DAYLIGHT/SUNLIGHT ANALYSIS

in connection with the proposed redevelopment at

49-50 EAGLE WHARF ROAD

LONDON N1 7ED

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DAYLIGHT/SUNLIGHT ANALYSIS

in connection with the proposed redevelopment at

4 ROACH ROAD

LONDON E3

EXECUTIVE SUMMARY

1.1 This Report has been commissioned by GHL (Eagle Wharf) Limited to determine and demonstrate the effect of the redevelopment on daylight and sunlight to the windows of the adjoining buildings, and the internal illuminance of the proposed development.

1.2 Assessments have been carried out in accordance with the *Building Research Establishment* Report document entitled "*Site Layout planning for daylight and sunlight: A guide to good practice*" *Second Edition* by Paul Littlefair (*2011*). This publication has superseded the previous Guidance dated 1991 which was generally taken by the majority of Planning Authorities as the accepted basis for Assessment.

1.3 The *Second Edition 2011* does give numerical guidelines, but recommends that these should be interpreted flexibly because natural lighting is only one of a number of factors in site layout design. In special circumstances a Planning Authority may wish to use different target values.

1.4 The analysis of the effect upon daylight to the fenestration of the adjacent residential fenestration demonstrates that the proposals accord with the *Second Edition 2011* save for the effect upon 14-27 Eagle Wharf Road. There is a discernible effect, but this is as a consequence of the proposals matching the size and mass of the adjacent building known as Angel Wharf, Eagle Wharf Road.

1.5 Insofar as sunlight is concerned, only the windows to the front elevation windows to 12A/B Eagle Wharf Road met the criteria for analysis; following the proposals these windows will receive above 50% of annual sunlight with at least 18% of winter sun.

1.6 With regard to internal illuminance, the proposed accommodation can be seen to accord with the recommendations of *Appendix C* of the *Second Edition 2011* and those detailed within *BS 8206-2 Code of practice for daylighting* and the *CIBSE Lighting Guide LG10 Daylighting and window design.*

1.7 The proposals therefore accord with the *.London Borough of Hackney Adopted Unitary Development Plan – June 1995 EQ1 Development Requirements*

INTRODUCTION

2.1 This Report is produced to determine and demonstrate the effect of the redevelopment on daylight and sunlight to the windows of the adjoining buildings, and the internal illuminance of the proposed development.

2.2 For the purposes of this Report, I would like to confirm that I work predominately in the field of boundary disputes dealing with matters arising under *The Party Wall etc. Act, 1996,* neighbourly matters including boundary disputes and rights of light including daylight and sunlight assessments. I have an extensive and highly specialised knowledge, in these areas having worked in the past for both Anstey Horne & Co. for five years and Schatunowski Brooks (formerly known as Michael Brooks Associates as it was when I joined and now known as GVA Schatunowski Brooks) for three years, as well as Delva Patman Associates for four years prior to joining in partnership Dixon Payne in 2001. All are acknowledged Experts in these fields. I regularly provide Expert Witness advice in respect of Planning Applications in respect of daylight and sunlight at Planning Inquiries acting for both Appellants and Planning Authorities. I was consulted by the *Building Research Establishment* with regard to the revision of their guidelines prior to the publication of *Second Edition 2011.*

2.3 The analysis and assessment is described in more detail in subsequent sections of this Report.

2.4 The proposals that have been considered are those prepared by Stephen Davy Peter Smith Architects which include for the comprehensive redevelopment of the site including the demolition of existing buildings save for the retention, refurbishment and conversion of the three storey warehouse fronting Regents Canal and the chimney stack and erection of new buildings, including the creation of a basement, to provide commercial uses (Use Class B1/A3), 64 residential dwellings, new public realm, landscaping, cycle parking and other associated works.

ANALYSIS OF THE EFFECT UPON DAYLIGHT & SUNLIGHT TO ADJOINING RESIDENTIAL PROPERTIES

3.1 Within the *London Borough of Hackney Adopted Unitary Development Plan – June 1995 EQ1 Development Requirements* states

THE COUNCIL WILL NORMALLY PERMIT DEVELOPMENTS WHICH:
(A) RESPECT THE VISUAL INTEGRITY AND ESTABLISHED SCALE, MASSING AND RHYTHM OF THE BUILDING, GROUP OF BUILDINGS OR STREET SCENE (INCLUDING CHARACTERISTIC BUILDING LINES AND PLOT WIDTHS) OF WHICH THEY FORM A PART;
(B) ARE OF MATERIALS, FORM AND DETAILING APPROPRIATE TO THE DESIGN AND THE LOCALITY;
(C) RETAIN, ENHANCE AND/OR CREATE URBAN SPACES, VIEWS, LANDMARKS AND OTHER TOWNSCAPE FEATURES WHICH MAKE A SIGNIFICANT CONTRIBUTION TO THE CHARACTER OF THE AREA, AND TAKE OPPORTUNITIES TO REVEAL SUCH FEATURES TO PUBLIC VIEW;
(D) ARE OF A HEIGHT WHICH ACCORDS AND IS COMPATIBLE WITH NEIGHBOURING BUILDINGS, AND HAVE REGARD TO THE SPECIAL CIRCUMSTANCES OF THE SITE, AND DO NOT DETRACT FROM IMPORTANT OR POTENTIALLY IMPORTANT VIEWS;
(E) PROVIDE SAFE AND CONVENIENT ACCESS AND CIRCULATION FACILITIES FOR BOTH USERS AND THE GENERAL PUBLIC, PARTICULARLY PEOPLE WITH DISABILITIES AND PEOPLE WITH CHILDREN;
(F) DO NOT CONSTITUTE OVER DEVELOPMENT LEADING TO CRAMPED LAYOUTS AND/OR OBTRUSIVENESS IN RELATION TO ADJOINING PROPERTIES;
(G) PROVIDE ADEQUATE SUNLIGHT, DAYLIGHT AND OPEN ASPECTS TO ALL PARTS OF THE DEVELOPMENT AND ADJACENT BUILDINGS AND LAND;
(H) DO NOT HAVE ANY UNACCEPTABLE DETRIMENTAL EFFECT UPON THE REASONABLE USE AND ENJOYMENT OF ADJACENT BUILDINGS AND LAND, DUE, FOR EXAMPLE, TO VIBRATION, NOISE, SMELLS, EMISSIONS OR PRESENCE OF HAZARDOUS SUBSTANCES AND MATERIALS;
(I) DO NOT ADVERSELY AFFECT THE AMENITIES OF EXISTING OCCUPIERS OF THE SAME DEVELOPMENT, BUILDING OR SITE;
(J) MAXIMISE ENERGY CONSERVATION THROUGH DESIGN, SITING AND ORIENTATION, WHERE CONSISTENT WITH CRITERIA (A) - (D) ABOVE.

