail	Fence / Handrail
Overhead Cables	Overhead cables

**Line types and Symbols**

Building Lines	100.40
Rooflines	100.40
Top & Back of Kerb	100.40
Edge of Surface / Footpath	100.40
Edge of Road	100.40
Edge of Concrete	100.40
Top of bank	100.40
Bottom of bank	100.40
Fence / Handrail	100.40
Overhead Cables	100.40

**Line types and Symbols**

Garden Line	Garden Line
Scrub Line	Scrub Line
Gullies / Waste Water	Gullies / Waste Water
Man holes & Flow	Man holes & Flow
Trees	Trees
Spot Levels	Spot Levels

**Control Stations**

Point Number	Ending	Co-ordinates in OSGB	Flow	Description
SW1	530807.552	115477.484	42.755	HELMET
SW2	530807.552	115477.484	42.755	HELMET
SW3	530807.552	115477.484	42.755	HELMET
SW4	530807.552	115477.484	42.755	HELMET



Rev.	Date	Description

Client  
 Hemsley Orrell Partnership

Drawing Title  
 Topographical Survey P4/4

Scale  
 1:100 @ A1

Date  
 01/04/21

Drawn  
 DH

Checked  
 SE

Job Title  
 Star Garages, 60 Keymer Road, Hassocks

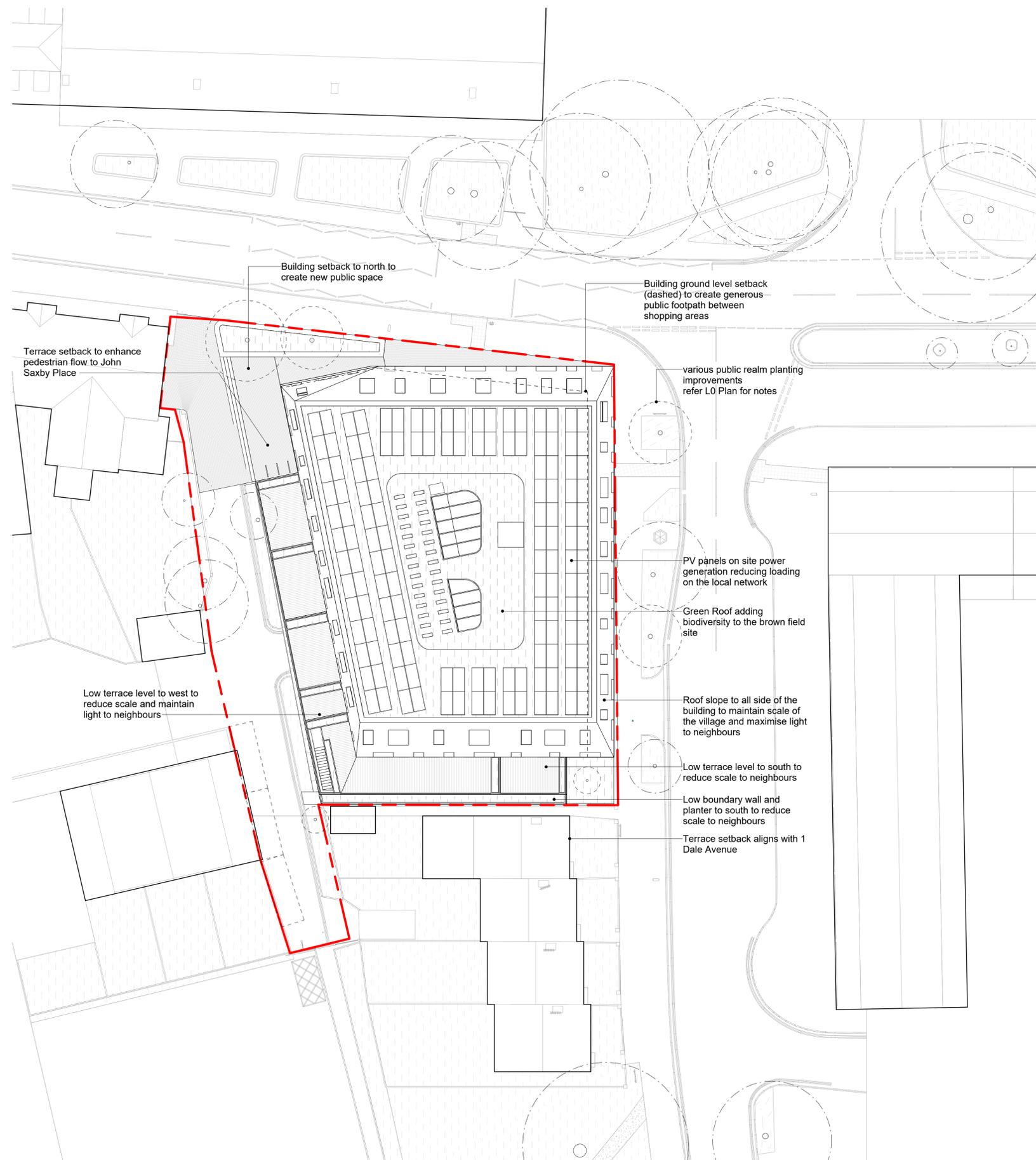
Job No.  
 015 03 21

Drawing No.  
 004

Rev.  
 -



## APPENDIX C – Architectural Proposals



Do not scale from this drawing  
Check all dimensions on site



Rev	Purpose	Date
00	Planning Pre App	12.12.2023
01	Design Review Panel	03.09.2024

CONSULTANT COORDINATION 05.11.24

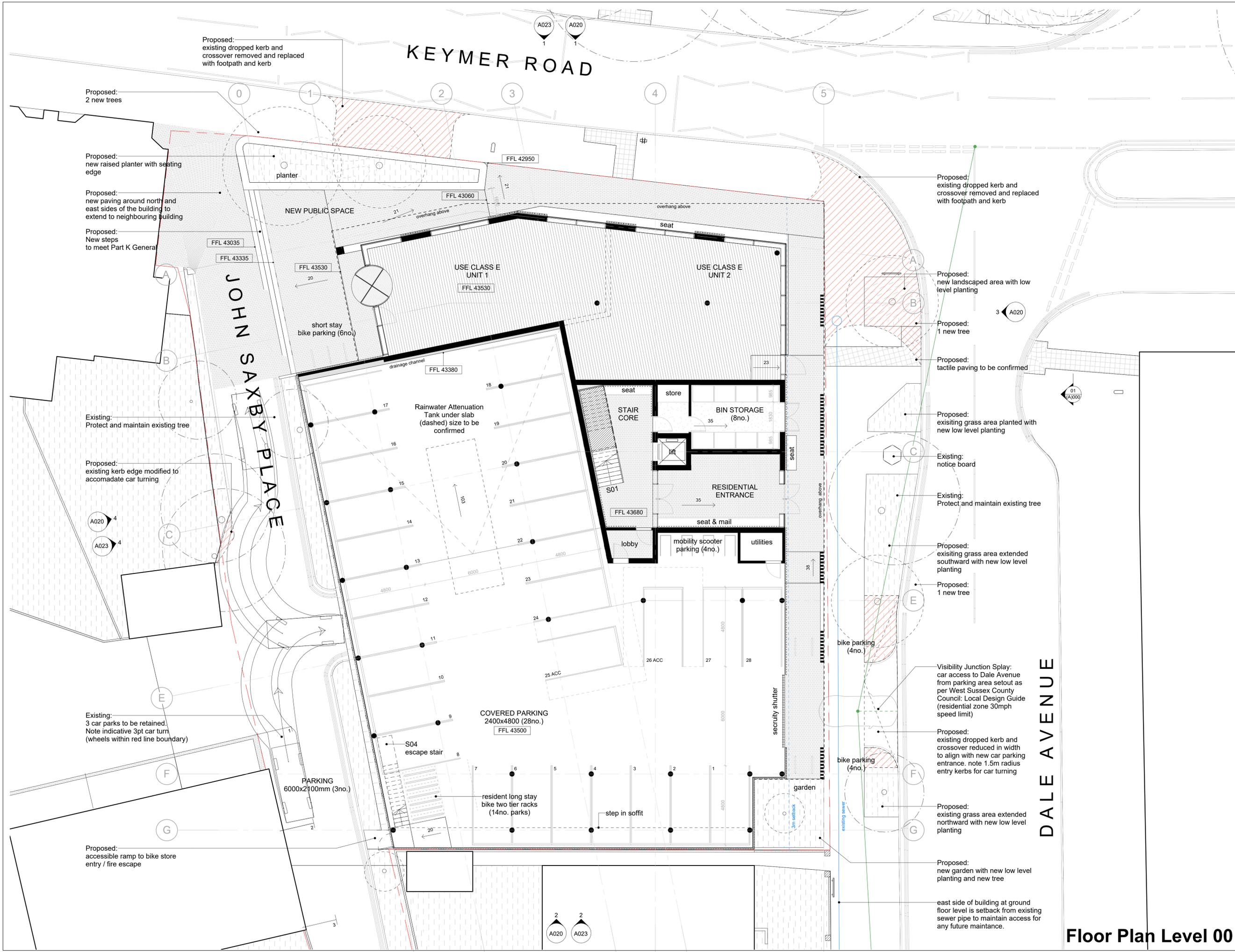
### Bowen & McLachlan

Bowen & McLachlan Ltd  
454 Leeston & Lake Road, Leeston 7683, NZ  
contact: b-mcl@outlook.com +64 27 356 1245

