

External Daylight and Sunlight Study

Client: Creative Property People Ltd
3A Wynnstay Grove
Manchester
M14 6XG

Site Details: 26A Wilbraham Road
Manchester
M14 6JU

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Report Details:

Prepared by	Checked by	Date	Job Number
Nicholas Gardner	Peter Kinsella	26.06.2023	10873 Rev0

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1. Introduction & Methodology

The daylight study is to ensure the comfort, health and safety of building occupants as well as visitors and others within the vicinity of the building is acceptable. It is also to enhance the quality of life in dwellings by recognising those that encourage a healthy and safe internal environment for occupants.

Using industry standard methodology as prescribed by BRE and British Standard guidance and in line with the BRE Guide: BRE BR 209 2022 Edition and BS EN 17037, we have made numerical analyses to ensure compliance with the recommended levels of change in daylight.

The main criteria used in this analysis to show compliance is the:

Vertical Sky Component (VSC)

VSC measures the general amount of light available on the outside plane of the window as a ratio (%) of the amount of total unobstructed sky viewable following introduction of visible barriers such as buildings. The maximum value is just under 40% for a completely unobstructed vertical wall.

The relevant BRE recommendations for daylight and sunlight are:

The Vertical Sky Component measured at the centre of a window should be no less than 80% of its former value, where the window(s) do not meet this criteria, BRE Guidelines states that if the VSC at the centre of a window is more than 27% of available light, then the diffuse daylighting will not be adversely affected.

Annual Probable Sunlight Hours (APSH)

APSH is a measure of the amount of potential direct sunlight that is available to a given surface. Only windows which face within 90 degrees of due south need to be assessed. BRE Guidance states that windows should continue to receive in excess of 80% of their pre-development value, **or** 25% of available hours over a year / 5% of hours in winter to be considered well - lit **or** if the window has a reduction in sunlight received over the whole year less than 4% of annual sunlight hours.

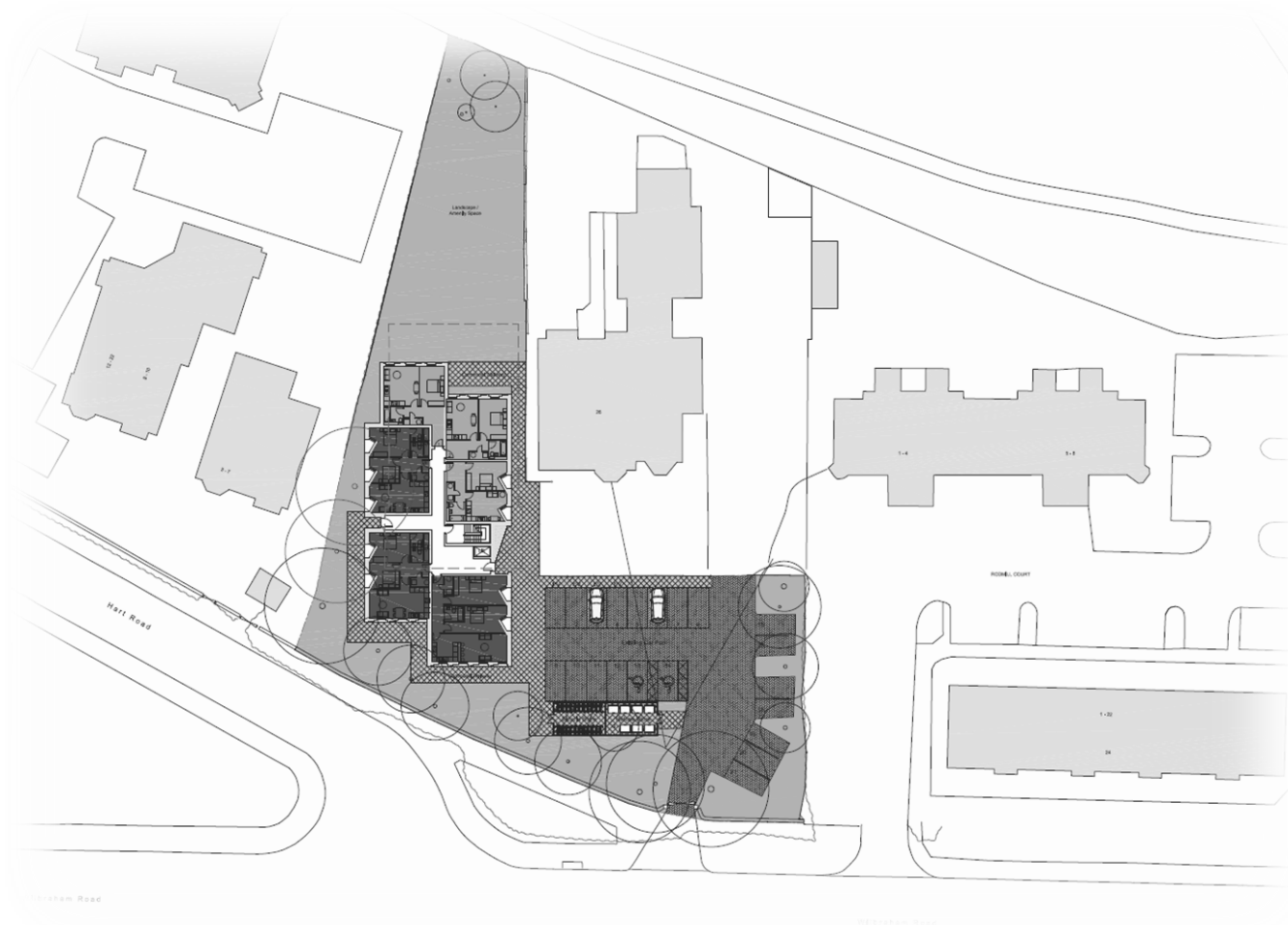
The BRE Guidance is not an instrument of planning policy; therefore, whilst the methods given are technically robust, some level of flexibility should be applied where appropriate.

We must stress that despite the methodology used above and the results that are drawn from it provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole.

2. Proposed Development

There are proposals for the demolition of an existing building to make way for the construction of a five – storey residential apartment scheme on the land at 26a Wilbraham Road, Manchester, M14 6JU.

Site Plan



3. Modelling the site & Window Schedule

An analysis model is created of the proposed development and the existing development allowing analysis, calculations are then run. The outputs of those calculations can be exported numerically. Using the BRE guidance which gives absolute figures for the acceptable percentage of daylight and sunlight, we can then establish if the proposal will have the required daylighting levels stipulated by BRE guidelines.

It is important to note that not all nearby features have been modelled, only those that will affect the daylighting, in accordance with BRE recommendations.

The reference document for this analysis, BRE BR 209 2022 Edition and BS EN 17037, provides the methodology for undertaking the calculations as well as benchmark figures for the acceptable reduction in the daylight/sunlight.

In order to complete an accurate model of the existing and proposed site we have used a combination of the following plans and information. These consist of:

- Existing Plans
- Proposed Site Plan, Floor Plans, Sections, Elevations
- Site Visit conducted on 19.06.2023

