Aberfeldy Village Masterplan Environmental Statement Volume 3: Technical Appendices

## Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare

Annex 1: Planning Policy Annex 2: Methodology and Baseline Results Annex 3: Scenario Overviews and Window Maps Annex 4: Daylight and Sunlight Results Annex 5: Overshadowing Results Annex 6: Solar Glare Results



Aberfeldy Village Masterplan Environmental Statement Volume 3: Technical Appendices

## Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare

Annex 1: Planning Policy Annex 2: Methodology and Baseline Results Annex 3: Scenario Overviews and Window Maps Annex 4: Daylight and Sunlight Results Annex 5: Overshadowing Results Annex 6: Solar Glare Results



## Annex 1

Planning Policy

## Legislation and Planning Policy Context

1.1 The following sections of this ES Chapter annex provide a review of relevant legislation, guidance and national, regional and local planning policy in terms of daylight, sunlight and overshadowing.

## National Legislation

1.2 There is no relevant legislation for daylight, sunlight and overshadowing.

## National Planning Policy

National Planning Policy Framework (2021)

**1.3** The National Planning Policy Framework<sup>1</sup>, updated in July 2021, stipulates that:

"... planning policies and decisions should ensure that developments ... create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users."

1.4 Paragraph 123, part C stipulates that:

use of a site (as long as the resulting scheme would provide acceptable living standards)."

## National Planning Practice Guidance (MHCLG) November 2016 (Last updated July 2021)

1.5 The National Planning Practice Guidance (NPPG) was last updated in July 2019. This document states that the form and scale of tall buildings should be designed with respect to daylight and sunlight patterns and whether the development would have an unreasonable impact on the daylight and sunlight levels enjoyed by neighbouring occupiers.

## **Regional Planning Policy**

The New London Plan (March 2021)<sup>2</sup>

1.7 Policy D6 Housing Quality and Standards states that:

1.8 Policy D9 Tall buildings states that:

spaces, including water spaces, around the building.

"...local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient

• 'The design of development should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space.'

 ...development proposals should address the following impacts: ...buildings should not cause adverse reflected glare [and] ...buildings should be designed to minimise light pollution from internal and external lighting." It continues that "wind, daylight, sunlight penetration and temperature conditions around the building(s) and neighbourhood must be carefully considered and not compromise comfort and the enjoyment of open

<sup>&</sup>lt;sup>1</sup> Department for Communities and Local Government (DCLG), National Planning Policy Framework, 2012. <sup>2</sup> Greater London Authority (GLA), 2021; The New London Plan, 2021.

## The Mayor's Housing Supplementary Planning Guidance (SPG) (March 2016)

**1.9** The SPG<sup>3</sup> draws on the London Plan, primarily policy 7.6Bd, and provides further guidance on standards to daylight, and overshadowing. The guidance states that:

"...an appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts of new development on surrounding properties, as well as within new developments themselves... Guidelines should be applied sensitively to higher density development...where BRE advice suggests considering the use of alternative targets' taking in to account the 'local circumstances; the need to optimise housing capacity; and scope for character and form of an area to change over time."

**1.10** Standard 32 states that:

"All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight."

**1.11** It is also states that:

"Natural light is also vital to a sense of wellbeing in the home, and this may be restricted in densely developed parts of the city". The Mayor seeks to encourage housing that provides comfortable and enjoyable places of retreat and privacy" and factors to be considered include daylight and sunlight."

## Local Planning Policy

London Borough Of Tower Hamlets Local Plan 2031: Managing Growth and Sharing Benefits (January 2020)

- **1.12** The recently adopted local plan provides spatial policies, development management policies and site allocations to guide and manage development in the borough. The policy document states that "a sunlight and daylight assessment must accompany all major planning applications and/or smaller schemes where adverse effects on daylight and sunlight levels are anticipated."
- **1.13** Policy S.DH1 notes that "development is required to meet the highest standards of design, layout and construction which respects and positively responds to its context, townscape, landscape and public realm at different spatial scales". In order to achieve this, developments must:

"use design and construction techniques to ensure that the development does not result in unacceptably harmful impacts arising from overheating, wind, air pollution, light pollution and noise pollution and the loss of sunlight and daylight."

**1.14** Additionally, Policy D.DH8 states that development is required to protect and where possible enhance amenity in order to:

"ensure adequate levels of daylight and sunlight for new residential developments, including amenity spaces within the development.

not result in an unacceptable material deterioration of the sunlight and daylight conditions of surrounding development and not resulting in an unacceptable level of overshadowing to surrounding open space and private outdoor space, and

not create unacceptable levels of artificial light, odour, noise, fume or dust pollution during the construction and life of the development."

#### London Borough Of Tower Hamlets Tall Buildings Study Draft Report (July 2017)

#### Tall Building Design

This must consider in particular:

"The design to minimise impacts on microclimate including wind, overshadowing and daylighting, solar glare and light pollution."

## Impact On The Local Environment Impact On Microclimate

- building types. The following micro-climatic impacts will need particular attention:
  - "Overshadowing and Day Lighting
  - Solar Glare and Light Pollution'

## Other Relevant Policy, Standards and Guidance

## Historic England Guidance on Tall Buildings – Historic England Advice Note 4 (2015)

**1.17** Paragraph 4.10 of the Historic England Advice Note 4 recommends that the following should be addressed in relation to tall buildings:

"consideration of the impact on the local environment, including microclimate, overshadowing, night-time appearance, vehicle movements and the environment and amenity of those in the vicinity of the building".

Building Research Establishment (BRE) Guidelines: Site Layout Planning for Daylight and Sunlight 2011, A Guide to Good Practice, Second Edition (2011)

1.18 The Building Research Establishment (BRE) Guidelines 'Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice 2011. 2nd edition' (released October 2011)<sup>5</sup> ('BRE Guidelines') provides advice on site layout planning to achieve good sunlighting and daylighting within buildings. and in the open spaces between them. The BRE Guidelines are intended for use by building designers, developers, consultants and Local Planning Authorities (LPAs). The advice presented in the BRE Guidelines is not mandatory and should not be used as an instrument of planning policy. the Guidelines state:

"This guide is a comprehensive revision of the 1991 edition of Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location."

**1.19** The BRE Guidelines also state:

"The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. In special circumstances the developer or planning authority may wish to use different target values... in an area with modern high-rise buildings, a higher degree of obstruction maybe unavoidable if new developments are to match the height and proportions of existing building" (para.1.6).

**1.20** In addition, the BRE Guidelines state:

"it is intended to be read in conjunction with the interior daylighting recommendations in the British Standard 8206-2 Code of practice for daylighting, and in the CIBSE publication Lighting guide: daylighting and window design" (para. 1.3).

**1.15** As with any other development, the London Plan and the borough's design policies apply in guiding an appropriate and high quality design response. However, tall building developments should bring forward an exceptionally well considered urban design response and due to its wider visibility and prominence the architectural quality of a tall building needs specific attention.

