

The Royal Central School of Speech and Drama

'Phase 5' – Studio 1 Redevelopment

Daylight/ Sunlight Assessment

Devla Patman Redler LLP



Thavies Inn House 3-4 Holborn Circus London EC1N 2HA

020 7936 3668 info@delvapatmanredler.co.uk www.delvapatmanredler.co.uk

THE ROYAL CENTRAL SCHOOL OF SPEECH AND DRAMA

ETON AVENUE

LONDON

NW3 3HY

DAYLIGHT AND SUNLIGHT STUDY

Ref: LT/lt/14032 Date: November 2014

CONTENTS	PAGE
Introduction	2
THE PROPOSAL	2
POLICY / GUIDELINES	2
METHODOLOGY	2
Daylight Standard	
Sunlight Standard	
Source Data	3
SIGNIFICANCE CRITERIA	3
Daylight	
Sunlight	
BASELINE CONDITIONS	3
RESULTS - COMPLETED DEVELOPMENT	3
Vertical Sky Component Results (VSC)	
Annual Probable Sunlight Results	
Conclusions	4
APPENDIX A – LOCATION DRAWINGS	
14032/LOC/800 rev A, 801-803	
14032/SPT/801	
APPENDIX B - DAYLIGHT ANALYSIS	
APPENDIX C – SUNLIGHT ANALYSIS	

INTRODUCTION

Delva Patman Redler LLP have been instructed to prepare a daylight and sunlight study to assess the likely impact of the proposed development at The Royal Central School of Speech and Drama on the neighbouring residential amenity adjacent to the site.

This study has been carried out in accordance with the recommendations of the Building Research Establishment Report "Site Layout Planning for Daylight & Sunlight 2011" (BRE209).

The template drawings, which are attached, illustrate the results for the daylight and sunlight assessments and identify the drawings used in these studies.

THE PROPOSAL

The development proposals are to demolish the existing two storey building and replace it with a ground plus five storey block with the inclusion of a setback fifth floor from Buckland Crescent.

POLICY / GUIDELINES

This study has been carried out in accordance with the recommendations of the Building Research Establishment report "Site Layout Planning for Daylight & Sunlight 2011". This is the recognised standard outlined within The Camden Local Development Framework policy number 26.3 by which daylight and sunlight should be assessed.

The BRE guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and the report should not be seen as a part of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design. In certain circumstances the developer or planning authority may wish to use alternative target values.

Whilst technical analysis can be carried out in accordance with numerical guidelines and reported factually by comparison with those guidelines, the final assessment as to whether affected dwellings are left with acceptable amounts of daylight and sunlight in an inner city context where the findings are to be interpreted in a flexible manner is a matter of subjective opinion.

METHODOLOGY

The Daylight and Sunlight assessments have been undertaken in accordance with the Building Research Establishment (BRE) guidelines.

The BRE Report advises that daylight levels should be assessed for the main habitable rooms of neighbouring residential properties. Habitable rooms in residential properties are defined as kitchens, living rooms and dining rooms. Bedrooms are less important as they are mainly occupied at night time.

Daylight

The BRE Guide states that:

"If, for any part of the new development, the angle from the centre of the lowest affected window to the head of the new development is more than 25°, then a more detailed check is needed to find the loss of skylight to the existing buildings."

The BRE guidelines propose several methods for calculating daylight.

The two main methods predominantly used are those involving the measurement of the total amount of skylight available (the vertical sky component (VSC)) and its distribution within the building (the No-Sky line or daylight distribution).

The VSC calculation is a general test of potential for daylight to a building, measuring the light available on the outside plane of windows.

The "No-Sky" Line divides those areas of the working plane which can receive direct skylight, from those which cannot. It provides an indication of how good the daylight distribution is within a room.

The third recognised method of assessment for daylight is the Average Daylight Factor (ADF) calculation which assesses the quality and distribution of light within a room served by a window and takes into account the VSC value, the size and number of the windows and room and the use to which the room is put. ADF assesses actual light distribution within a defined room area whereas the VSC considers potential light. British Standard 8206, Code of Practice for Daylighting recommends ADF values of 1% in bedrooms, 1.5% in living rooms and 2% in kitchens. For other uses, where it is expected that supplementary electric lighting will be used throughout the daytime, such as in offices, the ADF value should be 2%. There is no general requirement within the BRE guidelines to assess ADF values, other than for neighbouring residential buildings.