### KEYMER HOUSING

Client: Star Garages (Brighton) Ltd  
Project Address:  
60 Keymer Rd, Hassocks BN6 8AR, UK

Project No:	BMCL005
Scale at A1:	1:200
Drawing No:	Revision:



Do not scale from this drawing  
Check all dimensions on site

Rev	Purpose	Date
00	Planning Pre App	12.12.2023
01	Design Review Panel	03.09.2024

CONSULTANT COORDINATION 05.11.24

**Bowen & McLachlan**

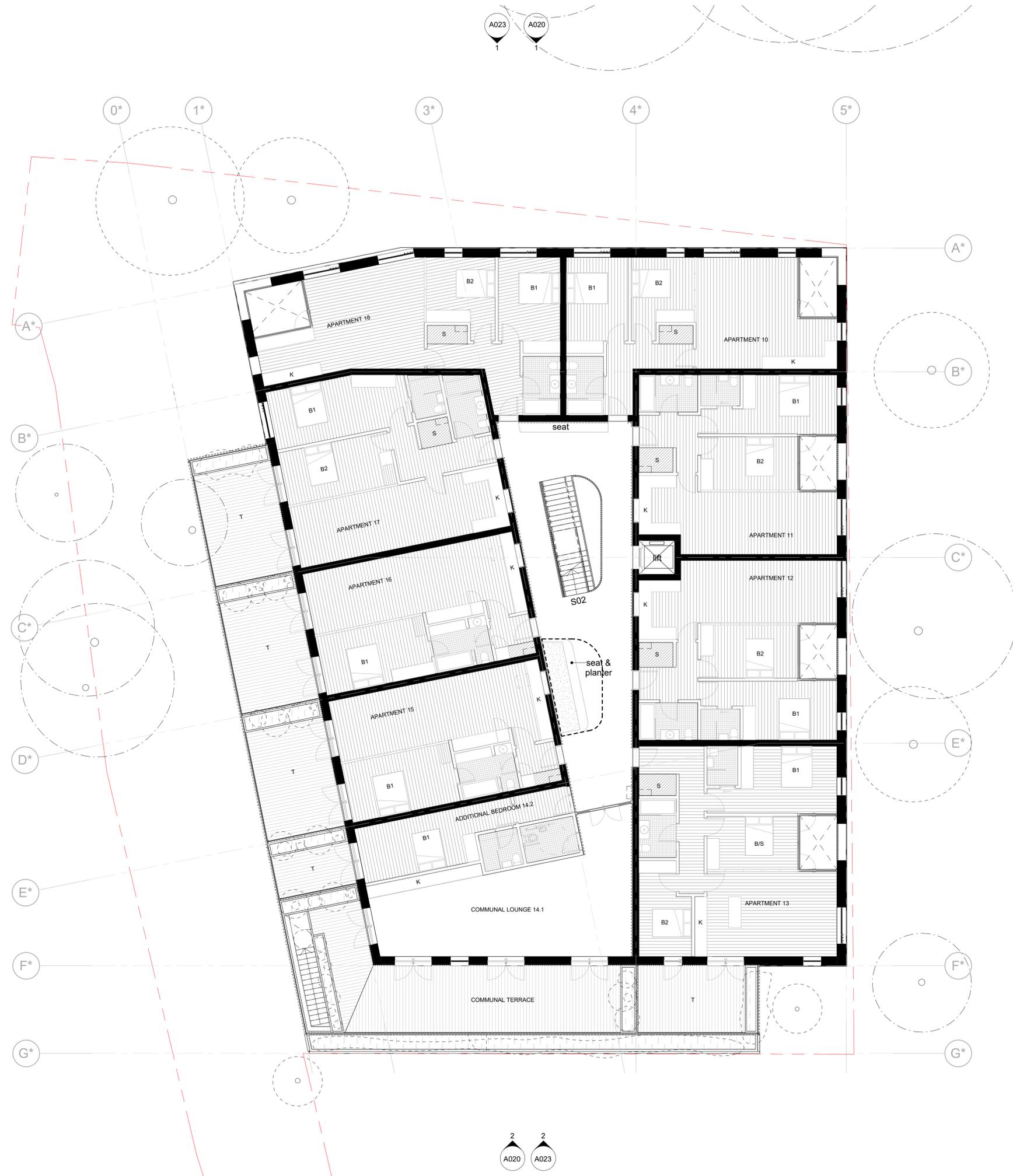
Bowen & McLachlan Ltd  
454 Leiston & Lake Road, Leiston 7683, NZ  
contact: b-mcl@outlook.com +64 27 356 1245

**KEYMER HOUSING**

Client: Star Garages (Brighton) Ltd  
Project Address:  
60 Keymer Rd, Hassocks BN6 8AR, UK

Project No:	BMCL005
Scale at A1:	1:100
Drawing No:	Revision:

Floor Plan Level 00    **A010**    **01**



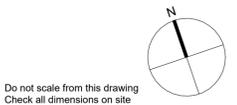
**TECHNICAL HOUSING REQUIREMENTS**

Nationally described standard 2015

ROOM	MIN WIDTH	MIN AREA
principal double Bed	2750 mm	11.5 m <sup>2</sup>
other double Bed	2550 mm	NA
other single Bed	2150 mm	7.5 m <sup>2</sup>
outdoor Space for 2p	1500mm	5.0 m <sup>2</sup>
per additional occupants	NA	+1.0 m <sup>2</sup>

**PLAN LEGEND**

Bedroom Principle	B1
Bedroom	B2
Bedroom / Study	B/S
Dining	D
Entry (Fire Rated)	E
Kitchen	K
Living	L
Storage	S
Terrace	T
Utility	U
Water Closet	W
Bath	BTH
Clothes Dryer	DRY
Dishwasher	DW
Fridge Freezer	FF
Shower	SHW
Sink	SNK
Laundry Tub	TUB
Water Closet	WC
Wash Hand Basin	WHB
Washing Machine	WM



Do not scale from this drawing  
Check all dimensions on site

Rev	Purpose	Date
00	Planning Pre App	12.12.2023
01	Design Review Panel	03.09.2024

