



**Wood Green Social Club
Wood Green
London
N22 5NJ**

**Basement Impact
Assessment**

Mr Steve Satwick, Martin Cramer
and Pentagon Investments Group Ltd

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Ground investigation | Geotechnical consultancy | Contaminated land assessment



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Executive (Non-technical) summary

This executive summary contains an overview of the key findings and conclusions. No reliance should be placed on any part of the executive summary until the whole of the report has been read. Other sections of the report may contain information that puts into context the findings that are summarised in the executive summary.

Brief

This report describes the findings of a Basement Impact Assessment (BIA) carried out by Geotechnical and Environmental Associates Limited (GEA) on the instructions of CDS Planning, on behalf of Mr Steve Satwick, Martin Cramer and Pentagon Investments Group Ltd, with respect to the partial demolition and replacement of the existing structures on the rear part of the site with five new two-storey to three-storey dwellings, partial demolition and refurbishment of the existing Social Club building for mixed community and residential use, and refurbishment and reconfiguration of Nos 3 & 4 Stuart Crescent to create 9 No residential units. The existing lower ground floor level below the Social Club building will be reconfigured and extended below the new residential units on the rear part of the site, with an additional basement level beneath the property on the south-eastern part of the site.

The purpose of the report has been to provide an assessment of any impact of the proposed basement development on the local hydrology, hydrogeology or surrounding structures. This has been carried out through a review of the desk study and site investigation by WDE Consulting (report ref: 21206R1-Issue C, dated July 2023) and a Structural Impact Assessment (report ref 210414, dated October 2021) completed by Davies Burton Sweetlove (DBS) Ltd.

The report also includes information required to comply with the London Borough of Camden (LBC) Planning Guidance, CPG Basements, with regard to the provision of a Basement Impact Assessment (BIA). Although the site lies outside the London Borough of Camden, the Camden procedure for assessing the effects of basements has been adopted as it is now widely known and is considered to provide a robust approach to the issues of concern.

Desk Study Findings

The WDE Consulting desk study indicates that the site was occupied by an unnamed building from 1864 until 1935, when it was first labelled as a Hall and Club. It was then renamed Stirling Hall in 1956 and then a Labour Club, before being referred to as Wood Green Social Club from 1994, with the buildings in their present configuration. The report indicates that the area around the site has a predominantly residential history, with significant phases of development after 1894 and 1920, respectively. A public house was identified as being present approximately 100 m to the northwest, whilst an asylum had been present approximately 120 m to the west.

There are no landfill sites, environmental records or incidents within 250 m of the site and no off-site activities are likely to have had an adverse impact.

A preliminary UXO risk assessment has indicated that the site is not at an elevated risk with respect to the potential presence of unexploded ordnance and that further assessment is not required.

On the basis of the findings of the desk study research and subsequent contaminated land assessment, it was concluded that there is a LOW risk to potential receptors.

Ground Conditions

The British Geological Survey (BGS) map of the area indicates that the site is underlain by the London Clay Formation, although there is a potential for unmapped Head Deposits to be present. This was generally confirmed by the WDE Consulting investigation of the site, in that, beneath a limited thickness of made ground, potential Head Deposits, comprising soft to firm medium strength brown gravelly clay, was encountered to depths of 1.8 m and 2.0 m, and below which, firm becoming stiff high strength to very high strength brown to dark brown silty clay of the London Clay was proved to the maximum depth investigated, of 10.0 m.

Isolated water strikes were recorded within the London Clay at depths of 4.0 m and 6.0 m, and was subsequently monitored at a depth of 3.1 m. However, this was attributed to perched water inflows rather than a continuous groundwater table.

Basement Impact Assessment

It has been concluded that the majority of the potential impacts identified can be mitigated by appropriate design and standard construction practice.

Excavations for the proposed basement and lower ground floor extension will require temporary support to maintain stability and to prevent any excessive ground movements. However, as the proposed extension is set back some distance from the public highway and will not lead to any significant increase in foundation depth with respect to neighbouring buildings, it is not considered to pose any significant risk to any nearby assets and structures.

On the basis of the observations and monitoring carried out to date, significant groundwater inflows are not expected to be encountered within the proposed excavations, and with the absence of a continuous water table, the proposed development should not, therefore, have any noticeable effect on groundwater flow.



Part 1: Screening & Scoping

This section of the report details the objectives of the assessment, the work that has been carried out and the results of the screening and scoping elements of the BIA.

1.0 Introduction

Geotechnical and Environmental Associates Limited (GEA) has been commissioned by CDS Planning, on behalf of Mr Steve Satwick, Martin Cramer and Pentagon Investments Group Ltd, to carry out a basement impact assessment (BIA) for the proposed redevelopment of this site at Wood Green Social Club, Wood Green, London N22 5NJ, within the London Borough of Haringey.

The report has been produced in support of an existing planning approval (ref HGY/2021/2031), which was granted in June 2022 and whilst the site lies in the London Borough of Haringey, the Camden procedure for assessing the effects of basements has been adopted as it is now widely known and is considered to provide a robust approach to the issues of concern.

The site has been the subject of a separate desk study and site investigation by WDE Consulting (report ref: 21206R1-Issue C, dated July 2023) and a Structural Impact Assessment (report ref 210414, dated October 2021) completed by Davies Burton Sweetlove (DBS) Ltd. Records of this work have been provided to GEA and the information from these reports has been used to assist with the completion of this assessment.

1.1 Proposed Development

It is understood that the proposed redevelopment of the site will include partial demolition and replacement of the existing structures on the rear part of the site with five new two-storey to three-storey dwellings, partial demolition and refurbishment of the existing Social Club building for mixed community and residential use, and refurbishment and reconfiguration of Nos 3 & 4 Stuart Crescent to create 9 No residential units.

The existing lower ground floor level below the Social Club building will be reconfigured and extended below the new residential units on the rear part of the site, with an additional basement structure excavated to a depth of about 3.0 m below existing lower ground floor level of the property on the south-eastern part of the site.

This report is specific to the proposed development and the advice herein should be reviewed if the development proposals are amended.

1.2 Purpose of Work

The principal technical objectives of the work carried out were as follows:

-  to check records of data on the ground conditions, groundwater, surface water and other publicly available data; and
-  to provide an assessment of the impact of the proposed development on groundwater, surface water and land stability in support of a planning application.

1.3 Scope of Work

In order to meet the above objectives, an assessment was carried out, comprising, in summary, the following activities:

-  a review of readily available geology and hydrogeological maps;
-  a review of the previous desk study and site investigation carried out by WDE Consulting; and
-  provision of a report presenting and interpreting the above data, together with our advice and recommendations with respect to the proposed development.



1.3.1 Basement Impact Assessment (BIA)

The work carried out also includes information required for a Hydrological, Hydrogeological and Land Stability Assessment (also referred to as Slope Stability Assessment), which form part of the BIA procedure specified in the London Borough of Camden Planning Guidance CPG¹ and their Guidance for Subterranean Development² prepared by Arup (the “Arup report”) in accordance with Policy A5 of the Camden Local Plan 2017.

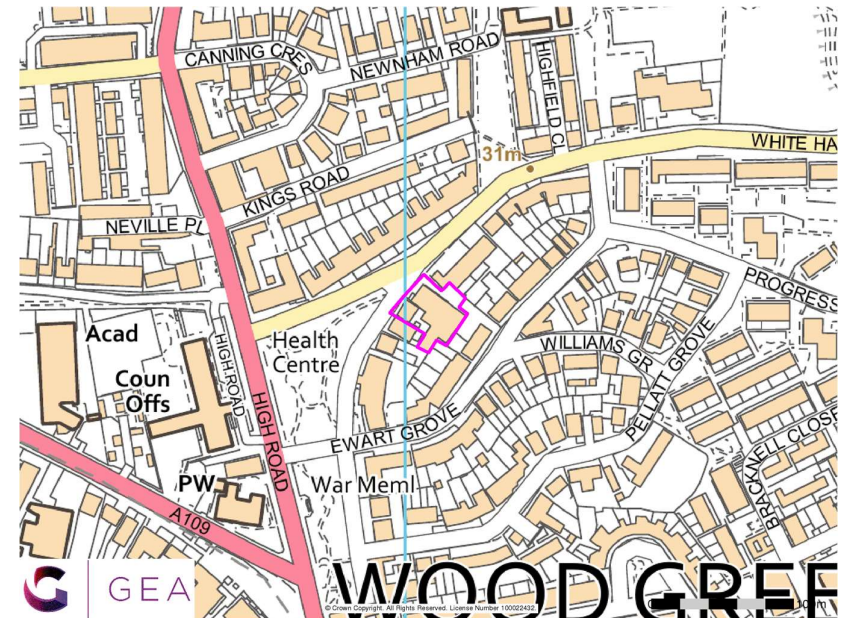
Although the site lies outside the London Borough of Camden, the Camden procedure for assessing the effects of basements has been adopted as it is now widely known and is considered to provide a robust approach to the issues of concern. The aim of this work is to provide information on the groundwater conditions specific to this site and land stability, in particular to assess whether the development will affect the stability of neighbouring properties and whether any identified impacts can be appropriately mitigated.

2.0 The Site

2.1 Site Description

The site is located in London Borough of Haringey, approximately 325 m to the north of Wood Green London Underground station. It fronts onto Stewart Crescent to the northwest and is bounded by No 5 Stuart Crescent to the southwest, the rear gardens of properties fronting onto Ewart Grove to the south, southeast and east, and Nos 1 & 2 Stuart Crescent and Nos 1 to 6 Colab Court to the northeast.

The site may be additionally located by National Grid Reference 531024, 190783 and is shown on the map extract below.



1 London Borough of Camden Planning Guidance CPG (January 2021) *Basements*

2 Ove Arup & Partners (2010) *Camden geological, hydrogeological and hydrological study. Guidance for Subterranean Development.* For London Borough of Camden November 2010



The site is irregular in shape, measuring approximately 45 m by 45 m in maximum extent, and is situated in an essentially level area.

The north-western part of the site is occupied by a detached two-storey building, comprising No 4 Stuart Crescent, with the majority of the rest of the site covered by the existing Social Club building, a two-storey to three-storey brick clad structure with lower ground floor level and single storey extension across the rear part of the site.

A ramped accessway is present down the north-eastern part of the site, which slopes down to a parking / delivery area at existing lower ground floor level. The available plans and information contained within the Structural Impact Assessment indicate that the adjacent sites are at an elevation of approximately 2.0 m above this area, i.e., they are at the same level as ground floor level for the Social Club building, with this elevation supported by an existing brick retaining structure.

The site is devoid of vegetation, being entirely covered by the existing buildings and areas of external hardstanding.

A number of trees are present within the rear gardens of site beyond the south-eastern and eastern boundary of the site, albeit behind the existing retaining structures and at a higher elevation of about 2.0 m.

2.2 Previous Desk Study Findings

2.2.1 Site History

The WDE Consulting desk study indicates that the site was occupied by an unnamed building from 1864 until 1935, when it was first labelled as a Hall and Club. It was then renamed Stirling Hall in 1956 and then a Labour Club, before being referred to as Wood Green Social Club from 1994, with the buildings in their present configuration.

The report indicates that the area around the site has a predominantly residential history, with significant phases of development after 1894 and 1920, respectively. A public house was identified as being present approximately 100 m to the northwest, whilst an asylum had been present approximately 120 m to the west.

2.2.2 Other Information

The previous report indicates that there are no landfill sites or waste licences / permits located within 250 m of the site.

The report indicates that there are a number of off-site activities within 250 m, the closest of which include a distribution business, 150 m to the south, and an electricity sub-station 86 m to the east, although these are unlikely to have had any adverse impact on the site.

Reference to records compiled by the Health Protection Agency (formerly the National Radiological Protection Board) indicates that the site falls within a non-affected area, such that radon protective measures should not be necessary. However, where basement developments are proposed, further consideration should be given to the potential risks associated with radon.

A preliminary UXO assessment, undertaken by 1st Line Defence (report ref: PA17890-00, dated May 2023), found that the site was not an elevated risk, and that further assessment or on-site action was not required.

There are no London Underground or Network Rail Tunnels within 100 m of the site.

2.2.3 Preliminary Risk Assessment

On the basis of the desk study research and subsequent contaminated land assessment there is considered to be a LOW risk to potential sensitive receptors.



3.0 Ground Conditions

3.1 Anticipated Geology

The British Geological Survey map (sheet 256) indicates that the site is underlain the London Clay Formation, which, according to the BGS memoir, is relatively homogenous slightly calcareous silty clay to very silty clay, with some beds of clayey silt grading to silty fine-grained sand.

An area of “Head Propensity” shown approximately 100 m to the northeast and there is a potential that these deposits may be present over the London Clay. Head propensity is shown on the BGS map as areas denoted as most likely to be covered by Quaternary Head Deposits as interpreted from digital slope analysis and confirmed by borehole data. These deposits are not mapped and have not been verified by fieldwork.

A review of deep borehole records of the area held on the British Geological Society (BGS) database, indicates that the London Clay in the area is likely to extend to a depth of approximately 45 m, below which the Lambeth Group, Thanet Sand and Upper Chalk are expected to be present.

3.2 Hydrology and Hydrogeology

The London Clay is classified as Unproductive Strata, which refers to rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow. Published data for the permeability of the London Clay indicates the horizontal permeability to generally range between 1×10^{-11} m/s and 1×10^{-9} m/s, with an even lower vertical permeability.

Groundwater is unlikely to be present as the London Clay cannot support a water table or effectively transmit groundwater flow because of its low permeability and cohesive nature.

Perched groundwater may be present within any made ground encountered on site, particularly in the vicinity of existing foundations, or within silt layers within the Head Deposits, if present, or upper weathered layers of the underlying London Clay. However, these are unlikely to be a source of any significant inflows into the proposed basement excavations.

The site is located within the outer zone (Zone 2) of a Groundwater Source Protection Zone. However, this relates to water abstracted from the underlying chalk aquifer and will not be affected by the proposed development due to the presence of the overlying London Clay.

The nearest surface water feature to the site is the Moselle Brook, located 467 m to the southeast.

The site is not within an area shown by the Environment Agency (EA) to be at risk from flooding from rivers or the sea, and there are no recorded flood events that have impacted on the site. BGS mapping indicates that the site is within an area with a limited potential for groundwater flooding to occur, although this is considered highly unlikely given the site is underlain by the London Clay.

The EA surface water flood maps indicate that the existing ramp and parking area along the north-eastern part of the site has a low risk from surface water flooding.

The site is entirely covered by the existing buildings and areas of external hardstanding or paving and therefore infiltration of rainwater into the ground beneath the site is limited, such that all surface runoff is likely to drain into combined sewers in the road. As the development does not result in a change to the present conditions, for example through the loss of any permeable areas, there will not be an increase in runoff rate or volume into the sewer system, or that could have a potentially adverse impact on the surrounding area.