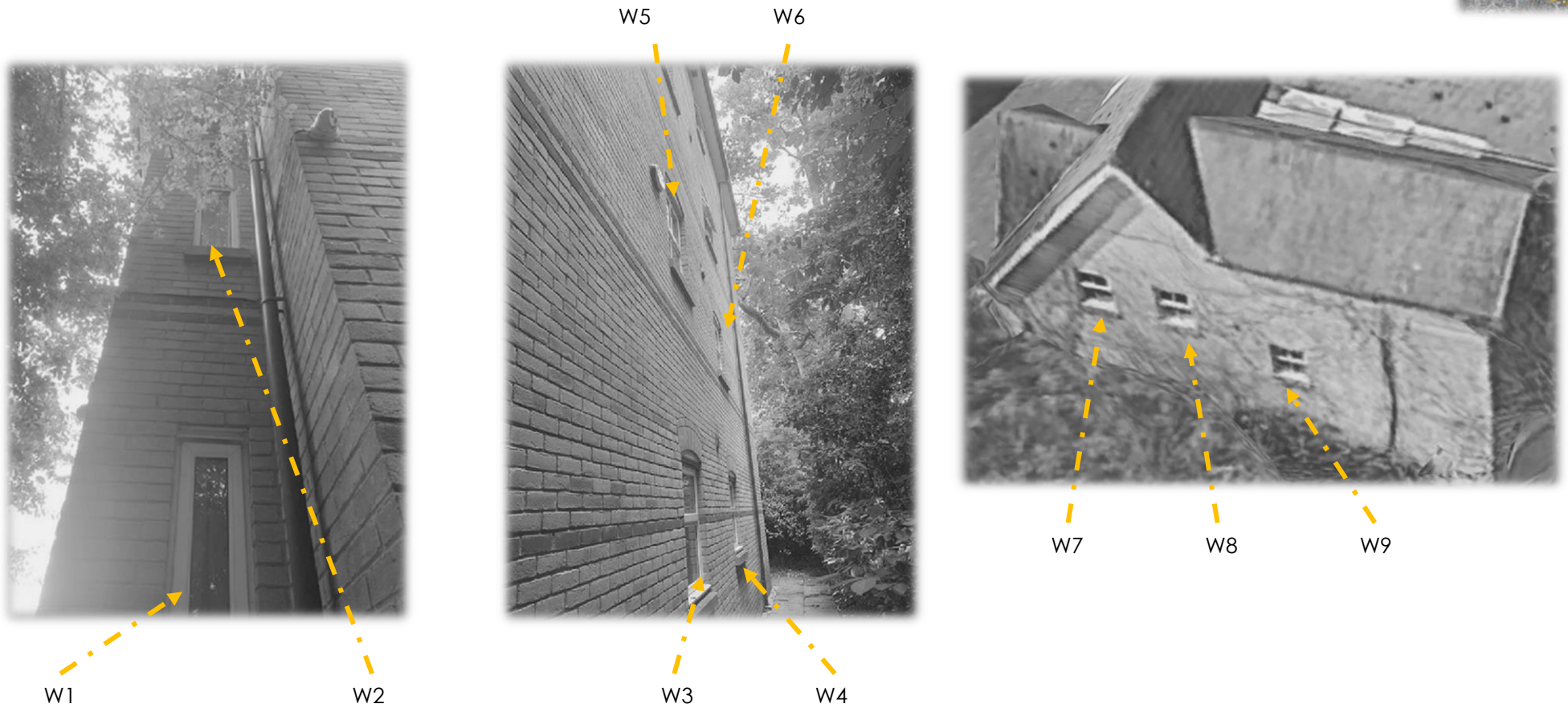
The purpose of this report is to assess the potential impact that the proposed development may have on the immediate surrounding neighbouring dwellings in terms of daylight and sunlight. The immediate neighbouring dwellings that have been identified for analysis being the flats at No.3 – No.7 and No.8 – No.22 Hart Road which are situated adjacent to the west of the proposed development. After site analysis we have established that No.3 – No.7 and No.8 – No.22 Hart Road are classed as the 'worst case' affected residential dwellings due to their proximity in relation to the proposed development, therefore, if the analysis shows that these dwellings meet the requirements for levels of change in daylight in accordance with BRE guidelines then all additional surrounding dwellings will meet these requirements by default.

For a full location and window schedule please see below.

Target Study Area



No.3 – No.7 Hart Road – Flank / South East Elevation

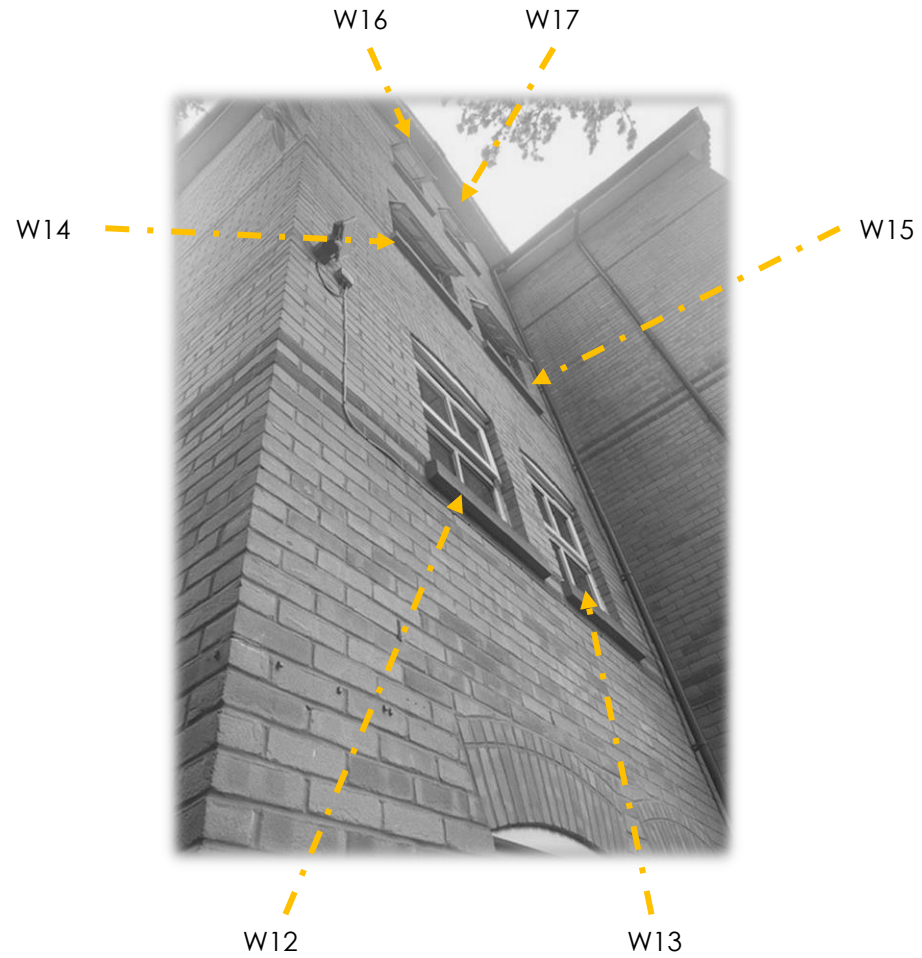


No.3 – No.7 Hart Road – Rear / North – East Elevation



W10

W11



W12

W13

W14

W15

W16

W17



No.8 – No.22 Hart Road – Rear Flank / South – East Elevation



No.8 – No.22 Hart Road – Rear Flank / South – East Elevation



As can be seen, there are 35 relevant window receptors of concern that may experience an impact in terms of daylight and sunlight from the proposed development.

- Receptors 1 - 9 located to the side flank /south east elevation of No.3 – No.7 Hart Road
- Receptors 10 - 17 located to the left side rear /north east elevation of No.3 – No.7 Hart Road
- Receptors 18 - 35 located to the right side rear /south east elevation of No.8 – No.22 Hart Road

Remaining Windows within the target study area

All windows assessed are considered 'worst case' due to their orientation and proximity in relation to the proposed development, therefore, where window receptors meet requirements in accordance with BRE Guidelines, any other windows within the vicinity that sit at a further distance or higher elevation than those that meet requirements will also pass by default.

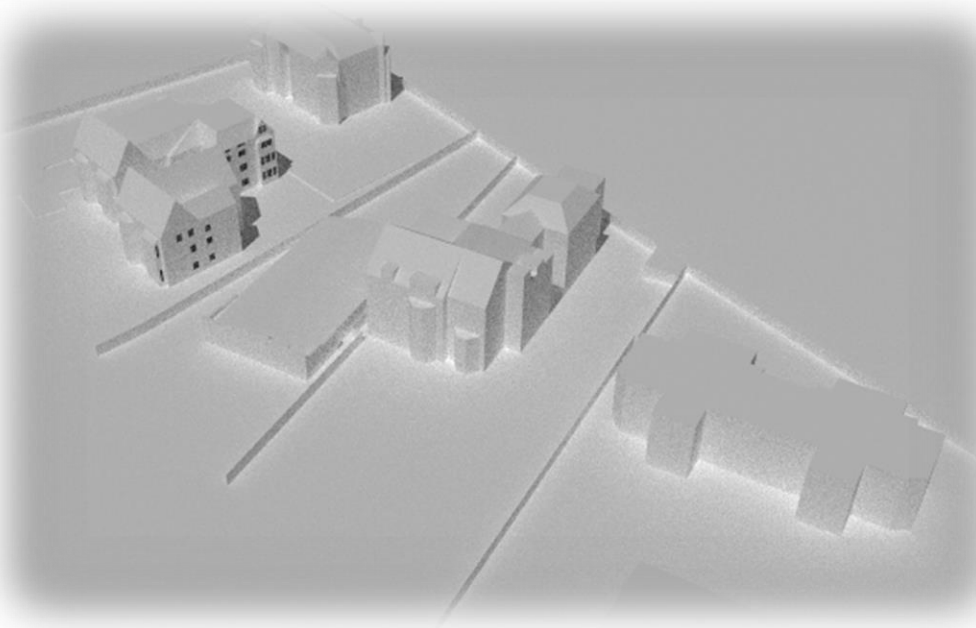
Where nearby windows or buildings have not been labelled, they have either been identified as commercial use or deemed to be un-affected from the proposed development due to having either superior daylighting qualities as those labelled, at a distance and elevation that they will be unaffected from the proposed development or they serve non-habitable spaces such as bathrooms, stairways, commercial property etc.

