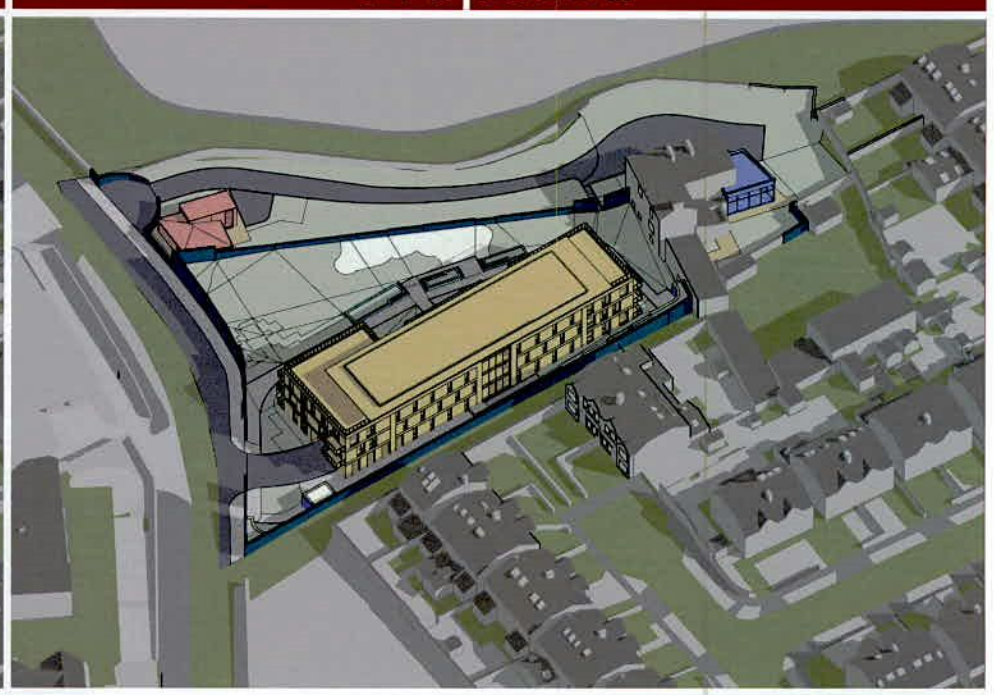
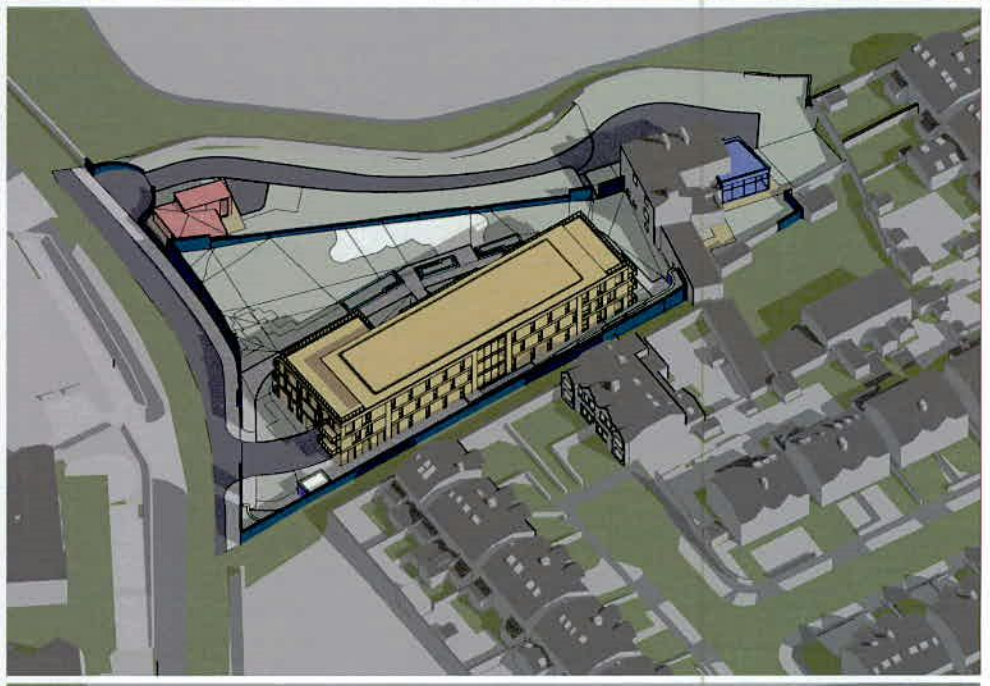
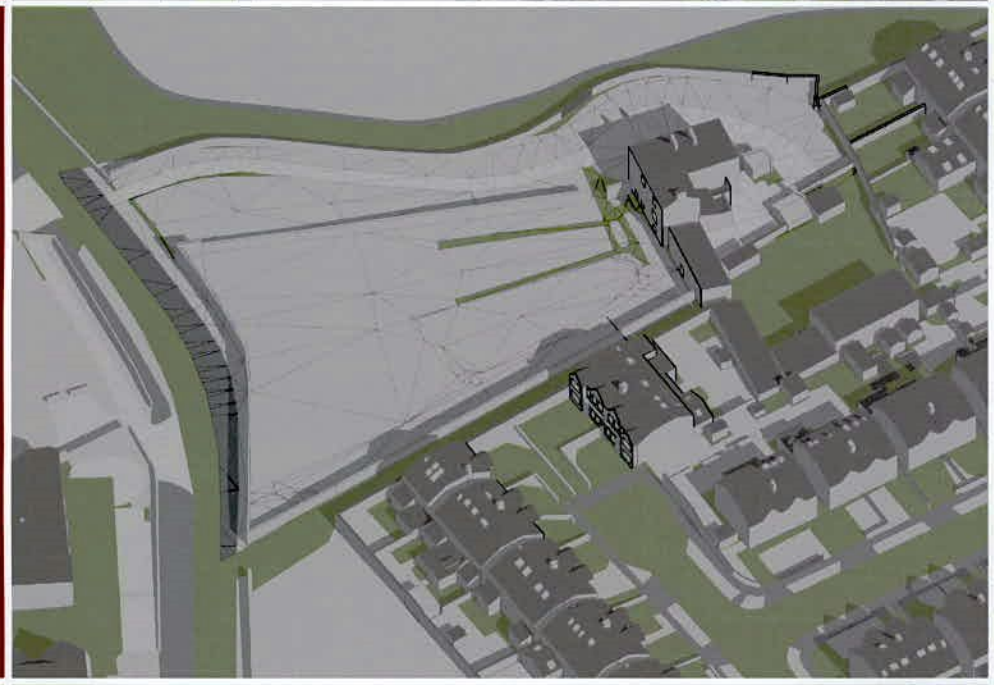
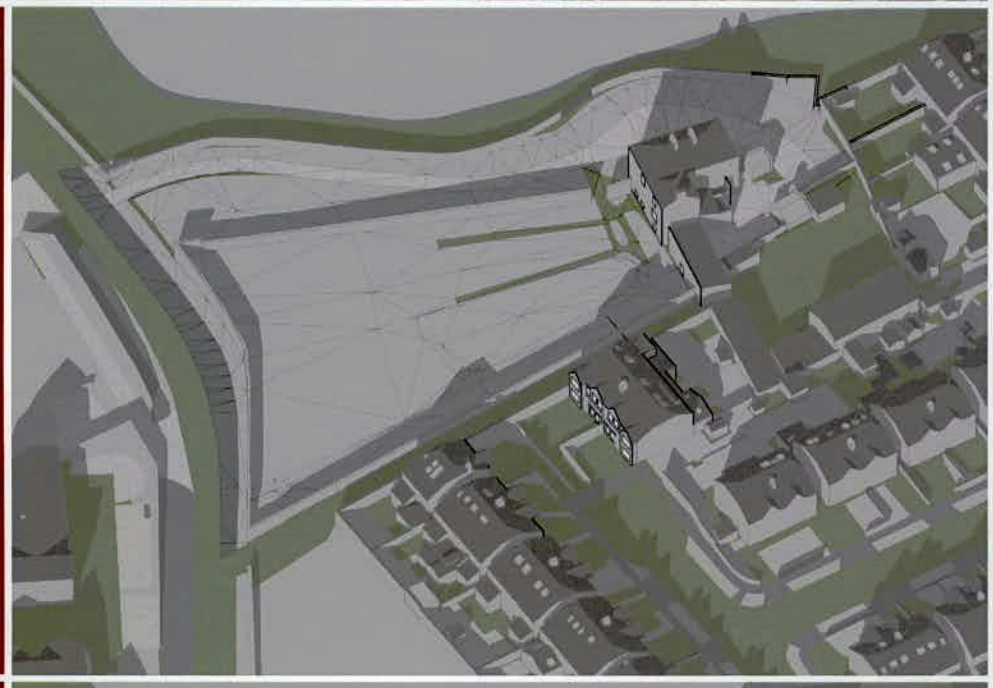
N