CONSULTANT COORDINATION 05.11.24

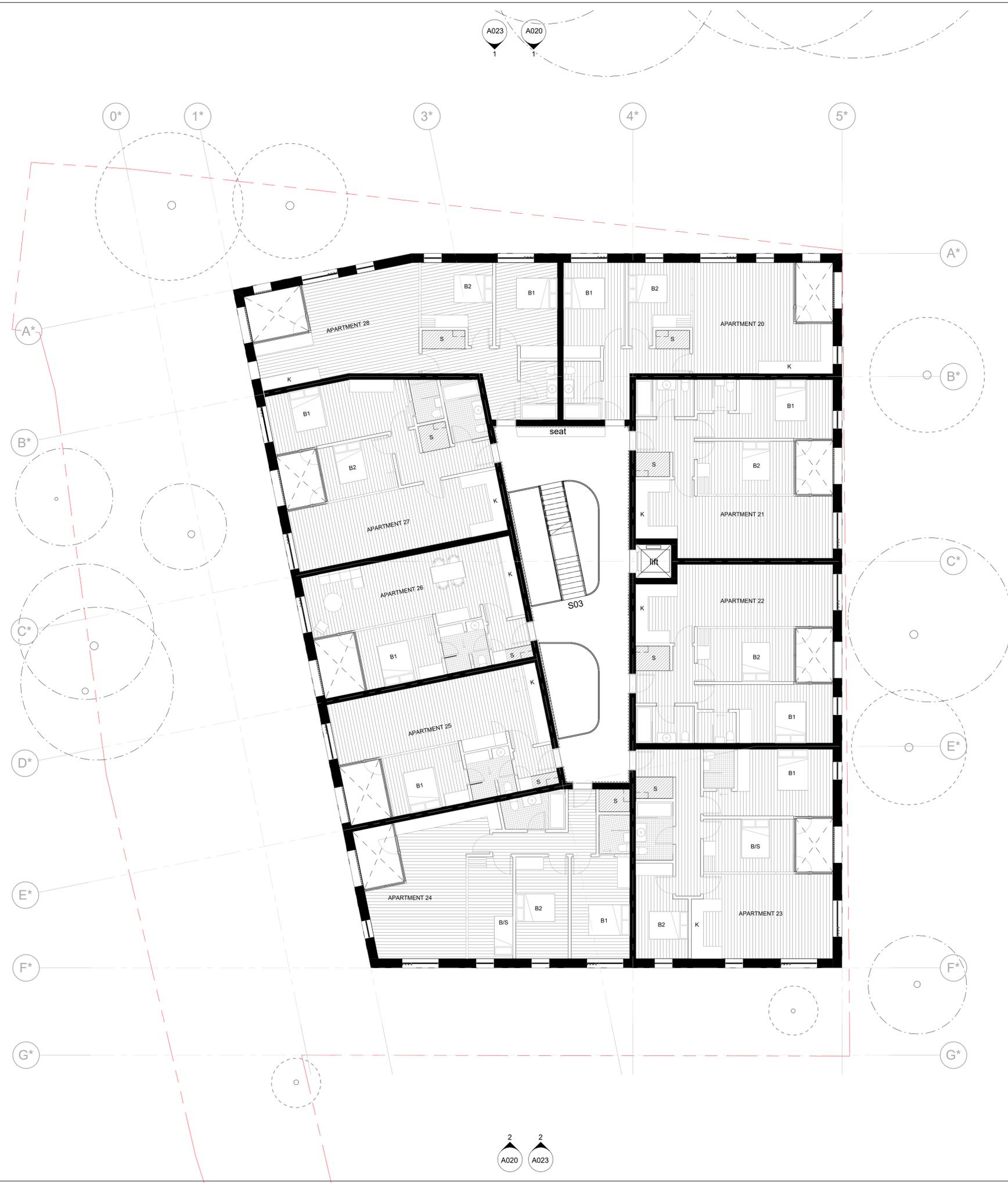
**Bowen & McLachlan**

Bowen & McLachlan Ltd  
454 Leeston & Lake Road, Leeston 7603, NZ  
contact: b-mcl@outlook.com +64 27 356 1245

**KEYMER HOUSING**

Client: Star Garages (Brighton) Ltd  
Project Address:  
60 Keymer Rd, Hassocks BN6 8AR, UK

Project No:	BMCL005
Scale at A1:	1:100
Drawing No:	Revision:



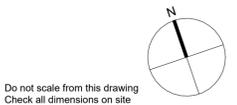
**TECHNICAL HOUSING REQUIREMENTS**

Nationally described standard 2015

ROOM	MIN WIDTH	MIN AREA
principal double Bed	2750 mm	11.5 m <sup>2</sup>
other double Bed	2550 mm	NA
other single Bed	2150 mm	7.5 m <sup>2</sup>
outdoor Space for 2p	1500mm	5.0 m <sup>2</sup>
per additional occupants	NA	+1.0 m <sup>2</sup>

**PLAN LEGEND**

Bedroom Principle	B1
Bedroom	B2
Bedroom / Study	B/S
Dining	D
Entry (Fire Rated)	E
Kitchen	K
Living	L
Storage	S
Terrace	T
Utility	U
Water Closet	W
Bath	BTH
Clothes Dryer	DRY
Dishwasher	DW
Fridge Freezer	FF
Shower	SHW
Sink	SNK
Laundry Tub	TUB
Water Closet	WC
Wash Hand Basin	WHB
Washing Machine	WM



Do not scale from this drawing  
Check all dimensions on site

Rev	Purpose	Date
00	Planning Pre App	12.12.2023
01	Design Review Panel	03.09.2024

CONSULTANT COORDINATION 05.11.24

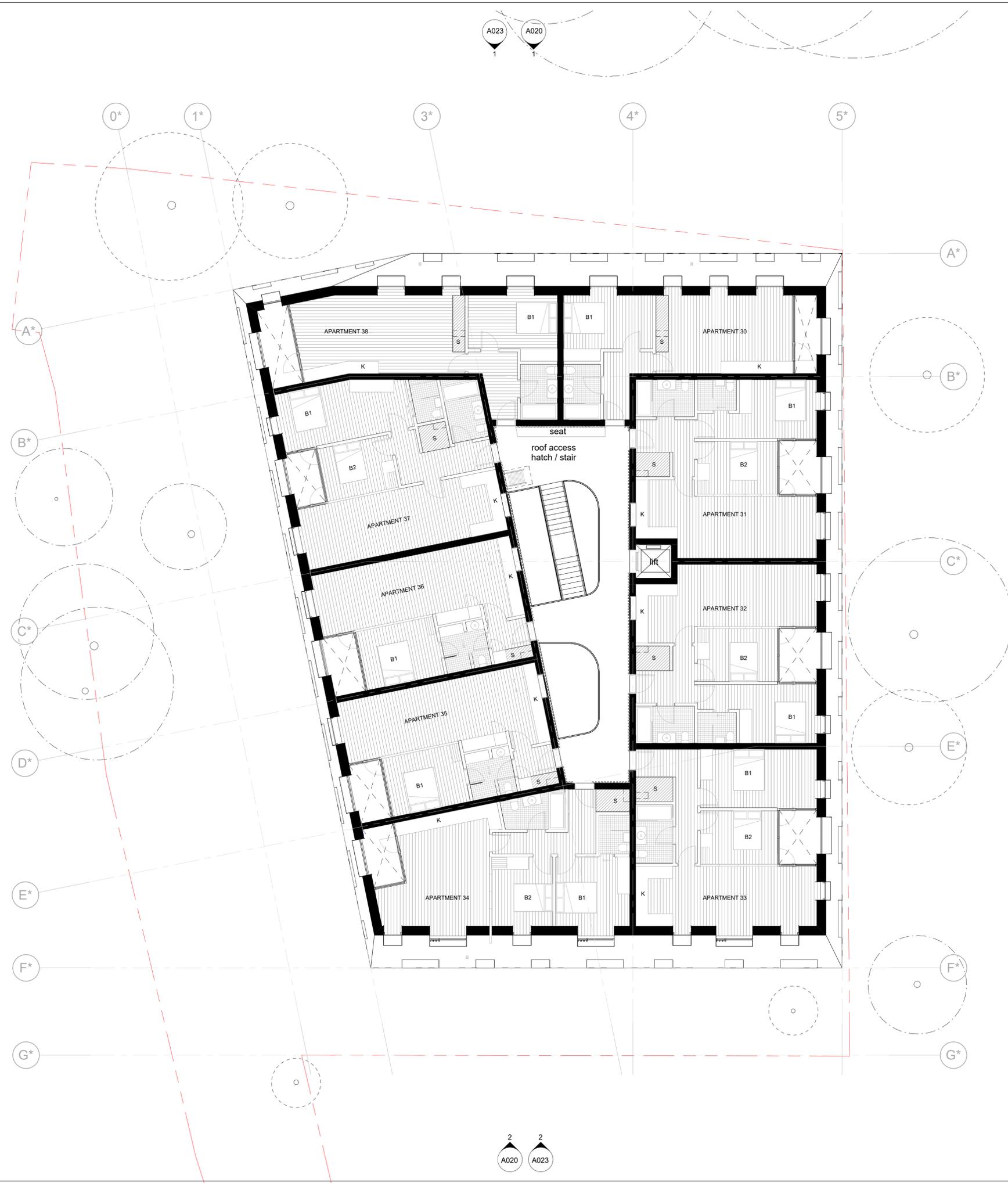
**Bowen & McLachlan**

Bowen & McLachlan Ltd  
454 Leeston & Lake Road, Leeston 7603, NZ  
contact: b-mcl@outlook.com +64 27 356 1245

**KEYMER HOUSING**

Client: Star Garages (Brighton) Ltd  
Project Address:  
60 Keymer Rd, Hassocks BN6 8AR, UK

Project No:	BMCL005
Scale at A1:	1:100
Drawing No:	Revision:



**TECHNICAL HOUSING REQUIREMENTS**

Nationally described standard 2015

ROOM	MIN WIDTH	MIN AREA
principal double Bed	2750 mm	11.5 m <sup>2</sup>
other double Bed	2550 mm	NA
other single Bed	2150 mm	7.5 m <sup>2</sup>
outdoor Space for 2p	1500mm	5.0 m <sup>2</sup>
per additional occupants	NA	+1.0 m <sup>2</sup>

Do not scale from this drawing  
Check all dimensions on site

Rev	Purpose	Date
00	Planning Pre App	12.12.2023
01	Design Review Panel	03.09.2024