This report considers the primary method of assessment, the VSC analysis only.

Sunlight

The BRE have produced sunlight templates for London, Manchester and Edinburgh indicating the Annual Probable Sunlight Hours (APSH) for these regions. The London template has been selected for this study as the London indicator template is the closest of the three available from BRE in terms of latitude.

Sunlight analysis is undertaken by measuring annual probable sunlight hours (APSH) for the main windows of rooms which face within 90° of due south. The maximum number of annual probable sunlight hours for the London orientation is 1,486 hours. The BRE guidelines propose that the appropriate date for undertaking a sunlight assessment is on 21st March, being the spring equinox. Calculations of both summer and winter availability are made with the winter analysis covering the period from the 21st September to 21st March. For residential accommodation, the main requirement for sunlight is in living rooms and it is regarded as less important in bedrooms and kitchens.

Due to orientation and room uses only the living room windows at 14-15 College Crescent have been considered for the sunlight assessment in accordance with BRE Guidance.

Source Data

The studies have been undertaken by calculating the daylight & sunlight based on the template drawings provided within the BRE guidelines. The study was undertaken with plan drawings derived from:

Existing/Proposed and surrounding buildings:
 Tim Ronalds Architects:

Dwg No's:

3D Model - 140522_RCSSD_Stage D Design.dwg

A set of plans/elevations have been obtained for 14-15 College Crescent from the London Borough of Camden Planning website. This allowed the room uses for the windows to be determined for increased accuracy within the technical study. Plans for 51 Buckland Crescent have also been obtained which show that of the four windows facing directly onto the development site that only the lower ground window serves a third bedroom which is of habitable use.

SIGNIFICANCE CRITERIA

The guidance given by BRE has been used as a basis for the criteria to assess the potential effect of the Development.

In describing the significance criteria as set out below, it should be noted that they have been developed to protect residential properties, which are the most sensitive receptors.

TABLE 1: BRE DAYLIGHT GUIDANCE USED IN THE ASSESSMENT

Issue	Criteria
Neighbouring Daylight	A window may be affected if the vertical sky component (VSC) measured at the centre of the window is less than 27% and less than 0.8 times its former value.
Neighbouring Sunlight	A window may be adversely affected if a point at the centre of the window receives in the year less than 25% of the annual probable sunlight hours including at least 5% of the annual probable sunlight hours (APSH) during the winter months (21 September to 21 March) and less than 0.8 times its former sunlight hours during either period.

BASELINE CONDITIONS

An analysis of the impact of the existing buildings (the baseline conditions) against which to compare any potential impact arising from the development has been undertaken based on drawing 14032/SPT/801 in Appendix A.

The site is situated on the corner of Buckland Crescent and College Crescent. It is in close proximity to the adjacent properties including 14-15 College Crescent, Northways Parade and 51 Buckland Crescent. On 51 Buckland Crescent further research has been conducted and only the lower ground floor window serves a habitable room. The windows on Northways Parade at first floor level are situated underneath an existing external balcony thus already inhibiting natural daylight.

The windows which were tested are shown on Drawing 14032/LOC/801-803 in Appendix A.

An analysis of the existing daylight and sunlight levels enjoyed by the neighbouring residential amenity has been undertaken in order to provide a baseline against which the impacts arising from the proposed development can be assessed.

RESULTS – COMPLETED DEVELOPMENT

DAYLIGHT - VSC

The full results of the daylight analysis are presented in Appendix B in tabular form. A summary of the results of the Vertical Sky Component (VSC) analysis on the relevant overlooking windows are presented in the Table 2 below. This identifies where habitable rooms are left with adequate light.

TABLE 2: NUMBER OF WINDOWS EXPERIENCING DAYLIGHT IMPACTS AS A RESULT OF THE DEVELOPMENT (VSC METHOD)

Address	Total Number of Windows Tested	Number of Windows Meeting BRE Guidelines for VSC	Number of Windows Experiencing Adverse Impacts
14-15 College Crescent	22	22	0
Northways Parade	50	43	7
51 Buckland Crescent	1	0	1
Total	73	65	8

Table 2 indicates that all but 8 neighbouring windows (89.4%) assessed will fully comply with BRE Guidance for daylight in VSC terms.