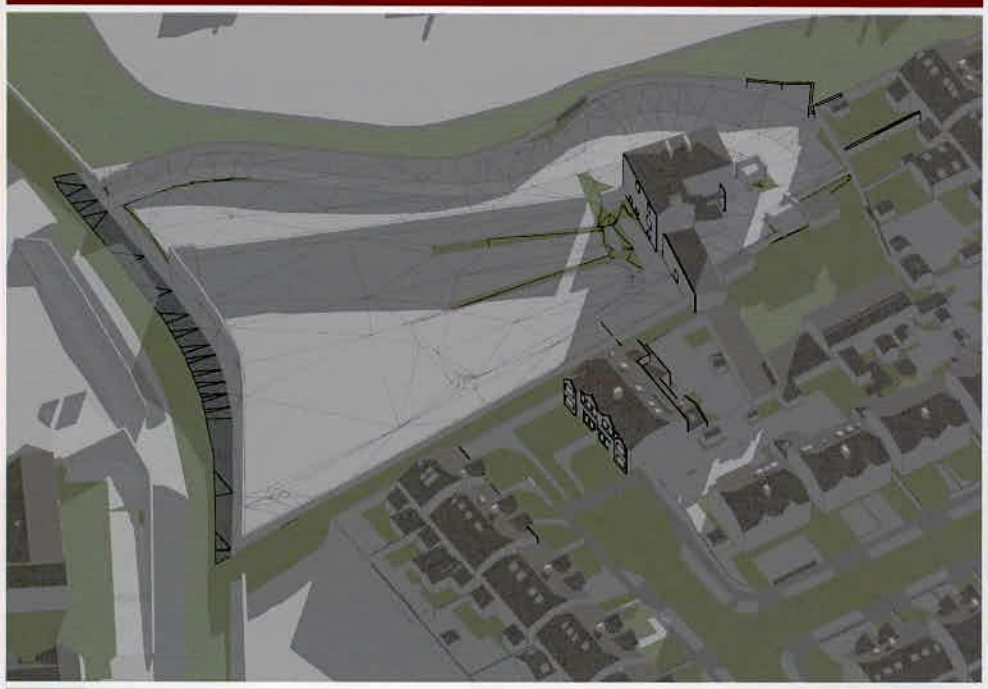
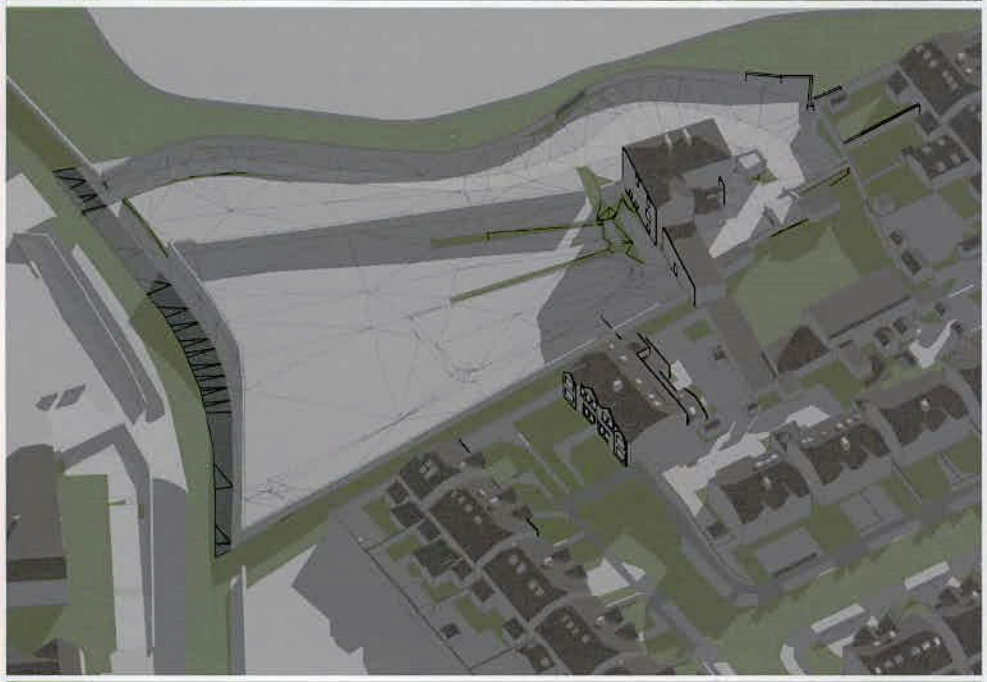
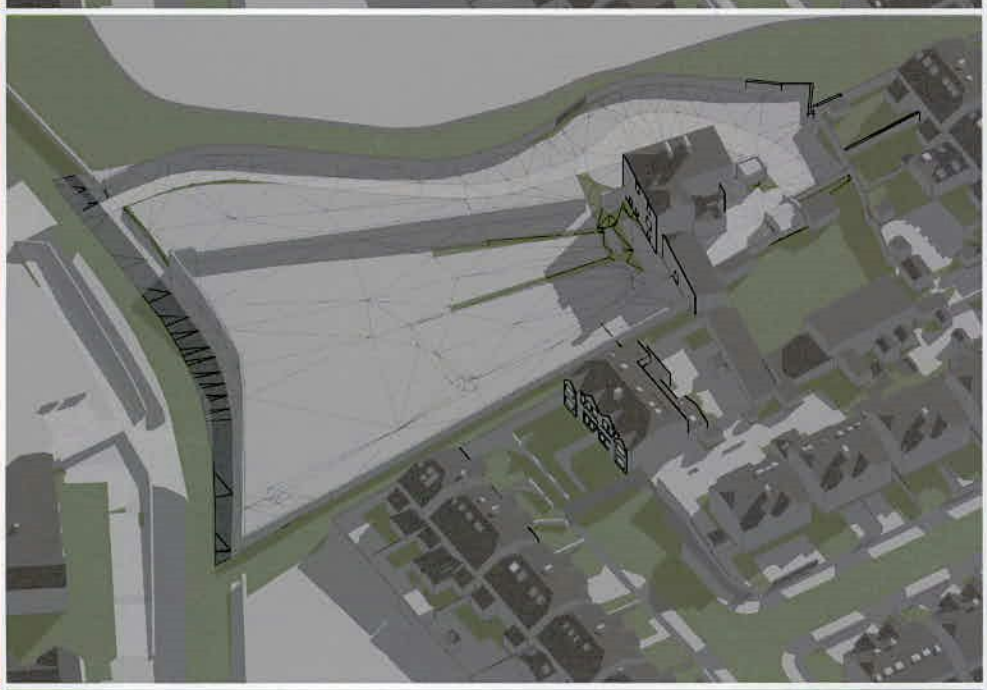
Baseline	Proposed
March 21st 11:00		
March 21st 12:00		
March 21st 13:00		
March 21st 14:00		

	Project: Prospect House, Stocking Lane	3D DESIGN BUREAU
March 21st **Sunrise 6:25 | Sunset 18:40**	**Applicant: MSJA Ltd.**	

	Baseline	Proposed
March 21st 15:00		
March 21st 16:00		
March 21st 17:00		
March 21st 18:00		

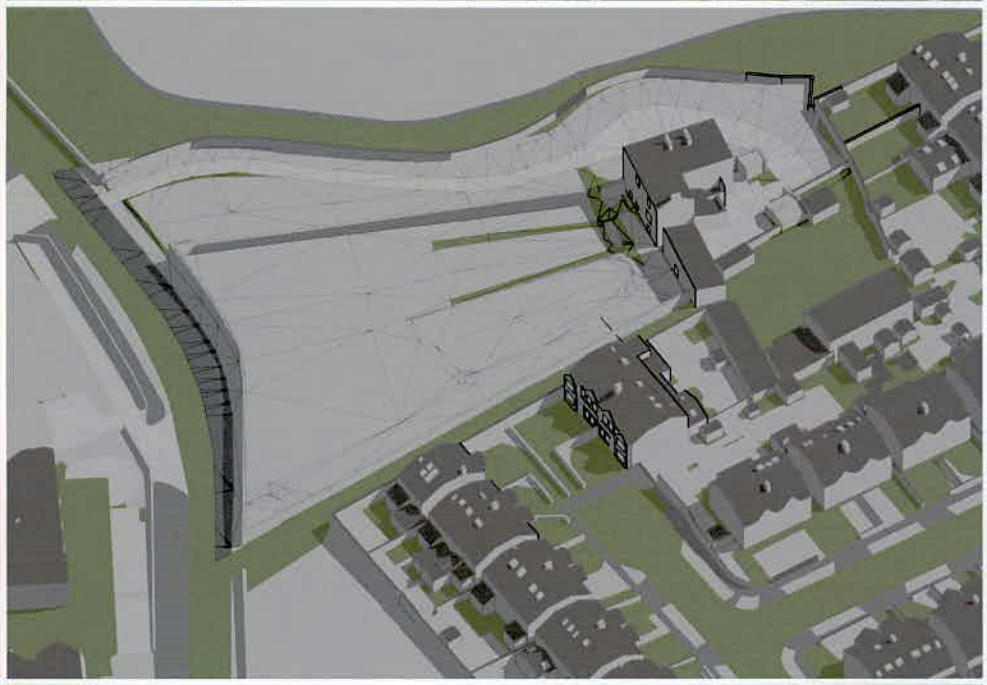
	Project: Prospect House, Stocking Lane	3D DESIGN BUREAU
March 21st **Sunrise 6:25 | Sunset 18:40**	**Applicant: MSJA Ltd.**	

N

	Baseline	Proposed
June 21st 6:00		
June 21st 7:00		
June 21st 8:00		
June 21st 9:00		