3.3 WDE Investigation

The previous ground investigation by WDE Consulting comprised two boreholes drilled using a tracked rig to depths of 6.0 m and 10.0 m, with SPTs taken at regular intervals to provide in-situ information on the strength of the underlying soils.

A standpipe was installed within one of the boreholes and was monitored on a single occasion, approximately one week after installation.

A selection of the samples recovered from the boreholes were submitted to a soil mechanics laboratory for a programme of geotechnical testing and an analytical laboratory for a programme of contamination testing; the WDE Consulting report should be referred to for full details of the techniques and methods and standards adopted for the investigation and laboratory analysis, and for a full assessment of the results.



3.3.1 Summary of Ground Conditions

The investigation generally encountered the expected ground conditions, in that beneath a limited thickness of made ground, the London Clay was encountered and proved to the maximum depth investigated, of 10.0 m (approx. 22.0 m OD).

The made ground was encountered to depths of 1.00 m and 1.05 m (approx. 33.0 m OD to 31.0 m OD) and typically comprised brown sandy clay, with variable amounts of extraneous material, including brick fragments.

Underlying the made ground was a weathered layer of soft to firm brown gravelly clay, which extended to depths of 1.8 m (approx. 32.0 m OD) and 2.0 m (approx. 30.0 m OD), which could potentially be interpreted as comprising local Head Deposits.

Below this, the London Clay comprised firm becoming stiff brown to dark brown silty clay of the London Clay was encountered and proved to the maximum depth of the investigation, of 10.0 m (approx. 22.0 m OD).

A check for desiccation using the modified liquid limit method from BRE Digest 412³, indicated that the London Clay could potentially be desiccated at depths of between 3.0 m and 5.0 m. However, this method is not a reliable test for the London Clay, as it does not account for the general decrease in soil water content common in overconsolidated soils and is therefore likely to overestimate the potential presence of desiccation. No evidence of desiccation, including the presence of roots or rootlets, was recorded in either of the borehole logs and the pocket penetrometer readings taken in Borehole No 2 all plot below the equilibrium line for the London Clay, confirming that these soils were not desiccated.

A soakage test, conducted within one of the boreholes, confirmed the low permeability and poor soakage potential of the London Clay, with negligible soakage rate significantly less than 10^{-6} m/sec.

The results of laboratory undrained triaxial compression testing generally indicate a pattern of increasing strength with depth from medium strength to very high strength, whilst the classification tests indicate that the clay is of high volume change potential.

3.3.2 Summary of Groundwater Conditions

Isolated water strikes were recorded during drilling, at depths of 4.0 m and 6.0 m within Borehole Nos 1 and 2, respectively.

Water was subsequently monitored at a depth of 3.1 m in Borehole No 2. However, this is likely to be attributable to a localised perched water inflow associated with the presence of a more granular layer recorded at this depth, rather than representing a continuous groundwater table.

3.3.2 Recommendations

The interpretive section of the WDE Consulting report should be referred to for full details of their recommendations. However, a brief summary of the key conclusions is provided below.

Excavations for the lower ground floor extension and proposed basement will result in a formation level in the London Clay and significant groundwater inflows are not anticipated, although seepages of perched water may be encountered within any overlying made ground, particularly in the vicinity of existing foundations.

It should be possible to adopt moderate width spread, or raft, foundations constructed from basement level to support the new development. Alternatively, consideration could be given to piled foundations.

Excavations for the proposed basement structure will require temporary support to prevent any excessive ground movements and the stability of neighbouring structures will need to be ensured at all times, and information contained within the Structural Impact Assessment by DBS indicates that the likely method of construction will be through the adoption of piled retaining wall, although sheet piling is suggested for parts of the proposed lower ground floor construction where a bored pile wall might take up too much space. Consideration could also be given to the uses of traditional underpinning techniques, particularly where the proposed basement and lower ground floor extension extends below existing foundations.

3 BRE Digest 412 (1996). Desiccation in clay soils. BRE Press.



4.0 Basement Screening Assessment

The Camden guidance suggests that any development proposal that includes a basement should be screened to determine whether or not a full BIA is required.

A number of screening tools are included in the Arup document and for the purposes of this report reference has been made to Appendices E1, E2 and E3 which include a series of questions within screening flowcharts for surface flow and flooding, subterranean (groundwater) flow and land stability. The flowchart questions and responses to these questions are tabulated below.

4.1 Subterranean (Groundwater) Flow Screening Assessment

Question	Response for Wood Green Social Club
1a. Is the site located directly above an aquifer?	No. The site is directly underlain by London Clay, which is classified as Unproductive Strata.
1b. Will the proposed basement extend beneath the water table surface?	No. London Clay cannot support a water table and is classified as Unproductive Strata. Perched groundwater may be encountered within the upper weathered horizons and the proposed excavations may therefore extend below local monitored groundwater levels. However, the predominantly clay soils present beneath the site cannot store or transmit groundwater under normal hydraulic conditions and it is therefore considered that significant inflows are unlikely to be encountered, although this does not eliminate a requirement for potential mitigation measures during basement construction.
2. Is the site within 100 m of a watercourse, well (used/ disused) or potential spring line?	No. The site is not located within 100 m of a known spring line, and the nearest surface water feature to the site is located 467 m to the southeast
3. Is the site within the catchment of the pond chains on Hampstead Heath?	No.
4. Will the proposed basement development result in an increase in the proportion of hard surfaced / paved areas?	No. The proposed development will not result in any change in the proportion of hard surfaced / paved areas.

Question	Response for Wood Green Social Club
5. As part of the site drainage, will more surface water (e.g., rainfall and run-off) than at present be discharged to the ground (e.g., via soakaways and/or SUDS)?	No. It is unlikely that there will be any increase in discharge of surface water run-off to the ground, nor is it considered feasible that the ground would be sufficiently permeable to allow for the use of soakaways in any case.
6. Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to or lower than, the mean water level in any local pond or spring line?	No.

The above assessment has not identified any potential issues that need further assessment.

4.2 Land Stability Screening Assessment

Question	Response for Wood Green Social Club
1. Does the existing site include slopes, natural or manmade, greater than 7°?	<i>Yes. Part of the existing ramp is understood to slope at an angle greater than 7°.</i>
2. Will the proposed re-profiling of landscaping at the site change slopes at the property boundary to more than 7°?	No. The proposed development is understood not to introduce any new slopes with angles greater than 7°.
3. Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°?	No. Topographical maps of the area confirm this.
4. Is the site within a wider hillside setting in which the general slope is greater than 7°?	
5. Is the London Clay the shallowest strata at the site?	<i>Yes. The site is underlain by soils of the London Clay.</i>
6. Will any trees be felled as part of the proposed development and / or are any works proposed within any tree protection zones where trees are to be retained?	No. There are no trees on the site.
7. Is there a history of seasonal shrink-swell subsidence in the local area and / or evidence of such effects at the site?	<i>Yes. The area is prone to these effects as a result of the presence of shrinkable clay soils. However, there are no trees on the site and no evidence of any</i>



Question	Response for Wood Green Social Club
	<i>potential movement on the existing and / or surrounding structures.</i>
8. Is the site within 100 m of a watercourse or potential spring line?	No. The site is not located within 100 m of a known spring line, and the nearest surface water feature to the site is located 467 m to the southeast
9. Is the site within an area of previously worked ground?	No. Not according to local geological mapping included as part of the previous desk study.
10a. Is the site within an aquifer?	No. The site is located above Unproductive Strata.
10b. Will the proposed basement extend beneath the water table such that dewatering may be required during construction?	No. The London Clay Formation cannot support a water table and is classified as Unproductive Strata.
11. Is the site within 50 m of Hampstead Heath ponds?	No.
12. Is the site within 5 m of a highway or pedestrian right of way?	<i>Yes. The site is bounded by Stewart Crescent to the northwest. However, the proposed lower ground floor extension and basement construction is set back from this boundary.</i>
13. Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	<i>Yes. It is likely that the proposed development will result in an increase in foundation depth with respect to any neighbouring properties.</i>
14. Is the site over (or within the exclusion zone of) any tunnels, e.g., railway lines?	No.

The above assessment has identified the following potential issues that need to be assessed:

- Q1 The site includes a man-made slope with an angle in excess of 7°.
- Q5 The London Clay is the shallowest stratum.
- Q7. The site is in an area likely to be affected by seasonal shrink-swell due to the presence of shrinkable clays.
- Q12 The site is within 5 m of both a public highway.
- Q13 The proposed basement may increase the differential depth of foundations relative to neighbouring properties.

4.3 Surface Flow and Flooding Screening Assessment

Question	Response for Wood Green Social Club
1. Is the site within the catchment of the pond chains on Hampstead Heath?	No.
2. As part of the proposed site drainage, will surface water flows (e.g., volume of rainfall and peak run-off) be materially changed from the existing route?	No. There will not be an increase in impermeable area as a result of the proposed development, so the surface water flow regime will be unchanged.
2. Will the proposed basement development result in an increase in the proportion of hard surfaced / paved areas?	No. There will not be an increase in impermeable area as a result of the proposed development.
3. Will the proposed basement development result in changes to the profile of the inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream watercourses?	No. There will not be an increase in impermeable area as a result of the proposed development, so the surface water flow regime will be unchanged.
4. Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No. The proposed development is very unlikely to result in any changes to the quality of surface water being received by adjacent properties or downstream watercourses as the surface water drainage regime will be unchanged and the land uses will remain the same.
5. Is the site in an area identified to have surface water flood risk, or is otherwise at risk of flooding, for example because the proposed basement is below the static water level of nearby surface water feature?	No. The site is not at risk of flooding from fluvial/tidal watercourses and is at low risk from surface water and groundwater. It is possible that the proposed retaining walls may be constructed within pockets of perched water, although statutory requirements with regards to waterproofing and tanking will reduce any associated risk to acceptable levels. In accordance with paragraph 6.16 of the CPG, a positive pumped device and non-return valve should be installed to further protect the site from sewer flooding.

The above assessment has not identified any following potential issues that need further assessment.



5.0 Basement Scoping Assessment

The purpose of scoping is to assess in more detail the factors to be investigated in the impact assessment. Potential impacts are assessed for each of the identified potential impact factors.

5.1 Potential Impacts

The following potential impacts have been identified by the screening process.

Screening Issue	Potential Impact
The site includes a man-made slope with an angle in excess of 7°.	The presence of a slope may cause local instability within the site.
London Clay is the shallowest stratum at the site.	If a new basement is not dug to below the depth likely to be affected by tree roots this could lead to damaging differential movement between the subject site and adjoining properties.
The site is within an area likely to be affected by seasonal shrink-swell	
The site located within 5 m of a public highway or pedestrian right of way?	Excavation of a basement can cause instability of such structures.
The development may increase the differential depth of foundations relative to neighbouring properties.	Excavation of a sub-terranean structure may result in structural damage to neighbouring properties if there is a significant differential depth between adjacent foundations.



Part 2: Ground Movement Analysis

This section of the report comprises an analysis of the ground movements arising from the proposed basement scheme discussed in Part 1 and the information obtained from the investigation completed by WDE Consulting.

6.0 Basement / Lower Ground Floor Construction

The sides of an excavation will move to some extent regardless of how they are supported. The movement will typically be both horizontal and vertical and will be influenced by the engineering properties of the ground, groundwater level and flow, the efficiency of the various support systems employed, and the efficiency or stiffness of any support structures used.

An analysis has been carried out of the likely movements arising from the proposed excavation and the results of this analysis have been used to predict the effect of these movements on surrounding structures.

6.1 Proposed Excavation

Consideration is being given to the redevelopment of the site, which will include extension of the existing lower ground floor below the new residential units on the rear part of the site, with an additional basement structure that will extend to a depth of about 3.0 m below existing lower ground floor level of the property on the south-eastern part of the site, as shown on the plans included in the appendix.

It is understood that the preferred option will be for the adoption of a contiguous bored piled wall to support the proposed lower ground floor and basement excavations.

6.2 Construction Sequence

Essentially the sequence may be considered as two groups of activities, the first comprising the short-term temporary works, whilst the second represents the construction of the permanent works.

The detail of the support provided to adjacent walls is beyond the scope of this report and the structural engineer will be best placed to agree the methodology with the chosen contractor(s) once appointed.

6.2.1 Temporary Support to Piled Walls

Following the installation of the bored pile wall and associated capping beams, temporary props will be installed, and the lower ground floor and basement excavation will proceed.

The detail of section sizes and spacings will be finalised by the contractor but it is anticipated that the general philosophy adopted will be for diagonal braces to be used across the corners or returns of the basement walls whilst props will be positioned at regular intervals along the long walls of the basement.

It is anticipated that steel temporary props will be used with strut forces spread along the wall by steel waling beams fixed to the piles. Although the detail of the propping is to be finalised there is the option to use hydraulic 'active' props where the propping force is applied prior to excavation in order to minimise movement at critical locations.

Where horizontal restraint cannot be provided by other parts of the piled wall the prop forces can be provided by so-called 'flying shores' where the reaction to horizontal forces is provided by pile caps, gravity blocks or basement thickenings in the centre of the excavation.

6.2.2 Bulk Excavation

Excavation will proceed in stages and in broad terms the order of operations will be to install capping beam props, excavate to a suitable depth below the next propping level, install props and then repeat the operation until the final excavation level has been reached.

6.2.3 Permanent Works

When the final excavation depths have been reached the permanent works will be formed which, from the information provided, are understood to comprise reinforced concrete walls with a drained cavity discharging to a sump pit.

Reinforced concrete will be used for the basement raft slab.

It is anticipated that the floor slabs, which will act as permanent props, will be constructed lowest level first and when each floor has achieved adequate strength, the temporary props will be removed, and the subsequent walls and floors cast until the structure is complete.



7.0 Ground Movements

7.1 Basis of Ground Movement Assessment

An assessment of ground movements within and surrounding the excavation has been undertaken using the P-Disp and X-Disp computer programs licensed from the OASYS suite of geotechnical modelling software from Arup. These programs are commonly used within the ground engineering industry and are considered to be appropriate tools for this analysis.

The X-Disp and P-Disp programs have been used to predict ground movements likely to arise from the excavation and construction of the proposed basement. This includes the heave / settlement of the ground (vertical movement) and the lateral movement of soil behind the proposed retaining walls (horizontal movement).

For the purpose of these analyses, the corners have been defined by x and y coordinates, with the x-direction orientated with Stewart Crescent (approximately northeast-southwest), whilst the y-direction is orientated approximately northwest-southeast. Vertical movement is in the z-direction.

The proposed lower ground floor and basement excavations have been modelled as regular and irregular polygons, with maximum dimensions of approximately 10.0 m by 26.0 m and 10.0 m by 12.0 m, respectively, with an excavation level of approximately 31.0 m OD to 29.0 m OD; thus resulting in an excavation depth of about 3.0 m when measured from existing ground and lower ground floor levels of approximately 34.0 m OD to 32.0 m respectively.