Notes:
(i) Adequate daylight will be determined using the Department of the Environment's "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" published by Building Research Establishment 1991.

3.2 Following the publication of the *Building Research Establishment* guideline document entitled "*Site Layout planning for daylight and sunlight: A guide to good practice*" by Paul Littlefair (1991), the assessment of daylight has been generally carried out in accordance with the criteria set by this publication and which is generally taken to be the accepted basis for such assessment and adopted by most Planning Authorities. The guidance has now been replaced by the *Second Edition 2011* and addresses, amongst other things, appropriate target values for development within the urban location.

3.3 The *Second Edition 2011* does give numerical guidelines which, as stated in the document, are not to be considered either mandatory or an instrument of planning policy, but recommends that these should be interpreted flexibly because natural lighting is only one of a number of factors in site layout design. A higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings.

3.4 The primary assessment of daylight is based on the calculation of the vertical sky component (*VSC*) to an affected window in both the existing and proposed condition. The *VSC*, simply put, is the amount of light received at the centre of a window. The advised procedure to follow is to ascertain whether the new development subtends a line drawn at 25° to the horizontal. If the whole of the development is below this line then it is unlikely that the proposals will have a substantial effect on the skylight or daylight enjoyed by the existing building. If any part of the proposed development does subtend this line then a more detailed check is required. This analysis determined that 14-27 Eagle Wharf Road, 12A/B Eagle Wharf Road and Bletsoe Walk met the criteria for analysis.

3.5 The *Second Edition 2011* states that this assessment should be undertaken for habitable rooms that include living rooms, dining rooms and kitchens. Windows to bathrooms, toilets, storerooms and circulation areas need not be analysed.

3.6 If at the centre of a window the *VSC* is greater than 27% of the visible dome then enough skylight should be reaching the window. To put this into terms more readily understood, when looking at the sky dome within an open field you would be able to see 39.6% of the total sky dome.

3.7 This said, a *VSC* of 27% is the ideal, but in most urban situations unlikely to be achieved. The guide states, however, that if the *VSC* is below 27%, and as long as any reduction is within 0.8 of the original value, no significant loss will occur (a reduction which is deemed to be of no consequence and not readily identifiable).

3.8 The results of the daylight analysis are as below:-

WINDOW	EXISTING *VSC*	PROPOSED *VSC*	DIFF
14-27 EAGLE WHARF ROAD			
1,001	26.4	14.26	0.54
1,002	26.61	14.02	0.53
1,003	26.65	14.17	0.53
1,004	26.75	13.72	0.51
1,005	26.83	13.68	0.51
1,006	27.6	15.51	0.56
1,007	27.6	15.51	0.56
1,008	29.2	19.93	0.68
1,009	30.18	22.22	0.74
1,010	31.1	24.07	0.77
1,011	31.62	17.33	0.55
1,012	31.85	16.91	0.53
1,013	31.89	16.87	0.53
1,014	31.97	16.28	0.51
1,015	32.04	16.12	0.5
1,016	32.22	16.74	0.52
1,017	32.42	17.7	0.55
1,018	33.35	22.23	0.67
1,019	33.92	24.55	0.72
1,020	34.44	26.62	0.77

12A/B EAGLE WHARF ROAD			
1,021	25.29	21.5	0.85
1,022	23.82	20.51	0.86
1,024	29.51	26.85	0.93
1,025	30.06	27.93	
BLETSOE WALK			
1,026	26.36	21.8	0.83
1,027	25.53	21.84	0.86

3.9 The analysis demonstrates that whilst there will be no discernible effect upon 12A/B Eagle Wharf Road and Bletsoe Walk, the effect upon 14-27 Eagle Wharf Road will be discernible. Having regard to paragraph 3.3 above, 'A higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings.', the proposals are comparable to that at Angel Wharf, Eagle Wharf Road.

3.10 In respect of sunlight, the guide details the assessment of this by way of calculating the number of probable sunlight hours.

3.11 Probable sunlight hours take into account the total number of hours a year that the sun is expected to shine taking into account average levels of cloud cover for the geographical location. Only windows which face within 90° of south meet the criteria for assessment.

3.12 The orientation of a window is important when considering sunlight. A south facing window, generally, will receive the most sunlight whilst east and west facing windows will only receive sunlight at certain times of the day with a maximum of 50% of annual probable hours available even in an unobscured aspect. A north facing window will only receive sunlight on a very few occasions during early morning and late evening in summer.

3.13 The windows to the adjacent properties generally do not meet the criteria for the analysis for the effect upon sunlight save for the front elevation windows to 12A/B Eagle Wharf Road; following the proposals these windows will receive above 50% of annual sunlight with at least 18% of winter sun.

ANALYSIS OF INTERNAL ILLUMINANCE

4.1 The criteria against which internal illuminance is considered is detailed within *Appendix C* of the *Second Edition 2011* which is used in conjunction with *BS 8206-2 Code of practice for daylighting* and the *CIBSE Lighting Guide LG10 Daylighting and window design.* The guide states that where a predominately daylit appearance is required, the *ADF* should be at least 5% or more if there is no supplementary electric lighting or 2% or more if there is. In respect of kitchens, living rooms and bedrooms there are additional recommendations of 2%, 1.5% and 1% respectively. *BS8206-2* further advises that achieving 2% in living room will give an improved daylight provision whilst 3% - 4% would improve the situation further.