6.4.2	**Shadow Study 21 June**	**Project: Prospect House, Stocking Lane**	3D DESIGN BUREAU
	June 21st Sunrise 4:57 | Sunset 21:57	**Applicant: MSJA Ltd.**	

N

	Baseline	Proposed
June 21st 10:00		
June 21st 11:00		
June 21st 12:00		
June 21st 13:00		

	Project: Prospect House, Stocking Lane	3D DESIGN BUREAU
June 21st **Sunrise 4:57 | Sunset 21:57**	**Applicant: MSJA Ltd.**	

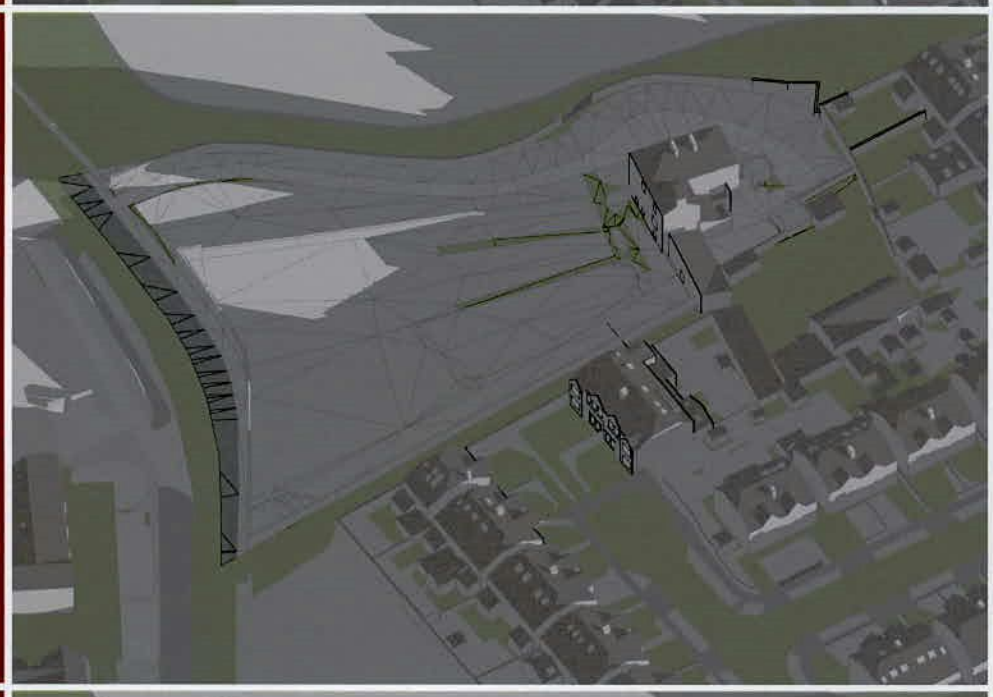
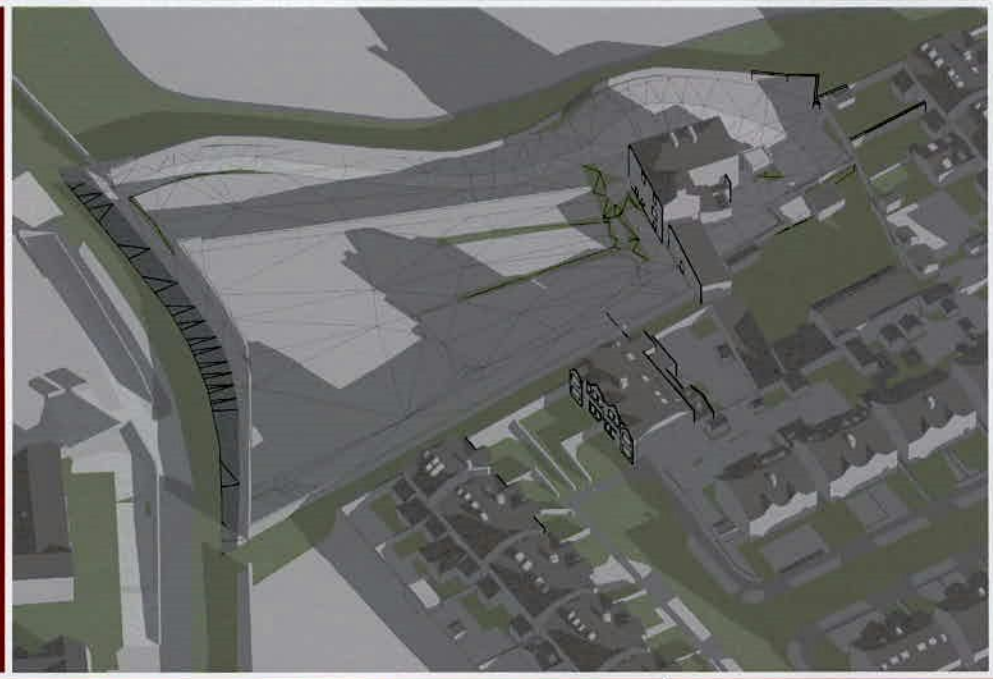
N

Baseline	Proposed
June 21st 14:00	
	
June 21st 15:00	
	
June 21st 16:00	
	
June 21st 17:00	
	

	Project: Prospect House, Stocking Lane	3D DESIGN BUREAU
June 21st **Sunrise 4:57 | Sunset 21:57**	**Applicant: MSJA Ltd.**	

	Baseline	Proposed
June 21st 18:00		
June 21st 19:00		
June 21st 20:00		
June 21st 21:00		

	Project: Prospect House, Stocking Lane	3D DESIGN BUREAU
June 21st **Sunrise 4:57 | Sunset 21:57**	**Applicant: MSJA Ltd.**	

	Baseline	Proposed
December 21st 9:00		
December 21st 10:00		
December 21st 11:00		
December 21st 12:00		

6.4.3	**Shadow Study 21 December**	**Project: Prospect House, Stocking Lane**	3D DESIGN BUREAU
	December 21st Sunrise 8:38 | Sunset 16:08	**Applicant: MSJA Ltd.**	

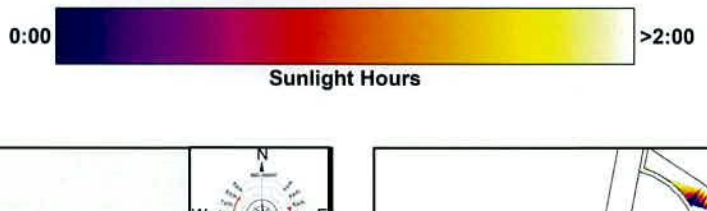
	Baseline	Proposed
December 21st 13:00		
December 21st 14:00		
December 21st 15:00		
December 21st 16:00		

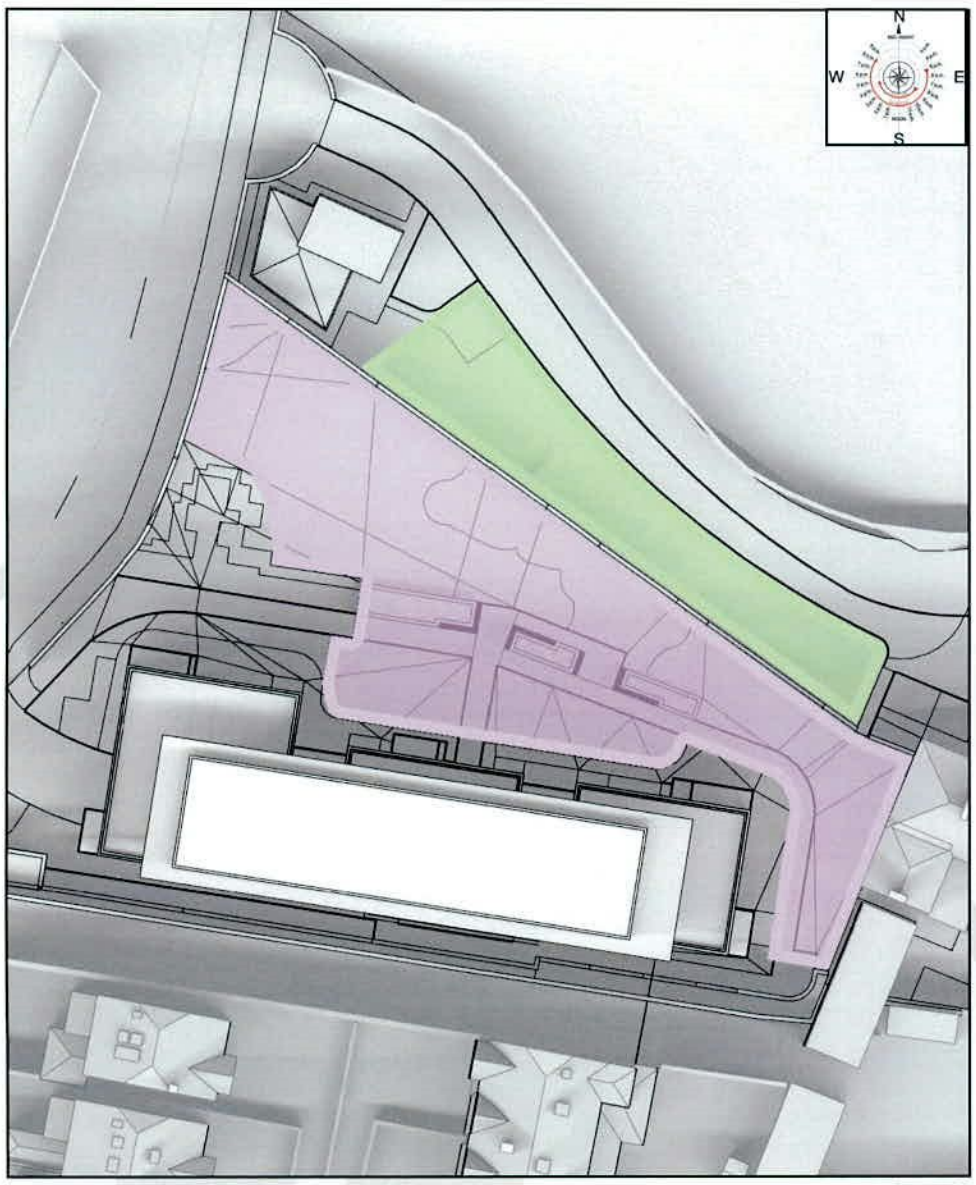
	Project: Prospect House, Stocking Lane	3D DESIGN BUREAU
December 21st **Sunrise 8:38 | Sunset 16:08**	**Applicant: MSJA Ltd.**	