It is assumed that suitable propping will be provided during the construction of the basement and in the permanent condition, such that the walls can be considered to be stiff for the purpose of the ground movement modelling.

The full outputs of all the analyses can be provided on request but samples of the output movement contour plots and the tables of movements are included within the appendix.

7.2 Ground Movements – Surrounding the Basement

The magnitude of the settlement resulting from the proposed basement construction will be controlled to a large extent by the quality of workmanship, particularly with respect to walls constructed by underpinning techniques.

For the purpose of this assessment a high quality of construction has therefore been assumed, with continued loading from the existing building, such that potential movements are expected to be kept to a minimum.

7.2.1 Model Used

For the X-Disp analysis, the soil movement relationships used for the embedded retaining walls are the default values within CIRIA report C760⁴, which were derived from a number of historic case studies.

Installation of Piled Retaining Walls:

For the contiguous bored pile wall sections, CIRIA C760 provides movement curves for the 'installation of a contiguous bored pile wall'. However, there has been much more recent monitoring of wall installation movements and movements due to subsequent excavation than the case studies included in C760. One such example is documented in a recent paper by Ball, Langdon and Giles⁵, which builds on an earlier paper by Ball, Langdon & Creighton⁶, both of which consider the installation of contiguous bored pile walls in central London that represent, in scale and currency of data, a closer representation to this site, than the case study data used to generate the CIRIA curves. The most recent of these case studies measured wall installation movements normalised to between 0.010% and 0.029% of pile length. These values are less than half of those predicted by the movement curve in C760, which adopts a value of 0.04% of pile length. The paper then suggests that, subject to careful control of installation, a normalised relationship of 0.02%, corresponding to half of the C760 movements, should be appropriate for a contiguous wall in a range of ground conditions, whilst remaining relatively conservative.

On the understanding that equally tight controls of pile installation are maintained, it follows that there is no reason why a similar relationship cannot be adopted for this site, particularly as piles installed into clay soils typically exhibit smaller movements than those

4 Gaba, A, Hardy, S, Powrie, W, Doughty, L and Selemetas, D (2017) *Embedded retaining walls – guidance for economic design* CIRIA Report C760

5 Langdon, N, Ball, R, and Giles, D (2021) *Ground movement predictions for a piled basement. A case study from Garlickhythe, City of London, UK*. Ground Engineering July 2021, pp 26-33

6 Ball, R, Langdon, N, and Creighton, M (2014) *Prediction of party wall movements using Ciria report C580*. Ground Engineering Sep 2014, pp 25-29



on which the above papers are based. However, for the purpose of this analysis the more conservative relationship of 0.04% has been adopted to provide a preliminary assessment of the likely maximum installation movements.

Excavation Phase:

The ground movement curves for 'excavations in front of a stiff wall in stiff clay' have been adopted for the subsequent excavation phase, as this provides a conservative assessment of the likely vertical and horizontal movements from these construction techniques in clay soils.

7.2.2 Results

The movements predicted by the X-Disp analysis are summarised in the table below; the results are presented below and in subsequent tables to the degree of accuracy required to allow predicted variations in ground movements around the structure(s) to be illustrated but may not reflect the anticipated accuracy of the predictions.

Phase of Works	Wall Movement (mm)	
	Vertical Settlement	Horizontal Movement
Installation Phase Only	2 to 5	2 to 4
Combined movements	4 to 9	6 to 10

The estimated movements in the tables above are those that will occur immediately behind the wall and are considered to represent a worst-case scenario, particularly as the movements resulting from basement excavation will be minimised due to control of the propping in the temporary works and a regime of monitoring.

7.3 Ground Movements – Within the Excavation

7.3.1 P-Disp Model

Unloading of the London Clay will take place as a result of the excavation of the proposed basements and the reduction in vertical stress will cause heave to take place. Undrained soil parameters have been used to estimate the potential short-term movements, which

include the “immediate” or elastic movements as a result of the basement excavation. Drained parameters have been used to provide an estimate of the total long-term movement.

The elastic analysis requires values of soil stiffness at various levels to calculate displacements. Values of stiffness for the soils at this site are readily available from published data⁷ and a well-established method has been used to provide estimated values. For the purpose of this analysis, conservative relationships of $E_u = 600 C_u$ and $E' = 450 C_u$ have been used to obtain values of Young's modulus for the cohesive soils.

The soil parameters used in this assessment are tabulated below and are based on the findings of the investigation completed by WDE Consulting and assumed parameters interpreted from published literature.

Stratum	Base of Stratum (m OD)	E_u (kN/m ²)	E' (kN/m ²)
Made Ground	33.0 to 31.0 (varies)	12,000	9,000
Head Deposits	32.0 to 30.0 (varies)	24,000	18,000
London Clay	22.0*	30,000 to 90,000	22,500 to 67,500
London Clay	-11.0	90,000 to 237,000	67,500 to 177,750

*Maximum depth of investigation.

The excavation of up to 3.0 m of soil to form the proposed lower ground floor and basement structures will result in an unloading of about 60 kN/m².

A rigid boundary for the analysis has been set within the London Clay at a depth of 45.0 m (approx. -11.0 m OD), with an increase in cohesion of 7.5 kN/m² per m increase in depth adopted to provide a conservative estimate of the likely strength profile below the depth of the investigation.

7 Burland JB, Standing, JR, and Jardine, FM (2001) *Building response to tunnelling, case studies from construction of the Jubilee Line Extension*. CIRIA Special Publication 200



7.3.1 Results

The P-Disp analysis indicates that up to 6 mm to 8 mm of short-term heave is likely to take place at the centre of the proposed lower ground floor and basement excavations, with up to 2 mm to 4 mm of heave at the edge of the excavations.

In the long term, following completion of the basement construction, a further 6 mm to 8 mm of heave is estimated as a result of long-term swelling of the underlying clay soils.

The potential movements are summarised in the table below.

Location	Movement (mm)		
	Short-term Heave (Construction phase)	Long-term Heave (Post construction)	Total Heave
Centre of excavations	6 to 8	6 to 8	12 to 16
Edge of excavation	2 to 4	4 to 6	6 to 10

In order to mitigate the effects of heave on the new building, the basement could be designed to transmit heave forces into the wall piles or onto tension piles within the basement. If a compressible material is used beneath the slab, it will need to be designed to be able to resist the potential uplift forces generated by the ground movements. In this respect, potential heave pressures are typically taken to equate to around 50 % of the total unloading pressure, assuming a linear relationship between heave movement and the pressure applied to the underside of the slab, which in this case is taken to be inflexible. However, if there is some flexibility in the slab, this value would reduce as the slab deflects and it would be reasonable to assume that the heave pressure would reduce to around 40 % to 35 % of the unloading pressure.

8.0 Building Damage Assessment

In addition to the above assessment of the likely movements that will result from the excavation, any neighbouring buildings within the zone of influence of the excavations are considered to be sensitive structures, requiring Building Damage Assessments, on the basis of the classification given in Table 6.4 of CIRIA report C760.

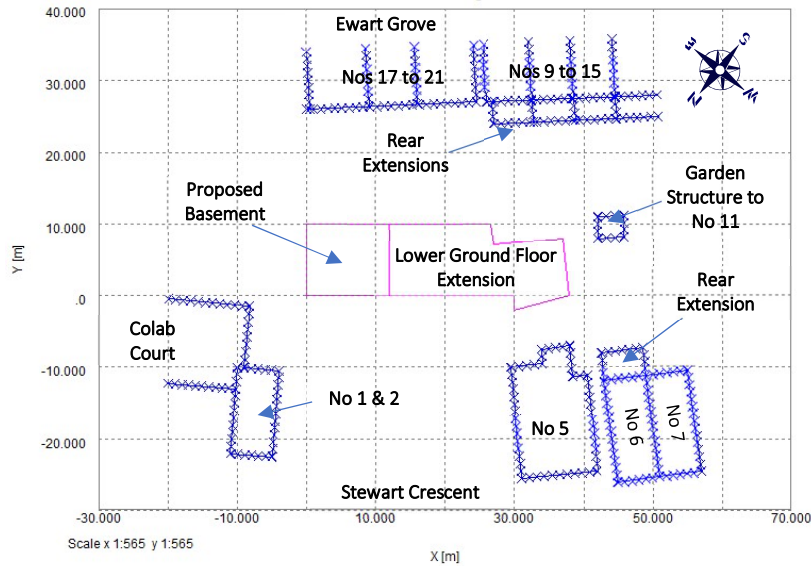
The nearby buildings or structures included in this assessment are as follows, with all other structure at sufficient distance as not to be affected by the proposed development;

- The adjoining properties of No 1 & 2 Stewart Crescent and Colab Court, to the northeast and northeast; and
- The adjoining properties of Nos 5 to 7 Stewart Crescent, to the northwest and west;
- Nos 9 to 21 Ewart Grove, to the south and southeast of the site; and
- A home office / garden extension within the rear garden of no 11 Ewart Grove, to the southwest.

The sensitive structures outlined have been modelled as lines in the analysis and are the lines along which the damage assessment has been undertaken. For clarity, the critical lines used in the assessment are shown on the plan overleaf.

These lines are expected to be sensitive at their foundation level, which, for the majority of the nearby properties are expected to be relatively shallow as they are not understood to include any existing basement structures; a conservative foundation depth of 0.5 m (approx. 33.5 m OD) has therefore been adopted for the purpose of the analysis.

Nos 6 & 7 Stewart Crescent, located to the west of the site, are understood to include a partial lower ground floor level and a lower foundation level of 32.5 m OD has been adopted for these properties. Similarly, for the retained elevations of Nos 1 & 2 Stewart Crescent and Colab Court, which face into the exiting lower ground floor parking area on the north-eastern part of the site, a foundation level of 31.5 m has been adopted, again equivalent to 0.5 m below measured ground level in this area.



Building heights have been derived from the number of storeys, as observed during the site walkover, Google Streetview images and from information included in the architectural drawings.

The proposed basement is set back at a distance in excess of 5.0 m from the boundary of the site with Stewart Crescent, such that the proposed development is not expected to have any adverse impact on the public footpath or adjoining highway.

8.1 Damage to Neighbouring Structures

The combined movements resulting from pile installation and excavation of the proposed basement, have been used to carry out an assessment of the likely damage to adjacent properties and the results are summarised in the table below.

Structure	Elevation / Specific Building Ref	Max Tensile Strain (%)	Maximum Damage Category*
Nos 1 & 2 Stewart Crescent	1	<0.01	Negligible (0)
	2	0.02	Negligible (0)
	3	Less than limit of sensitivity	N/A
	4	<0.01	Negligible (0)
Colab Court	5	<0.01	Negligible (0)
	6	0.03	Negligible (0)
	7	Less than limit of sensitivity	N/A
No 5 Stewart Crescent	8	0.06	Very Slight (1)
	9	<0.01	Negligible (0)
	10	0.05	Very Slight (1)
	11	<0.01	Negligible (0)
	12	0.04	Negligible (0)
	13 & 14	<0.01	Negligible (0)
	15	Less than limit of sensitivity	N/A
Nos 6 & 7 Stewart Crescent (inc. rear extension to No 6)	16 to 20	Less than limit of sensitivity	N/A
	21	0.02	Negligible (0)
	22	<0.01	Negligible (0)
	23	Less than limit of sensitivity	N/A
No 11 Ewart Grove (Garden Structure)	24	0.02	Negligible (0)
	25	0.06	Very Slight (1)
	26	<0.01	Negligible (0)
	27	0.02	Negligible (0)
Nos 17 to 21 Ewart Grove	28	0.04	Negligible (0)
	29	<0.01	Negligible (0)
	30	Less than limit of sensitivity	N/A



Structure	Elevation / Specific Building Ref	Max Tensile Strain (%)	Maximum Damage Category*
Nos 9 to 15 Ewart Grove (inc. rear extensions)	31	0.04	Negligible (0)
	32	Less than limit of sensitivity	N/A
	33 to 42	Less than limit of sensitivity	N/A

*From Table 6.4 of C760: Classification of visible damage to walls.

The damage to the adjoining and nearby structures has been predicted to generally be Category 0 (negligible), with some limited sections of Category 1 (Very Slight) damage to the north and rear elevations of No 5 Stewart Crescent, and the eastern elevation of the garden structure in the garden of No 11 Ewart Grove.

The results are based on individual building lines, or walls, that in some instances have been further divided into a series of segments that are assumed to be able to move independently of one another, with the most critical segment determining the result for the entire wall. In reality, this is unlikely to be the case as the walls will behave as single stiff elements that are also joined continuously with the rest of the structure. The results therefore provide a highly conservative estimate of the behaviour of each of the sensitive structures and overestimate the degree of damage, although they provide a useful indication of the most critical structures within the adjoining properties that may require further assessment, as detailed below.

8.2 Monitoring of Ground Movements

The predictions of ground movement should be checked by monitoring of the adjacent properties and structures. The structures to be monitored during the construction stages should include the existing property and the neighbouring structure assessed above. Condition surveys should be carried out before and after the proposed works.

The precise monitoring strategy will be developed at a later stage and will be subject to discussions and agreements with the owners of the adjacent properties and structures. Contingency measures will be implemented if movements exceed predefined trigger levels. Both contingency measures and trigger levels will need to be developed within a future monitoring specification for the works.

8.3 Damage Assessment Conclusions

The analysis has concluded that the predicted damage to the neighbouring properties from the construction of the proposed basement will be 'Negligible' to 'Very Slight' and is therefore within acceptable limits. However, careful construction, including the careful control of the proposed piling, will be required to ensure that no excessive movements occur that would lead to damage in excess of these limits.



Part 3: Basement Impact Assessment

This section of the report evaluates the direct and indirect implications of the proposed project, based on the findings of the previous screening and scoping, site investigation and ground movement assessment.

9.0 Basement Impact Assessment

The screening and scoping identified a number of potential impacts. Knowledge of the site conditions and proposed development has been used below to review the potential impacts identified by the screening, to assess the likelihood of them occurring and the scope for reasonable engineering mitigation.

9.1 Potential Impacts

The table below summarises the previously identified potential impacts and the additional information that is now available from the ground investigation in consideration of each impact.

Potential Impact	Consequence
The site includes a man-made slope with an angle in excess of 7°.	The existing access ramp is understood to slope at an angle greater than 7° and will be retained as part of the development. However, this feature is entirely covered by hardstanding and is bounded by existing retaining structures and does not therefore represent an area of potential instability
The London is the shallowest strata at the site and as such may be subject to seasonal shrink-swell	The London Clay is prone to seasonal shrink-swell and can cause structural damage. However, the site is essentially devoid of vegetation and desiccation was not noted during the fieldwork.
The development is located within 5 m of the public highway	The investigation has not indicated any specific problems, such as weak or unstable ground, voids or a high-water table that would make working within 5 m of public infrastructure particularly problematic at this site. Furthermore, the proposed basement and lower ground floor extensions are set back in excess of 5 m from the road and adjoining footpath.