4. Vertical Sky Component Analysis

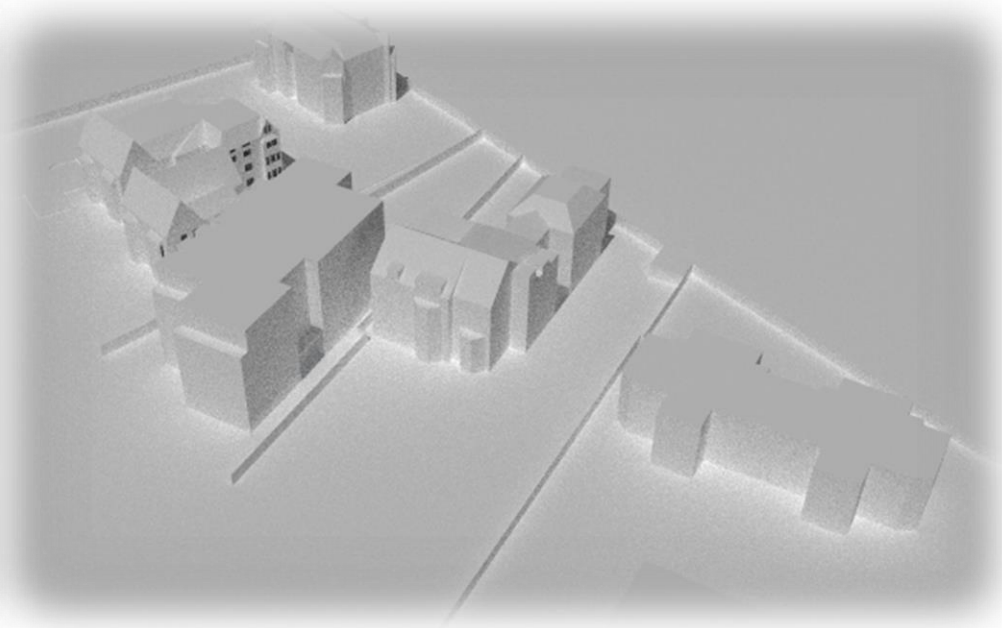
Stage 1 of the analysis is to model the existing site condition and then the proposal in 3 dimensions, thus allowing us to analyse the current situation and compare with relative ease the proposed situation.

The 3D model that has been created is then imported into specialist daylight analysis software from which calculations are then run for both the existing and proposed. We have isolated the dwellings of concern and taken a screen shot which is displayed below.

Existing Conditions



Proposed Conditions



5. Vertical Sky Component Benchmark & Results

As previously stated, even though the benchmark figures provided by BRE may provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole. Locations that may be considered dense urban areas or City Centre developments are often exposed to larger constraints in comparison to low-rise suburban areas, with that said, there is a higher scope for potential obstructions and loss of daylight in these areas. Higher density developments, such the one in question, generally experience lower daylight and sunlight levels.

Interpretation of the scale of impact

As discussed, the windows of the neighboring dwelling may or may not achieve the targets set by BRE, however, what BRE does not provide is an idea of the significance that these results will have on the assessed neighboring dwellings. Therefore, using professional experience, if we apply a scale to judge the implication these results may have on the dwelling, we can better understand the impact that may be experienced. The scale below is based on the BRE baseline target of 80% daylight retention.

Scale of Impact

Where the loss of daylight and sunlight fully meets the BRE Guidance Values, the impact is assessed as **Negligible**

Where the loss of daylight and sunlight is reduced within 20 – 35% of the BRE Guidance Values, the impact is can be classed as **Minor**

Where the loss of daylight and sunlight is reduced within 35 – 50% of the BRE Guidance Values, the impact is can be classed as **Moderate**

Where the loss of daylight and sunlight is reduced within 50 – 100% of the BRE Guidance Values, the impact is can be classed as **Major**

**The guidance above has been taken from BRE daylight and sunlight book for the nature and scale section 5. Ref: Site Layout Planning for Daylight and Sunlight, Appendix 1 Environmental Impact Assessment, page 73.*

6. Vertical Sky Component Analysis Results

The Vertical Sky Component has been calculated for the openings labelled in section 3 of this report for both the existing and proposed conditions. As previously stated, these window receptors are considered 'worst case', therefore, any other windows that sit at a greater distance or higher elevation than those that have passed the analysis within this report, under BRE Guidelines, will also pass by default.

Vertical Sky Component Results Summary (Numerical Results Appendix D)

The results show that of the 35 receptors tested, 26 meet and are in excess of minimum requirements in accordance with BRE Guidelines providing an overall 75% pass rate.

When we apply the scale of impact as detailed in section 5, page 14 of this report, we can see that these window receptors may experience the following level of impact:

- Receptors 10 - 35 may experience a '*Negligible*' impact in terms of daylight;
- Receptor 2 may experience a '*Moderate*' impact in terms of daylight;
- Receptors 1, 3, 4, 5, 6, 7, 8 and 9 may experience a '*Major*' impact in terms of daylight;

7. Annual Probable Sunlight Hours Results (Numerical Results Appendix E)

As stated in section 3 of this report, APSH is a measure of the amount of potential direct sunlight that is available to a given surface. Only windows which face within 90 degrees of due south need to be assessed. BRE Guidance states that windows should continue to receive in excess of 80% of their pre-development value, **or** 25% of available hours over a year / 5% of hours in winter to be considered well - lit **or** if the window has a reduction in sunlight received over the whole year less than 4% of annual sunlight hours.

Annual Sunlight Hours

Of the 27 window receptors tested that are subject to the Annual Sunlight Hours analysis, 25 meet and are in excess of minimum requirements in accordance with BRE Guidelines, providing an overall 93% pass rate, the results show that only receptors 3 and 4 may experience a shortfall in annual sunlight hours.

Winter Sunlight Hours

Of the 27 window receptors tested that are subject to the Annual Sunlight Hours analysis, 18 meet and are in excess of minimum requirements in accordance with BRE Guidelines, providing an overall 67% pass rate, the results show that receptors 18 – 24 and 28 - 29 may experience a shortfall in winter sunlight hours.

8. Conclusion

As previously stated, there are proposals for the demolition of an existing building to make way for the construction of a five – storey residential apartment scheme on the land at 26a Wilbraham Road, Manchester, M14 6JU.

The purpose of this report is to assess the potential impact that the proposed development may have on the immediate surrounding neighbouring dwellings in terms of daylight and sunlight. The immediate neighbouring dwellings that have been identified for analysis being the flats at No.3 – No.7 and No.8 – No.22 Hart Road which are situated adjacent to the west of the proposed development. After site analysis we have established that No.3 – No.7 and No.8 – No.22 Hart Road are classed as the 'worst case' affected residential dwellings due to their proximity in relation to the proposed development.

Using industry standard methodology, we have made numerical analysis to calculate the recommended levels of change in daylight for the window receptors detailed in section 3 of this report.

The main criteria used in this analysis is to show compliance is the Vertical Sky Component and Annual Probable Sunlight Hours for the effect on a neighbouring dwelling's habitable windows.