**1.16** Tall buildings, due to their size and their significant extension above the typical height in an area, will have significantly greater impacts on the local microclimate than other ordinary

<sup>&</sup>lt;sup>3</sup> GLA, 2016, Housing Supplementary Guidance, 2016.

<sup>&</sup>lt;sup>4</sup> Building Research Establishment (BRE) Guidelines: Site Layout Planning for Daylight and Sunlight 2011, A Guide to Good Practice, Second Edition, 2011

"Daylighting gives to a building a unique variety and interest. An interior which looks gloomy, or which does not have a view to the outside when this could reasonably be expected, will be considered unsatisfactory by its users."

**1.21** The CIE 146:2002 Collection on glare<sup>5</sup> states:

"Disability glare is glare that impairs vision (CIE, 1987). It is caused by scattering of light inside the eye [...]. The veiling luminance of scattered light will have a significant effect on visibility when intense light sources are present in the peripheral visual field and the contrast of objects to be seen is low."

"Disability glare is most often of importance at night when contrast sensitivity is low and there may well be one or more bright light sources near to the line of sight, such as car headlights, streetlights or floodlights. But even in daylight conditions disability glare may be of practical significance: think of traffic lights when the sun is close to them, or the difficulty viewing paintings hanging next to windows."

<sup>&</sup>lt;sup>5</sup> International Commission on Illumination (CIE) CIE Collection on Glare (CIE 146:2002)

Aberfeldy Village Masterplan Environmental Statement Volume 3: Technical Appendices

## **Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare**

**Annex 1: Planning Policy Annex 2: Methodology and Baseline Results Annex 4: Daylight and Sunlight Results Annex 5: Overshadowing Results Annex 6: Solar Glare Results** 

**Annex 3: Scenario Overviews and Window Maps** 



## Annex 2

Methodology and Baseline

## Methodology

Approach for Daylight, Sunlight, Overshadowing and Light Pollution Assessments

The technical analyses carried out to inform the assessments have been undertaken by creating a digital three dimensional (3D) model of the existing site and Proposed Development, based on measured survey data.

## Davlight

Vertical Sky Component

The VSC method of assessment is defined in the BRE Guidelines as the:

"ratio of that part of illuminance at a point on a given vertical plane that is received directly from a CIE standard overcast sky, to illuminate on a horizontal plane due to an unobstructed hemisphere of this sky".

The 3D model uses Waldram Diagrams to establish the VSC and 3D geometric calculations for daylight distribution. This model (which is orientated to north by the use of Ordnance Survey (OS) information) enables the path of the sun to be tracked throughout the year to establish the shadow cast by the existing and proposed buildings, and thus calculate the sun hours on ground in each scenario.

Only those surrounding properties which have windows facing towards the application site were included in the assessment. If a nearby property has no windows facing the application site, these properties would not be affected by the Proposed Development in terms of light.

The assessment is calculated from the centre of a window on the outward face and measures the amount of light available on a vertical wall or window following the introduction of visible barriers, such as buildings.

The maximum VSC value is almost 40% for a completely unobstructed vertical wall or window. In terms of assessment criteria, the BRE Guidelines state that:

"If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if either:

- the VSC measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value
- the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value."

No Sky Line

The BRE Guidelines state that where room layouts are known, the effect on the daylight distribution can be calculated by plotting the NSL. In terms of the surrounding receptors, it has not been possible to obtain room layouts for all of the properties and therefore layouts have been assumed where information is not available.

The NSL method is a measure of the distribution of daylight at the 'working plane' within a room. The 'working plane' is a horizontal plane 0.85m above finished floor level for residential properties. The NSL divides those areas of the working plane which can receive direct sky light from those which cannot. If a significant area of the working plane lies beyond the NSL (i.e. it receives no direct sky light), then the distribution of daylight in the room may be poor and supplementary electric lighting may be required.

Where actual room layouts were available, these have been considered in the modelling of the internal layouts within the surrounding properties. Obtaining these room layouts enables precise evaluation of the diffuse levels of daylight within each of the rooms via the NSL. Where layout information was not available assumptions have been made as to the use and internal configuration of the rooms (from external observations) behind the fenestration observed. In such

cases a standard 4.2m (14 ft) room depth has been assumed, unless the building form dictated otherwise. This is common practice where access to buildings for surveying is unavailable.

The potential effects of daylighting distribution in an existing building can be found by plotting the NSL in each of the main rooms. For houses, this will include living rooms, dining rooms and kitchens. Bedrooms should also be analysed, although they are less important. The BRE Guidelines identify that if the area of a room that does receive direct sky light is reduced to less than 0.8 times its former value, then this would be noticeable to its occupants.

In relation to deep rooms lit by windows on one side, the BRE Guidelines state (para. 2.2.10):

*"If an existing building contains rooms lit from one side only and greater than 5 m deep, then a greater movement of the no sky line may be unavoidable."* 

#### Average Daylight Factor

The BRE Guidelines state the following in Appendix C:

"If a predominantly day lit appearance is required, then ADF should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. There are additional recommendations for dwellings of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. These additional recommendations are minimum values of Average Daylight Factor, and should be attained even if a predominantly day lit appearance is not achievable."

This method of assessment takes into account the total glazed area to the room, the visible light transmittance of the glazing proposed, the total area of the room surfaces including ceilings and floors, and the internal average reflectance for the room being assessed. The method also takes into account the VSC and the quantum of reflected light.

This is, therefore, a significantly more detailed method of assessment than the VSC method.

The BRE Guidelines state that this method of assessment for daylight should be applied to new developments rather than existing neighbouring buildings, unless the internal subdivision of the properties is known; whereby the ADF may be used to inform the light potential.

The ADF gives a more detailed assessment of the daylight within a room and takes into account the highest number of factors in establishing a quantitative output.

#### Sunlight

Annual Probable Sunlight Hours

APSH is measured using a sun indicator containing 100 spots, each representing 1% of APSH. Therefore, where no obstruction exists the total annual probable sunlight hours would amount to 1486 hours and therefore each spot equates to 14.86 hours of the total annual sunlight hours.

The number of spots is calculated for the baseline and Proposed Development scenarios during the year and also during the winter period, and a comparison made between the two. This provides a percentage of APSH for each window assessed.

The BRE Guidelines note that:

- "In housing, the main requirement for sunlight is in living rooms, where it is valued at any time of day, but especially in the afternoon.";
- "all main living rooms of dwellings...should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.";
- *"If the main living room to a dwelling has a main window facing within 90° of due north, but a secondary window facing within 90° of due south, sunlight to the secondary window should be checked."; and*
- "...a south facing window will, in general, receive most sunlight, while a north facing one will receive it only on a handful of occasions. East and west facing windows will receive sunlight only at certain times of day".