The development is likely to increase the differential depth of foundations relative to neighbouring properties.

The proposed basement construction will need to be carried out competently, with tight controls on pile installation and underpinning, so as not to cause unacceptable movement of surrounding structures.

The site includes a man-made slope, with an angle in excess of 7°.

Part of the existing access ramp to the lower parking area on the northern part of the site is understood to slope at an angle in excess of 7°. However, as previously noted, this slope is fully paved and is supported by existing retaining structures and is not therefore considered to pose any significant risk of potential instability.

The site is underlain by London Clay and is within an area likely to be affected by shrink swell.

The investigation confirmed the expected ground conditions, in that, beneath a variable thickness of made ground, Head Deposits have been encountered over the London Clay. However, the site is devoid of vegetation and the proposed basement and lower ground floor extension are expected to extend to a depth such that new foundations will be expected to bypass any desiccated soils, in any case.

Subject to inspection of foundation excavations in the normal way to ensure that there is not significant unexpectedly deep root growth, it is not considered that the occurrence of shrink-swell issues in the local area has any bearing on the proposed development.

Location of public highway.

Whilst the site fronts onto Stewart Crescent, the proposed basement and lower ground floor extensions are positioned to the rear of the site, such that they are at a distance of no less than 30 m from this potentially sensitive asset at its closest point.

As the proposed lower ground floor extension and associated retaining walls are therefore at a distance in excess of 5 m from the public highway, it is unlikely to result in any adverse impact and further assessment is not considered to be necessary.



Differential founding depths to neighbouring properties

The stability of neighbouring properties and structures should be ensured at all times, through a suitable retention system. There is nothing unusual or exceptional in the proposed development or the findings of the investigation that give rise to any concerns with regard to stability over and above any development of this nature.

An analysis of the potential ground movements resulting from construction of the proposed basement is included in Part 3 of this report and has concluded that the predicted damage to the neighbouring properties would be Category 0 (Negligible) to Category 1 (Very Slight).

On this basis, the damage that would inevitably occur as a result of such an excavation would fall well within the acceptable limits although monitoring and mitigation measures will be required to ensure that no excessive movements occur that would lead to damage in excess of these limits.

10.0 CONCLUSIONS

A Basement Impact Assessment has been carried out following the information and guidance published by the London Borough of Camden. A number of potential impacts were identified as a result of the screening exercise. However, it has been concluded that all potential impacts can be mitigated by appropriate design and standard construction practice.

Standard safe working practices and measures that will be adopted to construct the basement mean that the proposed development is unlikely to result in any specific groundwater or land or slope stability issues.

The conclusions and recommendations made in this report are limited to those that can be made on the basis of the research carried out. The results of the work should be viewed in the context of the range of data sources consulted, the number of locations where the ground was sampled and the number of soil, gas or ground water samples tested. No liability can be accepted for information in other data sources or conditions not revealed by the sampling or testing. Any comments made on the basis of information obtained from the client or third parties are given in good faith on the assumption that the information is accurate; no independent validation of such information has been made by GEA.



Appendix

Existing Plans & Development Proposals

Ground Movement Analysis

P-Disp Analysis – Short-term Movements (Input data & outputs)

P-Disp Analysis – Total Movements (Input data & outputs)

X-Disp Analysis – Installation Movements (Input Data & outputs)

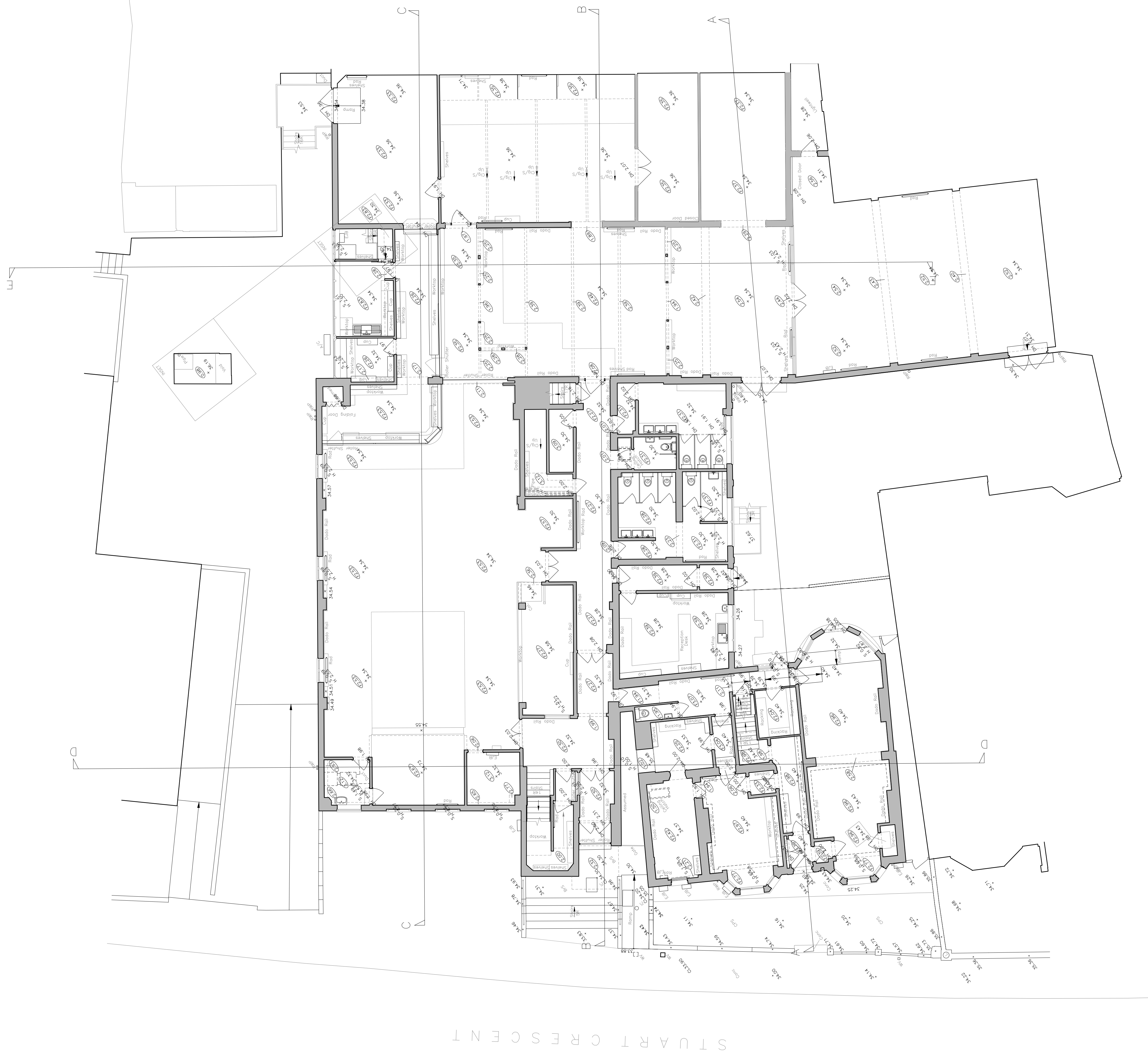
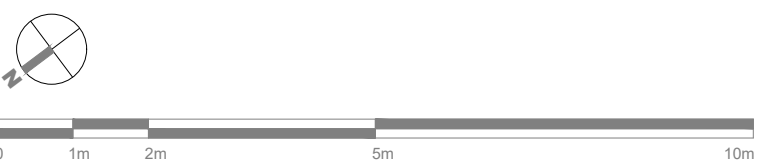
X-Disp Analysis – Combined Movements (Input Data & outputs)

X-Disp Analysis – Building Damage Assessment Results

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N22 5NJ

DWG 00 - EXISTING DRAWINGS
Ground Floor Plan

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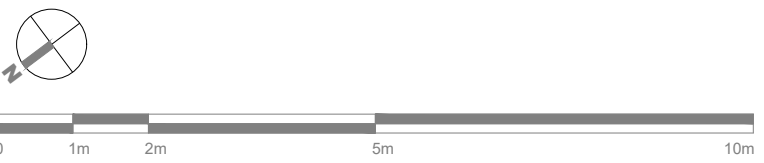
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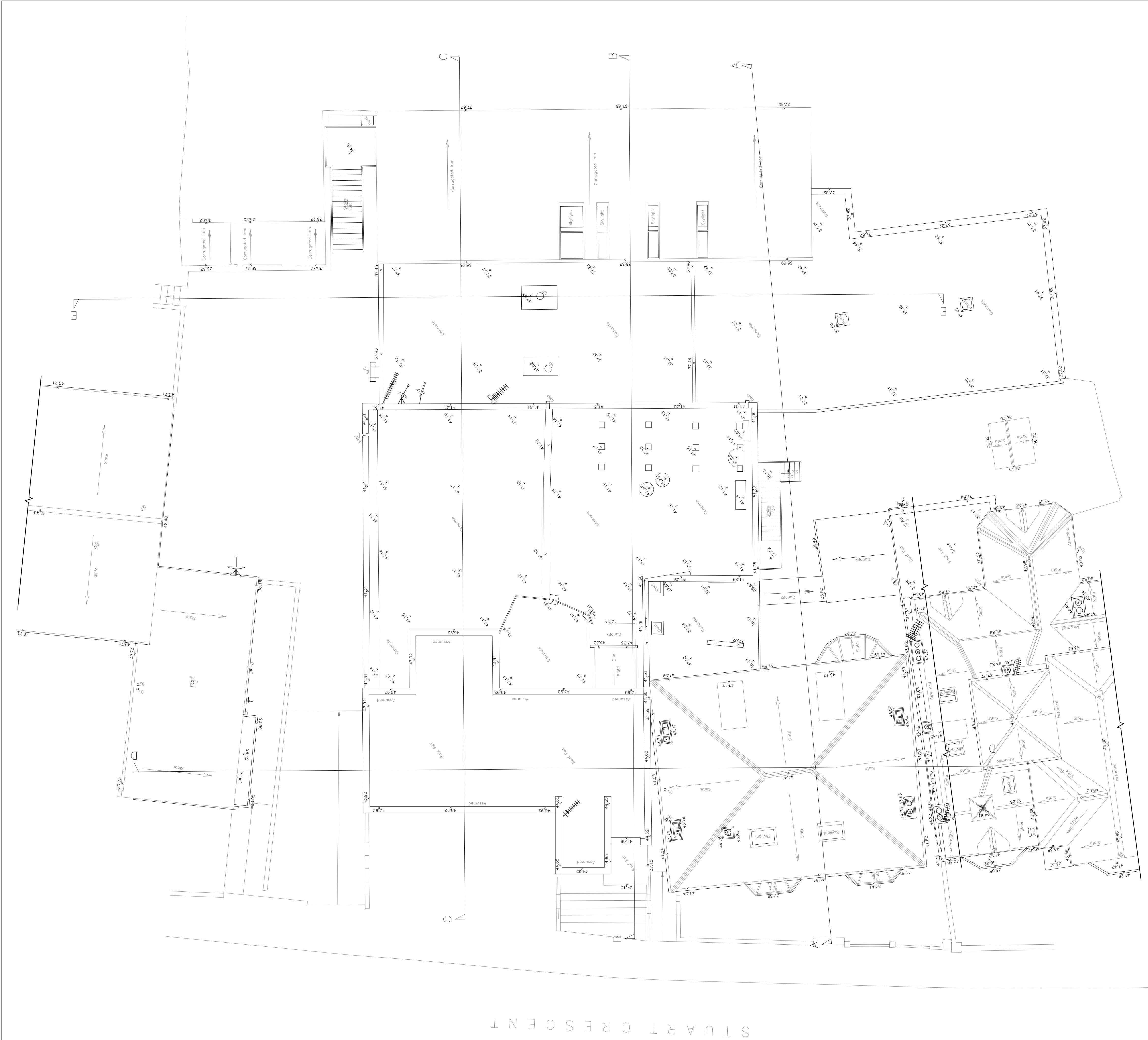
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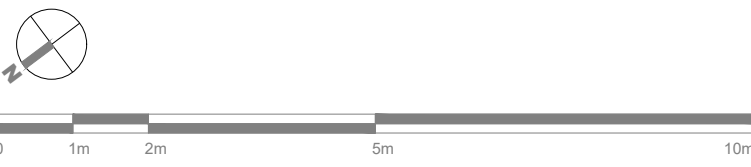


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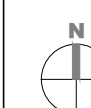
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SITE BOUNDARY



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DWG 01 - SITE PLAN
Proposed Site Plan

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12.10.2021	S2	PL04	PLANNING AMENDMENT
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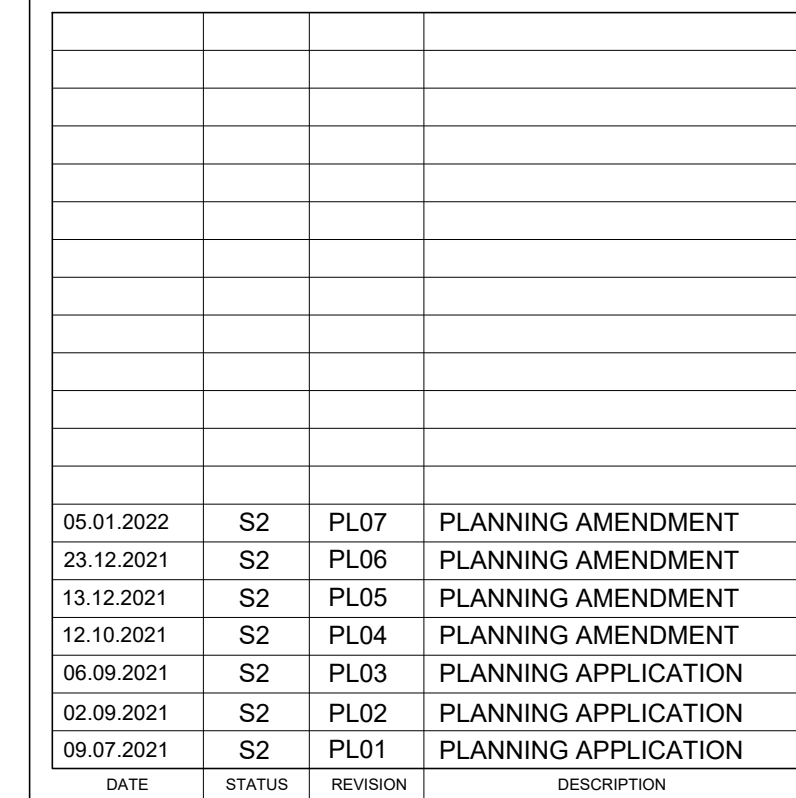