7.0 Scheme Performance Results

7.1 Sun On Ground in Proposed Outdoor Amenity Areas

Table No. 7.1: SOG in Proposed Outdoor Amenity Areas Results:			
Assessed Area	Area Capable of Receiving 2 Hours of Sunlight on March 21st	Recommended minimum	Level of Compliance with BRE Guidelines*
Amenity Area 1	93.4%	50.0%	BRE Compliant
Amenity Area 2	71.9%	50.0%	BRE Compliant
* The BRE Guidelines recommend that for a garden or amenity to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on March 21st.			





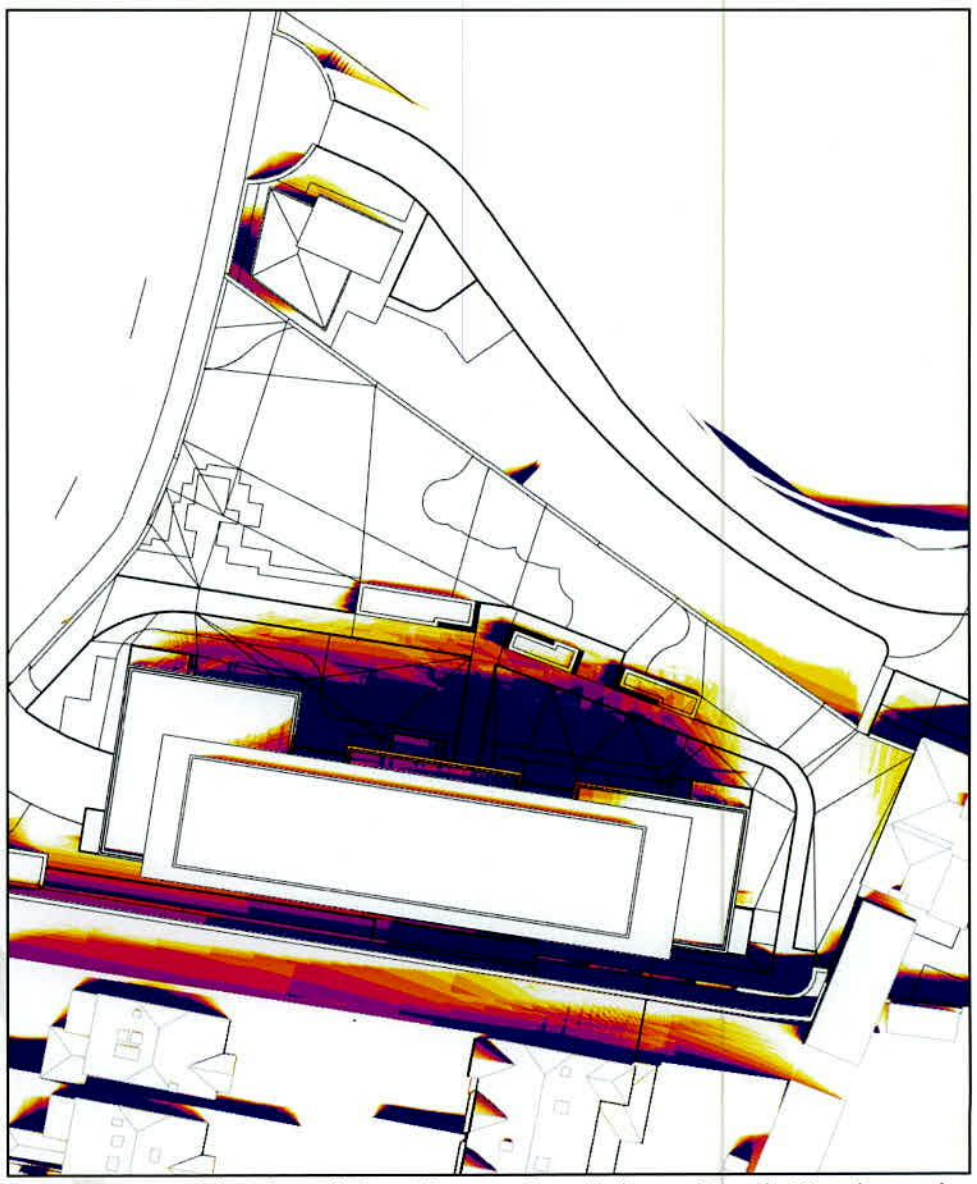


Figure 7.1: Left - Indication of the amenity areas that have been analysed, Right - Area capable of receiving 2 hours of sunlight on March 21st shown in white (R).

7.2 Average Daylight Factor

7.2.1 Apartments Block - Ground Floor

Table No. 7.2: ADF Results: Apartments Block - Ground Floor				
Unit Number	Room Description	Predicted ADF Value	Recommended Minimum ADF	Level of Compliance with BRE Guidelines*
No. 1	LKD	2.26%	2.0%	BRE Compliant
No. 1	Bedroom	5.68%	1.0%	BRE Compliant
No. 1	Bedroom	3.02%	1.0%	BRE Compliant
No. 2	Bedroom	5.53%	1.0%	BRE Compliant
No. 2	LKD	3.32%	2.0%	BRE Compliant
No. 3	Bedroom	6.30%	1.0%	BRE Compliant
No. 3	Bedroom	4.84%	1.0%	BRE Compliant
No. 3	LKD	5.58%	2.0%	BRE Compliant
No. 4	Bedroom	3.57%	1.0%	BRE Compliant
No. 4	LKD	4.71%	2.0%	BRE Compliant
No. 5	LKD	5.93%	2.0%	BRE Compliant
No. 5	Bedroom	5.80%	1.0%	BRE Compliant
No. 5	Bedroom	7.33%	1.0%	BRE Compliant

*The following ADF target values should be considered when reading the above table of results: 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. In LKDs, the higher target value of 2.0% should be applied. Consideration should be given to the methodology section of this report, specifically "Recommended Minimum ADF" on page 17, when reviewing these results. The circa compliance rates across the entire scheme can be found in section 8.2.2 on page 53.