In relation to existing surrounding receptors, the BRE Guidelines state that a window may be adversely affected if a point at the centre of the window receives for the whole year, less than 25% of the APSH, including at least 5% of the APSH during the winter months (21<sup>st</sup> September to 21<sup>st</sup> March) and less than 0.8 times its former sunlight hours during either period, and if there is a reduction in total APSH which is greater than 4%.

It is often not possible to determine the room uses within each of the neighbouring properties, nor is it clear which windows should be considered as the 'main windows'. Therefore, regardless of use, all the rooms with windows facing the site and within 90° of due south have been considered in the assessment.

#### Summary of Criteria for Daylight and Sunlight

The following table provides a summary of the criteria set out within the BRE Guidelines for daylight and sunlight.

## Table 9.1 Summary of Daylight and Sunlight Assessment Criteria

Method	BRE Criteria
VSC	A window may of the window
NSL	A room may b reduced beyor
ADF	Bedroom 1%,
APSH	A window may received for th 5% of the APS and less than ( for existing ne which is greate

## Transient Overshadowing

Where a Proposed Development includes tall buildings, these may affect the sunlight availability to gardens or open spaces in close proximity to the site. Owing to the southerly location of the sun path, only amenity areas located within 90° of due north of the Proposed Development have the potential to be affected by overshadowing from tall buildings and therefore taken into consideration in this assessment.

The 2011 BRE guidelines suggest plotting a series of shadow plans illustrating the location of shadows cast from those buildings at different times of the day and period of the year to assess the potential overshadowing effects. To this end, the overshadowing plots are mapped for the three key dates listed below:

- 21<sup>st</sup> March (Spring Equinox);
- 21 st June (Summer Solstice); and
- 21 <sup>st</sup> December (WinterSolstice).

The 21st September (Autumn Equinox) is not assessed owing to the identical solar altitude and therefore equivalent outcomes of overshadowing to those presented for 21 <sup>st</sup> March.

For each of these dates, the overshadowing is calculated at hourly intervals throughout daylight hours from sunrise to sunset. On 21st December, the sun is at its lowest altitude consequently creating long shadows to be cast and represents the worst-case scenario in terms of overshadowing.

The analysis described above varies according to different latitudes. The Site is located within London, which is at a latitude of 51.5° north.

ay be adversely affected if its VSC measured at the centre v is less than 27% and less than 0.8 times is former value.

be adversely affected if the daylight distribution (NSL) is ond 0.8 times its existing area.

Living room 1.5% and kitchen 2%.

by be adversely affected if a point at the centre of the window he whole year, less than 25% of the APSH including at least SH during the winter months (21<sup>st</sup> September to 21<sup>st</sup> March) 10.8 times its former sunlight hours during either period, and eighbouring buildings, if there is a reduction in total APSH ter than 4%.

## Sun Hours on Ground

The BRE Guidelines suggest that Sun Hours on Ground assessments should be undertaken on the Equinox (21<sup>st</sup> March and 21<sup>st</sup> September). Using specialist software, the path of the sun is tracked to determine where the sun would reach the ground and where it would not.

It is recommended that at least half of a garden or amenity area should receive at least 2 hours of sunlight on 21<sup>st</sup> March or the area which receives 2 hours of direct sunlight should not be reduced to less than 0.8 times its former value (i.e. there should be no more than a 20% reduction).

### Solar Glare Technical Assessment

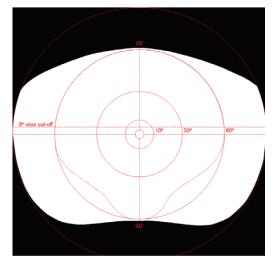
The potential for reflected solar glare or dazzle from glazed or reflective façades from the Proposed Development has been assessed using specialist lighting software, Radiance, showing the path of the sun for the entire year. From this, two computer generated angular images have been produced for each selected viewpoint, indicating the area which sees the reflection of the sun path at any point during the year. A modified diagram portraying a standardised extent of human vision is then overlaid onto the image.

The viewpoints are generally located at the minimum stopping distance and at the driver's eye height. The focal point is a relevant traffic element, such as signals or incoming traffic. The stopping distance is calculated as the combination of thinking and breaking distances Dtotal = Dthinking + Dbreaking =  $V^*T + V2/(2\mu^*g)$ , where each component is:

- V = Relevant vehicle speed, typically the road speed limit.
- T = Thinking time (0.67 sec)
- $\mu$  = Breaking effort (considered 0.65 for cars, 0.5 for
- buses and 0.031 for trains)
- g = Gravity acceleration.

Typical	Stopping	Dista	ances		(http://	Von wiking	dia.org/wiki
20 mph (32 km/h)		= 12 metro or three ca	es (40 feet) r lengths			ntralis_in_macula)	
<b>30 mph</b> (48 km/h)	9 m	14 m	= 23 metres (75 or six car lengths			Thinking Distan	ce Braking Distance
<b>40 mph</b> (64 km/h)	12 m 🔪		24 m	= 36 metres (118 feet) or nine car lengths			Average car length = 4 metres (13 feet)
50 mph (80 km/h)	15 m	$\rangle$	38 m		= 53 metres (175 feet) or thirteen car lengths		
60 mph (96 km/h)	18 m	$\rightarrow$		55 m		= 73 metres (240 feet) or eighteen car lengths	
70 mph	21 m				75 m		= 96 metres (315 feet)

The below highlights the degrees of vision corresponding to the foveal view, with a red circle of 3° of angle in order to identify the area most sensitive to reflected solar glare. Another red circle represents the incidence of the 30° radius of our typical field of view in order to identify a secondary area of sensitivity to potential reflected glare instances.



As stated in the International Commission on Illumination (CIE) CIE Collection on Glare (CIE 146:2002), occurrences at angles beyond 30° would be of little significance in most situations but may be relevant in exceptional circumstances. When seated in a driving seat of a typical car, for example, the limits of the windscreen would generally obstruct the driver's view at angles beyond 30° from the line of sight. The methodology for solar glare is not aimed at addressing the intensity of an instance of reflected solar glare, but rather its occurrence, duration throughout the year and the location of this occurrence in respect of an individual's line of sight. It is also to be noted that the hours presented reflect solar time and therefore do not take Daylight Saving Hours into account. It must be noted that the solar glare assessments undertaken assume a worst-case scenario whereby the sun will shine every day during daylight hours which is not the case within the UK.