One of the windows is the lower ground floor bedroom window on the return elevation at 51 Buckland Crescent. This is only marginally beyond the 20% reduction recommended within the BRE guidance. As this room is a third bedroom and all other habitable rooms in the property are unaffected by the development this is not a material adverse impact

The other 7 windows which fail are all located underneath the deep second floor balcony on Northways Parade. This naturally inhibits the access of light into the habitable rooms and is the main reason these windows do not meet BRE guidelines.

Paragraph 2.2.11 recognises that the presence of balconies artificially:

"...cuts out light from the top part of the sky."

and that:

"...even a modest obstruction opposite may result in a large relative impact on the VSC."

In order therefore to get a better demonstration of how the scheme impacts the neighbouring building an assessment can be made discounting the self-obstructing elements of the neighbour. The result for this assessment is shown below.

TABLE 3: NUMBER OF RESIDENTIAL WINDOWS EXPERIENCING DAYLIGHT IMPACTS AS A RESULT OF THE DEVELOPMENT (VSC METHOD)

Address	Total Number of Windows Tested	Number of Windows Meeting BRE Guidelines for VSC	Number of Windows Experiencing Adverse Impacts
Northways Parade (Without Balconies)	7	7	0
Total	7	7	0

Table 3 indicates that when these 7 windows are tested without the self-obstructing balcony above they comfortably comply with the BRE Guidelines. This demonstrates that it is the design of the neighbouring building itself causing the issue as opposed to the proposed scheme.

SUNLIGHT - APSH

The full results of the sunlight analysis are presented in Appendix C in tabular form with a sample attached. A summary of the results of the Annual Probable Sunlight Hours (APSH) analysis on the relevant overlooking windows are presented in Table 4 below. This identifies where habitable rooms are left with inadequate light.

Due to the orientation of the site and room uses, not all of the windows tested for the daylight analysis qualify for sunlight analysis.

TABLE 4: Number of Windows Experiencing Negligible and Adverse Sunlight Impacts as a Result of the Development (APSH Method)

Address	Total Number of Windows	Windows Meeting BRE	Number of Windows
	Tested	Guidelines for APSH	Experiencing Adverse Impacts
14-15 College Crescent	4	4	0

Table 4 shows that the all 4 living room windows tested are fully compliant in terms of sunlight in accordance with the BRE Guide.

CONCLUSIONS

The site is situated on the corner of Buckland Crescent and College Crescent. It is in close proximity to the adjacent properties including 14-15 College Crescent, Northways Parade and 51 Buckland Crescent. These all have an aspect of the development site.

The site is set in an urban environment; the neighbouring residential properties generally receive good levels of light over and above the existing and surrounding buildings due to their relative height and proximity.

To assess the potential impact of the Development on daylight and sunlight on the neighbouring properties a baseline assessment was undertaken. The methods of assessment used were Vertical Sky Component (VSC) for daylight and Annual Probable Sunlight Hours (ASPH) for sunlight.

The daylight assessment demonstrates all but 8 neighbouring windows are fully compliant. The alternative method of assessment where the balcony has been removed demonstrates that 7

windows which marginally fail remain fully compliant thus demonstrating it is the inherent design of the neighbouring building itself as opposed to the scheme.

Only one neighbouring window will exceed the minimum requirements set out in the BRE guidance. However this window experiences a reduction of -22.90% which is just beyond the 20% allowance. This window serves a third bedroom and all other habitable windows within the property will remain unaffected.

The sunlight assessment demonstrates that the four living room windows facing within 90° of due south will remain fully compliant.

The development proposals should be considered to address the requirements of the London Borough of Camden Local Development Framework in daylight and sunlight terms.