CONSULTANT COORDINATION 05.11.24

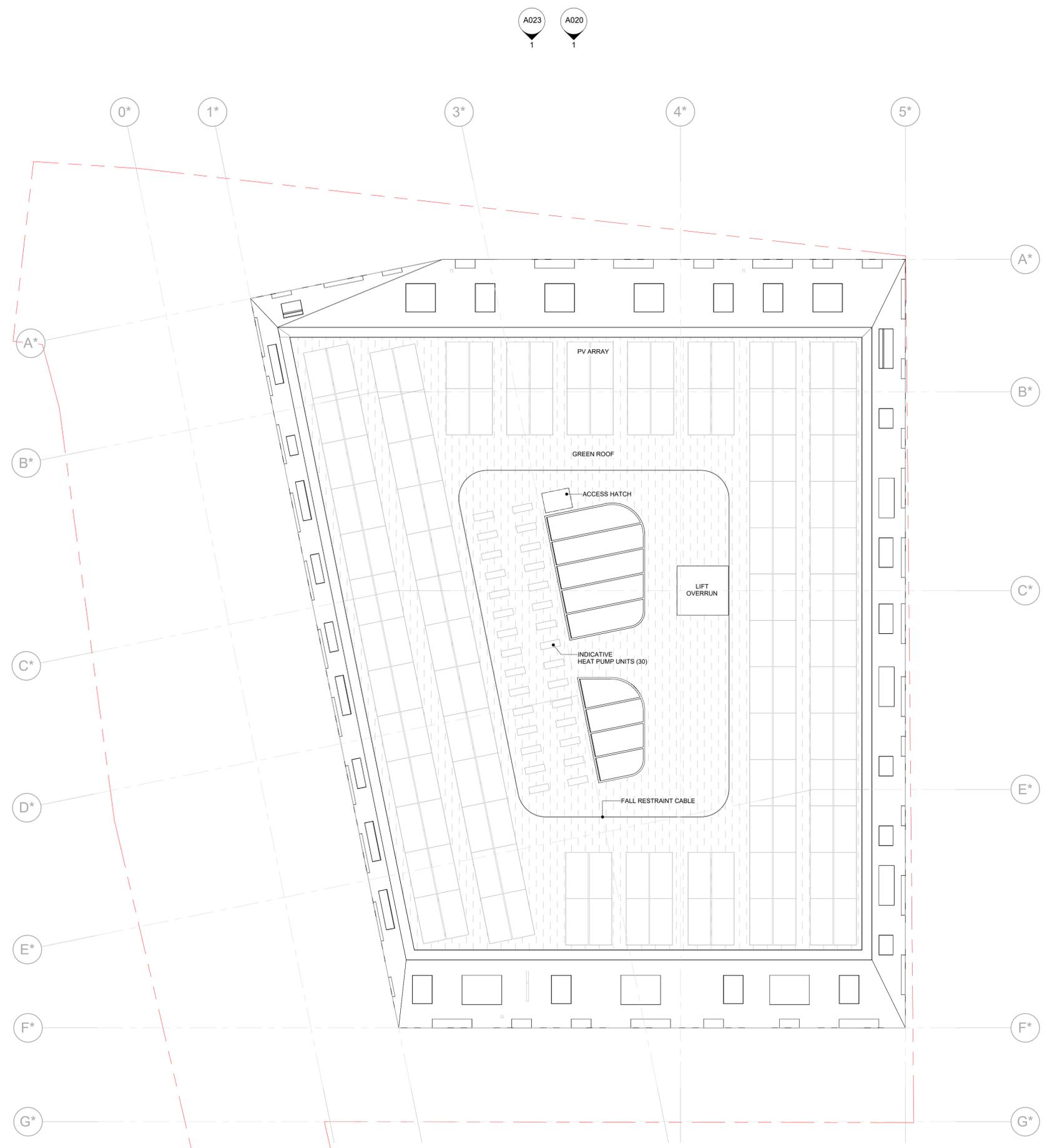
**Bowen & McLachlan**

Bowen & McLachlan Ltd  
454 Leeston & Lake Road, Leeston 7603, NZ  
contact: b+mcl@outlook.com +64 27 356 1245

**KEYMER HOUSING**

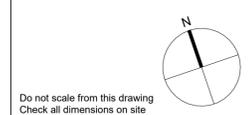
Client: Star Garages (Brighton) Ltd  
Project Address:  
60 Keymer Rd, Hassocks BN6 8AR, UK

Project No:	BMCL005
Scale at A1:	1:100
Drawing No:	Revision:



3 A020

A020 4  
A023 4



Rev	Purpose	Date
00	Planning Pre App	12.12.2023
01	Design Review Panel	03.09.2024

CONSULTANT COORDINATION 05.11.24

**Bowen & McLachlan**

Bowen & McLachlan Ltd  
454 Leeston & Lake Road, Leeston 7603, NZ  
contact: b-mcl@outlook.com +64 27 356 1245

**KEYMER HOUSING**

Client: Star Garages (Brighton) Ltd  
Project Address:  
60 Keymer Rd, Hassocks BN6 8AR, UK

Project No:	BMCL005
Scale at A1:	1:100
Drawing No:	Revision:

**Roof Plan Level 04**      **A014**      **01**

2 A020  
2 A023



## APPENDIX D – Environment Agency Flood Data

# Flood risk assessment data



Location of site: 60 Keymer Road, Hassocks, West Sussex, BN6  
8AR Document created on: 27 June 2024  
This information was previously known as a product 4.  
Customer reference number: SSD365515

Map showing the location that flood risk assessment data has been requested for.



## How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

**We recommend that you work with a flood risk consultant to get your flood risk assessment.**

## Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- modelled data
- climate change modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

## Information that's unavailable

This document **does not** contain:

- historic flooding
- flood defences and attributes

We do not have historic flooding data for this location.

Please note that:

- flooding may have occurred that we do not have records for
- flooding can come from a range of different sources
- we can only supply flood risk data relating to flooding from rivers or the sea

You can contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

We aren't able to display flood defence locations and attributes as there are no formal flood defences in the area of interest.

## Surface water and other sources of flooding

Use the [long term flood risk service](#) to find out about the risk of flooding from:

- surface water
- ordinary watercourses
- reservoirs

Or you can contact your Lead Local Flood Authority for further information.

Your Lead Local Flood Authority is West Sussex County Council

For information about sewer flooding, contact the relevant water company for the area.

## About the models used

Model name: Hassocks Modelling 2013

Scenario(s): undefended fluvial

Date: 2013

Model name: Hassocks Climate Change Allowances 2016

Scenario(s): undefended climate change fluvial

Date: 2016

This model contains the most relevant data for your area of interest.

## Terminology used

### Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

### Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

## Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change

The flood zones are not currently being updated. The last update was in November 2023. Some of the flood zones may have changed, however all source data is included in the models below.