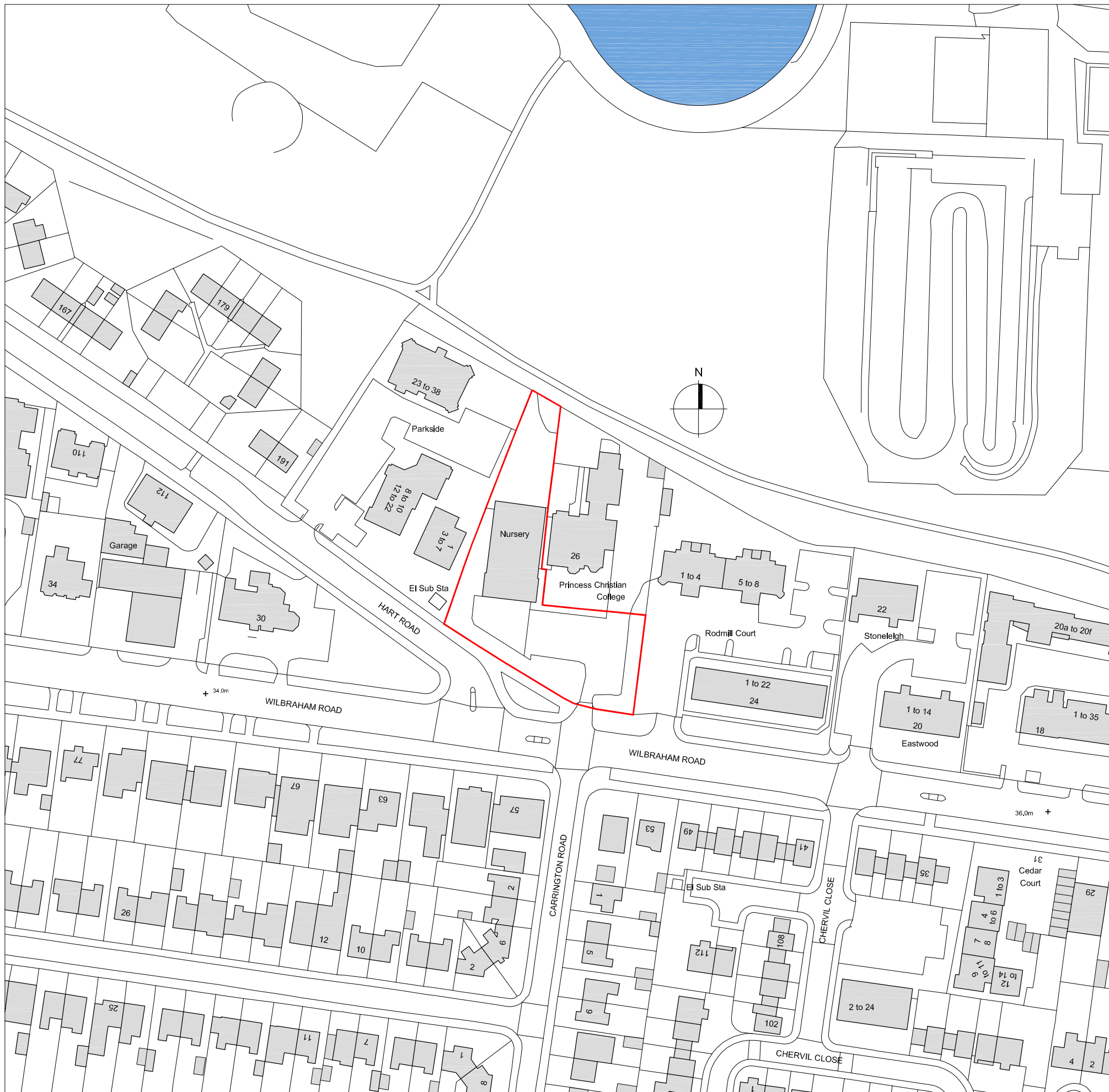
The analysis shows that the majority of window receptors tested meet the minimum requirements in accordance with BRE Guidelines and may only experience a *negligible* impact in terms of daylight and sunlight, with a selection of receptors falling short of minimum requirements.

It must be noted that the Vertical sky component (VSC) and Annual/Winter Probable Sunlight Hours test are a 'spot' measure of the skylight reaching the mid-point of a window from an overcast sky. It represents the amount of visible sky that can be seen from that reference point, from over and around an obstruction in front of the window. That area of visible sky is expressed as a percentage of an unobstructed hemisphere of sky, and, therefore, represents the amount of daylight available for that particular window alone. As it is a 'spot' measurement taken on the outside face of the window, its shortcoming is that it takes no account of the size or number of the windows serving a room, or the size and layout of the room itself.

We must stress that despite the methodology used above and the results that are drawn from it provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole.

Appendices

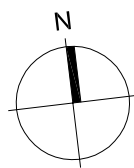
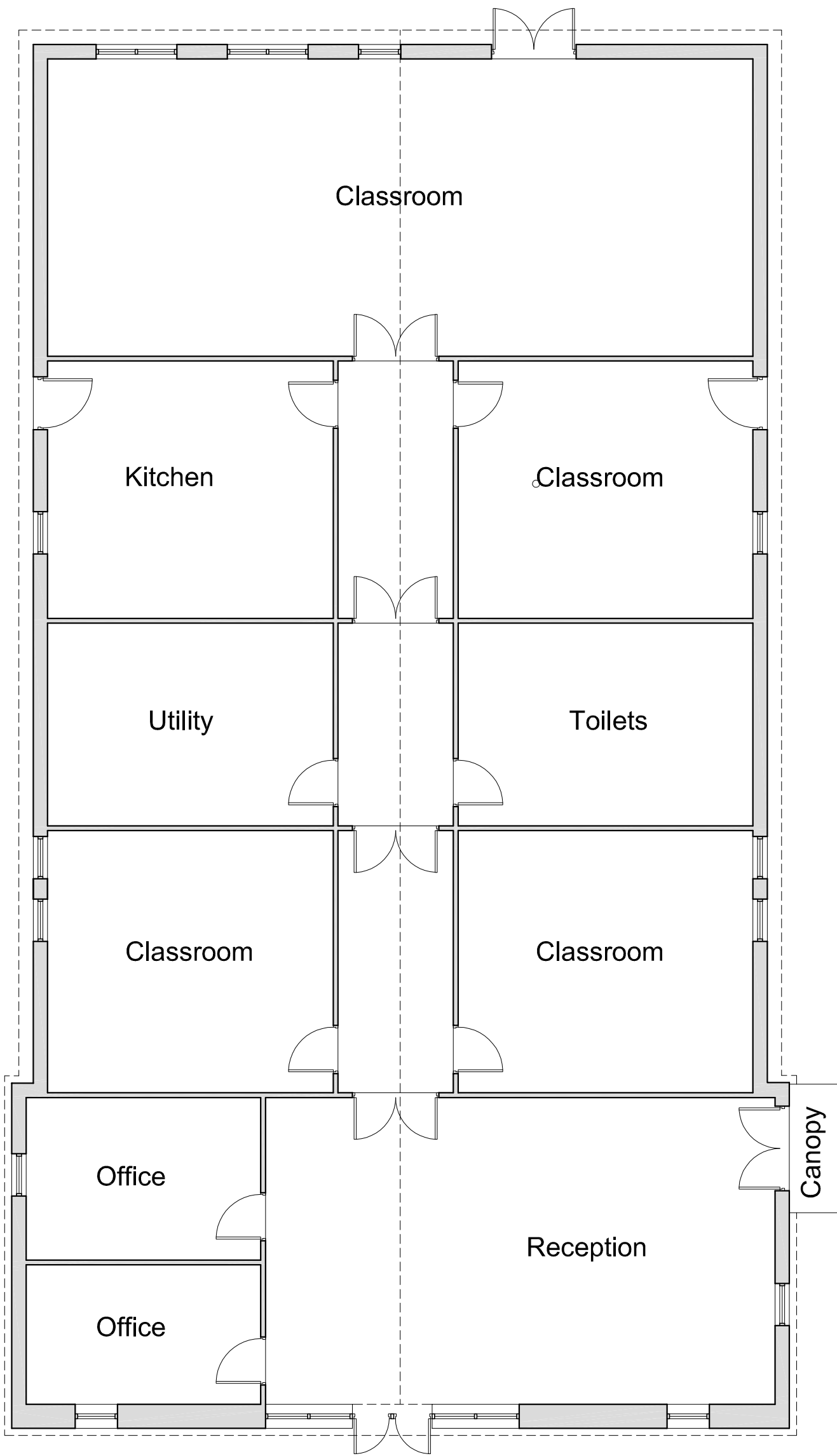
Appendix A: Existing Plans