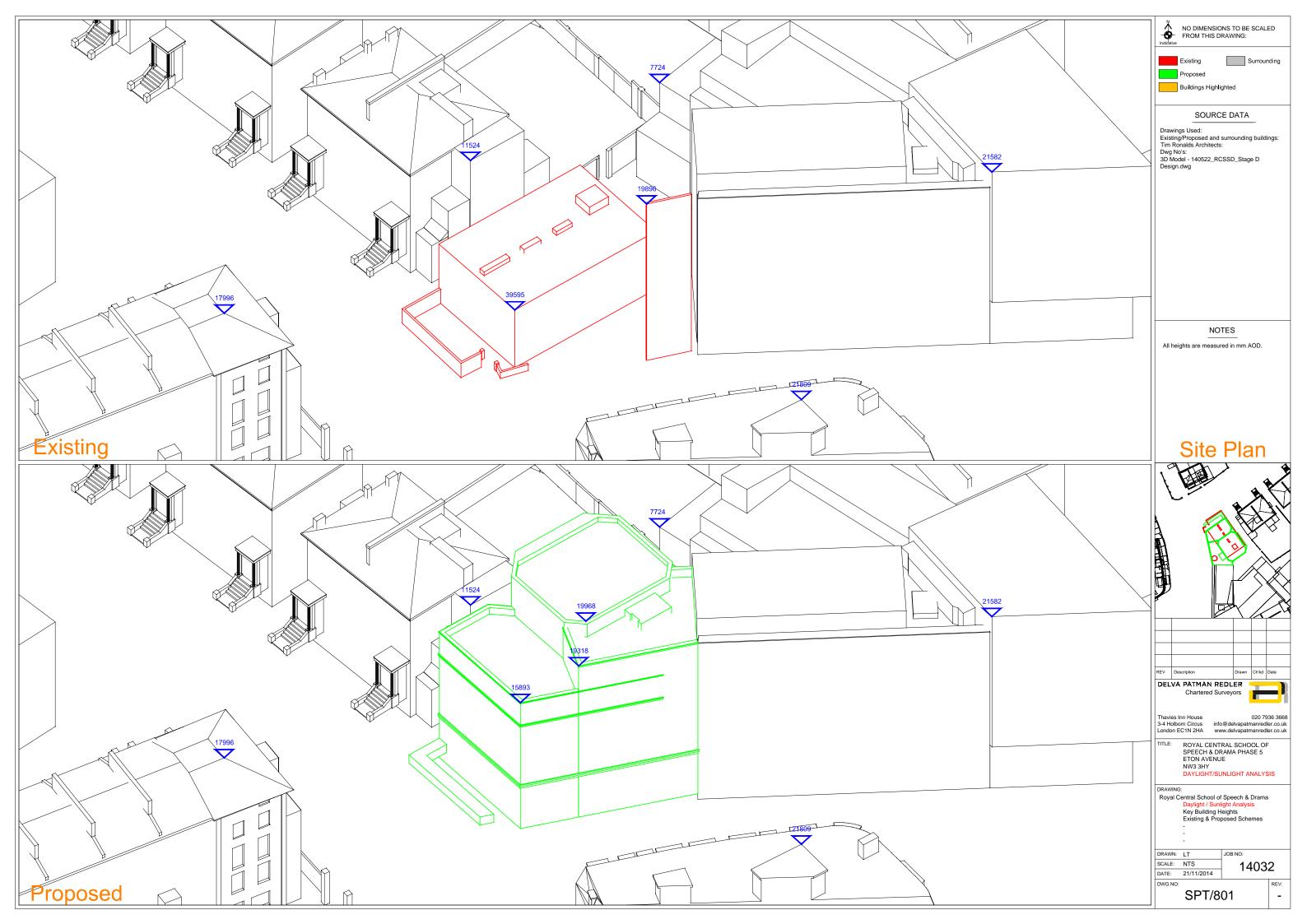
Delva Patman Redler LLP

APPENDIX A

LOCATION DRAWINGS

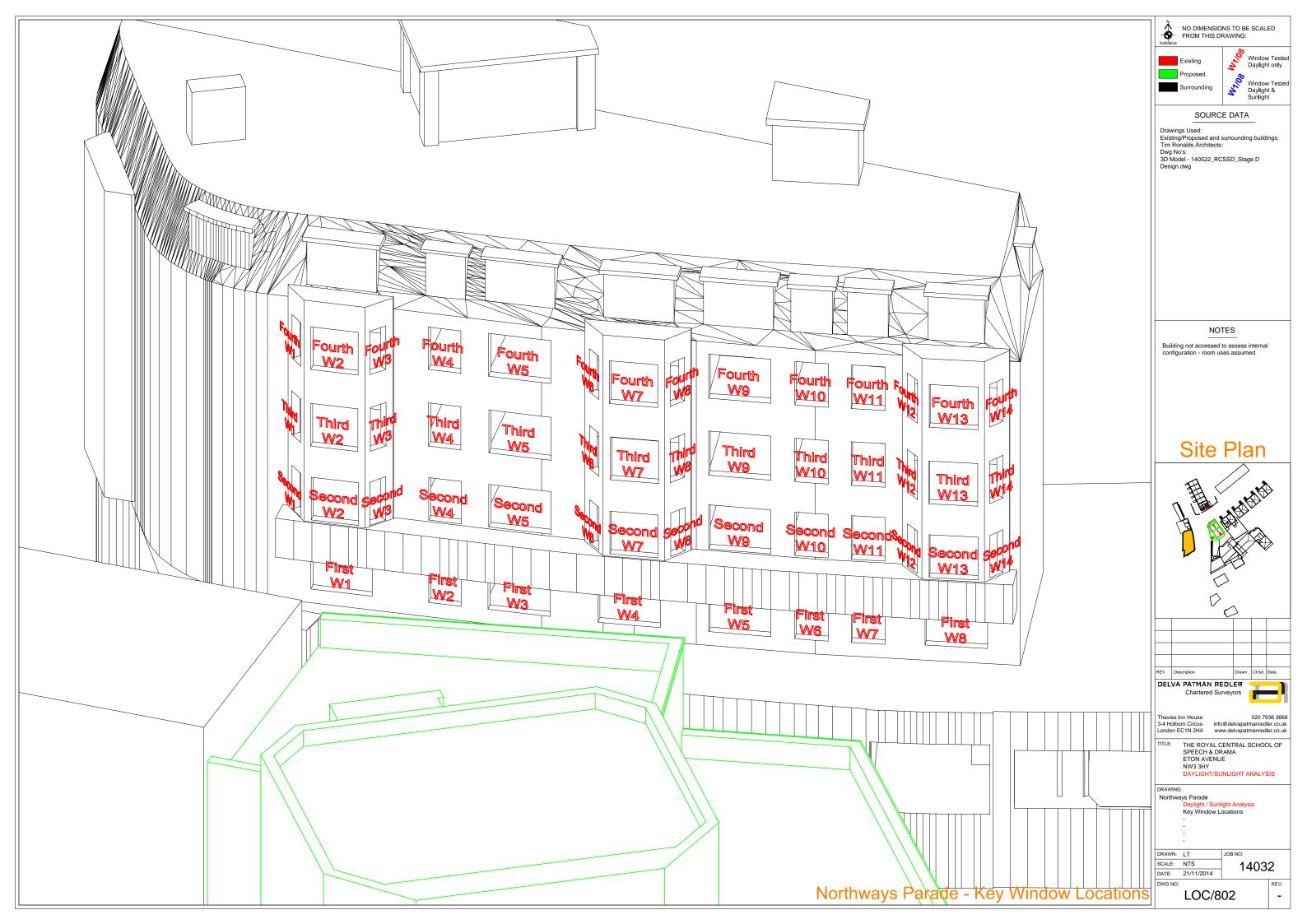
14032/LOC/800 REV A, 801 -803

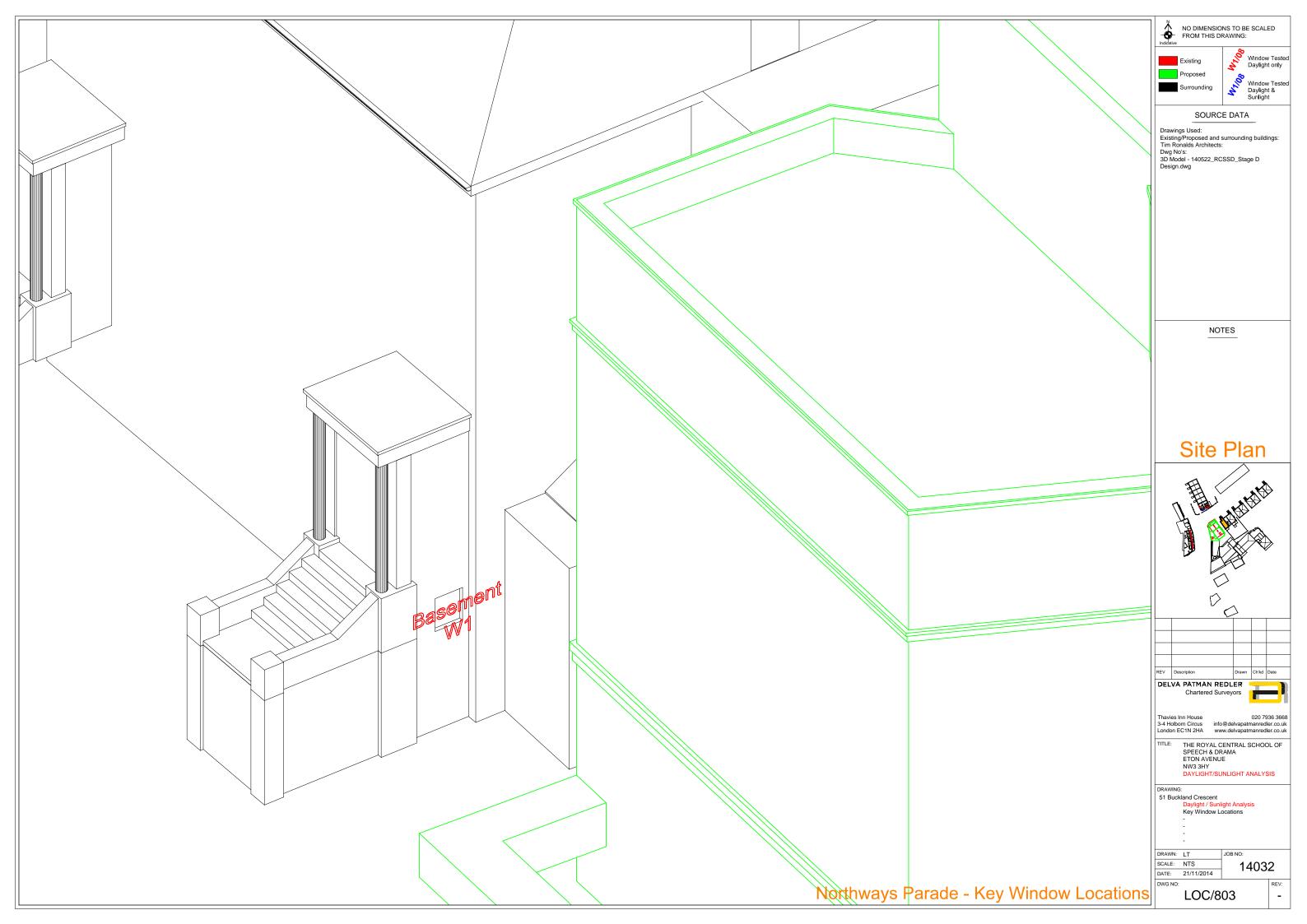
14032/SPT /801











APPENDIX B

DAYLIGHT ANALYSIS

DAYLIGHT TABLES

Dwg No	Address	Floor Level	Room Name	Window ID	Existing VSC%	Proposed VSC%	Percentage Difference	Condition
-				W1	26.04	26.04	-0.01%	Pass
-		Ground	Living_Kitchen	W2	26.51	26.51	-0.01%	Pass
-		Ground		W3	30.81	28.27	-8.24%	Pass
-			Bedroom 1	W4	28.09	25.74	-8.38%	Pass
-				W1	29.64	29.64	0.00%	Pass