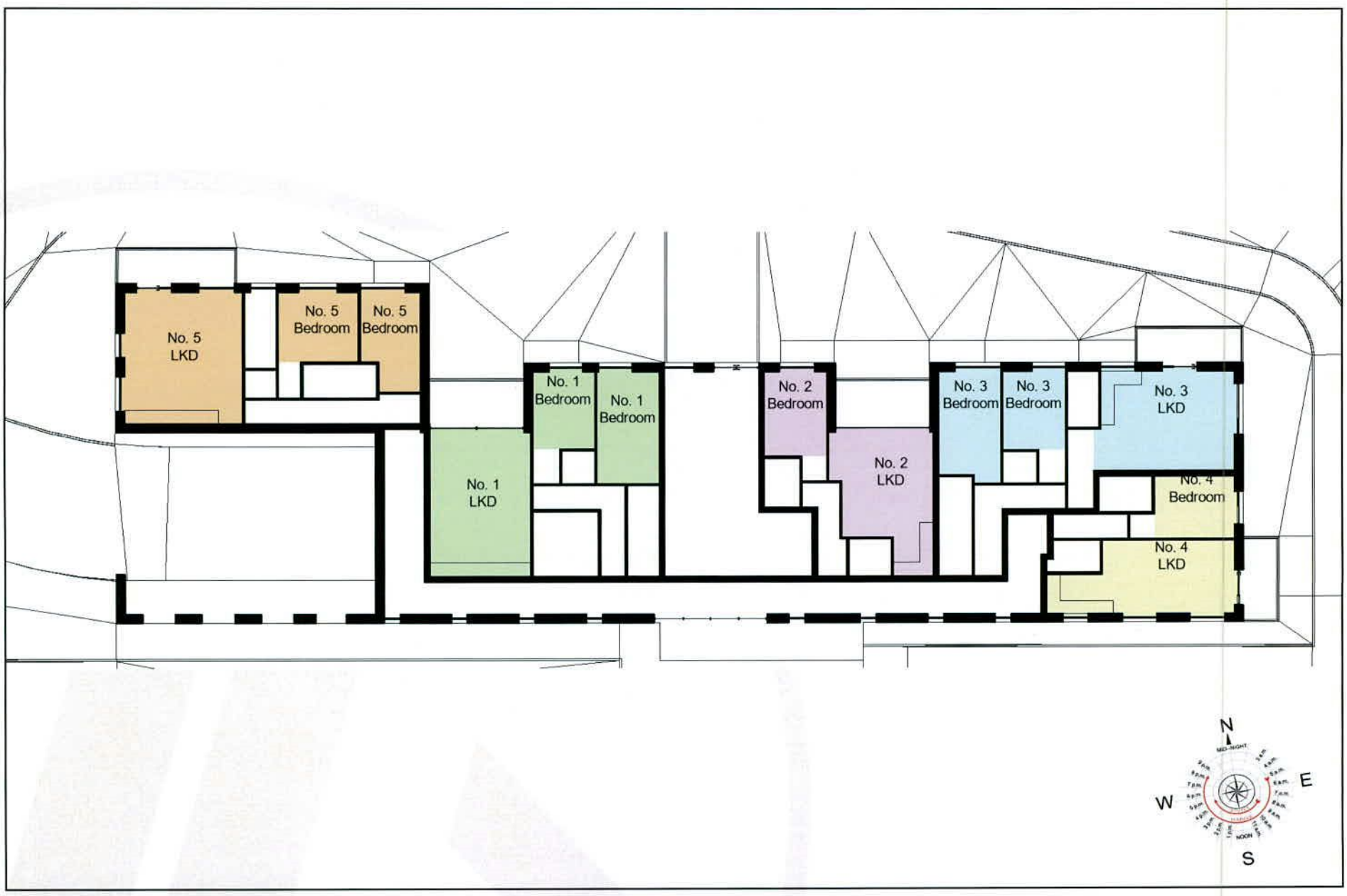


Figure 7.2: Floor plan of assessed building.

7.2.2 Apartments Block - First Floor

Table No. 7.3: ADF Results: Apartments Block - First Floor				
Unit Number	Room Description	Predicted ADF Value	Recommended Minimum ADF	Level of Compliance with BRE Guidelines*
No. 6	Bedroom	7.39%	1.0%	BRE Compliant
No. 6	LKD	2.98%	2.0%	BRE Compliant
No. 7	Bedroom	5.58%	1.0%	BRE Compliant
No. 7	Bedroom	4.75%	1.0%	BRE Compliant
No. 7	LKD	5.29%	2.0%	BRE Compliant
No. 8	Bedroom	3.66%	1.0%	BRE Compliant
No. 8	LKD	5.67%	2.0%	BRE Compliant
No. 9	Bedroom	4.38%	1.0%	BRE Compliant
No. 9	LKD	4.37%	2.0%	BRE Compliant
No. 10	LKD	3.29%	2.0%	BRE Compliant
No. 10	Bedroom	2.45%	1.0%	BRE Compliant
No. 10	Bedroom	2.14%	1.0%	BRE Compliant
No. 11	LKD	6.25%	2.0%	BRE Compliant
No. 11	Bedroom	4.84%	1.0%	BRE Compliant
No. 11	Bedroom	4.20%	1.0%	BRE Compliant
No. 12	LKD	4.60%	2.0%	BRE Compliant
No. 12	Bedroom	4.42%	1.0%	BRE Compliant

*The following ADF target values should be considered when reading the above table of results: 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. In LKDs, the higher target value of 2.0% should be applied. Consideration should be given to the methodology section of this report, specifically "Recommended Minimum ADF" on page 17, when reviewing these results. The circa compliance rates across the entire scheme can be found in section 8.2.2 on page 53.

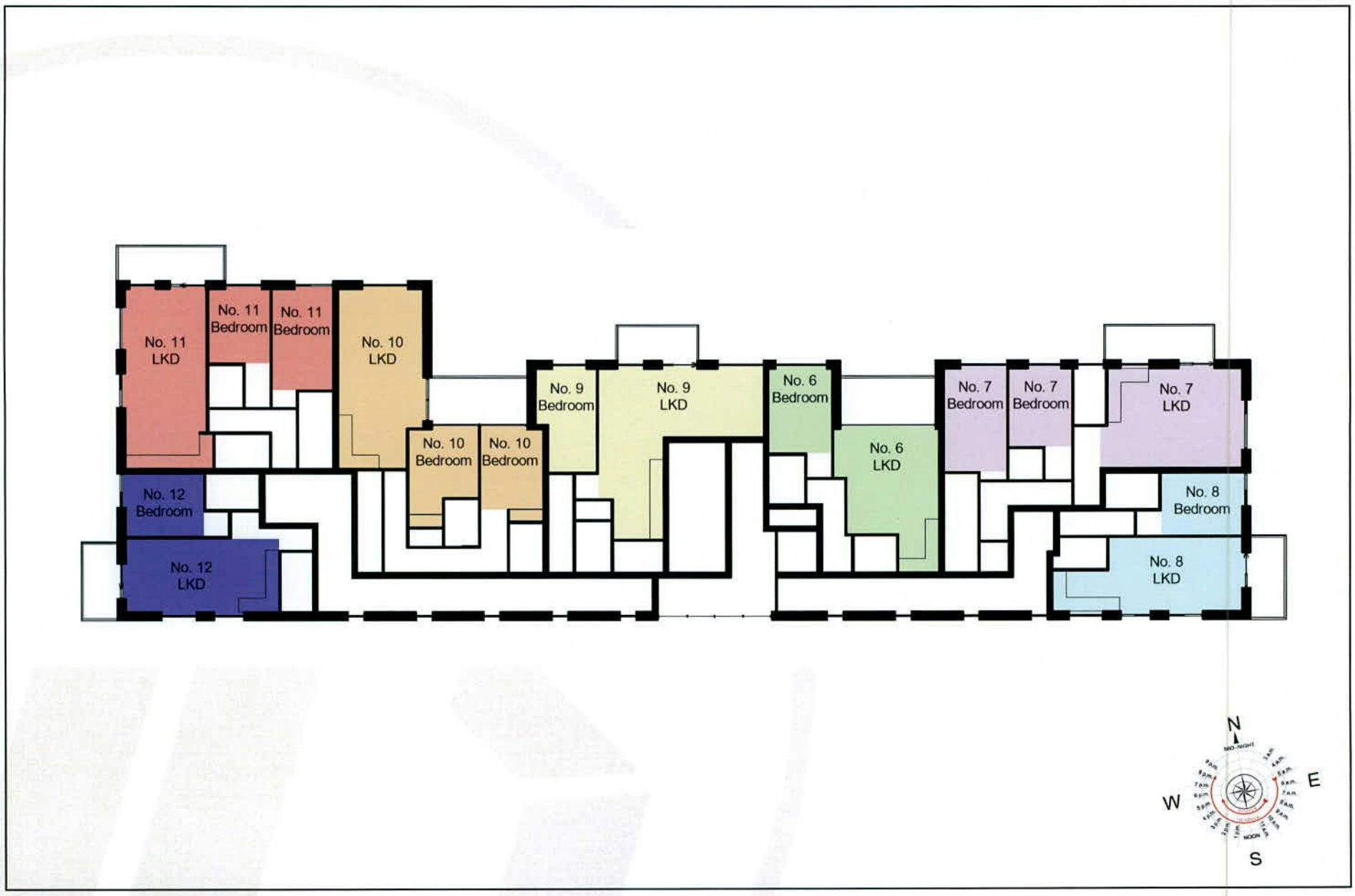


Figure 7.3: Floor plan of assessed building.

7.2.3 Apartments Block - Second Floor

Table No. 7.4: ADF Results: Apartments Block - Second Floor				
Unit Number	Room Description	Predicted ADF Value	Recommended Minimum ADF	Level of Compliance with BRE Guidelines*
No. 13	Bedroom	5.04%	1.0%	BRE Compliant
No. 13	LKD	6.02%	2.0%	BRE Compliant
No. 14	Bedroom	5.55%	1.0%	BRE Compliant
No. 14	Bedroom	5.13%	1.0%	BRE Compliant
No. 14	LKD	7.27%	2.0%	BRE Compliant
No. 15	Bedroom	4.51%	1.0%	BRE Compliant
No. 15	LKD	7.32%	2.0%	BRE Compliant
No. 16	Bedroom	4.44%	1.0%	BRE Compliant
No. 16	LKD	5.14%	2.0%	BRE Compliant
No. 17	LKD	3.98%	2.0%	BRE Compliant
No. 17	Bedroom	5.78%	1.0%	BRE Compliant
No. 17	Bedroom	5.30%	1.0%	BRE Compliant
No. 18	LKD	7.52%	2.0%	BRE Compliant
No. 18	Bedroom	6.06%	1.0%	BRE Compliant
No. 18	Bedroom	4.67%	1.0%	BRE Compliant
No. 19	LKD	6.57%	2.0%	BRE Compliant
No. 19	Bedroom	5.24%	1.0%	BRE Compliant

*The following ADF target values should be considered when reading the above table of results: 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. In LKDs, the higher target value of 2.0% should be applied. Consideration should be given to the methodology section of this report, specifically "Recommended Minimum ADF" on page 17, when reviewing these results. The circa compliance rates across the entire scheme can be found in section 8.2.2 on page 53.