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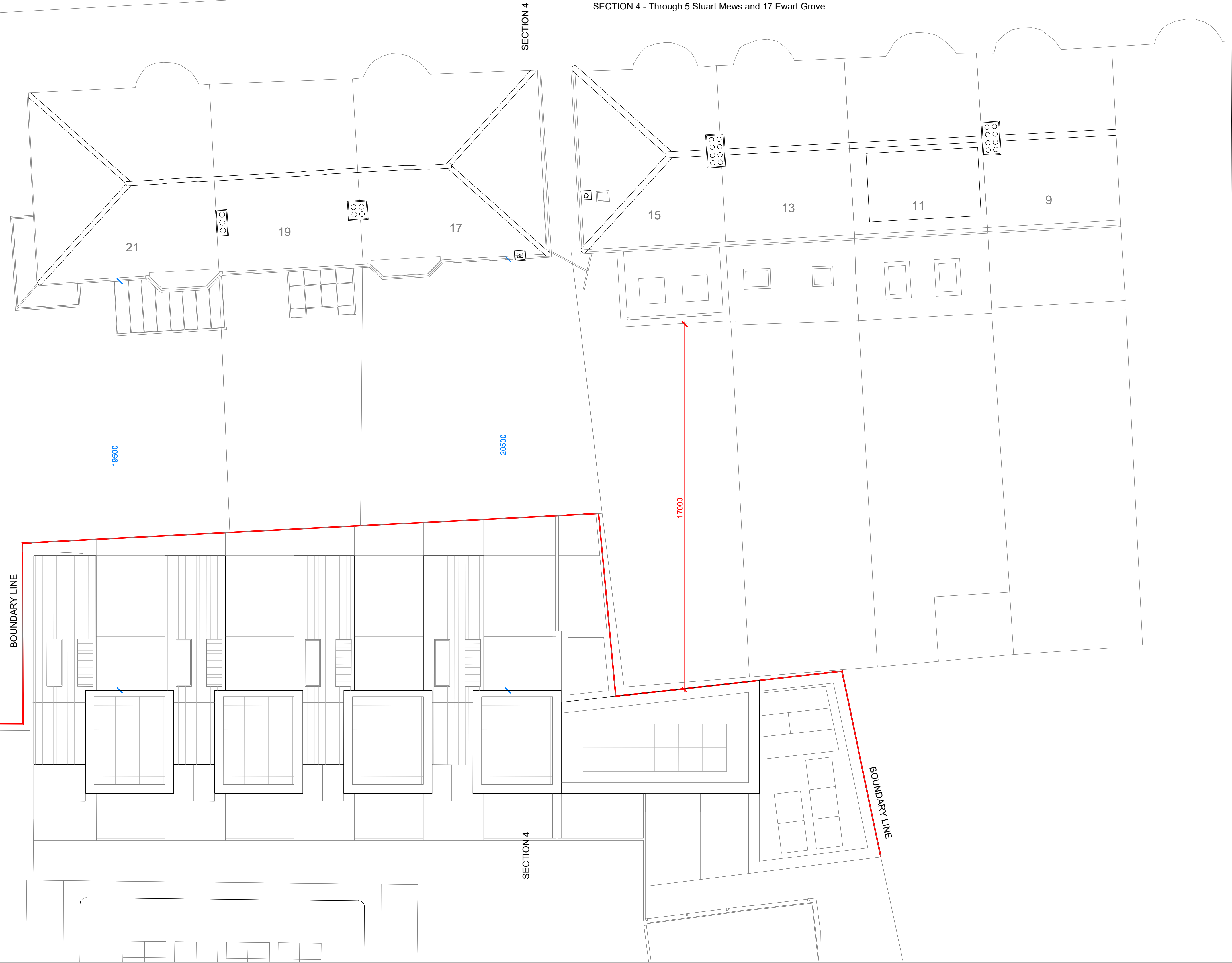
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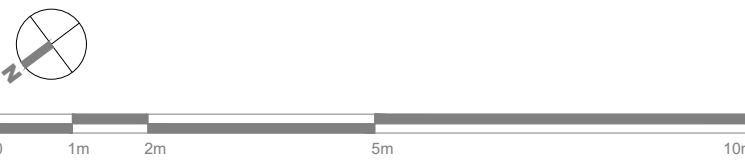
SECTION 4 - Through 5 Stuart Mews and 17 Ewart Grove

SECTION 4 - Through 5 Stuart Mews and 17 Ewart Grove



 Stuart Mews Terrace Level Window to Ewart Grove

 15 Ewart Grove Extension to Boundary Line (5 Stuart Mews)

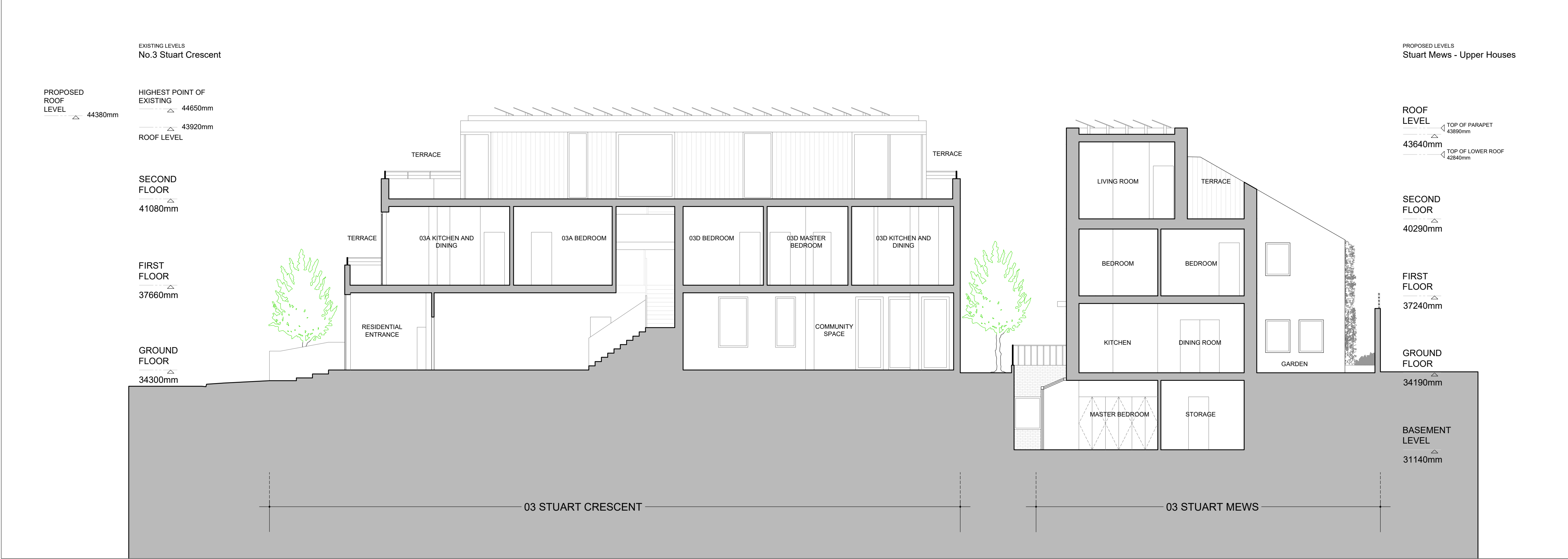
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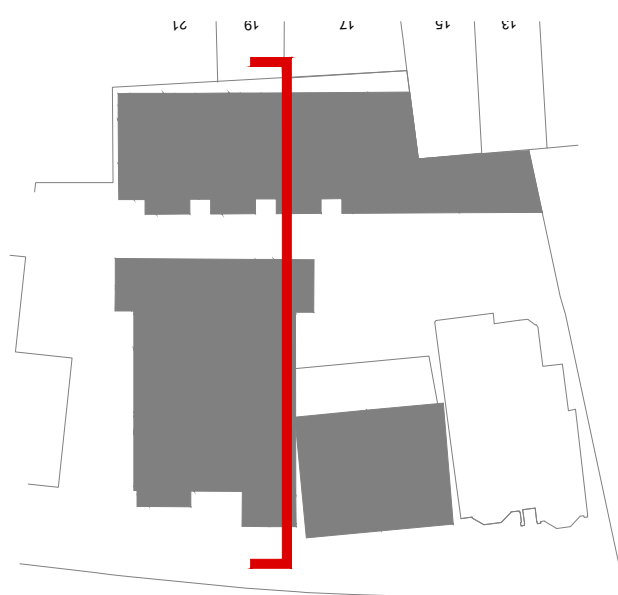


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DWG		REV	
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01 Section BB



DATE	STATUS	REVISION	DESCRIPTION
05.01.2022	S2	PL04	PLANNING AMENDMENT
12.10.2021	S2	PL03	PLANNING AMENDMENT
06.09.2021	S2	PL02	PLANNING APPLICATION
09.07.2021	S2	PL01	PLANNING APPLICATION



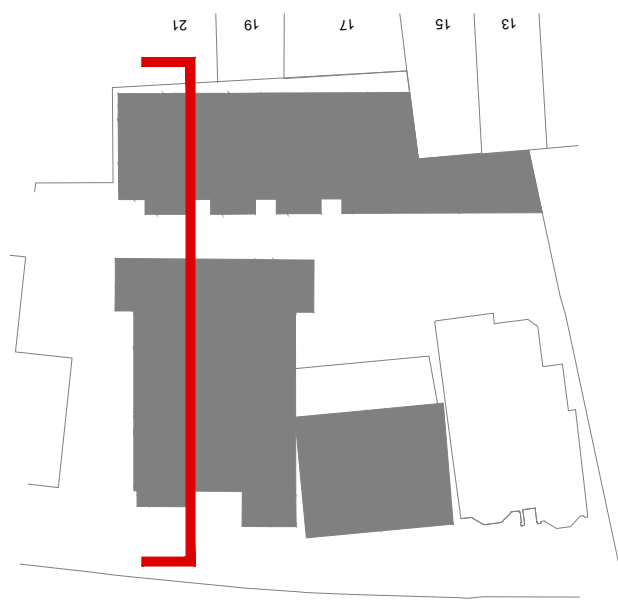
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JOB NO.	2102	CLIENT	BRYANSTON INVESTMENTS LTD
TITLE	3-4 Stuart Crescent N22 5NJ		
DWG	04 - GA SECTION Section BB		
DRAWN	JP	CHECKED	GE
DATE	09.07.2021	SCALE	1/100
STATUS DESCRIPTION	PLANNING	STATUS CODE	S2
REVISION	PL04	DRAWING NUMBER	2102-EMR-SC-ZZ-AP-A-04101



01 Section CC



DATE	STATUS	REVISION	DESCRIPTION
05.01.2022	S2	PL04	PLANNING AMENDMENT
12.10.2021	S2	PL03	PLANNING AMENDMENT
06.09.2021	S2	PL02	PLANNING APPLICATION
09.07.2021	S2	PL01	PLANNING APPLICATION



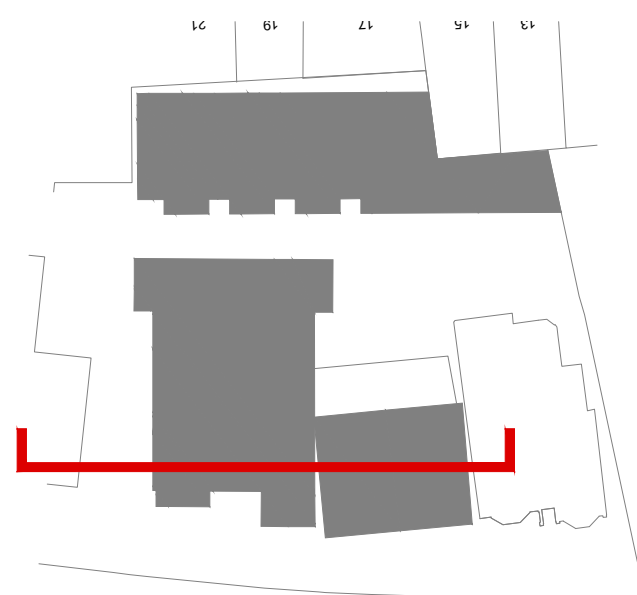
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JOB NO.	2102	CLIENT	BRYANSTON INVESTMENTS LTD
TITLE	3-4 Stuart Crescent N22 5NJ		
DWG	04 - GA SECTION Section CC		
DRAWN	JP	CHECKED	GE
DATE	09.07.2021	SCALE	1/100
STATUS DESCRIPTION	PLANNING	STATUS CODE	S2
REVISION	PL04		
DRAWING NUMBER	2102-EMR-SC-ZZ-AP-A-04102		



01 Section DD



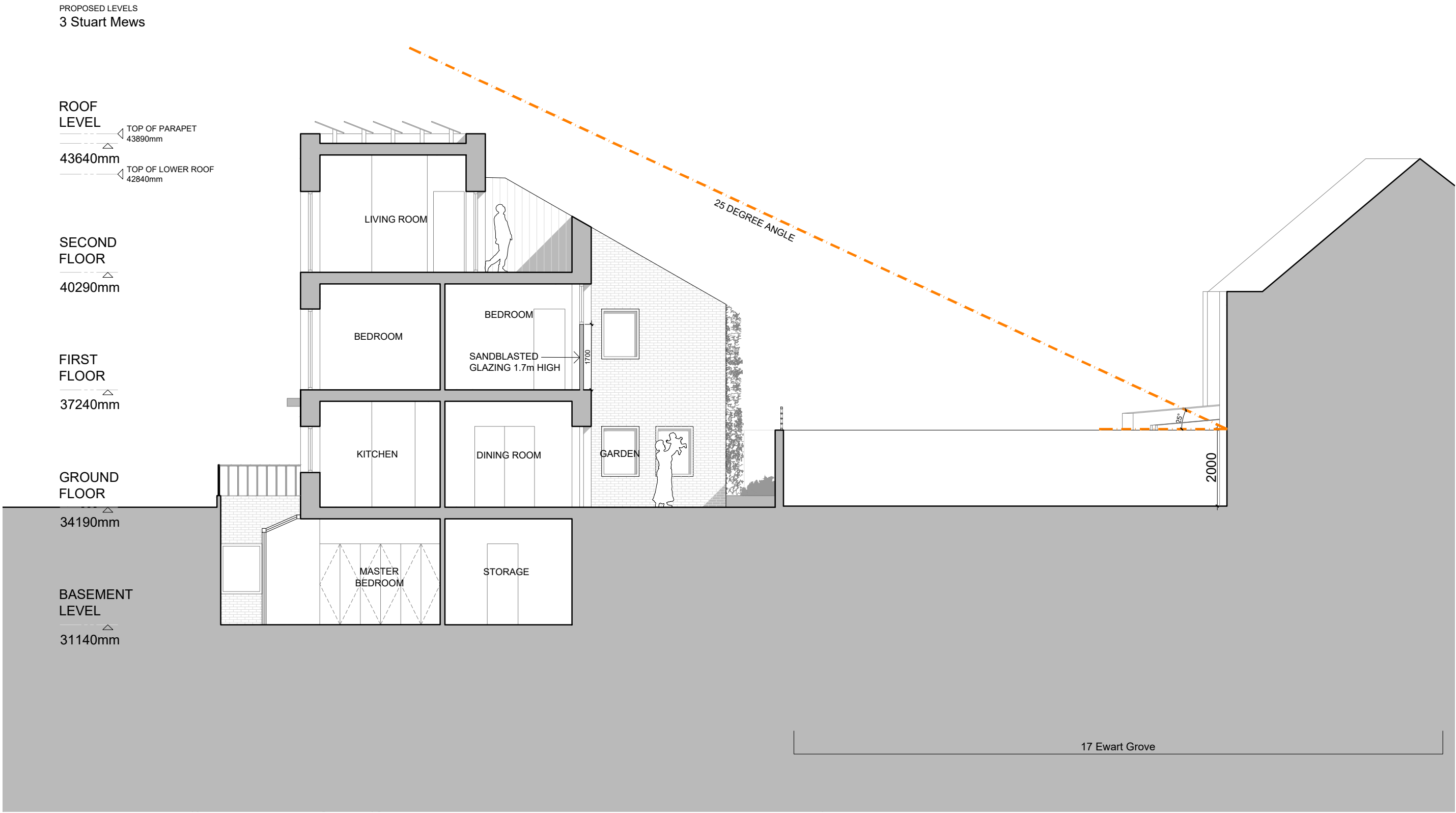
DATE	STATUS	REVISION	DESCRIPTION
05.01.2022	S2	PL02	PLANNING AMENDMENT
09.07.2021	S2	PL01	PLANNING APPLICATION