Location Plan 1:1250

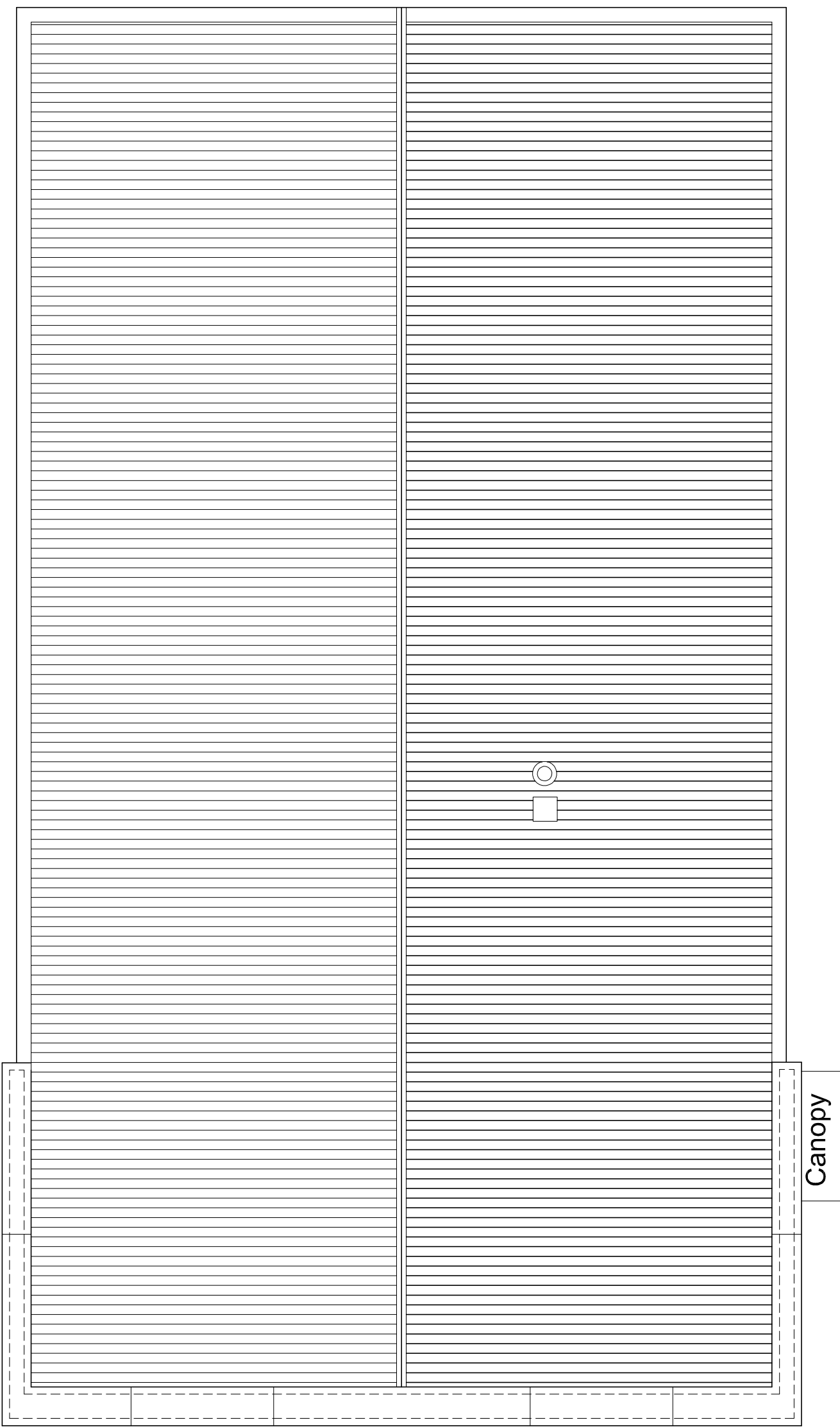
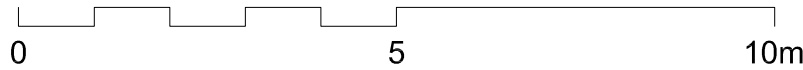
Scale Bar 1:1250





Existing Nursery Floor Plan 1:100

Scale Bar 1:100



Existing Nursery Roof Plan 1:100

Client:

Creative Property People Limited

Project:
26A Wilbraham Road, Fallowfield, Manchester
M14 6JU

Drawing Title:

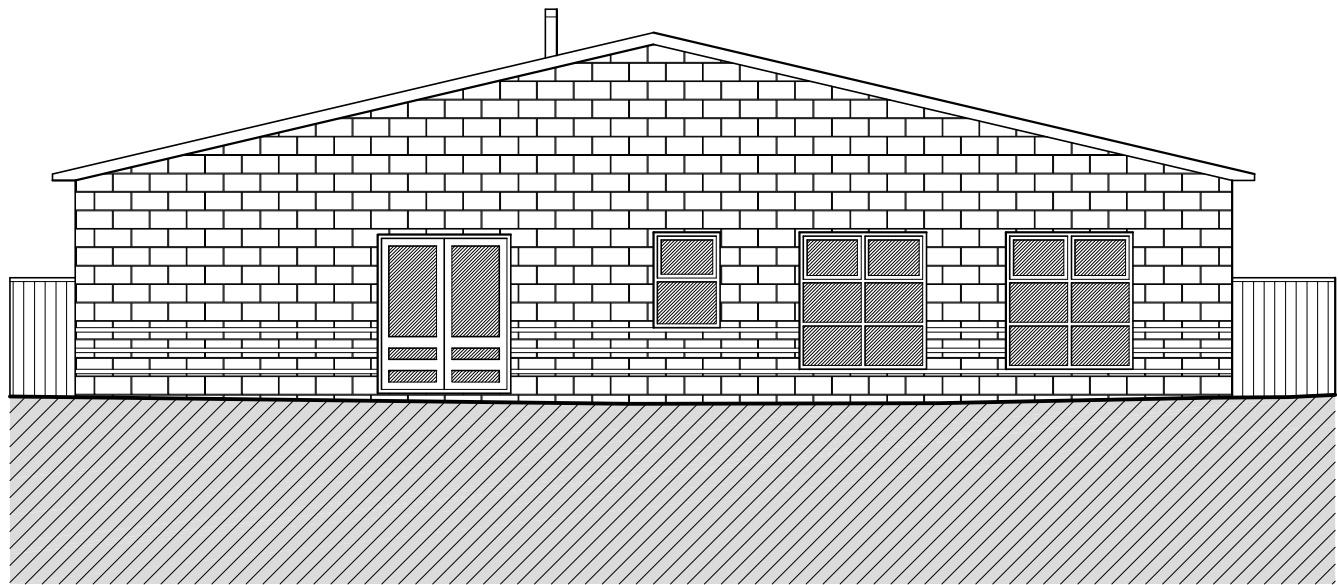
Existing G/F and Roof Plans

Scale:
1:100@ A1

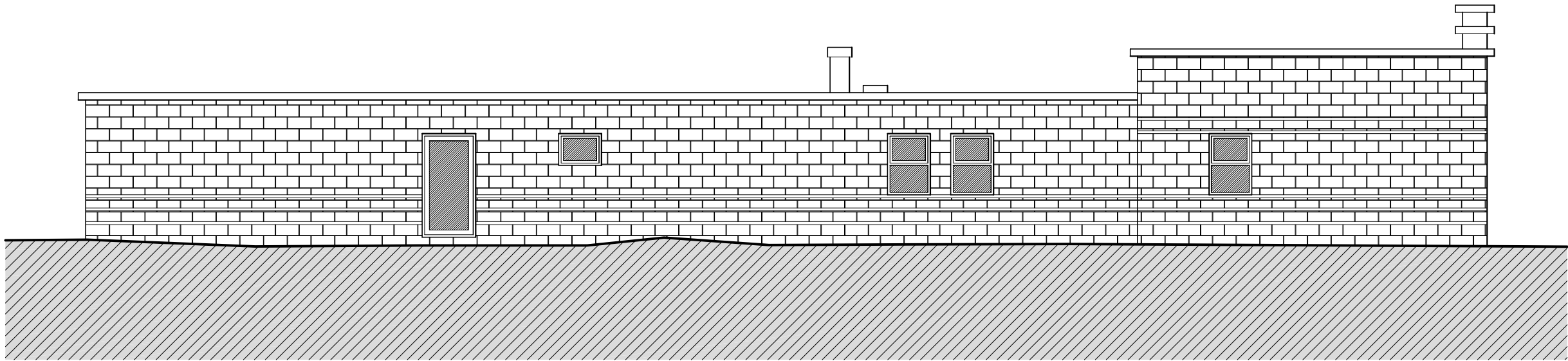
Date:
June 2023

Drawing No:
9792/211

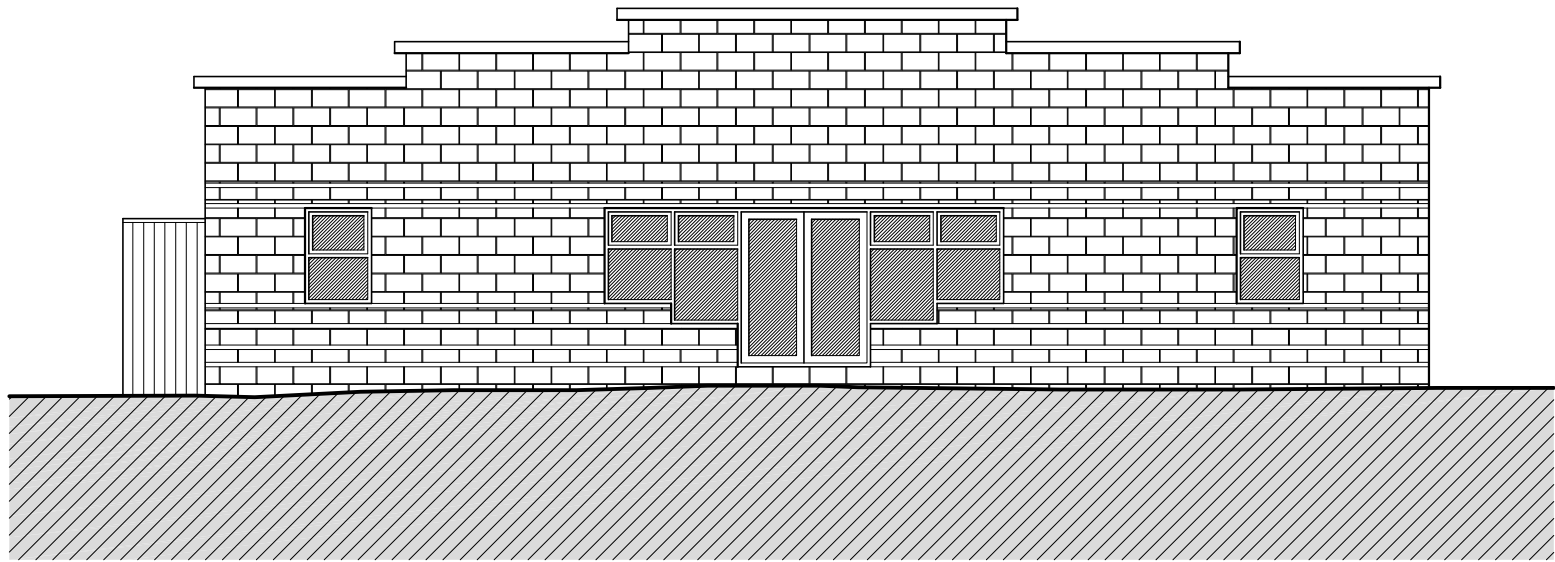
Revision:
A



Existing Rear Wilbraham Road Elevation 1:100

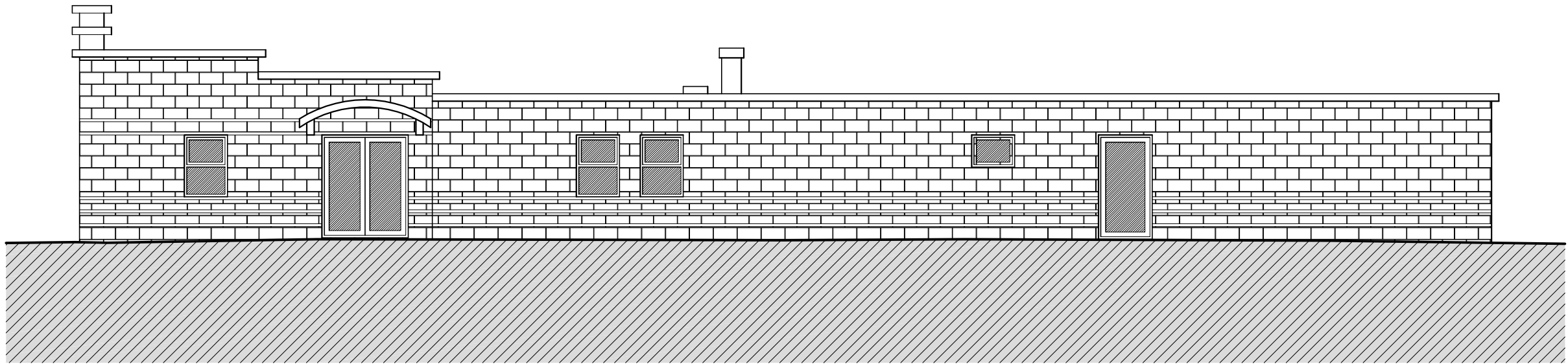
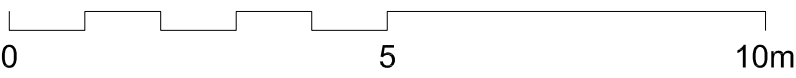


Existing West Elevation 1:100



Existing Wilbraham Road Elevation 1:100

Scale Bar 1:100



Existing East Elevation 1:100

Appendix B: Proposed Plans



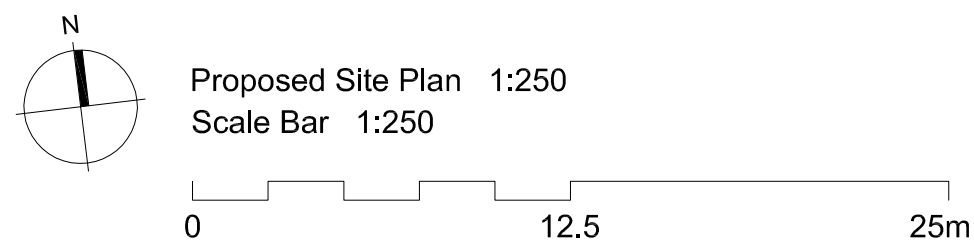
All dimensions are to be checked on site, any discrepancies are to be reported to the Architect before work commences. Do not scale from this drawing.

This drawing is to be read in conjunction with all relevant consultants and specialists drawings / documents, any discrepancies are to be reported to the Architect before the affected work commences.

All structural components shown are indicative only. Details / calculations of structural members are to be provided by the Structural Engineer.

This drawing is copyright.

A	First Issue	20/10/2022
B	Amendments following client's comments 20/10/2022	26/10/2022
C	Amendments following client's comments 27/10/2022	28/10/2022
D	Amendments following receipt of pre-application comments 16/11/2022	12/12/2022
E	Amendments following client's comments 14/12/2022	14/12/2022
F	Amendments following client's comments 17/01/2023	14/02/2023
G	Amendments following receipt of pre-application comments received on 17/01/2023	28/02/2023



--- Demolition
--- Trees to be removed

T+A Tang & Associates Ltd
Chartered Architects

Tel : 0161 877 9587
e-mail: barrytang@tangassociates.co.uk
10/F, 1 City Approach, Albert Street,
Eccles, Manchester, M30 0BS, UK