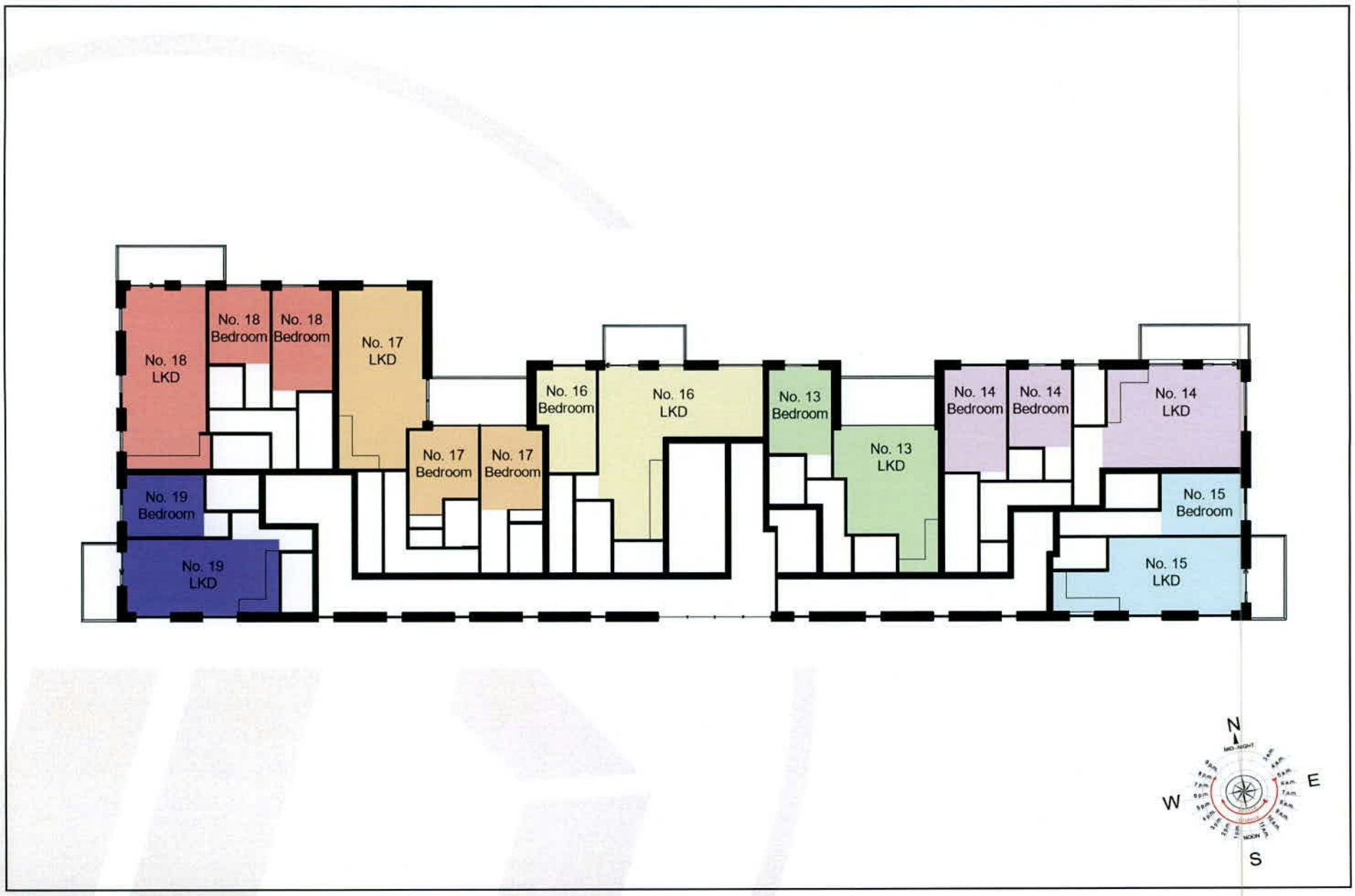


Figure 7.4: Floor plan of assessed building.

7.2.4 Apartments Block - Third Floor

Table No. 7.5: ADF Results: Apartments Block - Third Floor				
Unit Number	Room Description	Predicted ADF Value	Recommended Minimum ADF	Level of Compliance with BRE Guidelines*
No. 20	Bedroom	3.25%	1.0%	BRE Compliant
No. 20	LKD	3.19%	2.0%	BRE Compliant
No. 20	Bedroom	3.48%	1.0%	BRE Compliant
No. 21	LKD	2.57%	2.0%	BRE Compliant
No. 21	Bedroom	1.64%	1.0%	BRE Compliant
No. 22	LKD	5.64%	2.0%	BRE Compliant
No. 22	Bedroom	2.18%	1.0%	BRE Compliant
No. 22	Bedroom	1.95%	1.0%	BRE Compliant

*The following ADF target values should be considered when reading the above table of results: 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. In LKDs, the higher target value of 2.0% should be applied. Consideration should be given to the methodology section of this report, specifically "Recommended Minimum ADF" on page 17, when reviewing these results. The circa compliance rates across the entire scheme can be found in section 8.2.2 on page 53.

Figure 7.5: Floor plan of assessed building.

7.3 Appendix Results - Alternative Daylight Standards

7.3.1 Apartments Block - Ground Floor

Table No. 7.6: Alternative Daylight Standards Results: Apartments Block - Ground Floor

Unit Number	Room Description	BS 8206-2		EN 17037			BS_EN 17037	
		Predicted ADF	Meets Criteria*	% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets Criteria*	% of area above target Lux* (recommendation >50%)	Meets Criteria*
No. 1	LKD	2.26%	Yes	68%	100%	Yes	100%	Yes
No. 1	Bedroom	5.68%	Yes	100%	100%	Yes	100%	Yes
No. 1	Bedroom	3.02%	Yes	100%	100%	Yes	100%	Yes
No. 2	Bedroom	5.53%	Yes	100%	100%	Yes	100%	Yes
No. 2	LKD	3.32%	Yes	96%	100%	Yes	100%	Yes
No. 3	Bedroom	6.30%	Yes	100%	100%	Yes	100%	Yes
No. 3	Bedroom	4.84%	Yes	100%	100%	Yes	100%	Yes
No. 3	LKD	5.58%	Yes	100%	100%	Yes	100%	Yes
No. 4	Bedroom	3.57%	Yes	98%	100%	Yes	100%	Yes
No. 4	LKD	4.71%	Yes	100%	100%	Yes	100%	Yes
No. 5	LKD	5.93%	Yes	100%	100%	Yes	100%	Yes
No. 5	Bedroom	5.80%	Yes	100%	100%	Yes	100%	Yes
No. 5	Bedroom	7.33%	Yes	100%	100%	Yes	100%	Yes

*For information regarding the criteria under the various guidelines please refer to section 3.0 on page 12.

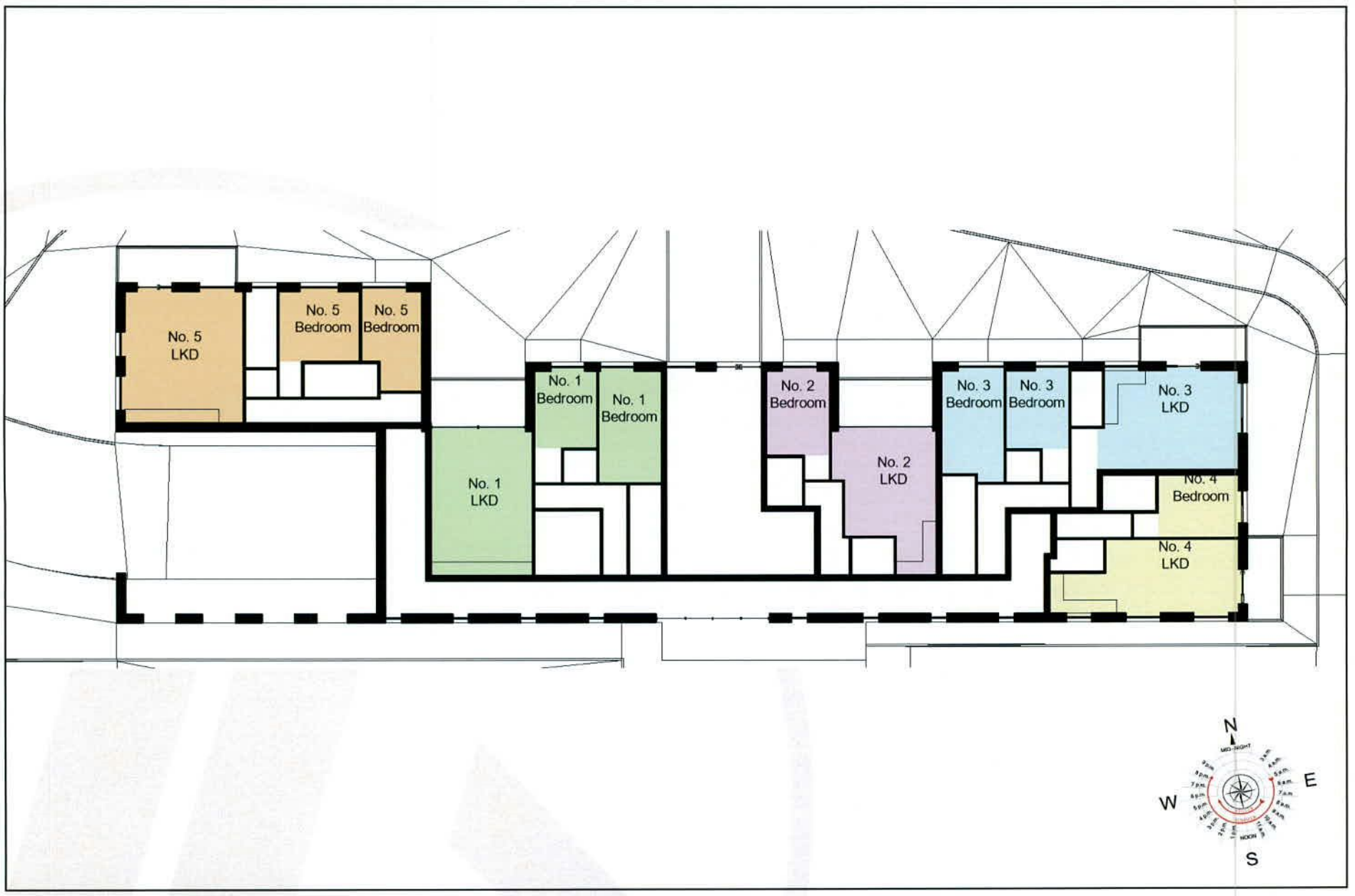


Figure 7.6: Floor plan of assessed building.