		NENT	NO SKY	LINE	ANNUAL PROBABLE SUNLIGHT HOURS WINDOWS		
	_		ROOMS	DACC			
	TOTAL	PASS	TOTAL	PASS	TOTAL	PASS	
110-126 LEVEN ROAD	95	59	36	36	59	59	
128-132 LEVEN ROAD	35	25	24	19	25	25	
			24		32		
134-144 LEVEN ROAD	56	22		21		32	
177-195 ABBOTT ROAD	85	42	48	41	42	41	
199-225 ABBOTT ROAD	179	72	90	77	94	75	
49-67 ABBOTT ROAD	70	45	41	35	37	36	
ABERFELDY ESTATE PHASE ONE BLOCK A	57	9	45	34	12	0	
ABERFELDY ESTATE PHASE ONE BLOCK C	98	16	61	34	43	17	
ABERFELDY ESTATE PHASE THREE BLOCK G	47	14	25	16	22	0	
ABERFELDY ESTATE PHASE THREE BLOCK J	111	44	56	56	27	13	
ABERFELDY ESTATE PHASE TWO BLOCK D	57	23	35	31	4	2	
AILSA WHARF BLOCK A	45	12	21	20	42	16	
AILSA WHARF BLOCK D	228	67	88	74	147	87	
AILSA WHARF BLOCKS K L	62	10	27	11	25	14	
ATELIER COURT	117	72	97	95	110	82	
BALFRON TOWER	62	42	54	26	8	4	
BROMLEY HALL	100	54	31	29	34	28	
CARRADALE HOUSE	77	55	44	44	22	11	
CULLODEN PRIMARY	90	16	21	0	43	11	
SCHOOL	90	10		0	43	15	
DEWBERRY STREET 16-46	72	50	44	44	48	46	
DEWBERRY STREET 2-14	44	17	25	19	37	34	
DEVONS WHARF	169	42	91	77	69	51	
JOSHUA STREET 1-15	77	28	31	23	26	16	
JOSHUA STREET 17-33	55	36	36	34	33	30	
JOSHUA STREET 35-41	30	15	17	17	19	16	
JOSHUA STREET 4	4	0	2	2	19	0	
JOSHUA STREET 6-14	27	10	17	17	20	15	
LANSBURY GARDENS 2-12	43	30	17	17	22	22	
LEVEN ROAD PHASE THREE	43 73	30	62	58	44	28	
LOREN APPARTMENTS	73 26	15	18	16	26	13	
MILLS GROVE 1-9	25	17	17	14	11	11	
MILLS GROVE 12-20	25	5	15	14	8	2	
MILLS GROVE 17-25	27	13	15	15	8	7	
MILLS GROVE 2-10	25	7	15	14	9	5	

MILLS GROVE 9-15	22	14	12	11	6	4
ST LEONARDS ROAD 118-	40	22	23	23	9	8
132						
ST LEONARDS ROAD 134-	43	25	28	28	7	7
146						
ST LEONARDS ROAD 148-	20	10	10	10	4	3
154						
SHERMAN HOUSE	69	48	43	43	35	35
ST.NICHOLAS CHURCH	59	35	31	31	37	33
WOOSTER GARDENS 1-7	33	10	16	14	29	16
WOOSTER GARDENS 9-15	20	19	16	16	16	16
TOTALS	2699	1197	1470	1257	1352	975

Aberfeldy Village Masterplan Environmental Statement Volume 3: Technical Appendices

# Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare

Annex 1: Planning Policy Annex 2: Methodology and Baseline Results Annex 3: Scenario Overviews and Window Maps Annex 4: Daylight and Sunlight Results Annex 5: Overshadowing Results Annex 6: Solar Glare Results



## BASELINE

Project Name:	Aberfeldy Village
Project number:	15382
Release:	Rel 14-16
IR:	IR39-55
Source of information:	Vu.City, Levitt Bernstein Architects IR49, Morris And Co. Architects IR39
Date:	13/10/2021
Drawing no.:	01



Drawing: 01

			NEIGHBOURS ADDRESSES		
1	Carradale House	11	2-12 Lansbury Gardens	21	Devons Wharf
2	Balfron Tower	12	1-7 Wooster Gardens	22	Leven Road Phase 3
3	Culloden Primary School	13	Loren Apartments (Aberfeldy Tavern)	23	Atelier Court
4	Aberfeldy Estate Phase 3 - Block J	14	Sherman House	24	Bromley Hall School
5	Aberfeldy Estate Phase 3 - Block G	15	St. Nicholas Church	25	Ailsa Wharf - Block A
6	Aberfeldy Estate Phase 2 - Block D	16	177-195 Abbott Road	26	Ailsa Wharf - Block D
7	Aberfeldy Estate Phase 1 - Block A	17	134-144 Leven Road	27	Ailsa Wharf - Blocks K-L
8	Aberfeldy Estate Phase 1 - Block C	18	128-132 Leven Road	28	1-14 & 16-46 Dewberry St
9	49-67 Abbott Road	19	199-225 Abbott Road	29	4, 6-14, 1-15, 17-33 & 35-41 Joshua St
10	9-15 Wooster Gardens	20	110-126 Leven Road	30	1-9, 2-10, 9-15, 12-20, 17-25 Mills Grove
				31	118-132, 134-146, 148-154 St

31 Leonards Rd



Drawing: 02



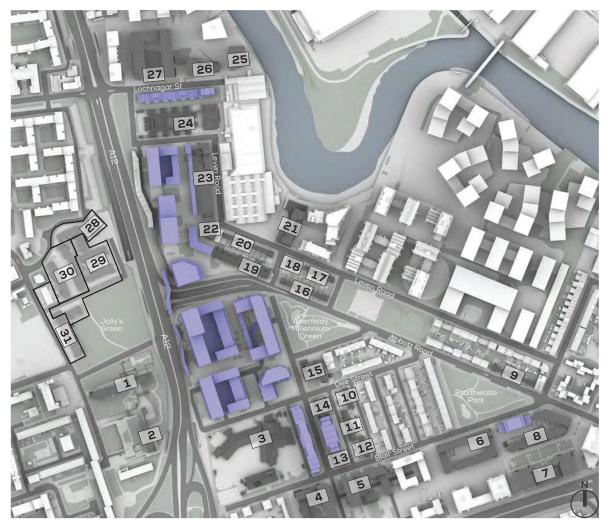
Drawing: 03



Project Name:	Aberfeldy Village
Project number:	15382
Release:	Rel 14-16
IR:	IR39-55
Source of information:	Vu.City, Levitt Bernstein Architects IR49, Morris And Co. Architects IR39
Date:	13/10/2021
Drawing no.:	02-03

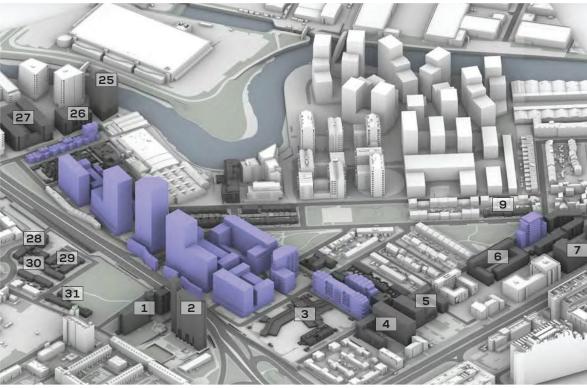
## **MAX PARAMETER**

Project Name:	Aberfeldy Village
Project number:	15382
Release:	Rel 14-16
IR:	IR39-55
Source of information:	Vu.City, Levitt Bernstein Architects IR49, Morris And Co. Architects IR39
Date:	13/10/2021
Drawing no.:	04