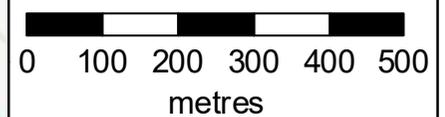
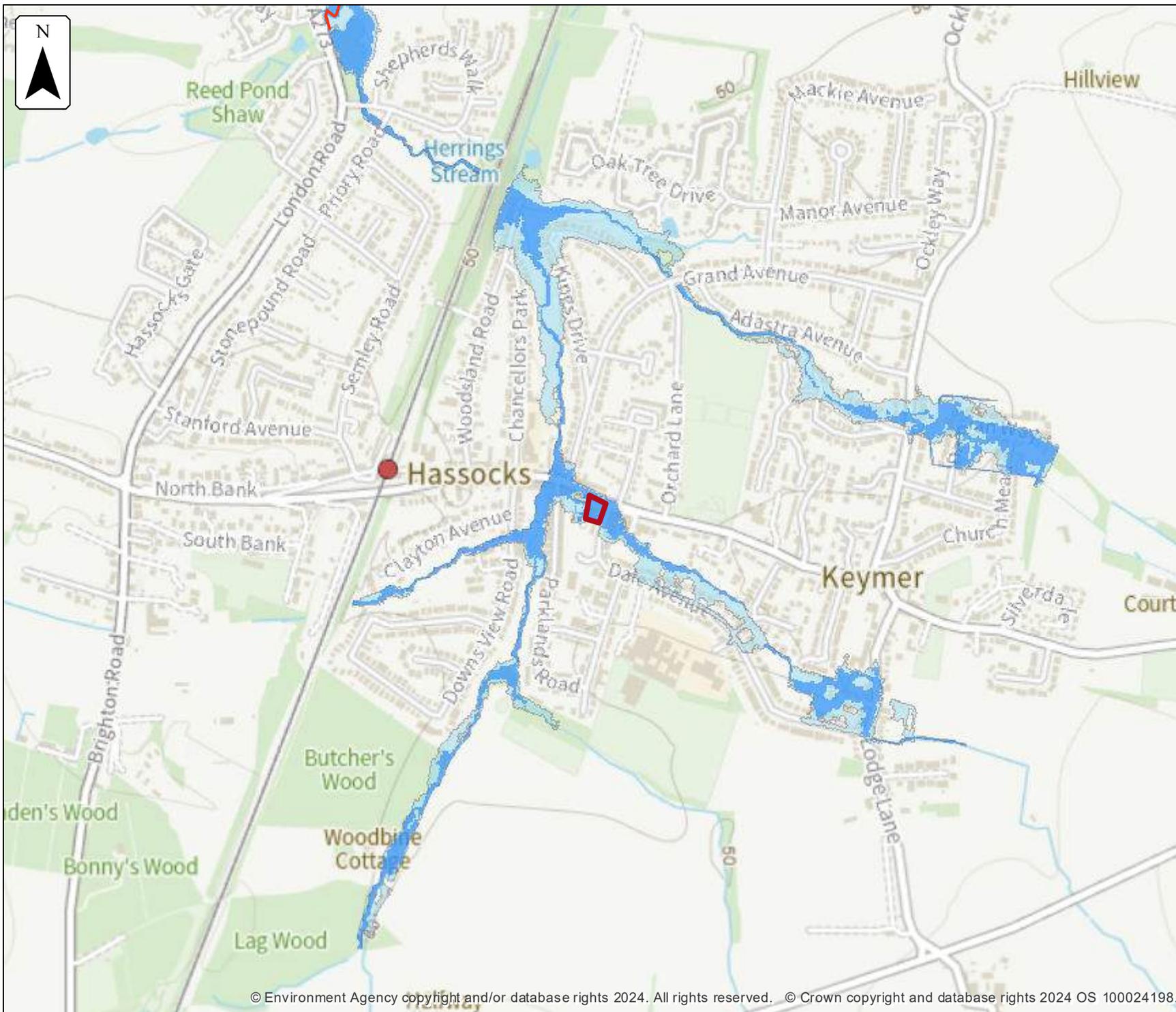
### Flood map for planning

Location (easting/northing)  
**530814/115453**

Scale  
**1:10,000**

Created  
**27 Jun 2024**

-  Selected area
-  Main river
-  Flood zone 3
-  Flood zone 2



## Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios

## Climate change

The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

## Modelled scenarios

The following scenarios are included:

- Undefined modelled fluvial: risk of flooding from rivers where there are no flood defences
- Undefined climate change modelled fluvial: risk of flooding from rivers where there are no flood defences, including estimated impact of climate change

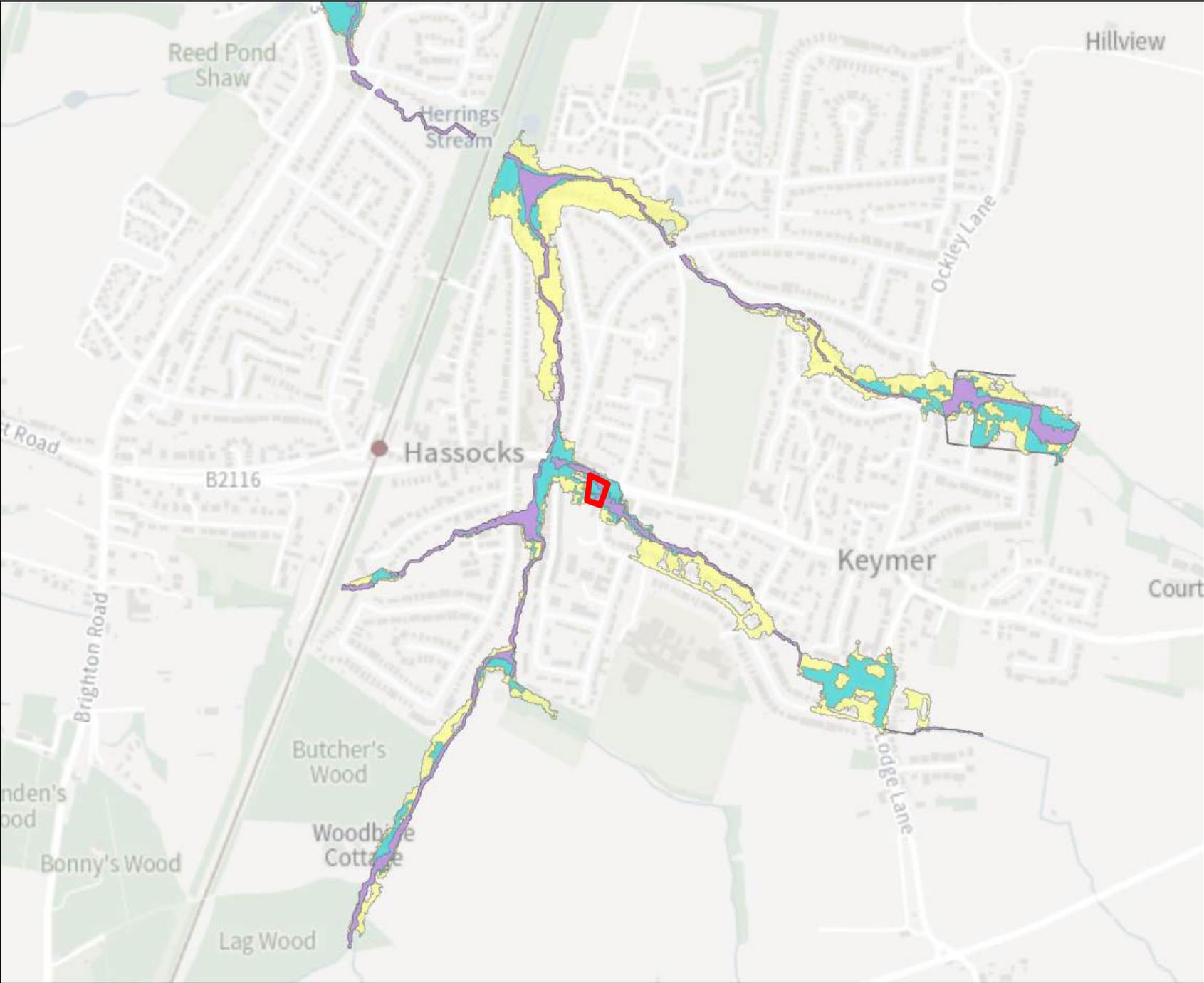
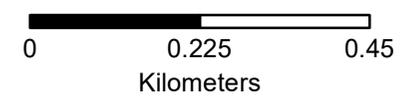


### Legend

-  Site Boundary
-  5% AEP (Undefended Fluvial)
-  1% AEP (Undefended Fluvial)
-  0.1% AEP (Undefended Fluvial)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000