7.3.2 Apartments Block - First Floor

Table No. 7.7: Alternative Daylight Standards Results: Apartments Block - First Floor

Unit Number	Room Description	BS 8206-2		EN 17037			BS_EN 17037	
		Predicted ADF	Meets Criteria*	% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets Criteria*	% of area above target Lux* (recommendation >50%)	Meets Criteria*
No. 6	Bedroom	7.39%	Yes	100%	100%	Yes	100%	Yes
No. 6	LKD	2.98%	Yes	92%	100%	Yes	100%	Yes
No. 7	Bedroom	5.58%	Yes	100%	100%	Yes	100%	Yes
No. 7	Bedroom	4.75%	Yes	100%	100%	Yes	100%	Yes
No. 7	LKD	5.29%	Yes	100%	100%	Yes	100%	Yes
No. 8	Bedroom	3.66%	Yes	100%	100%	Yes	100%	Yes
No. 8	LKD	5.67%	Yes	100%	100%	Yes	100%	Yes
No. 9	Bedroom	4.38%	Yes	100%	100%	Yes	100%	Yes
No. 9	LKD	4.37%	Yes	80%	100%	Yes	89%	Yes
No. 10	LKD	3.29%	Yes	96%	100%	Yes	100%	Yes
No. 10	Bedroom	2.45%	Yes	95%	100%	Yes	100%	Yes
No. 10	Bedroom	2.14%	Yes	80%	100%	Yes	100%	Yes
No. 11	LKD	6.25%	Yes	100%	100%	Yes	100%	Yes
No. 11	Bedroom	4.84%	Yes	100%	100%	Yes	100%	Yes
No. 11	Bedroom	4.20%	Yes	100%	100%	Yes	100%	Yes
No. 12	LKD	4.60%	Yes	100%	100%	Yes	100%	Yes
No. 12	Bedroom	4.42%	Yes	100%	100%	Yes	100%	Yes

*For information regarding the criteria under the various guidelines please refer to section 3.0 on page 12.

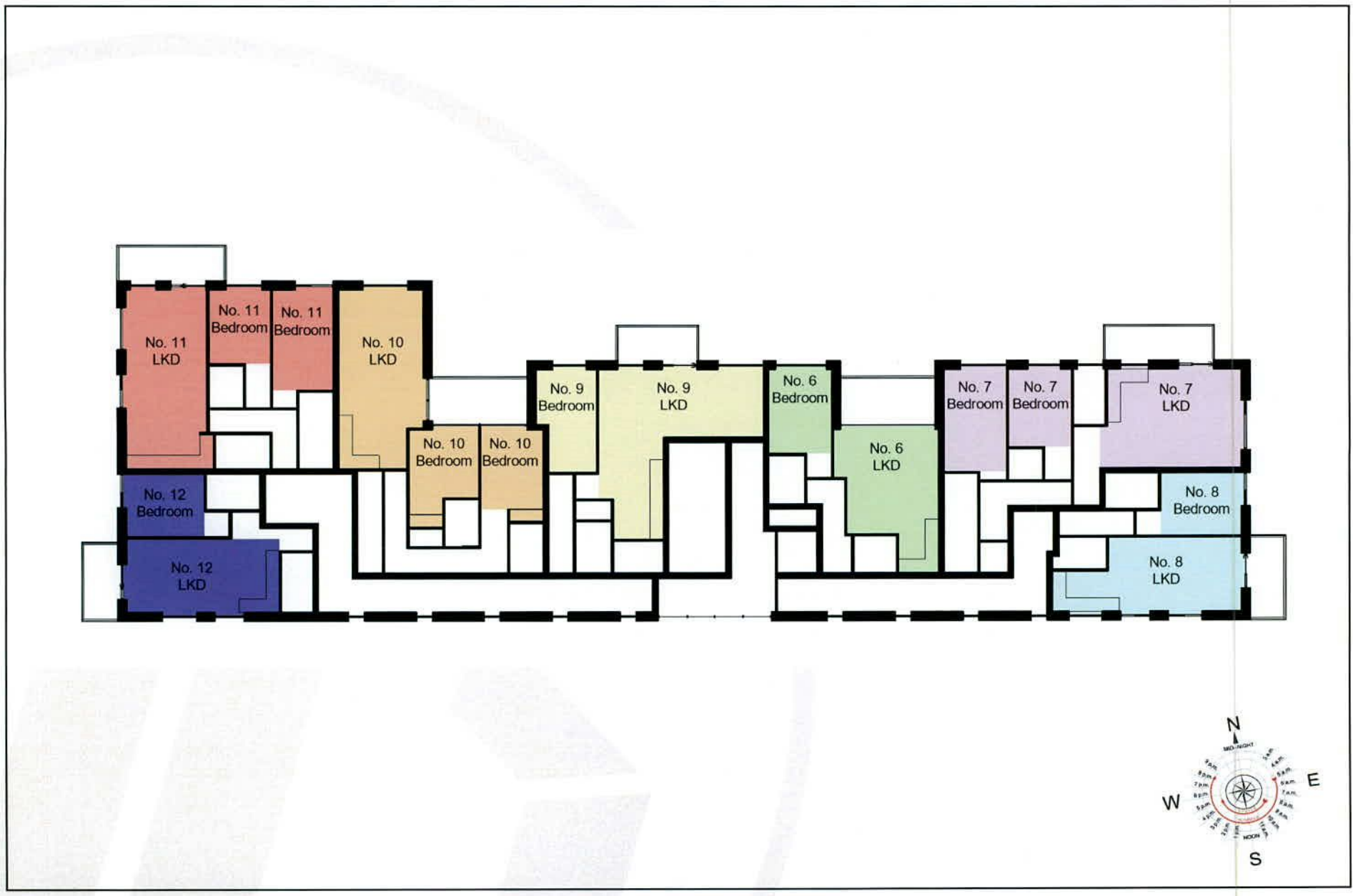


Figure 7.7: Floor plan of assessed building.

7.3.3 Apartments Block - Second Floor

Table No. 7.8: Alternative Daylight Standards Results: Apartments Block - Second Floor

Unit Number	Room Description	BS 8206-2		EN 17037			BS_EN 17037	
		Predicted ADF	Meets Criteria*	% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets Criteria*	% of area above target Lux* (recommendation >50%)	Meets Criteria*
No. 13	Bedroom	5.04%	Yes	100%	100%	Yes	100%	Yes
No. 13	LKD	6.02%	Yes	100%	100%	Yes	100%	Yes
No. 14	Bedroom	5.55%	Yes	100%	100%	Yes	100%	Yes
No. 14	Bedroom	5.13%	Yes	100%	100%	Yes	100%	Yes
No. 14	LKD	7.27%	Yes	100%	100%	Yes	100%	Yes
No. 15	Bedroom	4.51%	Yes	100%	100%	Yes	100%	Yes
No. 15	LKD	7.32%	Yes	100%	100%	Yes	100%	Yes
No. 16	Bedroom	4.44%	Yes	100%	100%	Yes	100%	Yes
No. 16	LKD	5.14%	Yes	84%	100%	Yes	93%	Yes
No. 17	LKD	3.98%	Yes	99%	100%	Yes	100%	Yes
No. 17	Bedroom	5.78%	Yes	100%	100%	Yes	100%	Yes
No. 17	Bedroom	5.30%	Yes	100%	100%	Yes	100%	Yes
No. 18	LKD	7.52%	Yes	100%	100%	Yes	100%	Yes
No. 18	Bedroom	6.06%	Yes	100%	100%	Yes	100%	Yes
No. 18	Bedroom	4.67%	Yes	100%	100%	Yes	100%	Yes
No. 19	LKD	6.57%	Yes	100%	100%	Yes	100%	Yes
No. 19	Bedroom	5.24%	Yes	100%	100%	Yes	100%	Yes

*For information regarding the criteria under the various guidelines please refer to section 3.0 on page 12.