-		First	Living_Kitchen	W2	29.88	29.88	-0.01%	Pass
-		i iist		W3	33.11	31.02	-6.30%	Pass
-			Bedroom 1	W4	32.96	31.01	-5.93%	Pass
-				W1	32.02	32.02	0.00%	Pass
-			Living_Kitchen	W2	32.22	32.22	-0.01%	Pass
-	14_15 College	Second		W3	35.23	33.64	-4.51%	Pass
-	Crescent		Dadas and	W4	35.24	33.78	-4.16%	Pass
-			Bedroom 1	W5	36.45	36.44	-0.04%	Pass
-			Dadas a 4	W4	32.11	31.34	-2.40%	Pass
-			Bedroom 1	W5	38.11	38.10	-0.03%	Pass
-		Third		W1	34.07	34.07	0.00%	Pass
-			Living Room	W2	34.16	34.16	0.00%	Pass
-				W3	32.84	32.02	-2.47%	Pass
-				W1	21.62	21.62	0.00%	Pass
-		= "	Bedroom 1	W2	23.30	22.81	-2.12%	Pass
-		Fourth	Bedroom 2	W4	26.39	25.90	-1.87%	Pass
-				W5	29.86	29.85	-0.02%	Pass
-			R1	W1	9.47	7.73	-18.37%	Pass
-			R2	W2	10.04	7.85	-21.75%	Fail
-			R3	W3	10.58	8.10	-23.47%	Fail
-			R4	W4	11.31	8.51	-24.74%	Fail
-		First	R5	W5	12.69	9.67	-23.78%	Fail
-				W6	13.85	10.68	-22.84%	Fail
-			R6	W7	14.07	10.89	-22.60%	Fail
-			R7	W8	13.91	10.80	-22.41%	Fail
-				W1	27.71	27.53	-0.65%	Pass
-			R1	W2	29.87	28.43	-4.81%	Pass
-				W3	27.80	26.13	-6.02%	Pass
_			R2	W4	29.69	27.94	-5.90%	Pass
-			R3	W5	30.69	28.69	-6.53%	Pass
-			R3	W6	26.26	25.08	-4.50%	Pass
-				W7	32.68	30.26	-7.40%	Pass
_	Northways Parade	Second		W8	29.87	28.08	-5.98%	Pass
			R5	W9	32.24	29.78	-7.61%	Pass
-				W10	33.39	30.82	-7.69%	Pass
-			R6	W10	32.66	30.08	-7.89%	Pass
-				W12	28.12	25.97	-7.66%	Pass
-			R7	W13	35.00	32.31	-7.68%	Pass
-			107	W14	34.37	33.21	-7.00%	Pass
-				W1	29.82	29.69	-0.45%	Pass
-			R1	W2	32.44	31.43	-3.14%	Pass
-			KI	W3				
			D2		29.88	28.70	-3.94%	Pass
-		Third	R2	W4	32.07	30.84	-3.85%	Pass
-			R3	W5	32.94	31.53	-4.28%	Pass
-			F :	W6	28.65	27.81	-2.92%	Pass
-			R4	W7	34.67	32.98	-4.89%	Pass
-				W8	31.49	30.24	-3.97%	Pass