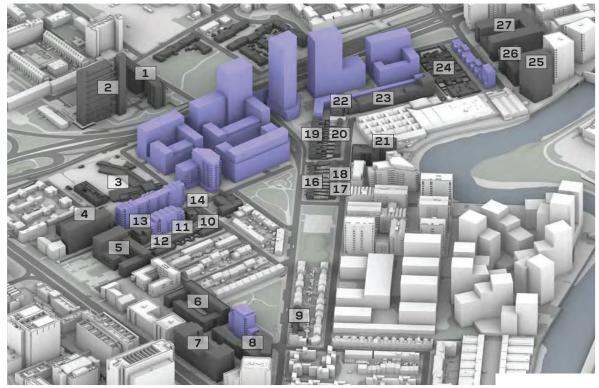


Drawing: 04

		NEIGHBOURS ADDRESSES		
Carradale House	11	2-12 Lansbury Gardens	21	Devons Wharf
Balfron Tower	12	1-7 Wooster Gardens	22	Leven Road Phase 3
Culloden Primary School	13	Loren Apartments (Aberfeldy Tavern)	23	Atelier Court
Aberfeldy Estate Phase 3 - Block J	14	Sherman House	24	Bromley Hall School
Aberfeldy Estate Phase 3 - Block G	15	St. Nicholas Church	25	Ailsa Wharf - Block A
Aberfeldy Estate Phase 2 - Block D	16	177-195 Abbott Road	26	Ailsa Wharf - Block D
Aberfeldy Estate Phase 1 - Block A	17	134-144 Leven Road	27	Ailsa Wharf - Blocks K-L
Aberfeldy Estate Phase 1 - Block C	18	128-132 Leven Road	28	1-14 & 16-46 Dewberry St
49-67 Abbott Road	19	199-225 Abbott Road	29	4, 6-14, 1-15, 17-33 & 35-41 Joshua St
9-15 Wooster Gardens	20	110-126 Leven Road	30	1-9, 2-10, 9-15, 12-20, 17-25 Mills Grove
			31	118-132, 134-146, 148-154 St Leonards Rd
	Balfron Tower Culloden Primary School Aberfeldy Estate Phase 3 - Block J Aberfeldy Estate Phase 3 - Block G Aberfeldy Estate Phase 2 - Block D Aberfeldy Estate Phase 1 - Block A Aberfeldy Estate Phase 1 - Block C 49-67 Abbott Road	Balfron Tower12Culloden Primary School13Aberfeldy Estate Phase 3 - Block J14Aberfeldy Estate Phase 3 - Block G15Aberfeldy Estate Phase 2 - Block D16Aberfeldy Estate Phase 1 - Block A17Aberfeldy Estate Phase 1 - Block C1849-67 Abbott Road19	Carradale House112-12 Lansbury GardensBalfron Tower121-7 Wooster GardensCulloden Primary School13Loren Apartments (Aberfeldy Tavern)Aberfeldy Estate Phase 3 - Block J14Sherman HouseAberfeldy Estate Phase 3 - Block G15St. Nicholas ChurchAberfeldy Estate Phase 3 - Block A16177-195 Abbott RoadAberfeldy Estate Phase 1 - Block A17134-144 Leven RoadAberfeldy Estate Phase 1 - Block C18128-132 Leven Road49-67 Abbott Road19199-225 Abbott Road	Carradale House112-12 Lansbury Gardens21Balfron Tower121-7 Wooster Gardens22Culloden Primary School13Loren Apartments (Aberfeldy Tavern)23Aberfeldy Estate Phase 3 - Block J14Sherman House24Aberfeldy Estate Phase 3 - Block G15St. Nicholas Church25Aberfeldy Estate Phase 3 - Block D16177-195 Abbott Road26Aberfeldy Estate Phase 2 - Block D16177-195 Abbott Road26Aberfeldy Estate Phase 1 - Block A17134-144 Leven Road27Aberfeldy Estate Phase 1 - Block C18128-132 Leven Road2849-67 Abbott Road19199-225 Abbott Road299-15 Wooster Gardens20110-126 Leven Road30



Drawing: 05



Drawing: 06



Project Name:	Aberfeldy Village
Project number:	15382
Release:	Rel 14-16
R:	IR39-55
ource of nformation:	Vu.City, Levitt Bernstein Architects IR49, Morris And Co. Architects IR39
Date:	13/10/2021
Prawing no.:	05-06

## **3 OVERVIEWS - CUMULATIVE**



			NEIGHBOURS ADDRESSES		
1	Carradale House	12	1-7 Wooster Gardens	23	Atelier Court
2	Balfron Tower	13	Loren Apartments (Aberfeldy Tavern)	24	Bromley Hall School
з	Culloden Primary School	14	Sherman House	25	Ailsa Wharf - Block A
4	Aberfeldy Estate Phase 3 - Block J	15	St. Nicholas Church	26	Ailsa Wharf - Block D
5	Aberfeldy Estate Phase 3 - Block G	16	177-195 Abbott Road	27	Ailsa Wharf - Blocks K-L
6	Aberfeldy Estate Phase 2 - Block D	17	134-144 Leven Road	28	1-14 & 16-46 Dewberry St
7	Aberfeldy Estate Phase 1 - Block A	18	128-132 Leven Road	29	4, 6-14, 1-15, 17-33 & 35-41 Joshua St
8	Aberfeldy Estate Phase 1 - Block C	19	199-225 Abbott Road	30	1-9, 2-10, 9-15, 12-20, 17-25 Mills Grove
9	49-67 Abbott Road	20	110-126 Leven Road	31	118-132, 134-146, 148-154 St Leonards Rd
10	9-15 Wooster Gardens	21	Devons Wharf	32	Former Poplar Bus Depot
11	2-12 Lansbury Gardens	22	Leven Road Phase 3	33	Islay Wharf
				34	45-47 Abbott Road

ABERFELDY VILLAGE MASTERPLAN OVERVIEWS (15382)

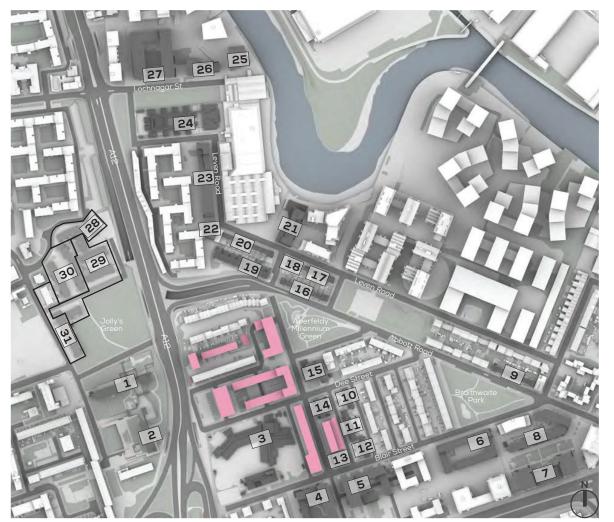






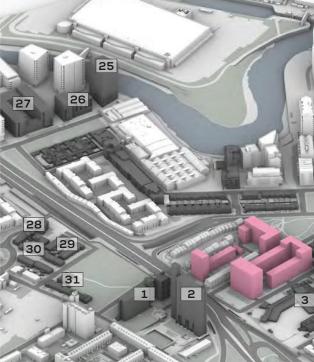
## CONSENTED

Project Name:	Aberfeldy Village
Project number:	15382
Release:	Rel 14-16
IR:	IR39-55
Source of information:	Vu.City, Levitt Bernstein Architects IR49, Morris And Co. Architects IR39
Date:	13/10/2021
Drawing no.:	10