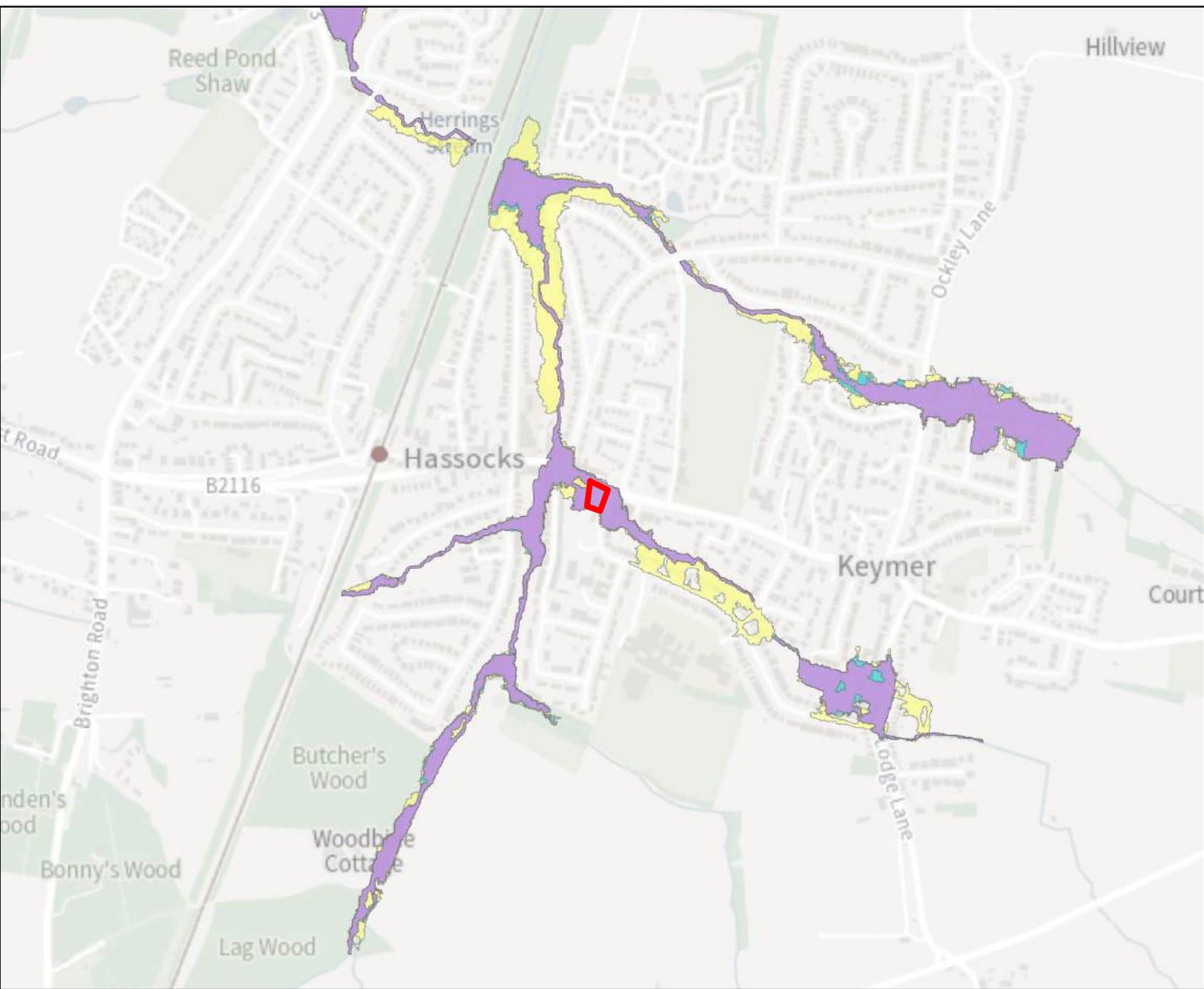
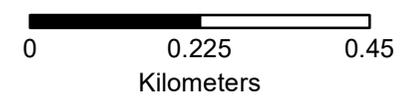


### Legend

-  Site Boundary
-  1% AEP+CC (35%) (Undefined Fluvial)
-  1% AEP+CC (45%) (Undefined Fluvial)
-  1% AEP+CC (105%) (Undefined Fluvial)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000





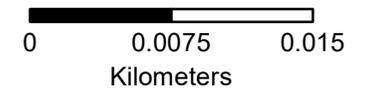
### Legend

 Site Nodes

 Site Boundary

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:400



**Product 4 Flood Risk Data Requested by:** Andrew Keen

**Site:** 60 Keymer Road, Hassocks, West Sussex, BN6 8AR

**Table 1:** Water Levels: Fluvial Undefended

Node Ref	NGR		Modelled Flood Levels in Metres AOD					
			Undefended Annual Exceedance Probability					
	Eastings	Northings	5%	1%	1%+CC (35%)	1%+CC (45%)	1%+CC (105%)	0.1%
1	530806	115478	-	42.61	42.63	42.63	42.65	42.64
2	530832	115465	-	43.15	43.18	43.18	43.20	43.20
3	530802	115456	-	43.26	43.27	43.28	43.29	43.29
4	530827	115446	43.22	43.30	43.36	43.37	43.42	43.41
5	530800	115438	-	43.36	43.39	43.40	43.42	43.41
6	530821	115430	-	43.39	43.43	43.46	43.49	43.48
7	530815	115453	-	43.28	43.32	43.33	43.37	43.36

**Table 5:** Water Depths: Fluvial Undefended

Node Ref	NGR		Modelled Flood Levels in Metres AOD					
			Undefended Annual Exceedance Probability					
	Eastings	Northings	5%	1%	1%+CC (35%)	1%+CC (45%)	1%+CC (105%)	0.1%
1	530806	115478	-	0.01	0.02	0.03	0.04	0.04
2	530832	115465	-	0.04	0.06	0.07	0.09	0.08
3	530802	115456	-	0.01	0.01	0.01	0.02	0.02
4	530827	115446	0.01	0.10	0.16	0.17	0.22	0.21
5	530800	115438	-	0.04	0.06	0.07	0.09	0.09
6	530821	115430	-	0.01	0.03	0.06	0.08	0.08
7	530815	115453	-	0.03	0.06	0.07	0.11	0.10

All levels taken from: Hassocks Modelling 2013 and Hassocks Climate Change Allowances 2016, completed by JBA Consulting.

Produced on: 27/06/2024

**\* Climate Change allowances for this model only show the superseded 20% increase in flows. The current allowances should be checked here: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>.**

**\*\* The flood risk data provided is based on existing EA hydraulic models for existing 0.5% annual probability events with an allowance for climate change. Please note the climate change allowances provided are not up to date. These were updated on 17 December 2019.**

**You should refer to 'Flood risk assessments: climate change allowances' for the most up to date allowances. You will need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.**

**There is no additional information or health warnings for these levels/depths or the model from which they have been produced.**

## Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

Your Lead Local Flood Authority is West Sussex County Council.

## About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

## Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

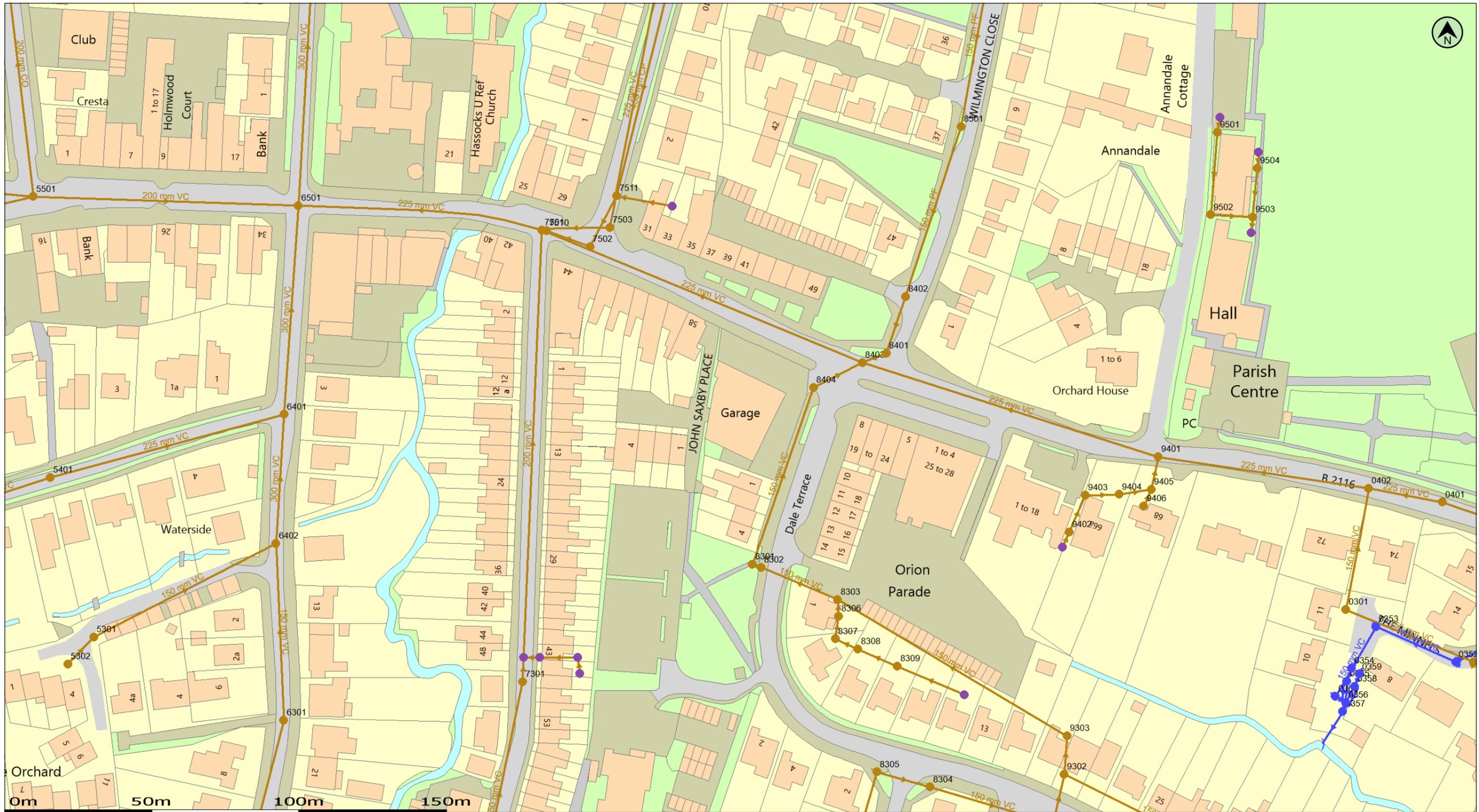
## Help and advice

Contact the Solent and South Downs Environment Agency team at [ssdenquiries@environment-agency.gov.uk](mailto:ssdenquiries@environment-agency.gov.uk) for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for