Client:
Creative Property People Limited

Project:
26A Wilbraham Road, Fallowfield, Manchester M14 6JU

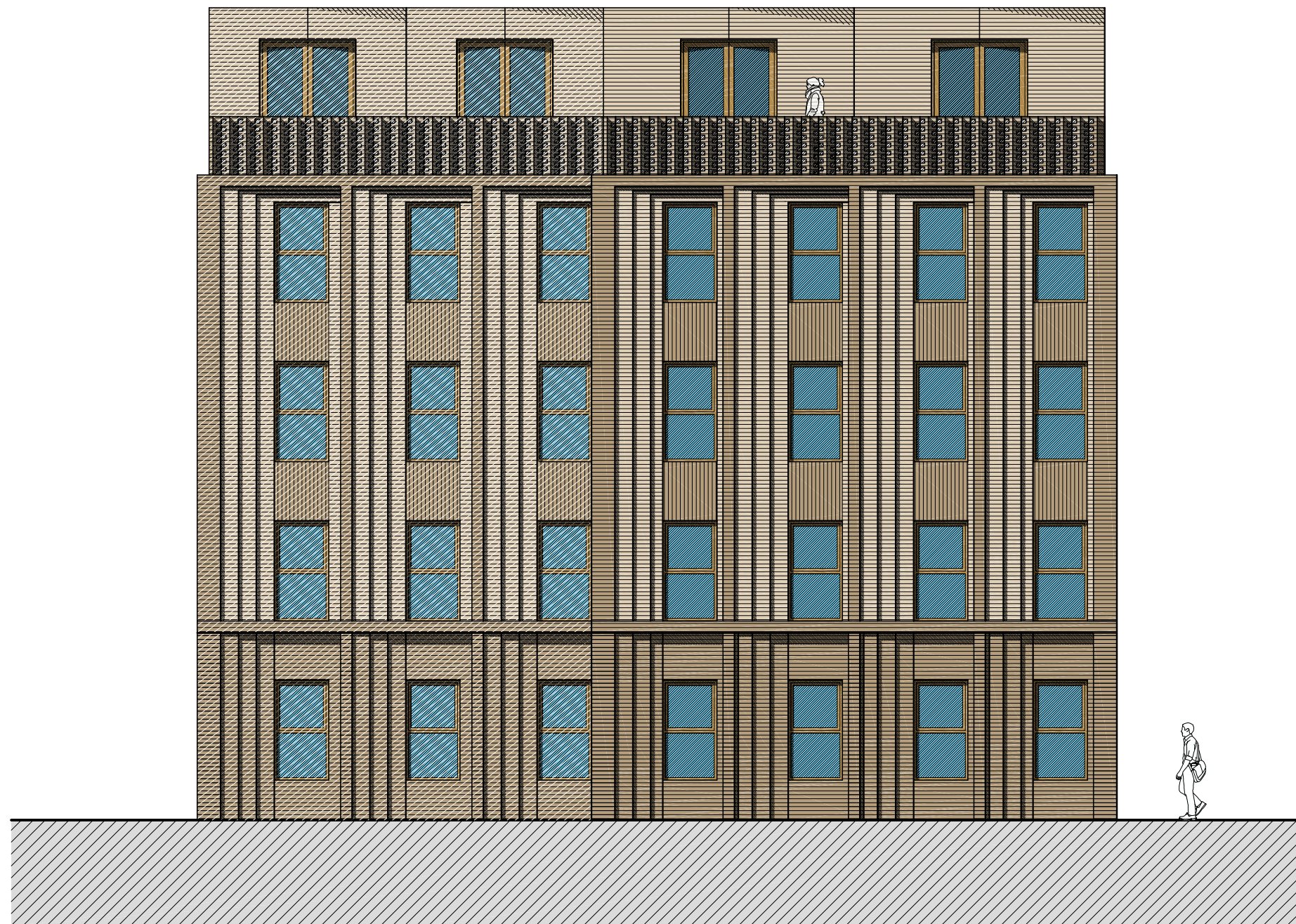
Drawing Title:
Proposed Site Plan

Scale:
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Date:
October 2022

Drawing No:
9792/102

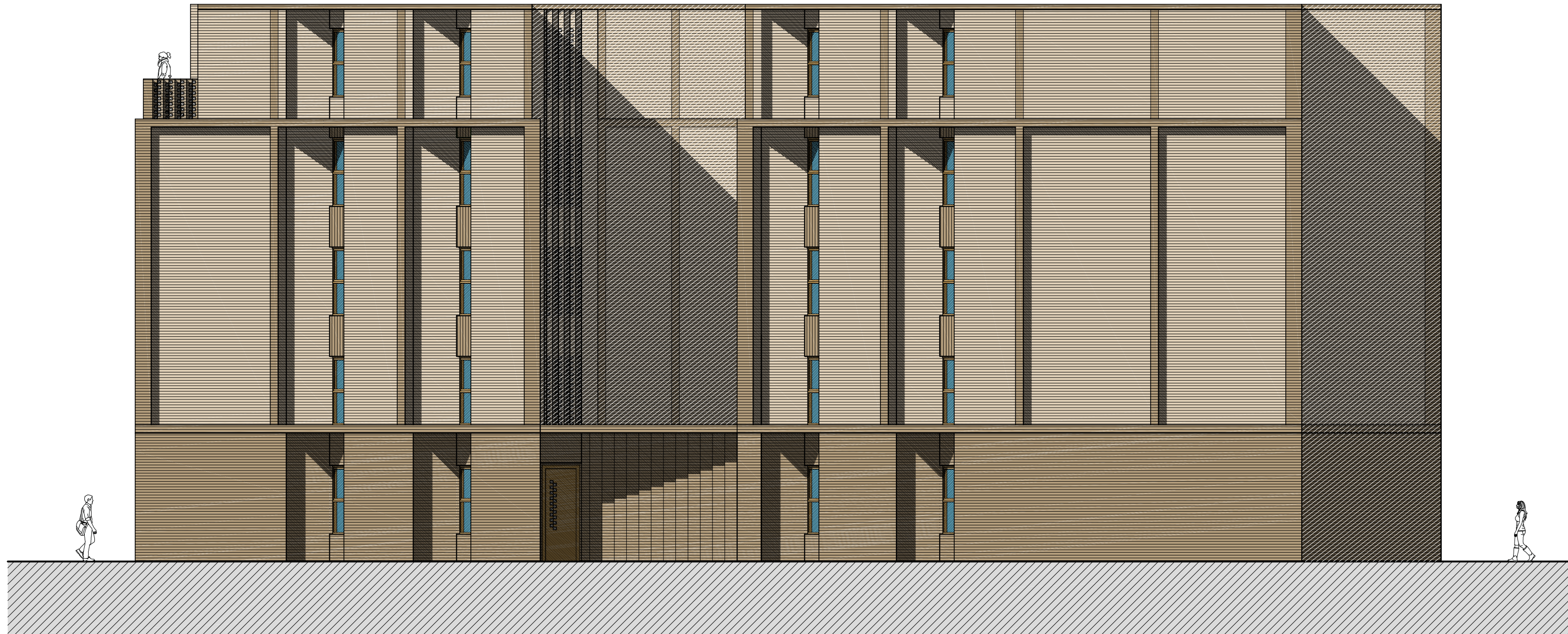
Revision:
G



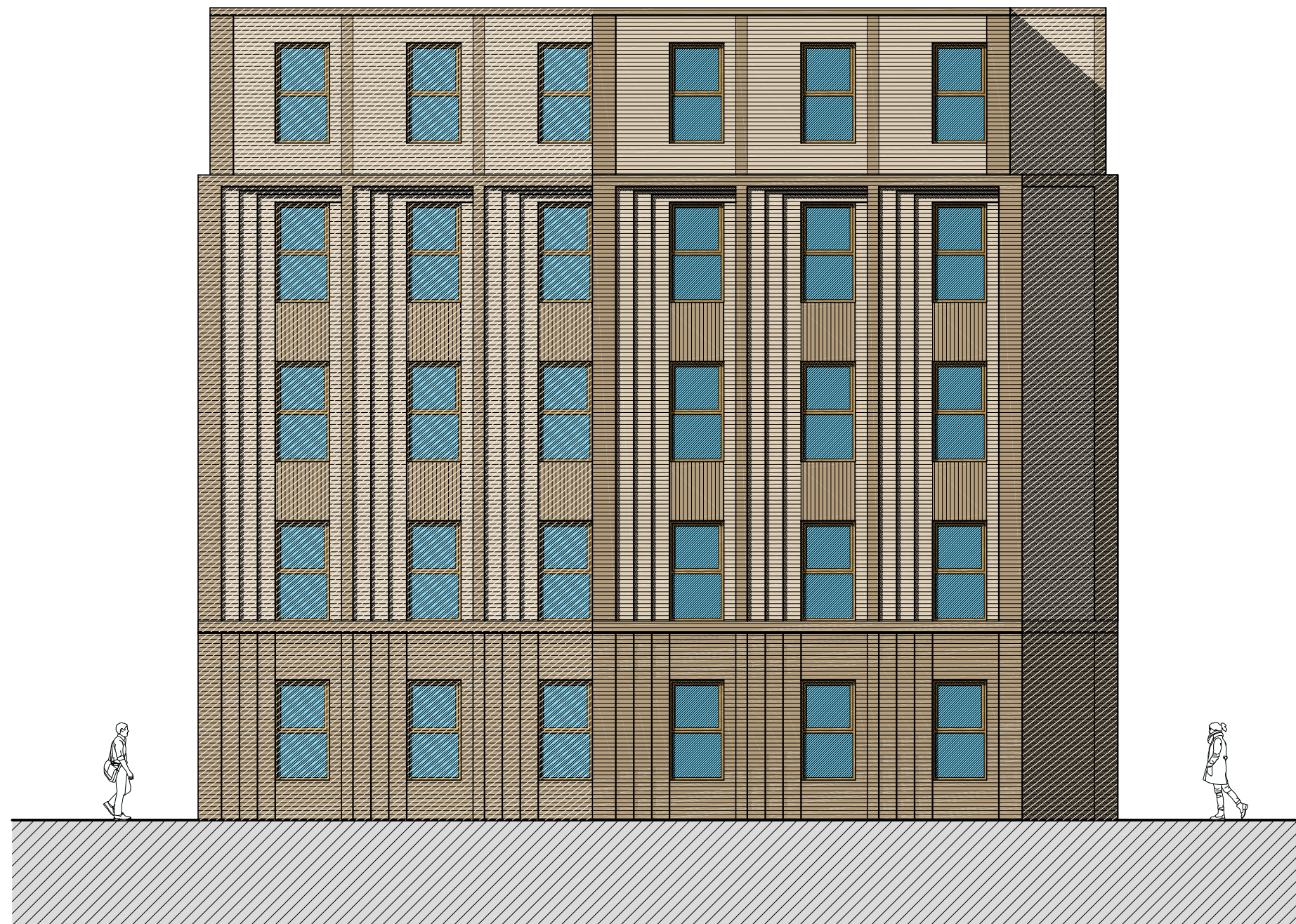
Proposed Wilbraham Road Elevation 1:100

Scale Bar 1:100

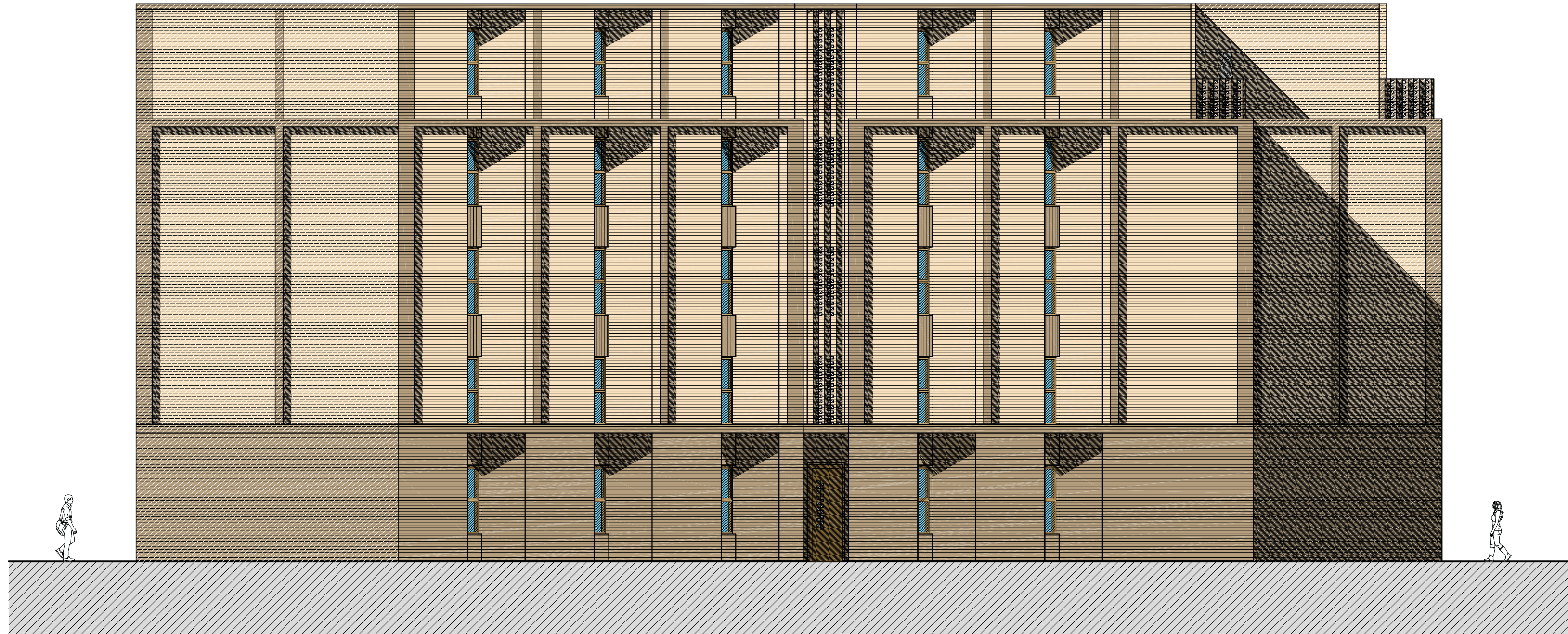
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Proposed East Elevation 1:100



Proposed Rear Elevation 1:100
Scale Bar 1:100
0 5 10m



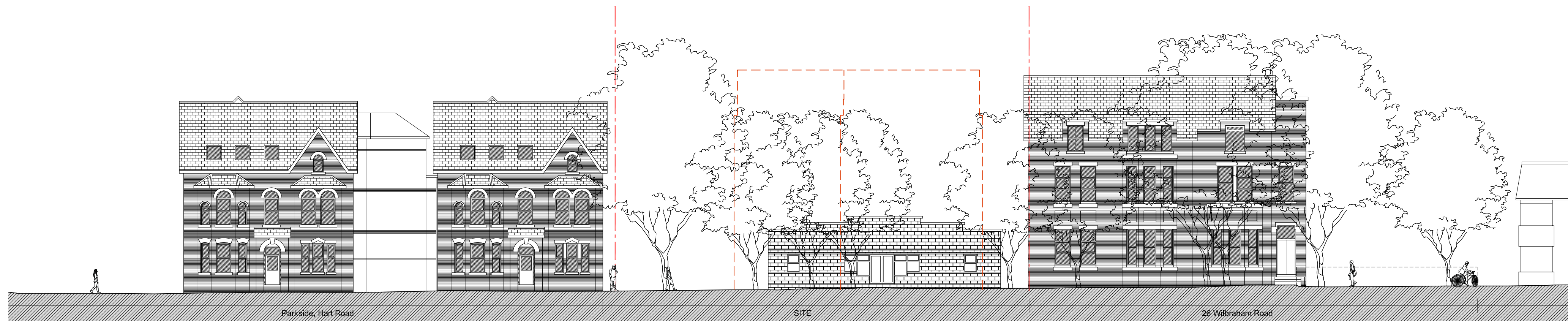
Proposed West Elevation 1:100

All structural components shown are indicative only. Details / calculations of structural members are to be provided by the Structural Engineer.

A	First Issue	20/10/2022
B	Amendments following receipt of pre-application comments 16/11/2022	12/12/2022
C	Amendments following receipt of client's comments	14/12/2022
D	Amendments following receipt of pre-application comments received on 17/01/2023	28/02/2023

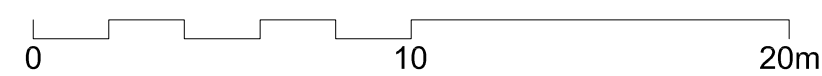


Proposed Wilbraham Road and Hart Road Street-scene 1:200



Existing Wilbraham Road and Hart Road Street-scene 1:200

Scale Bar 1:200



Appendix C: Vertical Sky Component Numerical Results

Project Name:

No.26a Wilbraham Road, Manchester, M14 6JU

Project No:

10873 - Rev0

Report Title:

Vertical Sky Component Analysis - Rev0

Date of Analysis:

23.06.2023

Vertical Sky Component - Numerical Results Rev0			
Receptor	VSC - Existing (%)	VSC - Proposed (%)	% Retained
1	28.63	13.83	48.00%
2	30.16	17.23	57.00%
3	33.84	10.97	32.00%
4	33.40	9.88	30.00%
5	37.02	13.68	37.00%
6	36.76	12.43	34.00%
7	38.29	18.93	49.00%
8	38.11	17.58	46.00%
9	37.71	15.13	40.00%
10	28.83	24.79	86.00%
11	24.60	21.51	87.00%
12	31.17	26.86	86.00%
13	26.05	22.86	88.00%
14	34.07	30.05	88.00%
15	30.56	27.66	91.00%
16	36.43	32.86	90.00%
17	34.86	32.32	93.00%
18	26.07	21.57	83.00%
19	29.06	23.93	82.00%
20	32.30	27.19	84.00%
21	32.76	27.85	85.00%
22	33.15	28.41	86.00%
23	28.57	24.47	86.00%