4.3 The internal illuminance to the first floor accommodation is as follows:-

FIRST FLOOR	ADF	COMMENT
E_02		
LKD	2.08	Improved daylight provision
BEDROOM 1	3.09	
BEDROOM 2	1.89	
E_01		
LKD	2.08	Improved daylight provision
BEDROOM 1	2.84	
D_03		
LKD	2.04 (1.09 WITH BALCONY)	Improved daylight provision
BEDROOM 1	2.07	
BEDROOM 2	1.5	
D-04		
LKD	1.55 (0.6833 WITH BALCONY)	Improved daylight provision
BEDROOM 1	1.37	
BEDROOM 2	0.85	
D_02		
LKD	4.47	Improved daylight provision
BEDROOM 1	6.38	
BEDROOM 2	0.84	
D_01		
LKD	1.77	
BEDROOM 1	2.34	

OVERSHADOWING

6.1 In respect of overshadowing, the *Second Edition 2011* states that the minimum requirement, insofar as overshadowing is concerned, is that the centre of an amenity area should receive at least two hours of sunlight on March 21 with the further recommendation that at least half of an amenity space should receive at least two hours of sunlight on March 21.

6.2 The analysis of the proposed amenity spaces demonstrates that due to the orientation of the site, it is difficult to achieve the guidance. However, the development has been designed to maximise the direct sunlight to the amenity areas.

6.3 Further analysis has been undertaken of the extent of overshadowing at June 21, when the shadowing will be at its minimum. This demonstrates that the majority of the amenity space will receive some direct sunlight throughout the year..

CONCLUSION

7.1 Within the *Building Research Establishment* guideline document entitled "*Site Layout planning for daylight and sunlight: A guide to good practice*" *Second Edition 2011* it does give numerical guidelines, but recommends that these should be interpreted flexibly because natural lighting is only one of a number of factors in site layout design.

7.2 The analysis of the effect upon daylight to the fenestration of the adjacent residential fenestration demonstrates that the proposals accord with the *Second Edition 2011* save for the effect upon 14-27 Eagle Wharf Road. There is a discernible effect, but this is as a consequence of the proposals matching the size and mass of the adjacent building known as Angel Wharf, Eagle Wharf Road.

7.3 Insofar as sunlight is concerned, only the windows to the front elevation windows to 12A/B Eagle Wharf Road met the criteria for analysis; following the proposals these windows will receive above 50% of annual sunlight with at least 18% of winter sun.

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7.5 The proposals therefore accord with the *.London Borough of Hackney Adopted Unitary Development Plan – June 1995 EQ1 Development Requirements*

July 15, 2015

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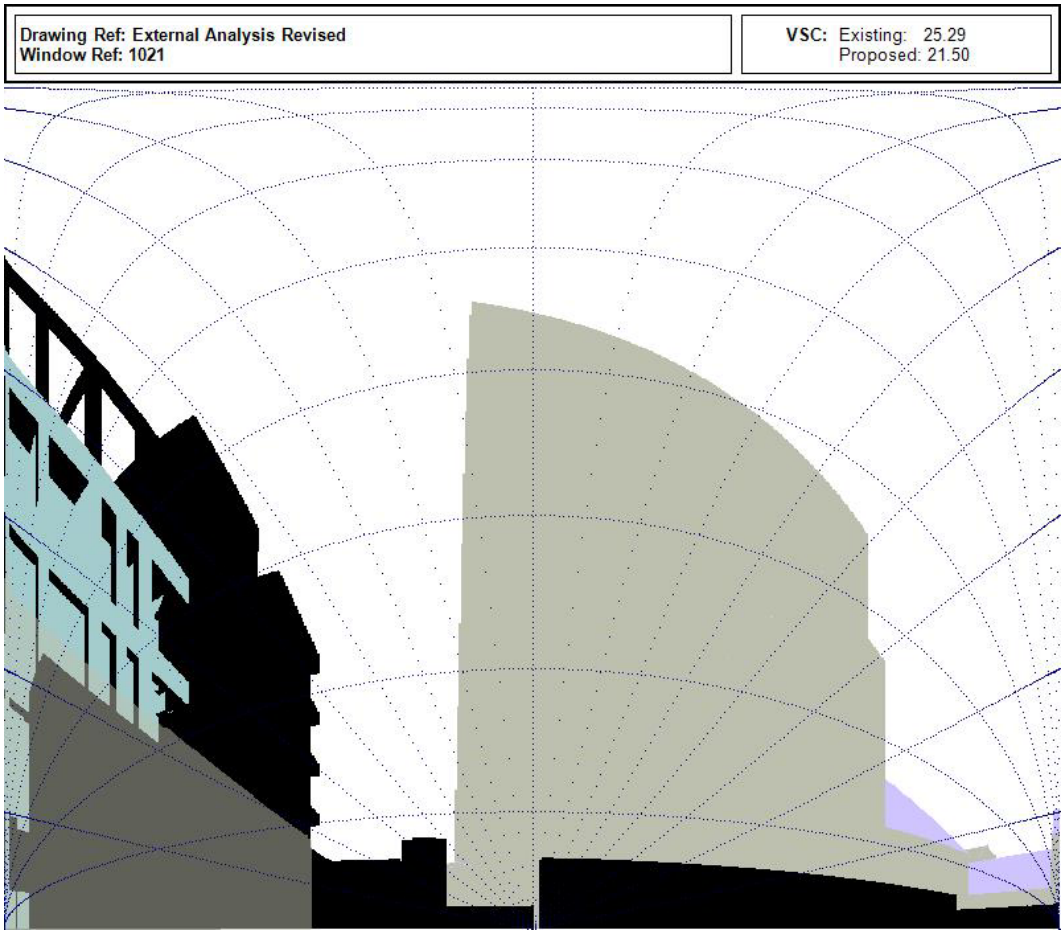
EAGLE WHARF ROAD
DAYLIGHT ANALYSIS - 12A/B EAGLE WHARF ROAD
GROUND FLOOR - REAR ELEVATION