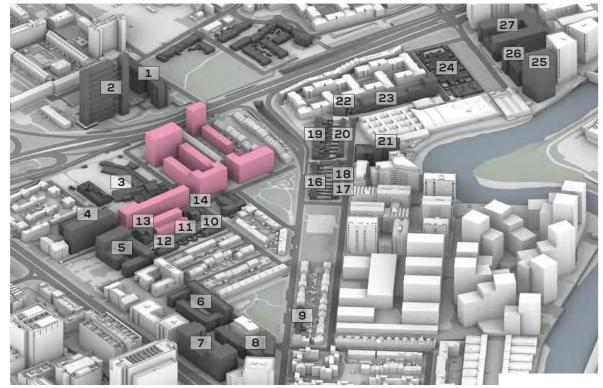


Drawing: 10

			NEIGHBOURS ADDRESSES		
1	Carradale House	11	2-12 Lansbury Gardens	21	Devons Wharf
2	Balfron Tower	12	1-7 Wooster Gardens	22	Leven Road Phase 3
3	Culloden Primary School	13	Loren Apartments (Aberfeldy Tavern)	23	Atelier Court
4	Aberfeldy Estate Phase 3 - Block J	14	Sherman House	24	Bromley Hall School
5	Aberfeldy Estate Phase 3 - Block G	15	St. Nicholas Church	25	Ailsa Wharf - Block A
6	Aberfeldy Estate Phase 2 - Block D	16	177-195 Abbott Road	26	Ailsa Wharf - Block D
7	Aberfeldy Estate Phase 1 - Block A	17	134-144 Leven Road	27	Ailsa Wharf - Blocks K-L
8	Aberfeldy Estate Phase 1 - Block C	18	128-132 Leven Road	28	1-14 & 16-46 Dewberry St
9	49-67 Abbott Road	19	199-225 Abbott Road	29	4, 6-14, 1-15, 17-33 & 35-41 Joshua St
10	9-15 Wooster Gardens	20	110-126 Leven Road	30	1-9, 2-10, 9-15, 12-20, 17-25 Mills Grove
				31	118-132, 134-146, 148-154 St Leonards Rd



Drawing: 11



Drawing: 12

**G**CHARTERED SURVEYORS

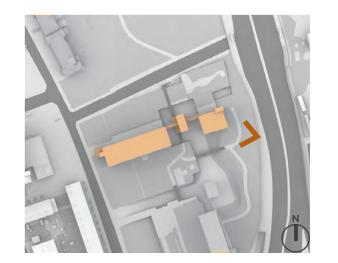
Project Name:	Aberfeldy Village
Project number:	15382
elease:	Rel 14-16
२:	IR39-55
ource of nformation:	Vu.City, Levitt Bernstein Architects IR49, Morris And Co. Architects IR39
ate:	13/10/2021
rawing no.:	11-12