## APPENDIX E – Southern Water Sewer Records



(c) Crown copyright and database rights 2021 Ordnance Survey 100031673

Date: 06/05/21

Scale: 1:1250

Map Centre: 530810,115452

Data updated: 19/04/21

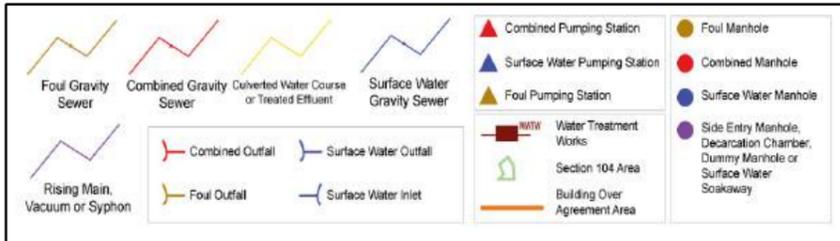
Our Ref: 552631 - 1

Wastewater Plan A3

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2021 Ordnance Survey 100031673. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.



andyk@hop.uk.com

16002-01 Keymer Road







## APPENDIX F – CCTV Drainage Survey



Aquatech Drains Ltd

60 Keymer Rd, Hassocks

16 May 2021

A large, stylized version of the WinCan V8 logo is superimposed over a photograph of a rain puddle on a wet surface. The puddle shows ripples and a reflection of the logo above it. The logo itself is red for 'WinCan' and yellow for 'V8', with a thick black outline.

[www.wincan.com](http://www.wincan.com)

## GRADE 3,4 & 5 Summary

---

### STRUCTURAL DEFECTS

Structural defects			
Section	PLR	Grade	Fault description
3	IC1 Parking area	3	Fracture, circumferential, from 12 to 12 o'clock
7	SW3 parking area	5	Deformed sewer/drain, 20%
8	SW4 side access	5	Deformed sewer/drain, 30%
9	RWP1 internal area	5	Multiple defects at 6.4m

Grade 3; Best practice suggests consideration be given to repair in the medium term

Grade 4; Best practice suggests consideration be given to a repair to avoid potential collapse

Grade 5; Best practice suggests this pipe is at risk of collapse at any time; urgent consideration should be given to a repair to avoid collapse

### SERVICE / OPERATIONAL DEFECTS

Service defects			
Section	PLR	Grade	Fault description
1	IC2 parking area	3	Attached deposits, other, from 5 to 7 o'clock, 15% cross-sectional
5	SW1 parking area	4	Settled deposits, fine, 25% cross-sectional area loss

Grade 3; Best practice suggests consideration be given to maintenance activities in the medium term

Grade 4; Best practice suggests consideration be given to maintenance activity to avoid potential blockage

Grade 5; Best practice suggests this pipe is at immediate risk of backing up / causing flooding

### Abandoned Surveys

Camera no access		
Section	PLR	Fault description
All Surveys Completed		

### Information

These summaries are based on the SRM grading from the WRC

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## Table of contents

Project Name: 60 Keymer Rd, Hassocks	Project number:	Date: 16/05/2021	Contact:	
---	-----------------	---------------------	----------	--

Profile Report .....	1
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SRMReport : .....	8
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Project Information .....	10
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Place :

**Aquatech Drains Ltd**

Solway Ave

Brighton

Tel: 01273 933705

Fax:

Email: Jason@aquatechdrains.co.uk

**/ Main sections**Project name :  
**60 Keymer Rd, Hassocks**

Project number :

Contact :

Date :  
**16/05/2021**

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
2	FWG1	IC2	16/05/2021	Keymer Rd		Vitrified clay	4.10	4.10
4	RG1	SW1	16/05/2021	Keymer Rd		Pitch fibre	4.90	4.90
5	SW1	SW2	16/05/2021	Keymer Rd		Pitch fibre	20.70	20.70

**Pipe size: CIRCULAR 100/100 = 29.7 m (29.7 m)**

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
1	IC2	IC1	16/05/2021	Keymer Rd		Vitrified clay	12.70	12.70
3	IC1	Mainsewer	16/05/2021	Keymer Rd		Vitrified clay	1.70	1.70
6	SW2	Main SW	16/05/2021	Keymer Rd		Vitrified clay	3.30	3.30
7	SW3	SW4	16/05/2021	Keymer Rd		Pitch fibre	14.70	14.70
8	SW4	Main	16/05/2021	Keymer Rd		Pitch fibre	12.30	12.30
9	RWP1	SW5	16/05/2021	Keymer Rd		Vitrified clay	6.50	6.50
10	SW5	Main	16/05/2021	Keymer Rd		Vitrified clay	11.00	11.00

**Pipe size: CIRCULAR 150/150 = 62.2 m (62.2 m)****All sections = 91.9 m (91.9 m)**

## Inspection Summary

Project Name: 60 Keymer Rd, Hassocks	Project number:	Contact:	Date: 16/05/2021
---	-----------------	----------	---------------------

Total Length of sewer network .....	<b>91.90 m</b>
Inspected Length of sewer network .....	<b>91.90 m</b>
Not inspected Length of sewer network .....	<b>0.00 m</b>
Total Length of sewer network (abandoned) .....	<b>0.00 m</b>
Inspected Length of Sewer network (abandoned) .....	<b>0.00 m</b>
Not inspected Length of sewer network (abandoned) .....	<b>0.00 m</b>
Total Length of house connections (satellite) .....	<b>0.00 m</b>
Inspected Length of house connections (satellite) .....	<b>0.00 m</b>
Not inspected Length of house connections (satellite) .....	<b>0.00 m</b>
Number of Sections .....	<b>10</b>
Number of sections (abandoned) .....	<b>0</b>
Number of house connections .....	<b>0</b>
Number of Photos .....	<b>61</b>

## Inspection Summary

Project Name: 60 Keymer Rd, Hassocks	Project Number:	Contact:	Date: 16/05/2021
---	-----------------	----------	---------------------

Place: Hassocks	Section length: 12.70 m
Road: Keymer Rd	Pipe length: 150 mm
U/S MH: IC2	Material: Vitrified clay
D/S MH: IC1	Shape: Circular

		0.00	MH	Start node type, manhole, reference number : IC1	0
		0.00	WL	Water level, 0% of the vertical dimension	0
		0.00	GP	General photograph taken at this point	0
		0.00	GP	General photograph taken at this point	0
		3.10	DEZ	Attached deposits, other, from 5 to 7 o'clock, 15% cross-sectional area loss	3
		9.00	DEZJ	Attached deposits, other at joint, from 5 to 7 o'clock, 20% cross-sectional area loss	4
		9.20	WL	Water level, 20% of the vertical dimension	0
		12.70	MHF	Finish node type, manhole reference number: IC2	0

Place: Hassocks	Section length: 4.10 m
Road: Keymer Rd	Pipe length: 100 mm
U/S MH: FWG1	Material: Vitrified clay
D/S MH: IC2	Shape: Circular

		0.00	MH	Start node type, manhole, reference number : IC2	0
		0.00	WL	Water level, 0% of the vertical dimension	0
		0.50	LR	Line deviates right	0
		3.30	LR	Line deviates right	0
		3.90	JDM	Joint displaced, medium	1
		4.10	MHF	Finish node type, manhole reference number: FWG1	0

## Inspection Summary

Project Name: 60 Keymer Rd, Hassocks	Project Number:	Contact:	Date: 16/05/2021
---	-----------------	----------	---------------------

Place: Hassocks	Section length: 1.70 m
Road: Keymer Rd	Pipe length: 150 mm
U/S MH: IC1	Material: Vitrified clay
D/S MH: Mainsewer	Shape: Circular

		0.00	MH	Start node type, manhole, reference number : IC1	0
		0.00	WL	Water level, 0% of the vertical dimension	0
		0.40	FC	Fracture, circumferential, from 12 to 12 o'clock	3
		0.70	JN	Junction, at 12 o'clock, diameter 100mm	0
		1.40	LD	Line deviates down	0
		1.70	MHF	Finish node type, manhole reference number: Mainsewer	0

Place: Hassocks	Section length: 4.90 m
Road: Keymer Rd	Pipe length: 100 mm
U/S MH: RG1	Material: Pitch fibre
D/S MH: SW1	Shape: Circular