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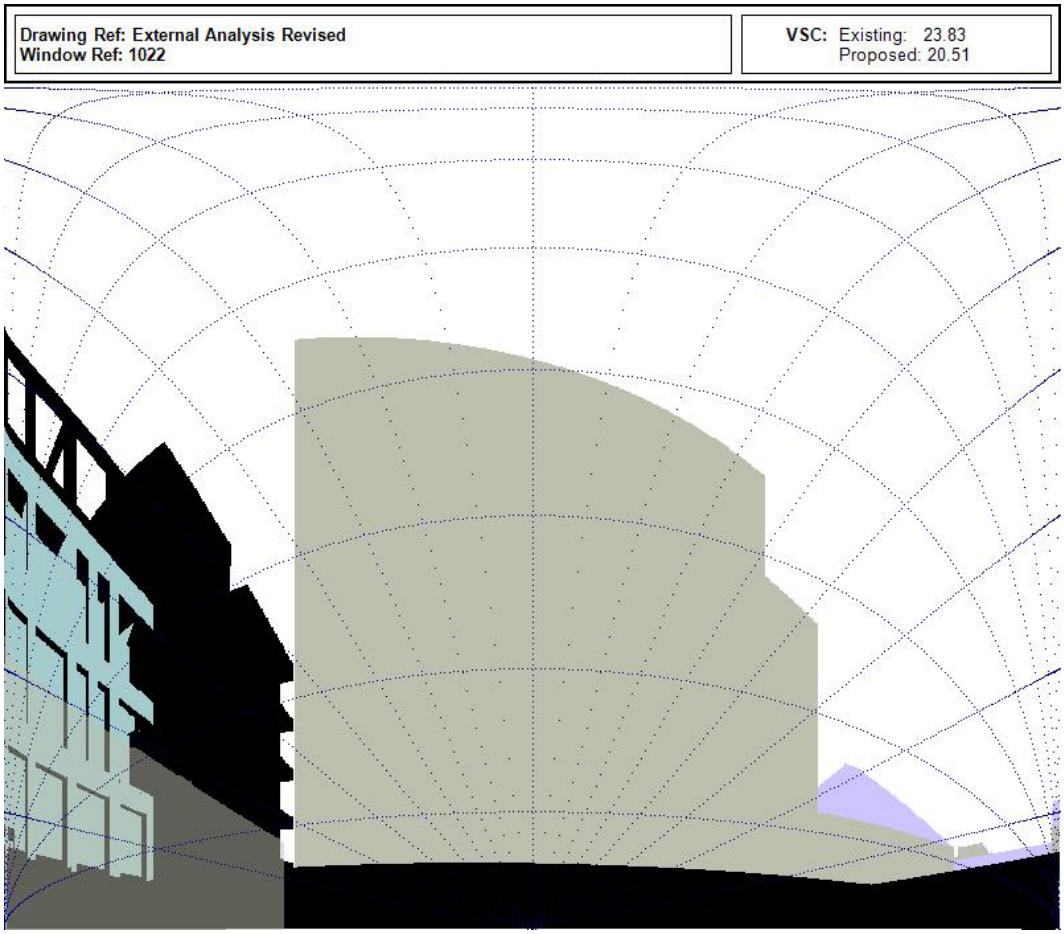

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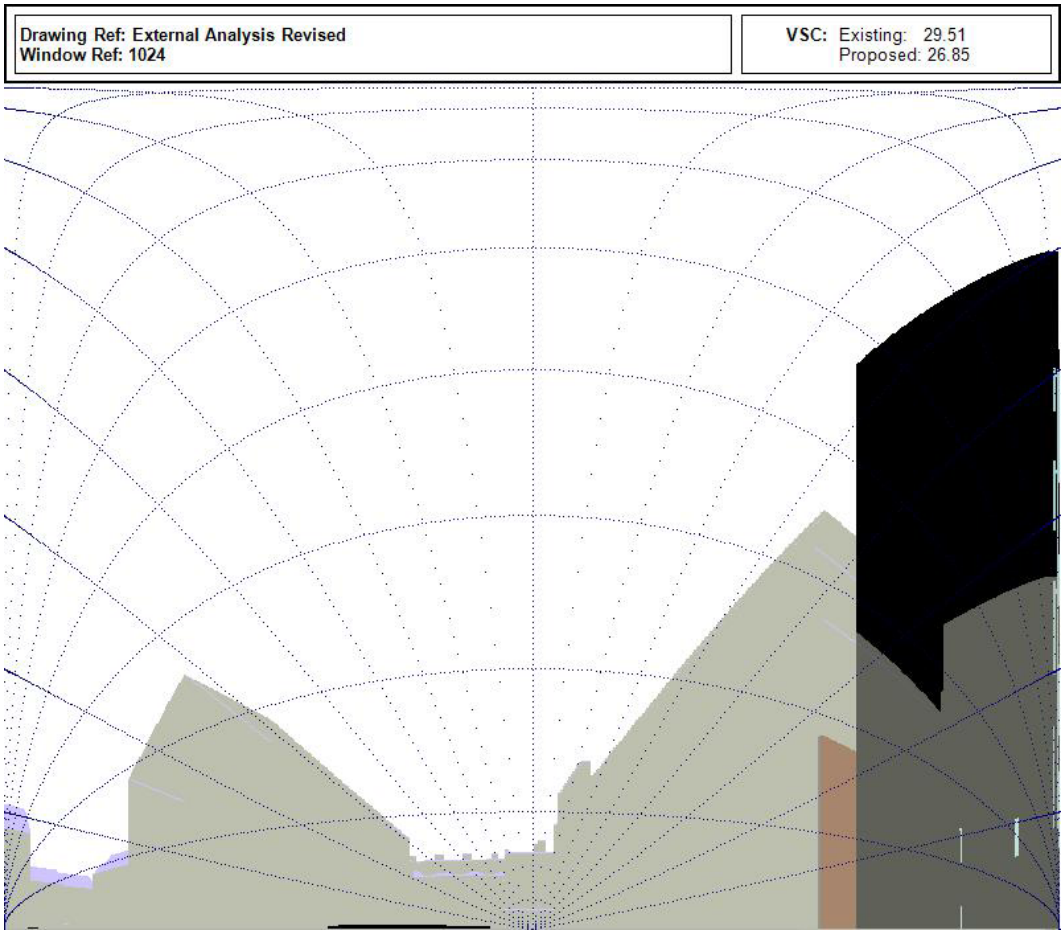
EAGLE WHARF ROAD
DAYLIGHT ANALYSIS - 12A/B EAGLE WHARF ROAD
GROUND FLOOR - FRONT ELEVATION