## WINDOW MAPS

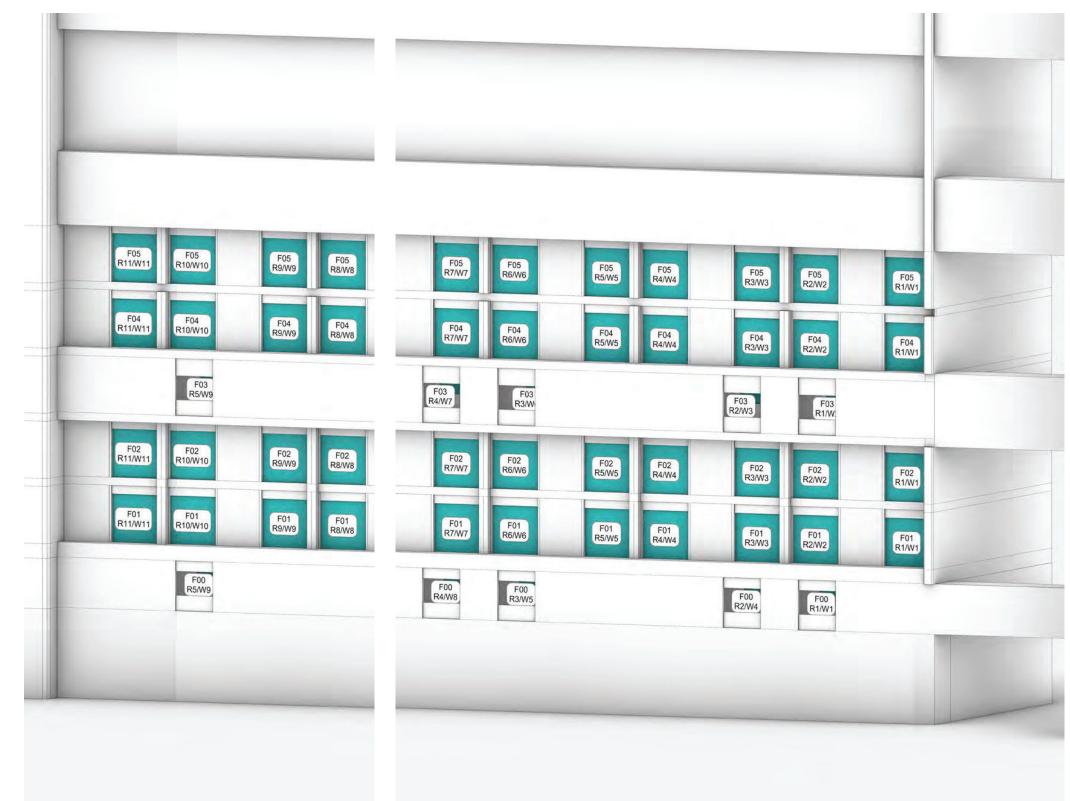
1. Carradale House







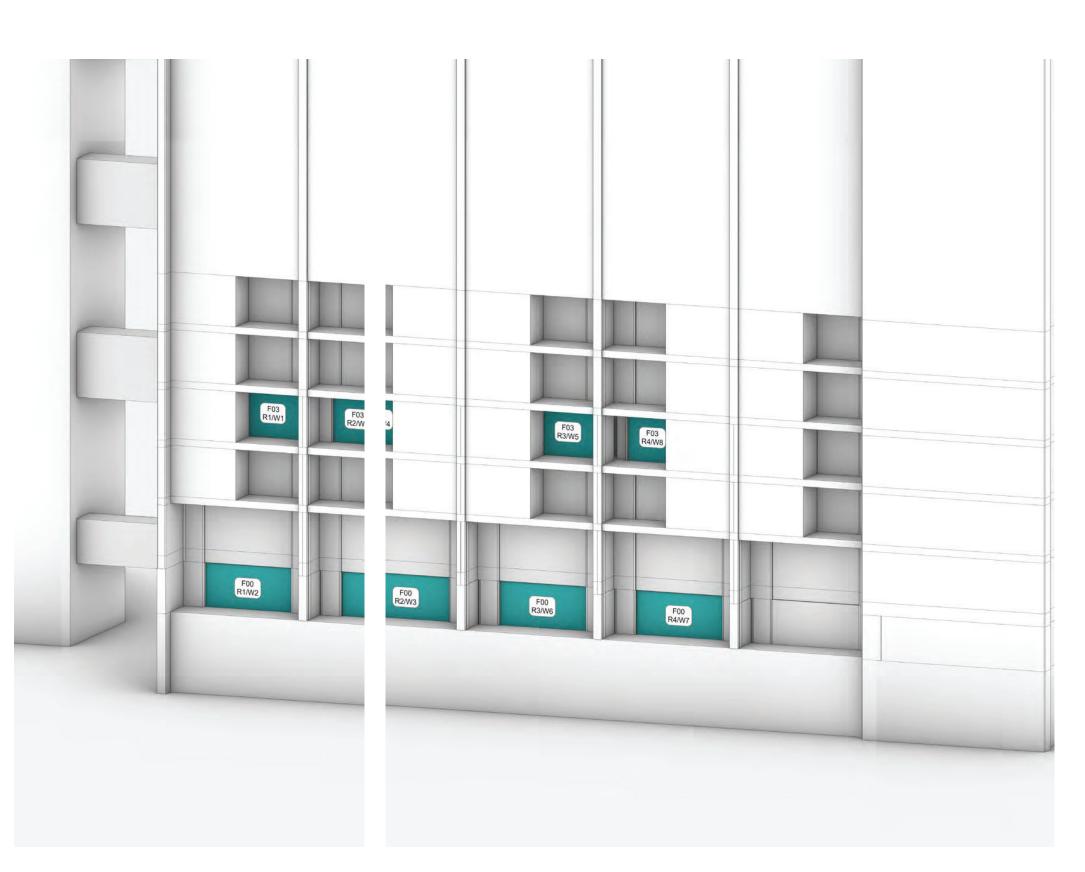
2. Balfron Tower

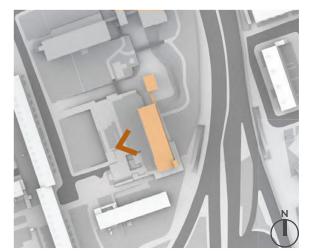




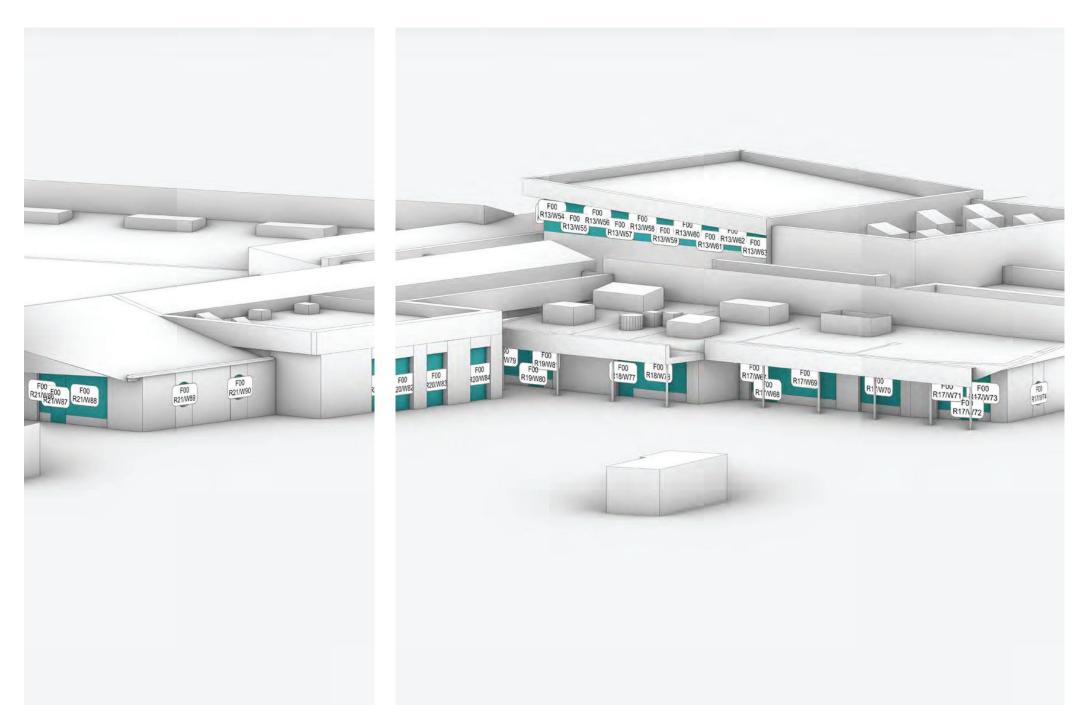


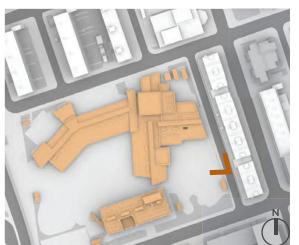
2. Balfron Tower



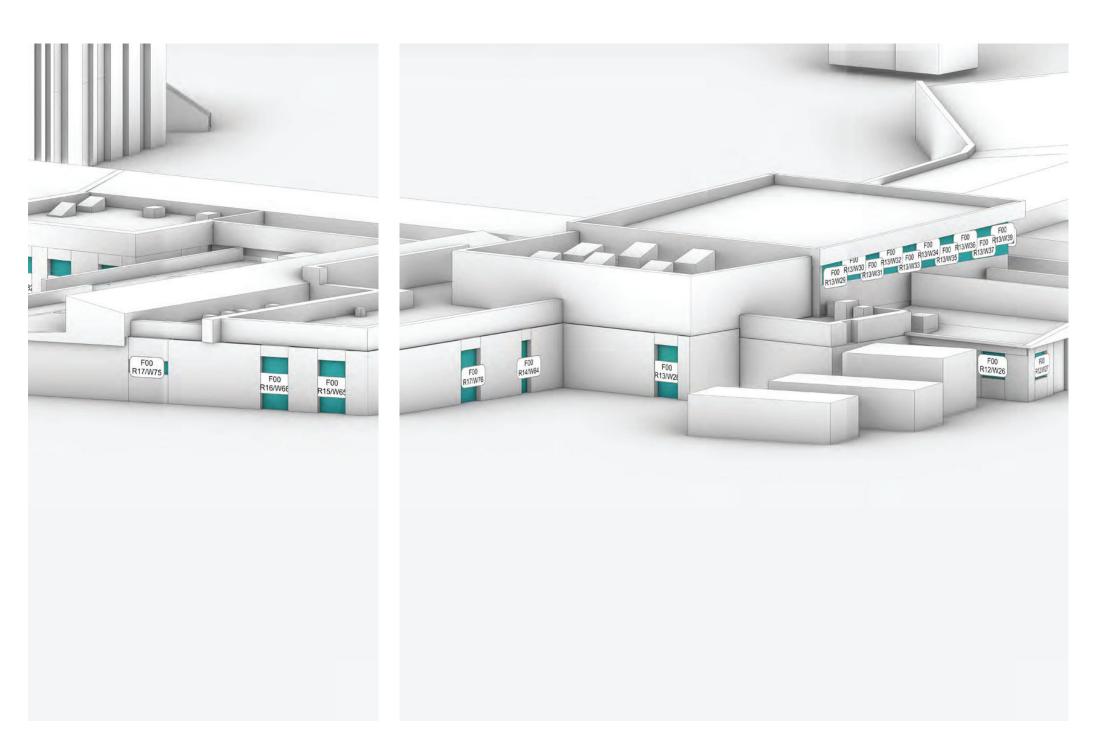


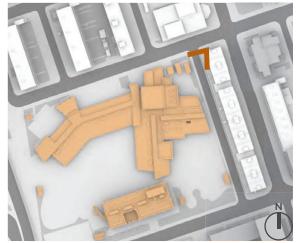




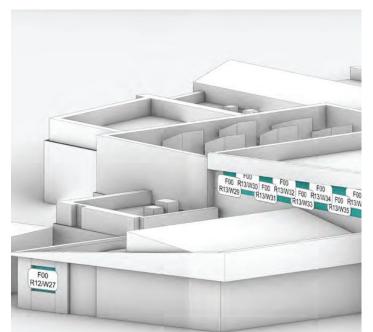


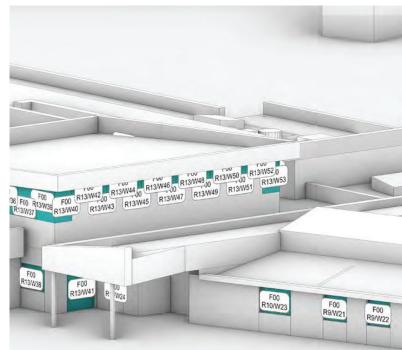


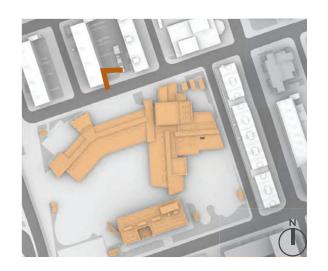






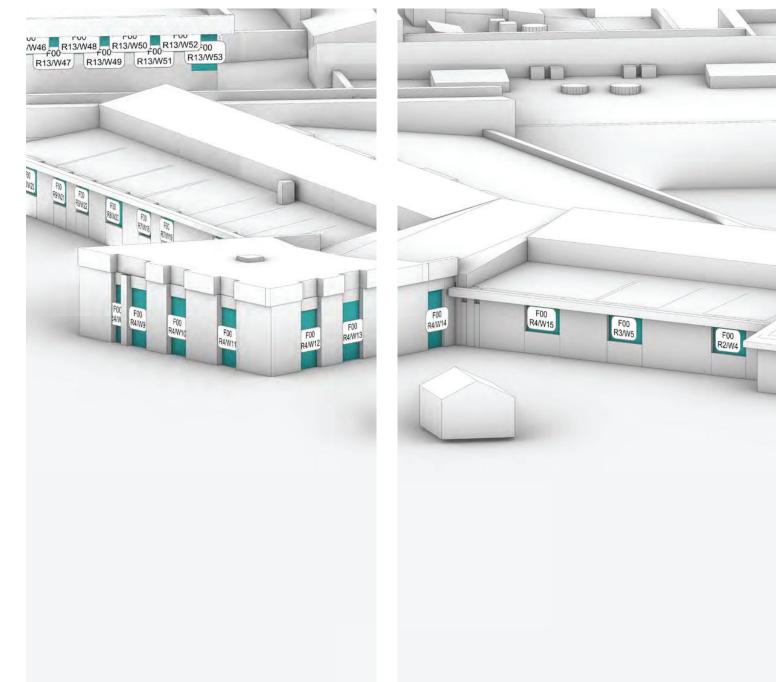