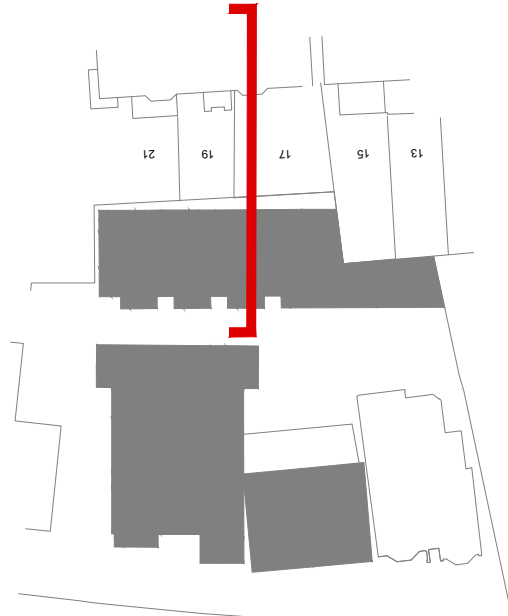
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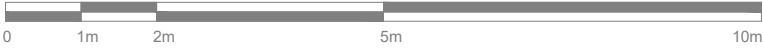
JOB NO.	2102	CLIENT	BRYANSTON INVESTMENTS LTD
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DATE	09.07.2021	SCALE	1/100
STATUS DESCRIPTION		STATUS CODE	REVISION
PLANNING		S2	PL02
DRAWING NUMBER			
2102-EMR-SC-ZZ-AP-A-04103			



01 Section 04



DATE	STATUS	REVISION	DESCRIPTION
12.10.2021	S2	PL04	PLANNING AMENDMENT
07.09.2021	S2	PL03	PLANNING APPLICATION
06.09.2021	S2	PL02	PLANNING APPLICATION
02.09.2021	S2	PL01	PLANNING APPLICATION



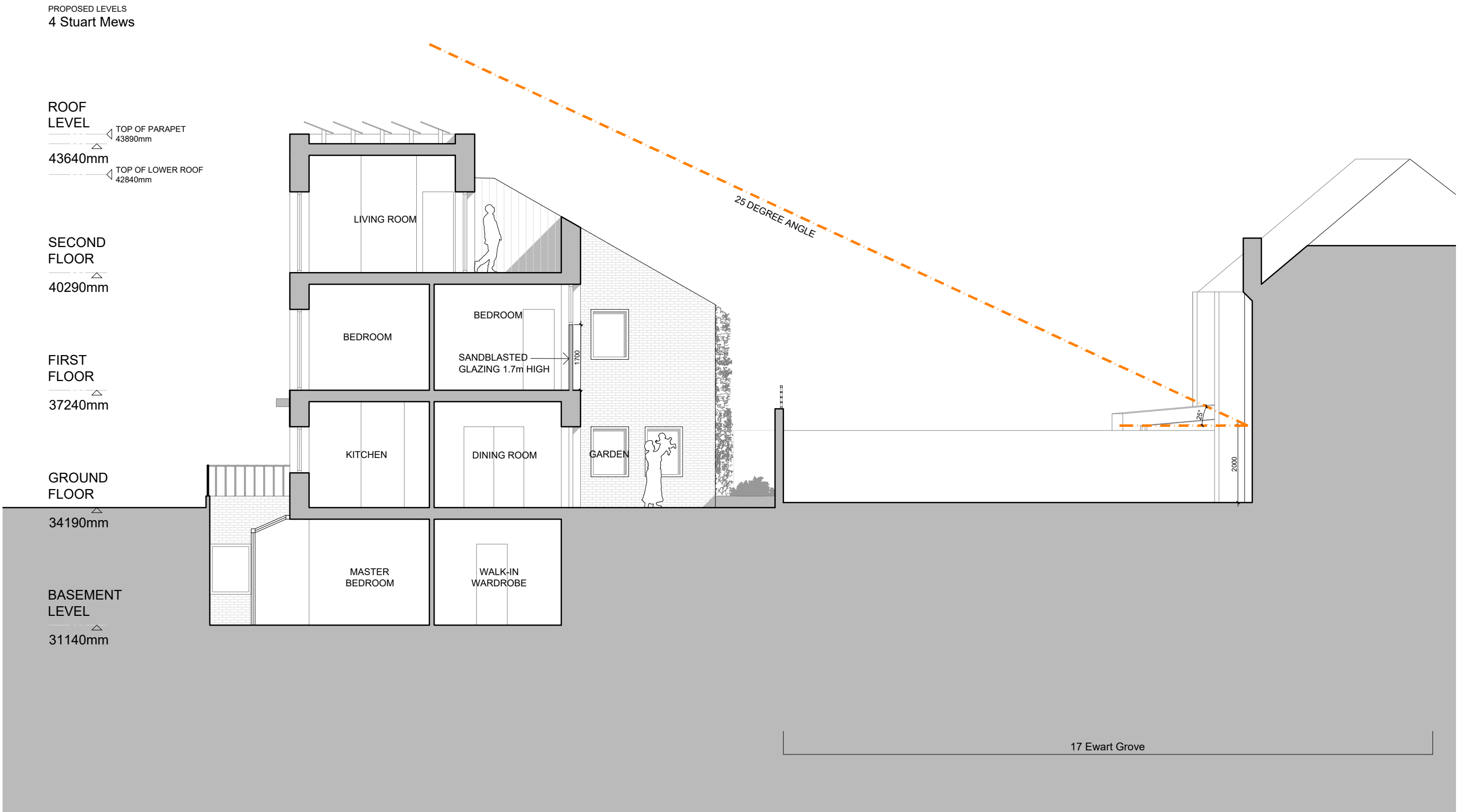
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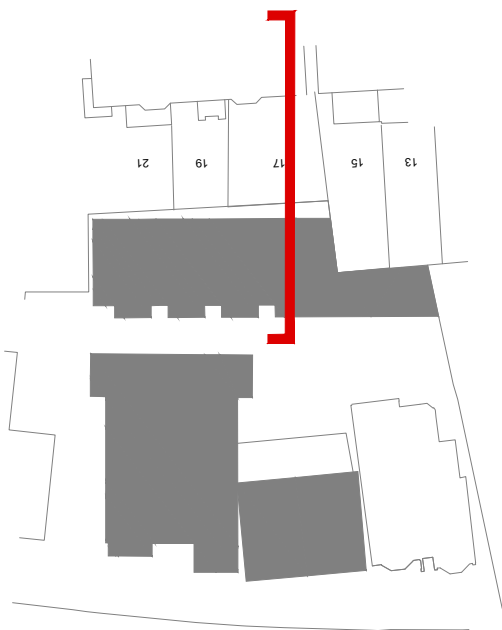
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CLIENT	BRYANSTON INVESTMENTS LTD		
TITLE	3-4 Stuart Crescent N22 5NJ		
DWG	04 - GA SECTION Section 04		
DRAWN	JP	CHECKED	GE
DATE	02.09.2021	SCALE	1/100
STATUS DESCRIPTION	PLANNING	STATUS CODE	S2
REVISION	PL04	DRAWING NUMBER	2102-EMR-SC-ZZ-AP-A-04104



01 Section 05



DATE	STATUS	REVISION	DESCRIPTION
12.10.2021	S2	PL04	PLANNING AMENDMENT
07.09.2021	S2	PL03	PLANNING APPLICATION
06.09.2021	S2	PL02	PLANNING APPLICATION
02.09.2021	S2	PL01	PLANNING APPLICATION



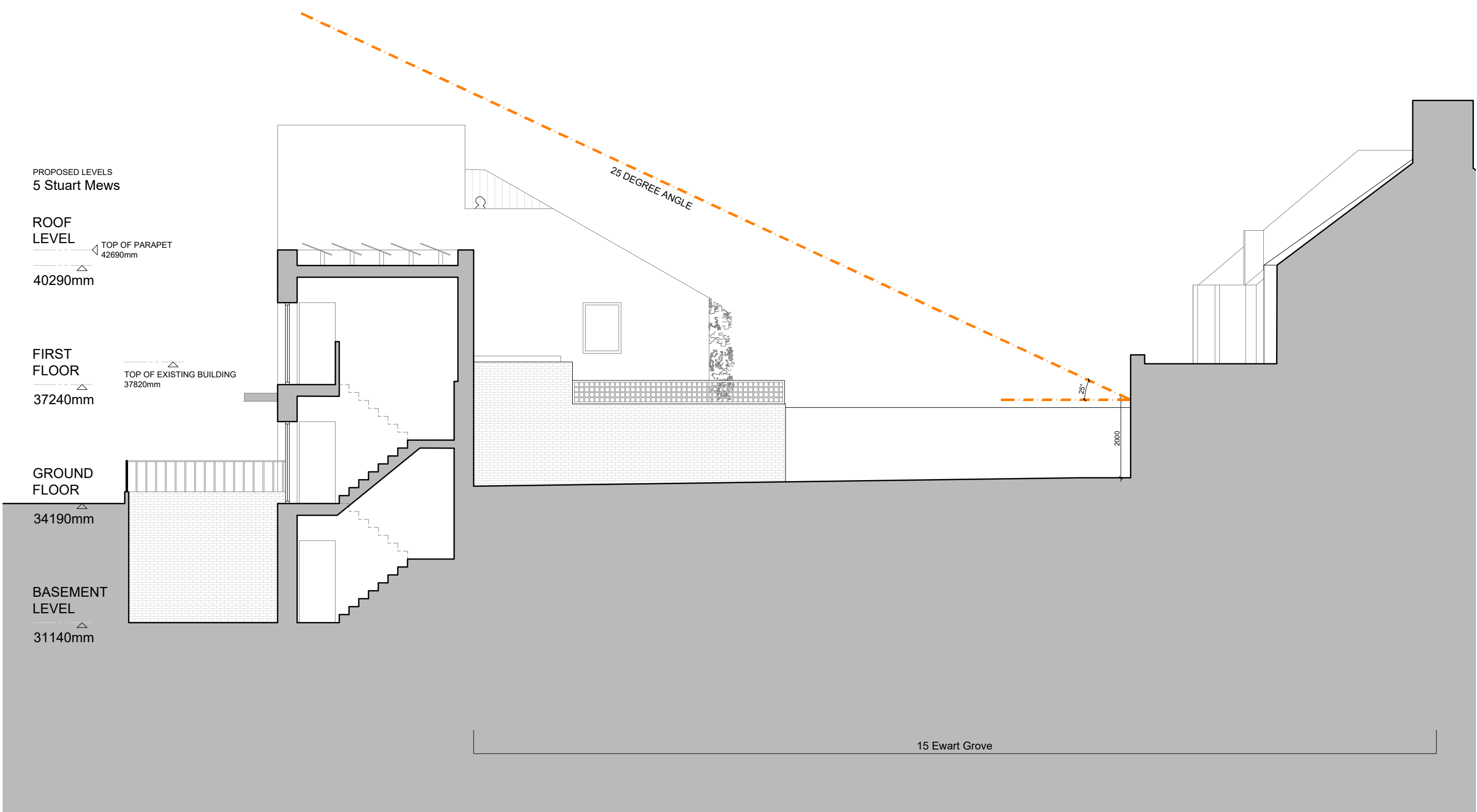
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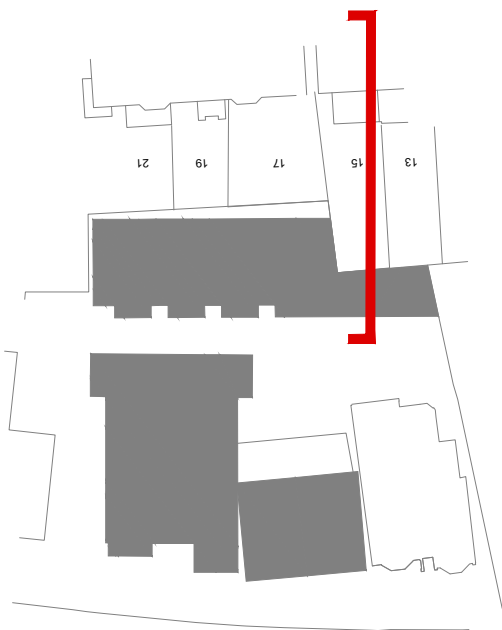
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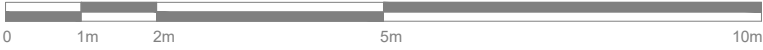
REF NO	2102	CLIENT	BRYANSTON INVESTMENTS LTD
TITLE	3-4 Stuart Crescent N22 5NJ		
DWG	04 - GA SECTION Section 05		
DRAWN	JP	CHECKED	GE
DATE	02.09.2021	SCALE	1/100
STATUS DESCRIPTION		STATUS CODE	REVISION
PLANNING		S2	PL04
DRAWING NUMBER			
2102-EMR-SC-ZZ-AP-A-04105			



01 Section 06



DATE	STATUS	REVISION	DESCRIPTION
12.10.2021	S2	PL03	PLANNING AMENDMENT
06.09.2021	S2	PL02	PLANNING APPLICATION
02.09.2021	S2	PL01	PLANNING APPLICATION



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2102BRYANSTON INVESTMENTS LTD