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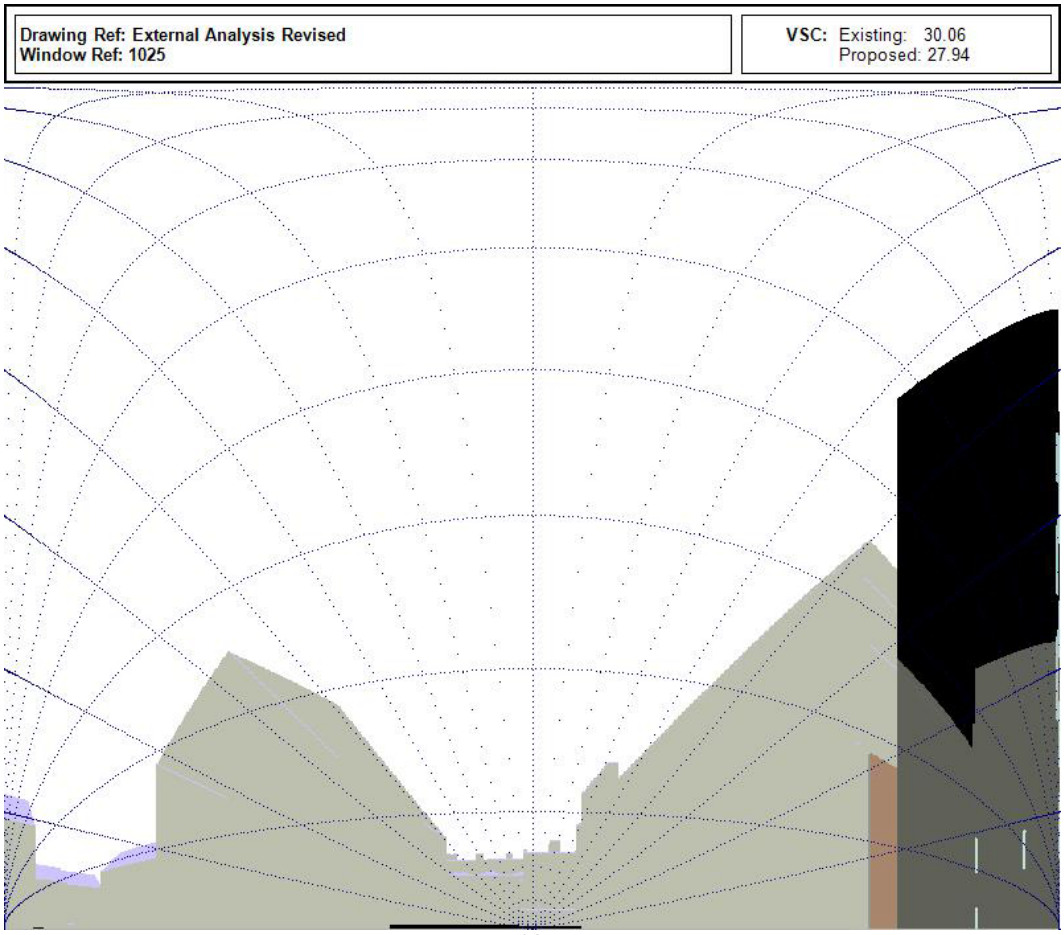

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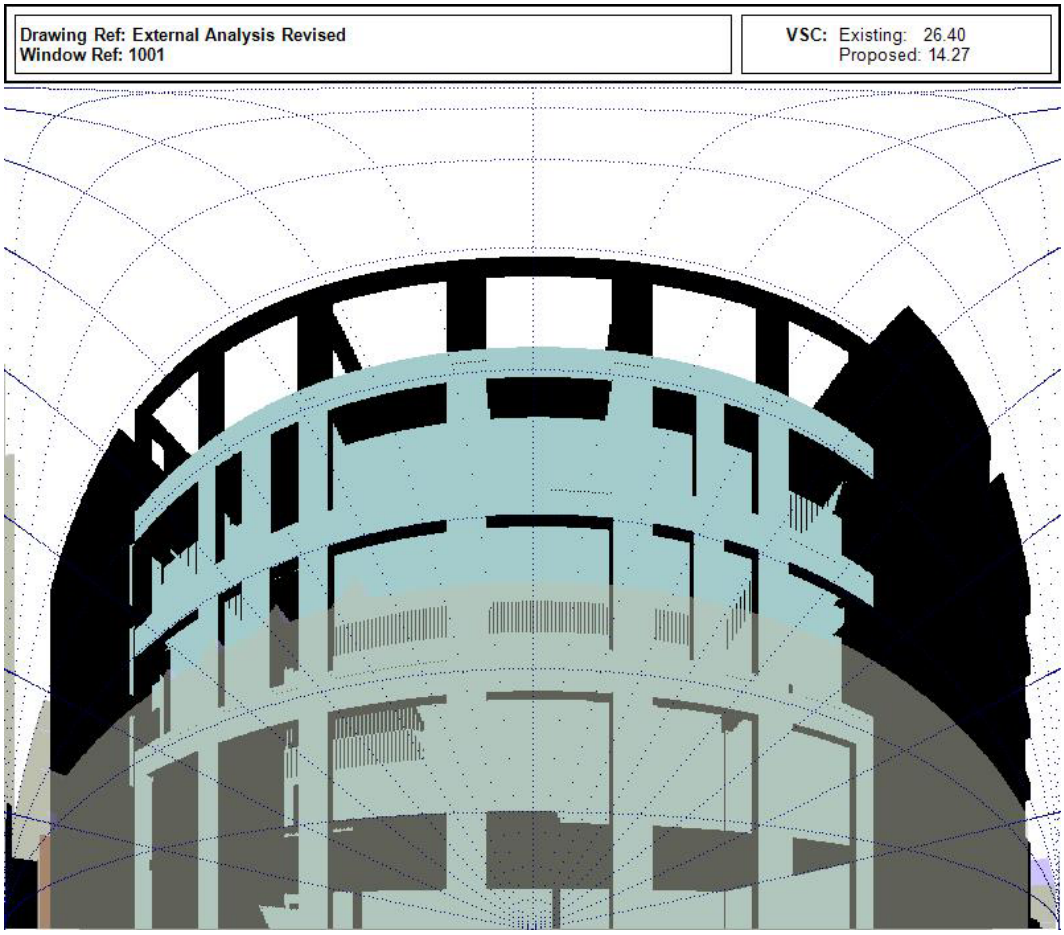
EAGLE WHARF ROAD
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
GROUND FLOOR