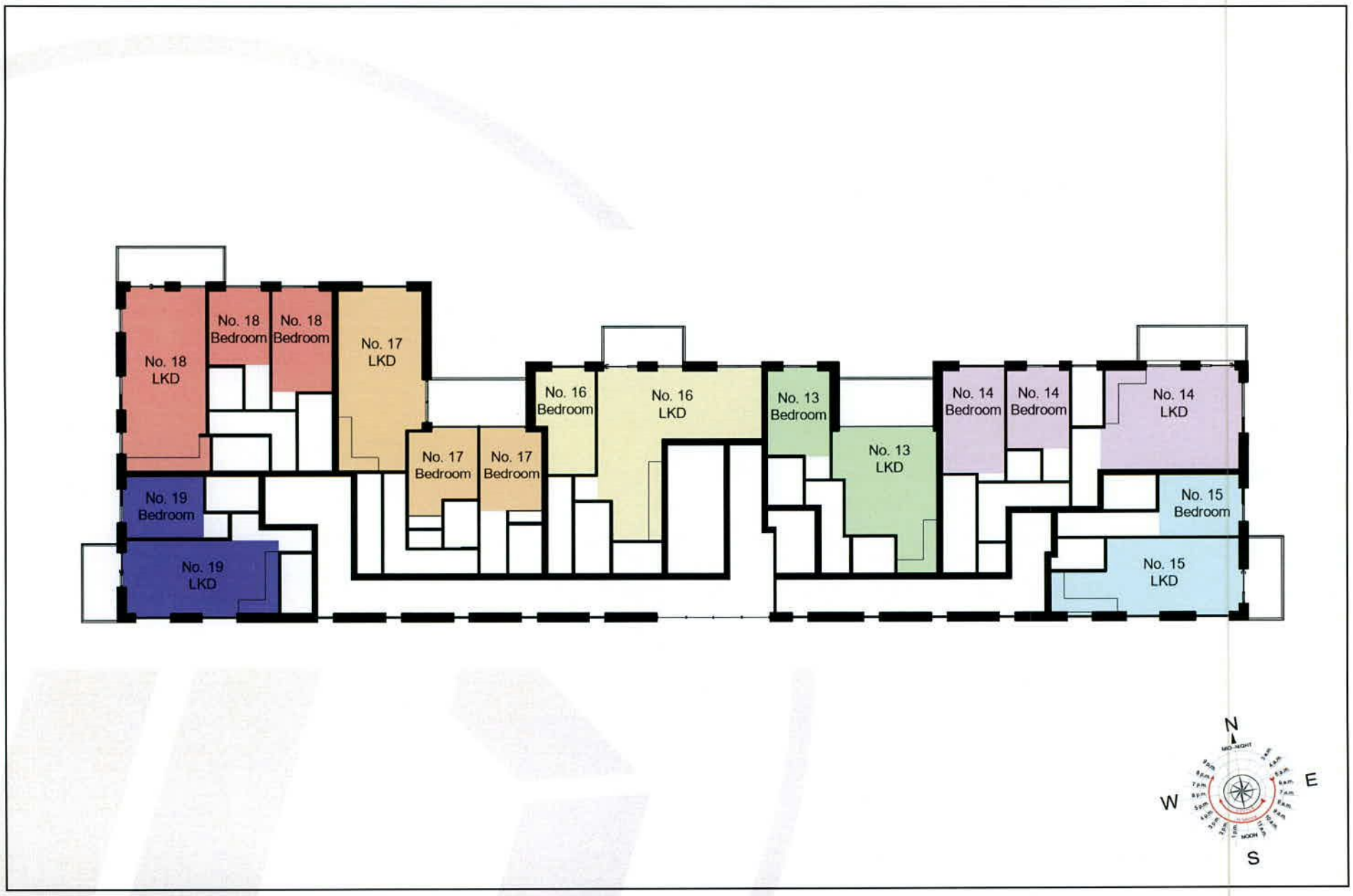


Figure 7.8: Floor plan of assessed building.

7.3.4 Apartments Block - Third Floor

Table No. 7.9: Alternative Daylight Standards Results: Apartments Block - Third Floor

Unit Number	Room Description	BS 8206-2		EN 17037			BS_EN 17037	
		Predicted ADF	Meets Criteria*	% of area above 300 Lux (recommendation >50%)	% of area above 100 Lux (recommendation >95%)	Meets Criteria*	% of area above target Lux* (recommendation >50%)	Meets Criteria*
No. 20	Bedroom	3.25%	Yes	100%	100%	Yes	100%	Yes
No. 20	LKD	3.19%	Yes	100%	100%	Yes	100%	Yes
No. 20	Bedroom	3.48%	Yes	100%	100%	Yes	100%	Yes
No. 21	LKD	2.57%	Yes	100%	100%	Yes	100%	Yes
No. 21	Bedroom	1.64%	Yes	40%	100%	No	100%	Yes
No. 22	LKD	5.64%	Yes	100%	100%	Yes	100%	Yes
No. 22	Bedroom	2.18%	Yes	85%	100%	Yes	100%	Yes
No. 22	Bedroom	1.95%	Yes	86%	100%	Yes	100%	Yes

*For information regarding the criteria under the various guidelines please refer to section 3.0 on page 12.

Figure 7.9: Floor plan of assessed building.

8.0 Analysis of Results

Results were generated and analysed for the following studies:

- Vertical Sky Component
  - Prospect House
  - 28 | 30 Prospect View
  - 32 | 34 | 36 Prospect View
- Annual Probable Sunlight Hours
  - 28 | 30 Prospect View
  - 32 | 34 | 36 Prospect View
- Sunlighting in Existing Gardens/Amenity Spaces
  - 2 Prospect Drive
- Sunlighting in Proposed Gardens/Amenity Spaces
  - 2 No. spaces in the proposed development.
- Average Daylight Factor
  - 55 No. spaces in the proposed development.

8.1 Analysis of Impact Assessment Results

8.1.1 Effect on Vertical Sky Component (VSC)

The effect on VSC has been assessed for 40 No. windows across the surrounding properties. Using the rationale explained in section 2.2 on page 6, the effect to VSC on all no. of these windows would be considered *imperceptible*.

This shows that 100% of the assessed windows will experience an imperceptible level of effect.

The complete results for the study on the effect on VSC caused by the proposed development can be found in Section 6.1 on page 19.

8.1.2 Effect on Annual/Winter Probable Sunlight Hours (APSH/WPSH)

The APSH/WPSH assessment has been carried out on the relevant windows of the surrounding properties that have an orientation within 90 degrees of due south.

The effect on APSH has been assessed for 32 no. of windows of the surrounding existing properties across Prospect View. Using the rationale explained in section 2.2 on page 6, the effect on the APSH and WPSH of all no. of these windows would be considered *imperceptible*.

100% of these windows have met the criteria for effect on APSH as set out in the BRE Guidelines.

The results of the study on APSH can be found in Section 6.2 on page 25.

8.1.3 Effect on Sun On Ground in Existing Gardens

This study has assessed the effect the proposed development would have on the level of sunlight on March 21st in the rear garden of the neighbouring property on 2 Prospect Drive.

Using the rationale explained in section 2.2 on page 6, the assessed garden would experience an *imperceptible* level of effect.

100% of these outdoor spaces have met the criteria for effect on sunlighting as set out in the BRE Guidelines.

The complete results of the study on effect on sunlight the neighbouring gardens can be found In section 6.3 on page 33.

A visual representation of these readings can be seen in the 2 hour false colour plans in section 6.3 and in the hourly shadow diagrams for March 21st in section 6.4.1 on page 34.

8.2 Analysis of Scheme Performance Results

8.2.1 Sun On Ground in Proposed Outdoor Amenity Areas

This study has assessed the level of sunlight on March 21st with in the proposed amenity areas.

In total 2 No. spaces have been assessed, all of which would meet the criteria as set out in the BRE Guidelines.

The complete results for the study on sunlighting in the proposed outdoor amenity spaces can be found in section 7.0 on page 43.

A visual representation of these readings can be seen in the false colour plan in section 7.0 and in the hourly shadow diagrams for March 21st in section 6.4.1 on page 34.

8.2.2 Average Daylight Factor (ADF)

This study has assessed the Average Daylight Factor (ADF) received in all habitable rooms across all habitable rooms across all floors of the proposed apartment development. This has ensured that where unit types differ by way of layout and/or floor to ceiling heights, a clear understanding has been obtained of the performance of the scheme with regard to ADF.

This proposed development consists of 22 no. units, which makes up approximately 55 no. habitable rooms.

The ADF value in all habitable rooms meet or exceed their target values. This gives a compliance rate of 100%, demonstrating that all habitable rooms will receive adequate levels of daylight considering the purpose of the space.

The complete results for the study on ADF can be seen in section 7.2 on page 44.

9.0 Conclusion

3D Design Bureau (3DDB) were commissioned to carry out a daylight assessment, sunlight assessment and shadow study for the proposed development Prospect House, Stocking Lane, Rathfarnham, Dulbin 16.

This assessment has studied the effect the proposed development would have on the level of daylight and sunlight received by the neighbouring residential properties that are in close proximity to the proposed development.

The study showed that all the surrounding windows and gardens that could potentially experience a level of impact would sustain an imperceptible level of effect, should the proposed building be built as proposed. Therefore, no existing properties will experience an unacceptable drop in levels of daylight or sunlight.

For the Scheme Performance, all proposed habitable rooms and amenity spaces presented BRE compliant results for Average Daylight Factor and Sun On Ground, respectively.

It can be determined that the proposed development will perform well in terms of daylight and sunlight, and neighbouring residential properties will experience imperceptible levels of effect to the daylight and sunlight received.

In conclusion, the proposed scheme is performing well from both an impact point of view and scheme performance point of view with all results assessed being favourable.