Third	R5 R6 R7 R1 R2 R3	W9 W10 W11 W12 W13 W14 W1 W2 W3 W4 W5	34.05 35.15 34.25 30.07 36.55 36.98 32.31 35.05 32.53 34.79 35.47	32.31 33.30 32.39 28.50 34.58 35.13 32.23 34.49 31.89 34.12 34.71	-5.10% -5.24% -5.43% -5.23% -5.39% -2.34% -0.25% -1.61% -1.96% -1.95%	Pass Pass Pass Pass Pass Pass Pass Pass
Third -	R7 R1 R2	W11 W12 W13 W14 W1 W2 W3 W4	34.25 30.07 36.55 35.98 32.31 35.05 32.53 34.79	32.39 28.50 34.58 35.13 32.23 34.49 31.89 34.12	-5.43% -5.23% -5.39% -2.34% -0.25% -1.61% -1.96%	Pass Pass Pass Pass Pass Pass Pass
Third	R7 R1 R2	W12 W13 W14 W1 W2 W3 W4	30.07 36.55 35.98 32.31 35.05 32.53 34.79	28.50 34.58 35.13 32.23 34.49 31.89 34.12	-5.23% -5.39% -2.34% -0.25% -1.61% -1.96% -1.95%	Pass Pass Pass Pass Pass Pass
THIIIG	R1 R2	W13 W14 W1 W2 W3 W4	36.55 35.98 32.31 35.05 32.53 34.79	34.58 35.13 32.23 34.49 31.89 34.12	-5.39% -2.34% -0.25% -1.61% -1.96% -1.95%	Pass Pass Pass Pass Pass
	R1 R2	W14 W1 W2 W3 W4	35.98 32.31 35.05 32.53 34.79	35.13 32.23 34.49 31.89 34.12	-2.34% -0.25% -1.61% -1.96% -1.95%	Pass Pass Pass Pass
_	R2	W1 W2 W3 W4	32.31 35.05 32.53 34.79	32.23 34.49 31.89 34.12	-0.25% -1.61% -1.96% -1.95%	Pass Pass Pass
	R2	W2 W3 W4	35.05 32.53 34.79	34.49 31.89 34.12	-1.61% -1.96% -1.95%	Pass Pass
	R2	W3 W4	32.53 34.79	31.89 34.12	-1.96% -1.95%	Pass
		W4	34.79	34.12	-1.95%	
						Pass
	R3	W5	35.47	24.74		
				34.71	-2.15%	Pass
	R4	W6	31.56	31.11	-1.44%	Pass
Fourth		W7	36.59	35.68	-2.49%	Pass
Fourth		W8	33.47	32.79	-2.03%	Pass
=	R5	W9	36.17	35.23	-2.62%	Pass
	Do	W10	37.05	36.04	-2.73%	Pass
	K6	W11	36.12	35.09	-2.86%	Pass
	R7	W12	32.36	31.47	-2.74%	Pass
		W13	37.93	36.82	-2.91%	Pass
		W14	37.56	37.10	-1.23%	Pass
Basement	Bedroom 1	W1	16.18	12.47	-22.90%	Fail
Е	Basement	R6	R6 W10 W11 W12 R7 W13 W14	R6 W10 37.05 W11 36.12 W12 32.36 R7 W13 37.93 W14 37.56	R6 W10 37.05 36.04 W11 36.12 35.09 W12 32.36 31.47 W13 37.93 36.82 W14 37.56 37.10	R6 W10 37.05 36.04 -2.73% W11 36.12 35.09 -2.86% W12 32.36 31.47 -2.74% W13 37.93 36.82 -2.91% W14 37.56 37.10 -1.23%

Job No: 14032 Existing V's Proposed Analysis Without Balconies

- R2		Address	Floor Level	Room Name	Window ID	Existing VSC%	Proposed VSC%	Percentage Difference	Condition
- Northways Parade First R5 W5 30.59 27.57 -9.86% Pass - W6 31.49 28.32 -10.05% Pass - W7 31.62 28.44 -10.05% Pass	-			R2	W2	27.64	25.45	-7.90%	Pass
- Northways Parade First R5 W5 30.59 27.57 -9.86% Pass - W6 31.49 28.32 -10.05% Pass - W7 31.62 28.44 -10.05% Pass	-			R3	W3	28.47	25.98	-8.73%	Pass
- R6 W6 31.49 28.32 -10.05% Pass W7 31.62 28.44 -10.05% Pass	-			R4	W4	27.15	24.35	-10.30%	Pass
- W7 31.62 28.44 -10.05% Pass	-	Northways Parade	First	R5	W5	30.59	27.57	-9.86%	Pass
- W7 31.62 28.44 -10.05% Pass	-			R6	W6	31.49	28.32	-10.05%	Pass
- R7 W8 29.89 28.78 110.43% Pass	-					31.62			
	-			R7	W8	29.89	26.78	-10.43%	Pass

Dwg No	Address	Floor Level	Room Name	Window ID	Existing VSC%	Proposed VSC%	Percentage Difference	Condition

APPENDIX C

SUNLIGHT ANALYSIS

SUNLIGHT TABLES

Dwg No
-
-
-
-

Dwg No	Address	Floor Level	Room Name	Window ID	APSH %		w	inter %	
					Existing Proposed	% Diff Pass/Fail	Existing Propose	ed % Diff	Pass/Fa