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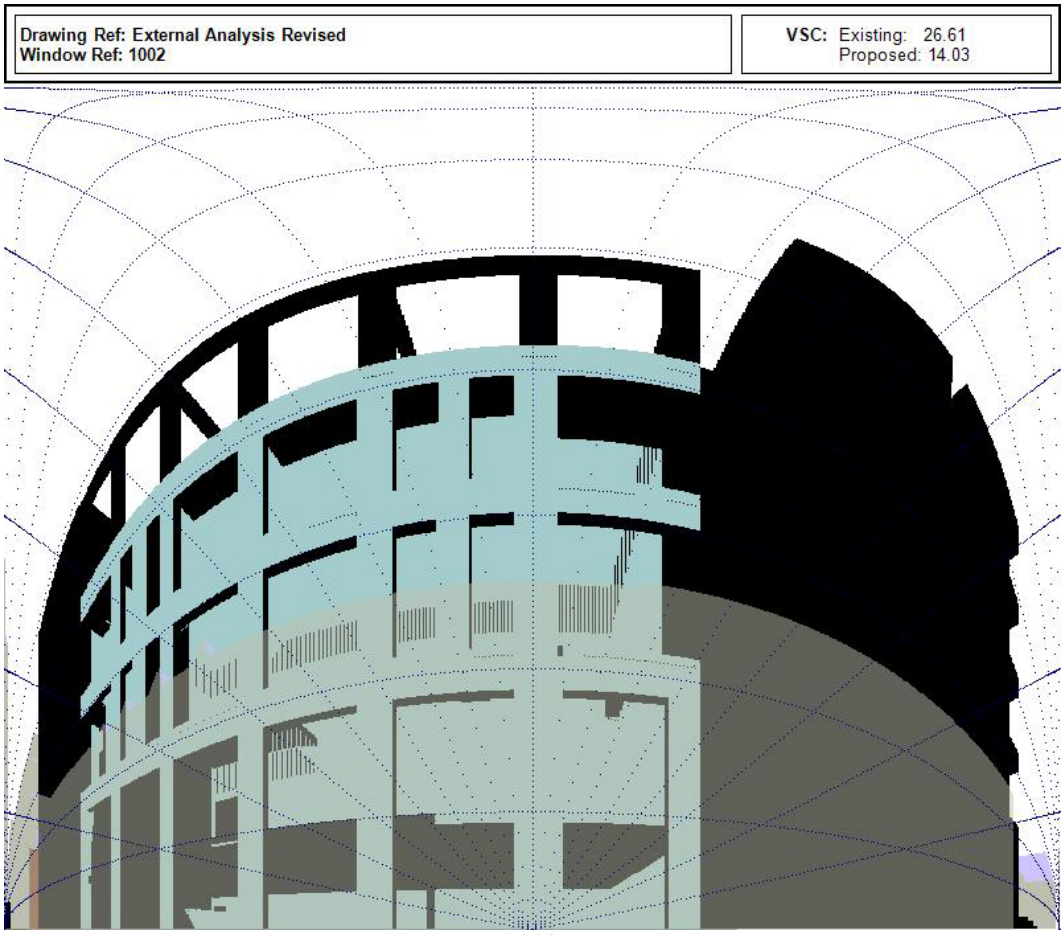