3-4 Stuart Crescent
N22 5NJ

04 - GA SECTION
Section 06

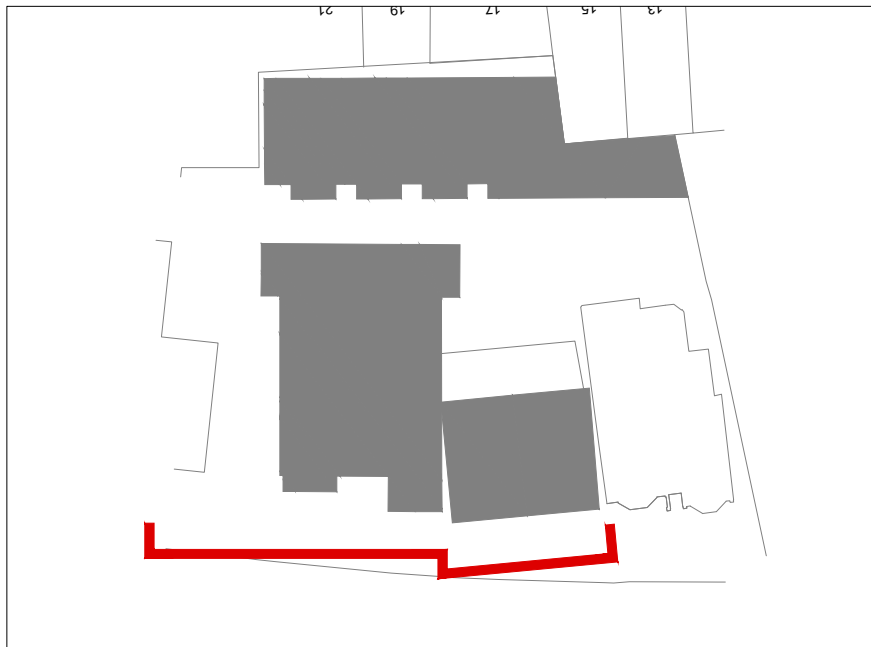
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STATUS DESCRIPTION	STATUS CODE	REVISION
PLANNING	S2	PL03

DRAWING NUMBER
2102-EMR-SC-ZZ-AP-A-04106



01 Elevation 01

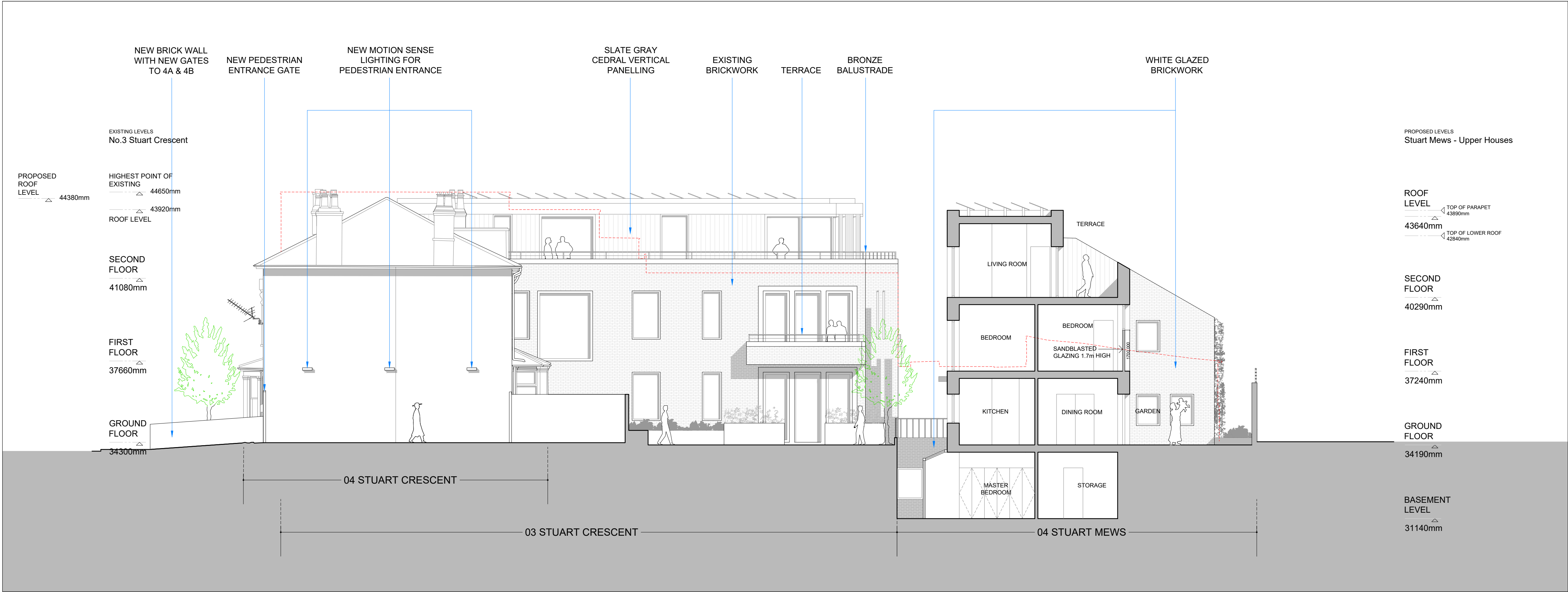


DATE	STATUS	REVISION	DESCRIPTION
05.01.2022	S2	PL04	PLANNING AMENDMENT
23.12.2021	S2	PL03	PLANNING AMENDMENT
13.12.2021	S2	PL02	PLANNING AMENDMENT
09.07.2021	S2	PL01	PLANNING APPLICATION



KEY:
EXISTING BUILDING

JOB NO.	2102	CLIENT	BRYANSTON INVESTMENTS LTD
TITLE	3-4 Stuart Crescent N22 5NJ		
DESC	05 - GA ELEVATION Elevation 01		
DRAWN	JP	CHECKED	GE
DATE	09.07.2021	SCALE	1/100
STATUS DESCRIPTION	PLANNING	STATUS CODE	S2
REVISION	PL04	DRAWING NUMBER	2102-EMR-SC-ZZ-AP-A-05101



01 Elevation 02

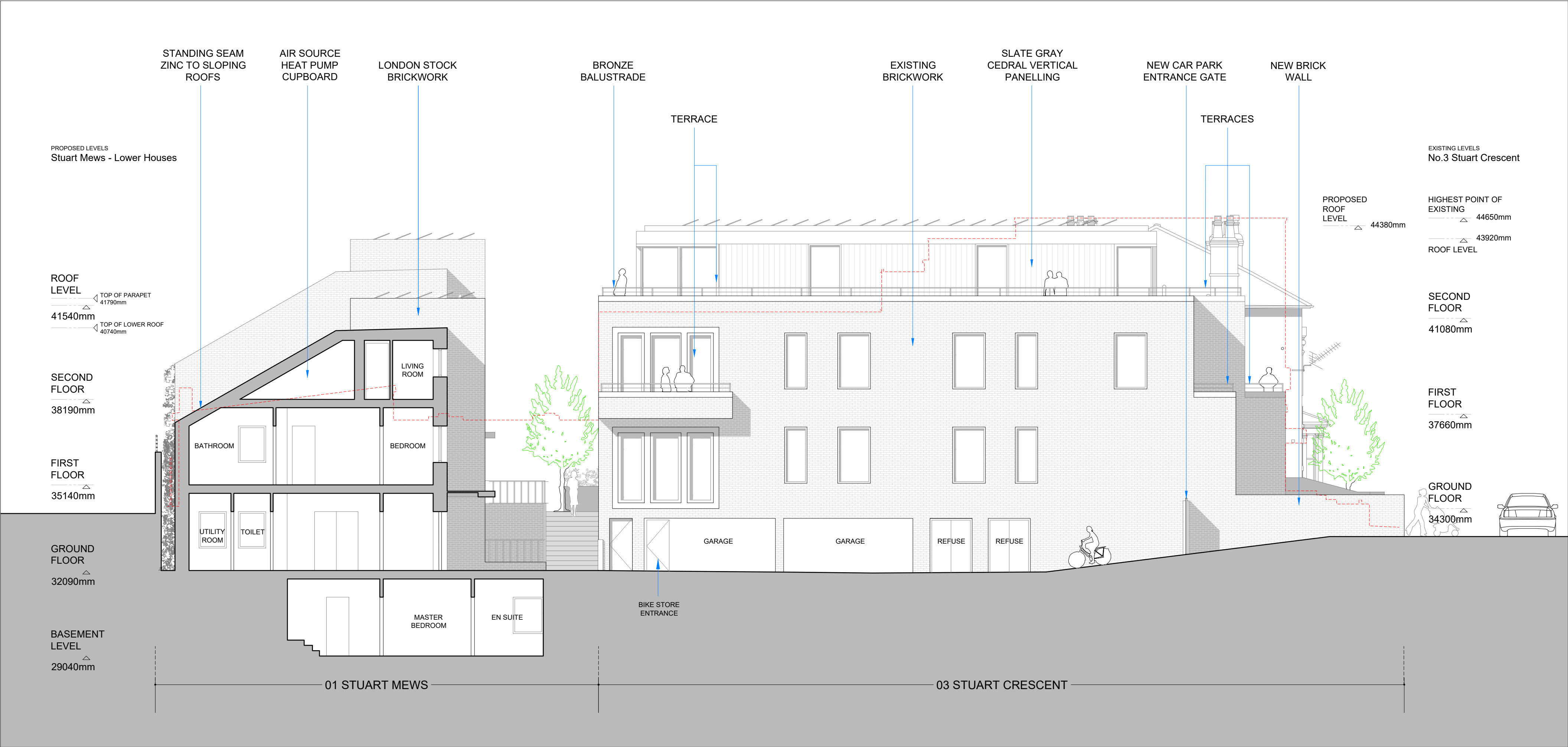


DATE	STATUS	REVISION	DESCRIPTION
05.01.2022	S2	PL05	PLANNING AMENDMENT
12.10.2021	S2	PL04	PLANNING AMENDMENT
07.09.2021	S2	PL03	PLANNING APPLICATION
06.09.2021	S2	PL02	PLANNING APPLICATION
09.07.2021	S2	PL01	PLANNING APPLICATION

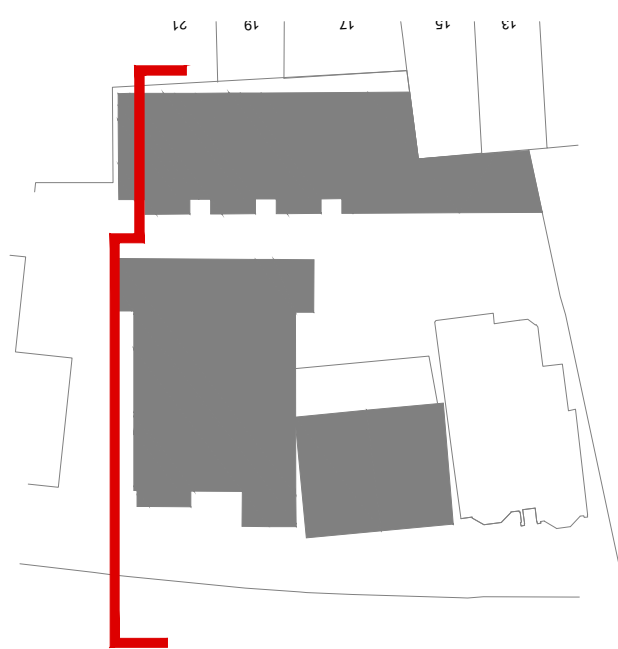


KEY:
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JOB NO.	2102	CLIENT	BRYANSTON INVESTMENTS LTD
TITLE	3-4 Stuart Crescent N22 5NJ		
DESC	05 - GA ELEVATION Elevation 02		
DRAWN	JP	CHECKED	GE
DATE	09.07.2021	SCALE	1/100
STATUS DESCRIPTION	PLANNING	STATUS CODE	S2
REVISION	PL05	DRAWING NUMBER	2102-EMR-SC-ZZ-AP-A-05102



01 Elevation 03



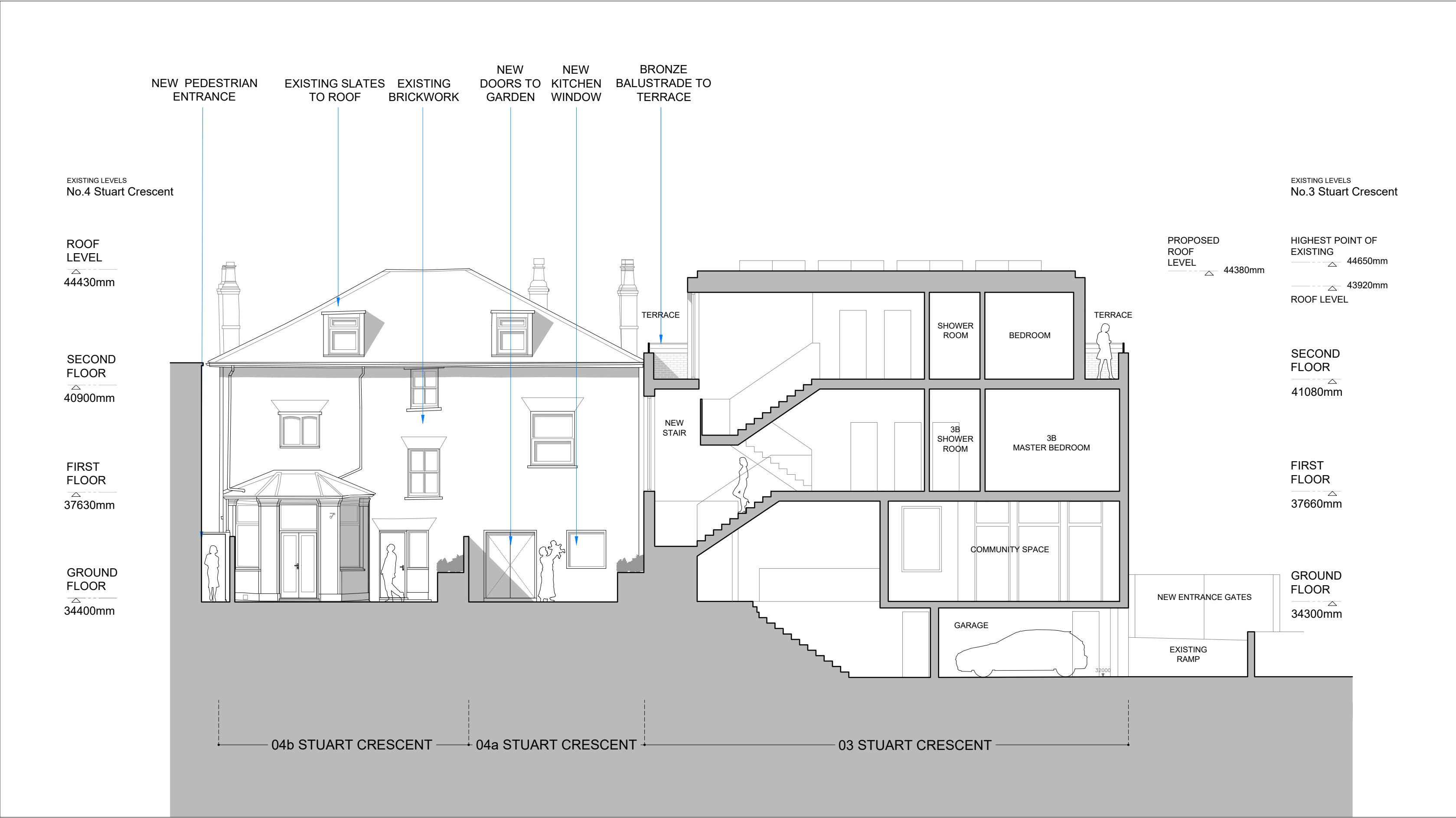
DATE	STATUS	REVISION	DESCRIPTION
05.01.2022	S2	PL04	PLANNING AMENDMENT
12.10.2021	S2	PL03	PLANNING AMENDMENT
06.09.2021	S2	PL02	PLANNING APPLICATION
09.07.2021	S2	PL01	PLANNING APPLICATION