		0.00	MH	Start node type, manhole, reference number : SW1	0
		0.00	WL	Water level, 0% of the vertical dimension	0
		3.00	MC	Material changes, vitrified clay	0
		3.70	JN	Junction, at 9 o'clock, diameter 100mm	0
		4.00	MC	Material changes, pitch fibre	0
		4.90	MC	Material changes, vitrified clay	0
		4.90	MHF	Finish node type, manhole reference number: RG1	0

## Inspection Summary

Project Name: 60 Keymer Rd, Hassocks	Project Number:	Contact:	Date: 16/05/2021
---	-----------------	----------	---------------------

Place: Hassocks	Section length: 20.70 m
Road: Keymer Rd	Pipe length: 100 mm
U/S MH: SW1	Material: Pitch fibre
D/S MH: SW2	Shape: Circular

	<b>SW1</b>	<b>0.00</b>	MH	Start node type, manhole, reference number : SW1	0
		<b>0.00</b>	WL	Water level, 0% of the vertical dimension	0
		<b>0.30</b>	DES	Settled deposits, fine, 25% cross-sectional area loss	4
		<b>8.00</b>	MC	Material changes, vitrified clay	0
		<b>8.40</b>	JN	Junction, at 3 o'clock, diameter 100mm	0
		<b>8.80</b>	MC	Material changes, pitch fibre	0
		<b>18.50</b>	MC	Material changes, vitrified clay	0
		<b>19.00</b>	JN	Junction, at 9 o'clock, diameter 100mm	0
		<b>20.10</b>	JN	Junction, at 3 o'clock, diameter 100mm	0
	<b>SW2</b>	<b>20.70</b>	MHF	Finish node type, manhole reference number: SW2	0

Place: Hassocks	Section length: 3.30 m
Road: Keymer Rd	Pipe length: 150 mm
U/S MH: SW2	Material: Vitrified clay
D/S MH: Main SW	Shape: Circular

	<b>SW2</b>	<b>0.00</b>	MH	Start node type, manhole, reference number : SW2	0
		<b>0.00</b>	WL	Water level, 20% of the vertical dimension	0
		<b>3.20</b>	GP	General photograph taken at this point	0
	<b>Main SW</b>	<b>3.30</b>	MHF	Finish node type, manhole reference number: Main SW	0

## Inspection Summary

Project Name: 60 Keymer Rd, Hassocks	Project Number:	Contact:	Date: 16/05/2021
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Place: Hassocks	Section length: 14.70 m
Road: Keymer Rd	Pipe length: 150 mm
U/S MH: SW3	Material: Pitch fibre
D/S MH: SW4	Shape: Circular

	0.00	MH	Start node type, manhole, reference number : SW3	0
	0.00	WL	Water level, 10% of the vertical dimension	0
	0.00	GP	General photograph taken at this point	0
	0.80	D	Deformed sewer/drain, 20%	5
	11.20	D	Deformed sewer/drain, 30%	5
	14.70	MHF	Finish node type, manhole reference number: SW4	0

Place: Hassocks	Section length: 12.30 m
Road: Keymer Rd	Pipe length: 150 mm
U/S MH: SW4	Material: Pitch fibre
D/S MH: Main	Shape: Circular

	0.00	MH	Start node type, manhole, reference number : SW4	0
	0.00	WL	Water level, 20% of the vertical dimension	0
	3.30	D	Deformed sewer/drain, 30%	5
	4.40	D	Deformed sewer/drain, 30%	5
	7.60	D	Deformed sewer/drain, 30%	5
	10.10	D	Deformed sewer/drain, 20%	5
	12.10	GP	General photograph taken at this point	0
	12.30	MHF	Finish node type, manhole reference number: Main	0

## Inspection Summary

Project Name: 60 Keymer Rd, Hassocks	Project Number:	Contact:	Date: 16/05/2021
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Place: Hassocks	Section length: 6.50 m
Road: Keymer Rd	Pipe length: 150 mm
U/S MH: RWP1	Material: Vitrified clay
D/S MH: SW5	Shape: Circular

		0.00	MH	Start node type, manhole, reference number : SW5	0
		0.00	WL	Water level, 0% of the vertical dimension	0
		0.00	GP	General photograph taken at this point	0
		0.50	SC	Dimension changes, 100mm high, 100mm wide	0
		5.70	CC	Crack, circumferential, from 12 to 12 o'clock	2
		5.80	LL	Line deviates left	0
		5.80	OJM	Open joint, medium	1
		6.40	LU	Line deviates up	0
		6.40	H	Hole in drain/sewer, from 5 to 9 o'clock	5
		6.50	MHF	Finish node type, manhole reference number: RWP1	0

Place: Hassocks	Section length: 11.00 m
Road: Keymer Rd	Pipe length: 150 mm
U/S MH: SW5	Material: Vitrified clay
D/S MH: Main	Shape: Circular

		0.00	MH	Start node type, manhole, reference number : SW5	0
		0.00	WL	Water level, 0% of the vertical dimension	0
		7.30	WL	Water level, 25% of the vertical dimension	0
		9.30	JN	Junction, at 3 o'clock, diameter 100mm	0
		11.00	MHF	Finish node type, manhole reference number: Main	0

**Service / Operational Defects (SRM 4)**Project name :  
60 Keymer Rd, Hassocks

Project Number :

Contact :

Date :  
16/05/2021

No.	PLR	Dir.	Use	Shape / Size	Date	Mat.	Total Length	Insp. Length	Peak HWG	Peak Score	Grade	Mean Score	Total Score
1	IC2parking area	U	F	C 150/150	16/05/2021	VC	12.70	12.70	-	2	3	0.16	2
2	FWG1internal area	U	F	C 100/100	16/05/2021	VC	4.10	4.10	-	0	1	0	0
3	IC1Parking area	D	F	C 150/150	16/05/2021	VC	1.70	1.70	-	0	1	0	0
4	RG1parking area	U	S	C 100/100	16/05/2021	PF	4.90	4.90	-	0	1	0	0
5	SW1parking area	D	S	C 100/100	16/05/2021	PF	20.70	20.70	3	5	4	0.24	5
6	SW2side area	D	S	C 150/150	16/05/2021	VC	3.30	3.30	-	0	1	0	0
7	SW3parking area	D	S	C 150/150	16/05/2021	PF	14.70	14.70	-	0	1	0	0
8	SW4side access	D	S	C 150/150	16/05/2021	PF	12.30	12.30	-	0	1	0	0
9	RWP1internal area	U	S	C 150/150	16/05/2021	VC	6.50	6.50	3	0	1	0	0
10	SW5internal area	D	S	C 150/150	16/05/2021	VC	11.00	11.00	-	0	1	0	0

## Structural Defects (SRM 4)

Project name :  
60 Keymer Rd, Hassocks

Project Number :

Contact :

Date :  
16/05/2021

No.	PLR	Dir.	Use	Shape / Size	Date	Mat.	Total Length	Insp. Length	Peak HWG	Peak Score	Grade	Mean Score	Total Score
1	IC2parking area	U	F	C 150/150	16/05/2021	VC	12.70	12.70	-	0	1	0	0
2	FWG1internal area	U	F	C 100/100	16/05/2021	VC	4.10	4.10	1	0	1	0	0
3	IC1Parking area	D	F	C 150/150	16/05/2021	VC	1.70	1.70	3	40	3	23.53	40
4	RG1parking area	U	S	C 100/100	16/05/2021	PF	4.90	4.90	-	0	1	0	0
5	SW1parking area	D	S	C 100/100	16/05/2021	PF	20.70	20.70	-	0	1	0	0
6	SW2side area	D	S	C 150/150	16/05/2021	VC	3.30	3.30	-	0	1	0	0
7	SW3parking area	D	S	C 150/150	16/05/2021	PF	14.70	14.70	5	165	5	22.45	330
8	SW4side access	D	S	C 150/150	16/05/2021	PF	12.30	12.30	5	165	5	53.66	660
9	RWP1internal area	U	S	C 150/150	16/05/2021	VC	6.50	6.50	4	165	5	27.08	176
10	SW5internal area	D	S	C 150/150	16/05/2021	VC	11.00	11.00	-	0	1	0	0

## Project-information

Project name :  
**60 Keymer Rd, Hassocks**

Project Number :

Contact :

Date :  
**16/05/2021**

Client:  
Contact Name:  
Department:  
Road:  
Town:  
County:  
Telephone:  
Fax:  
Mobile:  
E-mail:

Site: **60 Keymer Road**  
Contact Name: **Andy Keen**  
Department: **HOP Consultants**  
Road: **Keymer Road**  
Town: **Hassocks**  
County: **West Sussex**  
Telephone:  
Fax:  
Mobile:  
E-mail:

Contractor **Aquatech Drains Ltd**  
Contact Name: **Jason Scrase**  
Department:  
Road: **Solway Ave**  
Town: **Brighton**  
County: **East Sussex**  
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