24	31.67	28.24	89.00%
25	33.63	30.60	91.00%
26	35.95	32.63	91.00%
27	34.36	30.52	89.00%
28	31.57	26.90	85.00%
29	34.53	29.84	86.00%
30	34.89	30.39	87.00%
31	35.18	30.86	88.00%
32	36.49	32.86	90.00%
33	36.71	33.23	91.00%
34	37.80	35.24	93.00%
35	37.89	35.41	93.00%

Appendix D: Annual / Winter Probable Sunlight Hours Numerical Results

Project Name:

No.26a Wilbraham Road, Manchester, M14 6JU

Project No:

10873 - Rev0

Report Title:

Annual Probable Sunlight Hours Analysis - Rev0

Date of Analysis:

23.06.2023

Annual Probable Sunlight Hours				
Window Receptors - Annual Hours		Existing %	Proposed %	% Retained
1		57.00	31.00	54.00%
2		58.00	38.00	66.00%
3		53.00	24.00	45.00%
4		53.00	22.00	42.00%
5		56.00	28.00	50.00%
6		57.00	25.00	44.00%
7		59.00	34.00	58.00%
8		58.00	34.00	59.00%
9		58.00	30.00	52.00%
18		25.00	20.00	80.00%
19		37.00	30.00	81.00%
20		43.00	36.00	84.00%
21		46.00	40.00	87.00%
22		46.00	40.00	87.00%
23		36.00	30.00	83.00%
24		47.00	42.00	89.00%
25		49.00	45.00	92.00%
26		54.00	51.00	94.00%
27		51.00	47.00	92.00%
28		44.00	38.00	86.00%
29		49.00	43.00	88.00%
30		50.00	46.00	92.00%
31		54.00	49.00	91.00%
32		55.00	52.00	95.00%
33		54.00	52.00	96.00%
34		60.00	59.00	98.00%
35		60.00	59.00	98.00%

Project Name:

No.26a Wilbraham Road, Manchester, M14 6JU

Project No:

10873 - Rev0

Report Title:

Winter Probable Sunlight Hours Analysis - Rev0

Date of Analysis:

23.06.2023

Winter Probable Sunlight Hours				
Window Receptors - Winter Hours		Existing %	Proposed %	% Retained
1		20.00	14.00	70.00%
2		20.00	14.00	70.00%
3		18.00	11.00	61.00%
4		18.00	10.00	56.00%
5		20.00	12.00	60.00%
6		20.00	10.00	50.00%
7		20.00	14.00	70.00%
8		20.00	13.00	65.00%
9		20.00	13.00	65.00%
18		2.00	1.00	50.00%
19		4.00	1.00	25.00%
20		6.00	2.00	33.00%
21		6.00	2.00	33.00%
22		6.00	2.00	33.00%
23		4.00	1.00	25.00%
24		8.00	4.00	50.00%
25		10.00	7.00	70.00%
26		14.00	11.00	79.00%
27		11.00	7.00	64.00%
28		5.00	1.00	20.00%
29		9.00	4.00	44.00%
30		10.00	6.00	60.00%
31		14.00	9.00	64.00%
32		15.00	12.00	80.00%
33		14.00	12.00	86.00%
34		20.00	19.00	95.00%
35		20.00	19.00	95.00%