KEY:
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JOB NO.	2102	CLIENT	BRYANSTON INVESTMENTS LTD
TITLE	3-4 Stuart Crescent N22 5NJ		
DESC	05 - GA ELEVATION Elevation 03		
DRAWN	JP	CHECKED	GE
DATE	09.07.2021	SCALE	1/100
STATUS DESCRIPTION	PLANNING	STATUS CODE	S2
REVISION	PL04	DRAWING NUMBER	2102-EMR-SC-ZZ-AP-A-05103



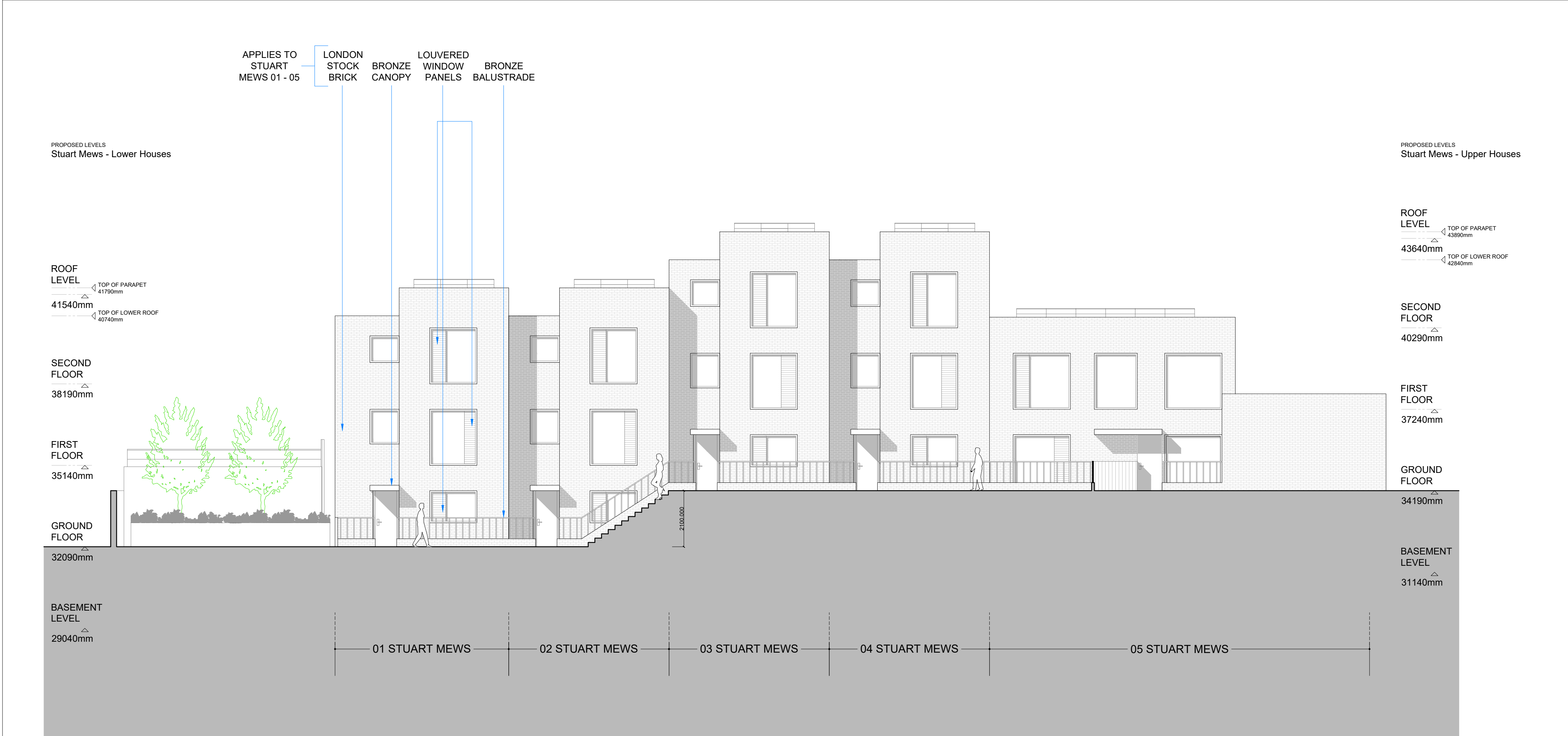
01 Elevation 04



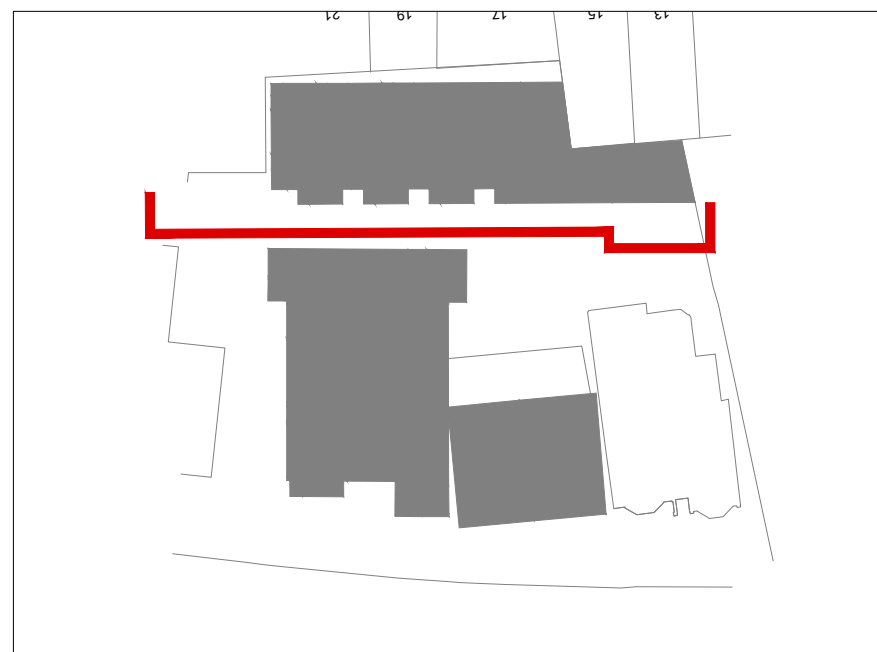
DATE	STATUS	REVISION	DESCRIPTION
05.01.2022	S2	PL02	PLANNING AMENDMENT
09.07.2021	S2	PL01	PLANNING APPLICATION



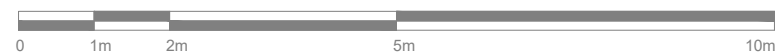
JOB NO.	2102	CLIENT	BRYANSTON INVESTMENTS LTD
TITLE	3-4 Stuart Crescent N22 5NJ		
DWG	05 - GA ELEVATION Elevation 04		
DRAWN	JP	CHECKED	GE
DATE	09.07.2021	SCALE	1/100
STATUS DESCRIPTION	PLANNING	STATUS CODE	S2
REVISION	PL02	DRAWING NUMBER	2102-EMR-SC-ZZ-AP-A-05104



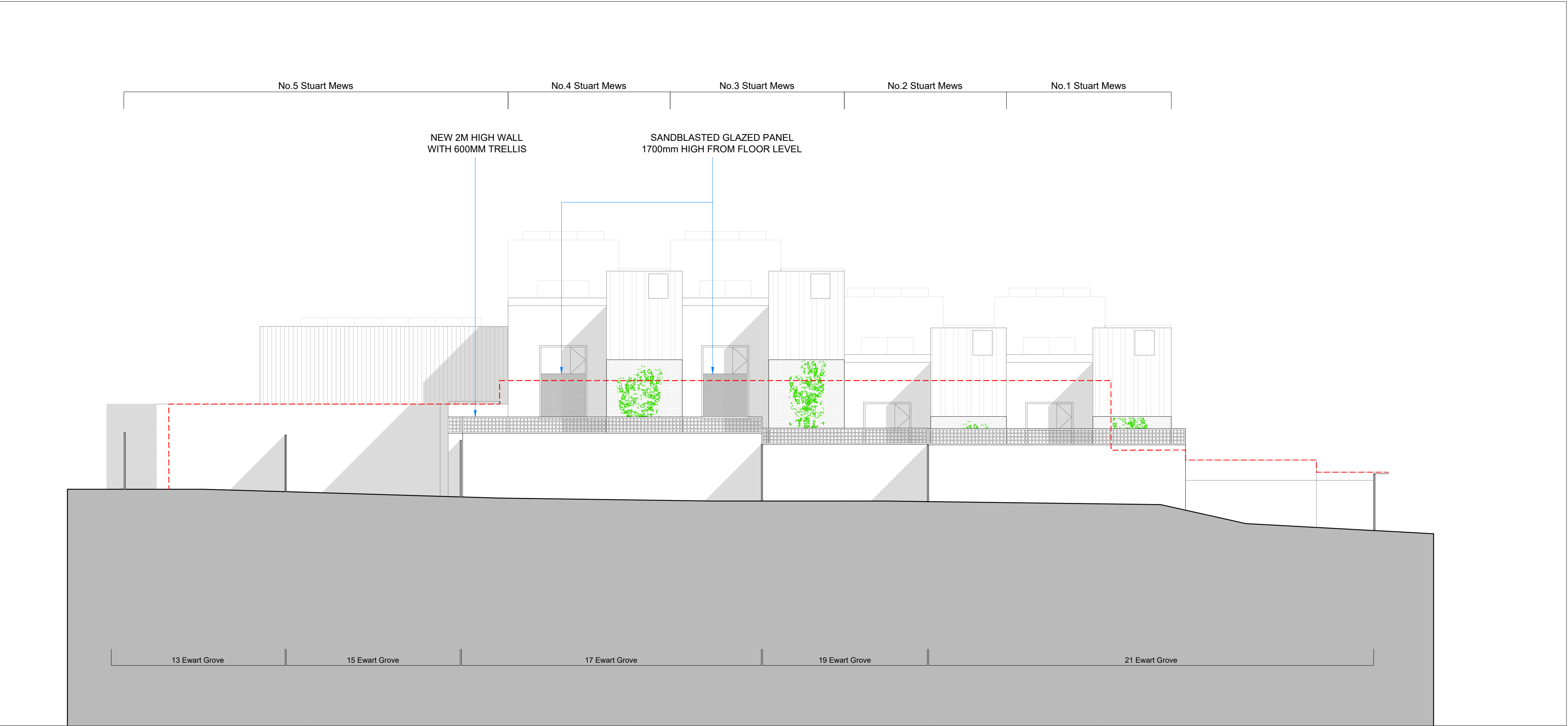
01 Elevation 05



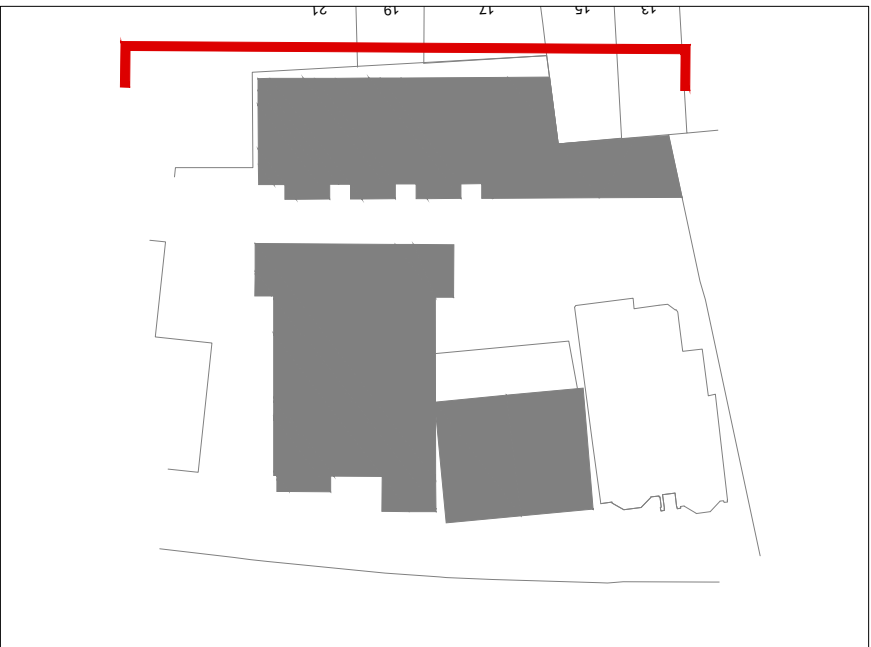
DATE	STATUS	REVISION	DESCRIPTION
12.10.2021	S2	PL03	PLANNING AMENDMENT
06.09.2021	S2	PL02	PLANNING APPLICATION
09.07.2021	S2	PL01	PLANNING APPLICATION



JOB#	2102		CLIENT	BRYANSTON INVESTMENTS LTD	
TITLE	3-4 Stuart Crescent N22 5NJ				
DWG#	05 - GA ELEVATION Elevation 05				
DRAWN	JP	GE	DATE	09.07.2021	SCALE 1/100
STATUS/DESCRIPTION			STATUS CODE		REVISION
PLANNING			S2		PL03
DRAWING NUMBER					
2102-EMR-SC-ZZ-AP-A-05105					



01 Elevation 06



DATE	STATUS	REVISION	DESCRIPTION
12.10.2021	S2	PL05	PLANNING AMENDMENT
07.09.2021	S2	PL04	PLANNING APPLICATION
06.09.2021	S2	PL03	PLANNING APPLICATION
02.09.2021	S2	PL02	PLANNING APPLICATION
03.08.2021	S2	PL01	PLANNING APPLICATION

KEY:
EXISTING BUILDING LINE - - - - -

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2102	BRYANSTON INVESTMENTS LTD		
3-4 Stuart Crescent N22 5NJ			
05 - GA ELEVATION Elevation 06			
JP	GE	03.08.2021	1/100
PLANNING		S2	PL05
2102-EMR-SC-ZZ-AP-A-05106			