-		
-		
F00 R8W20	F00 R7/W18 F00 R7/W19	
		F00 R6/W17

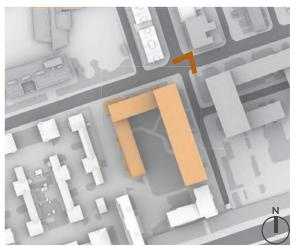






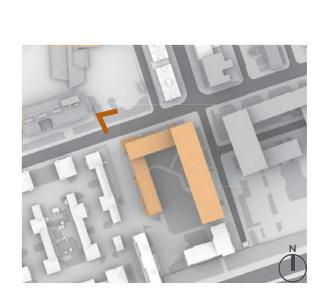
FOU R1W1	FUU R1/W2	HW







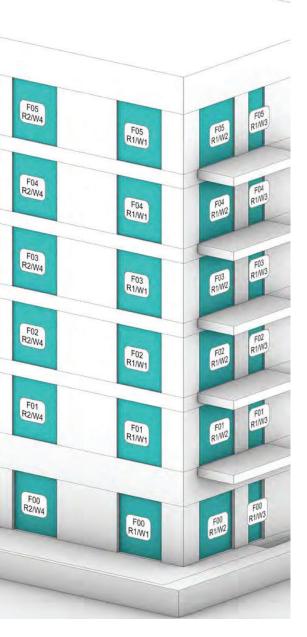
4. Aberfeldy Estate Phase 3 - Block J



4. Aberfeldy Estate Phase 3 - Block J







F05 R3/W7

F04 R3/W7

F03 R3/W7

F02 R3/W7

F01 R3/W7

F00 R3/W5



5. Aberfeldy Estate Phase 3 - Block G



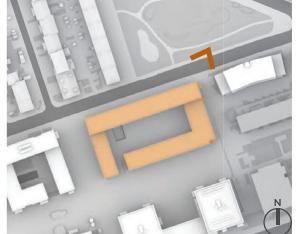








6. Aberfeldy Estate Phase 2 - Block D





6. Aberfeldy Estate Phase 2 - Block D