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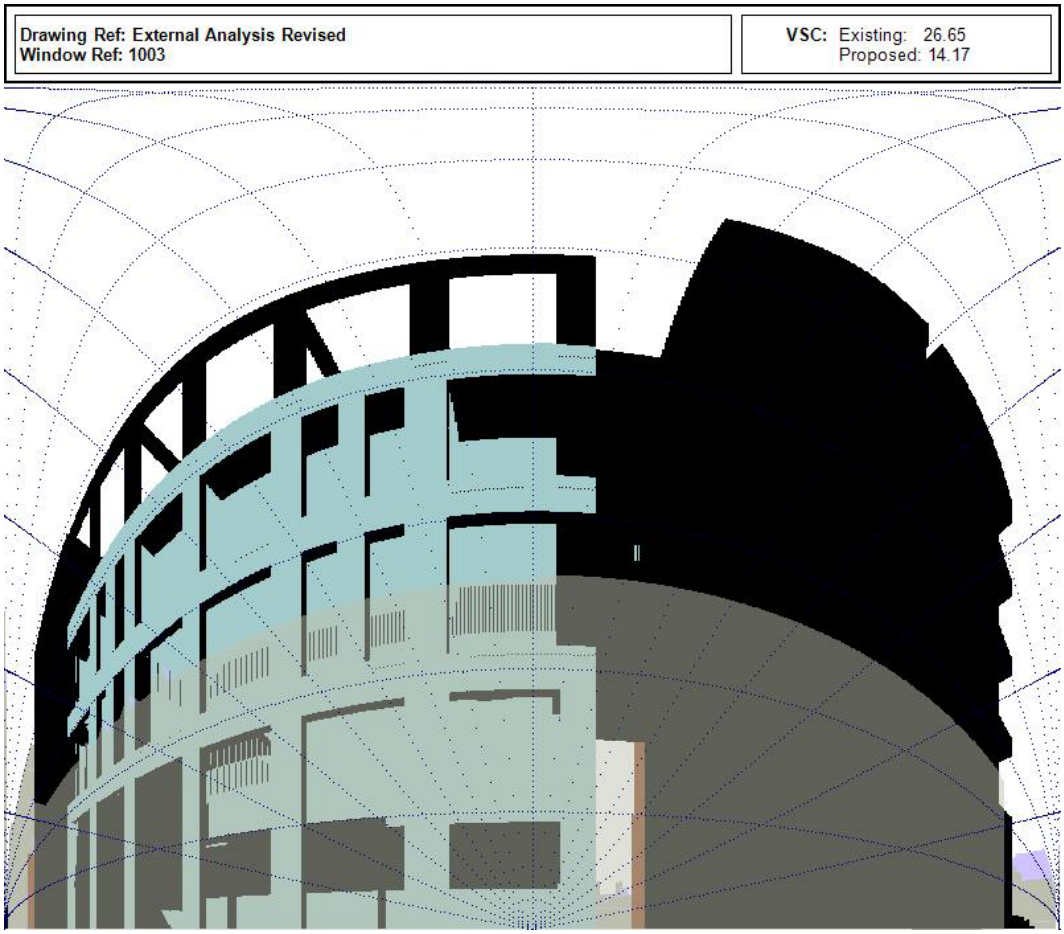
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
GROUND FLOOR



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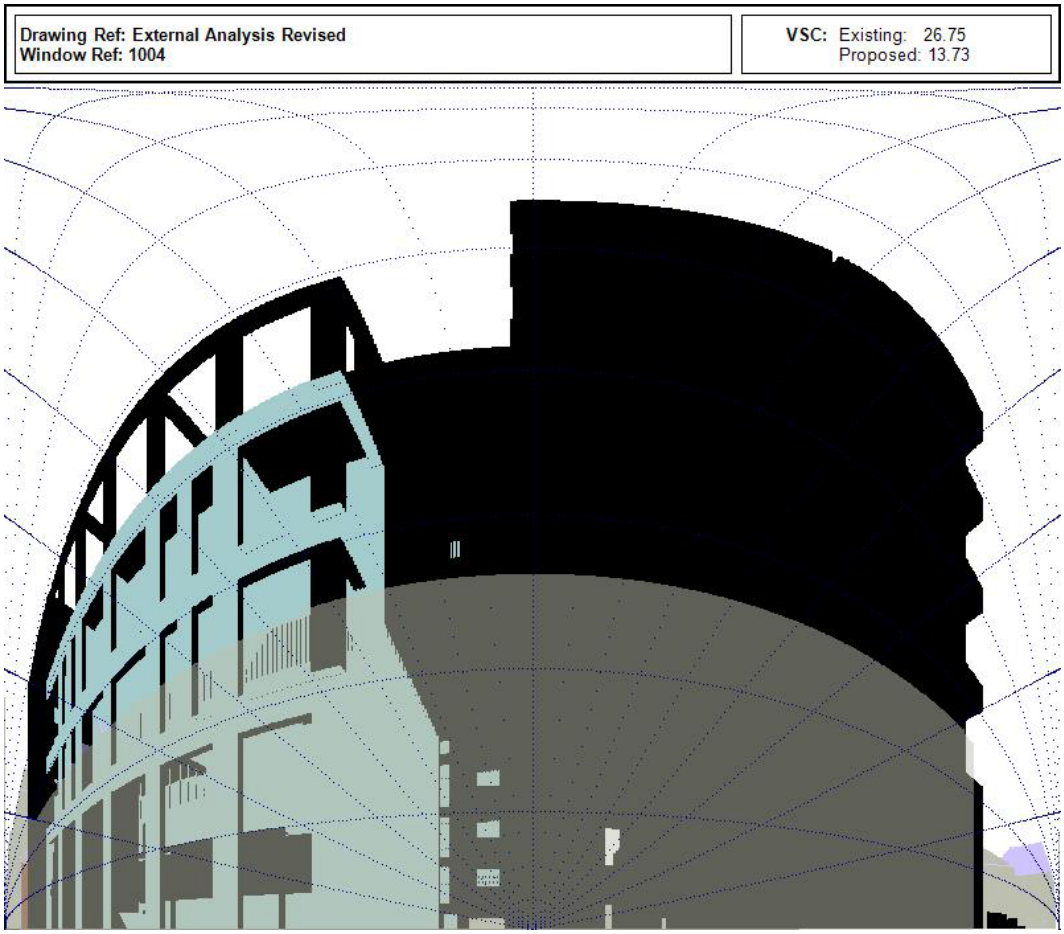

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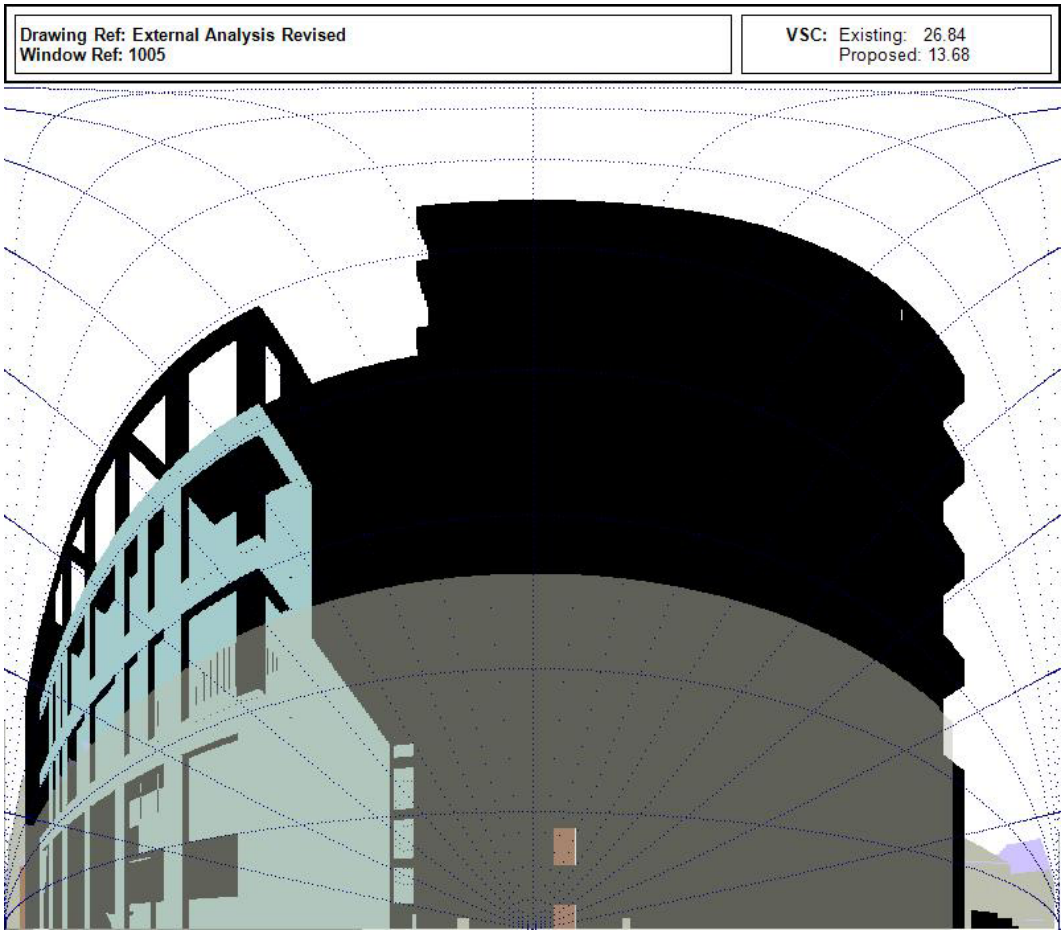
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
GROUND FLOOR



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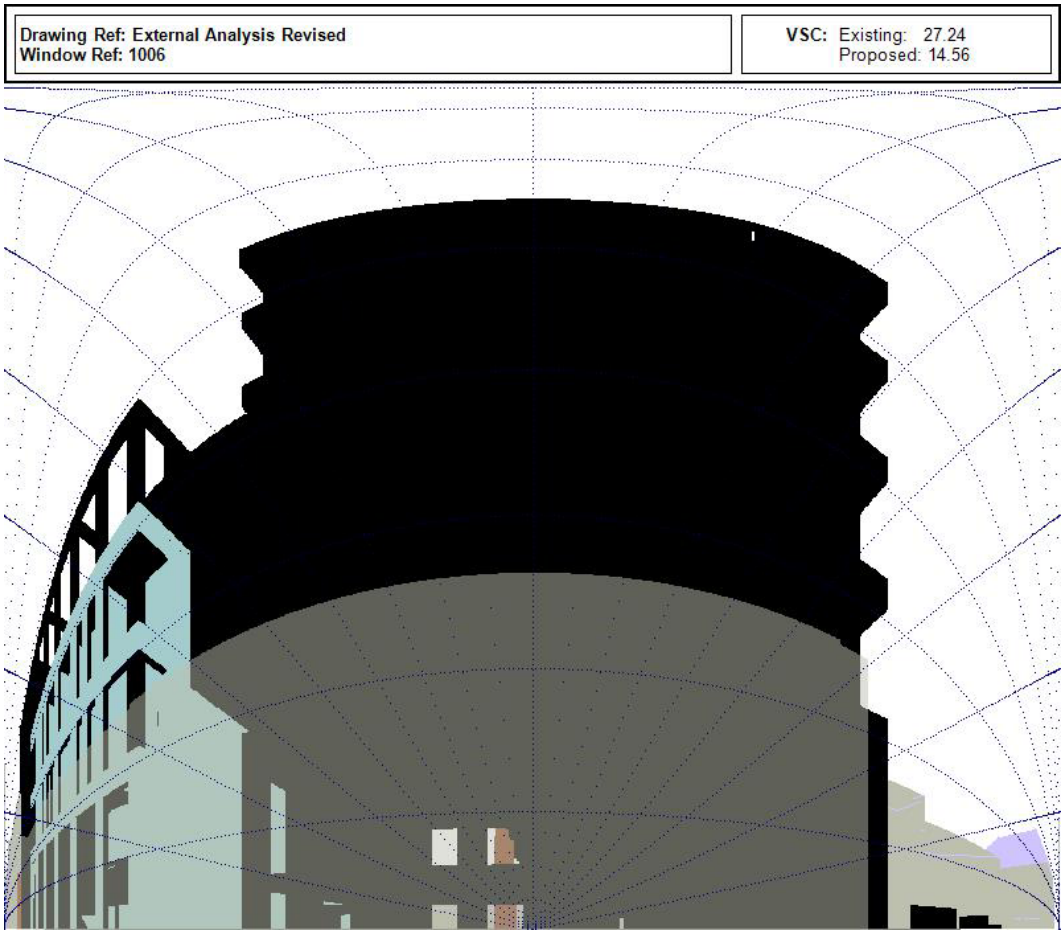

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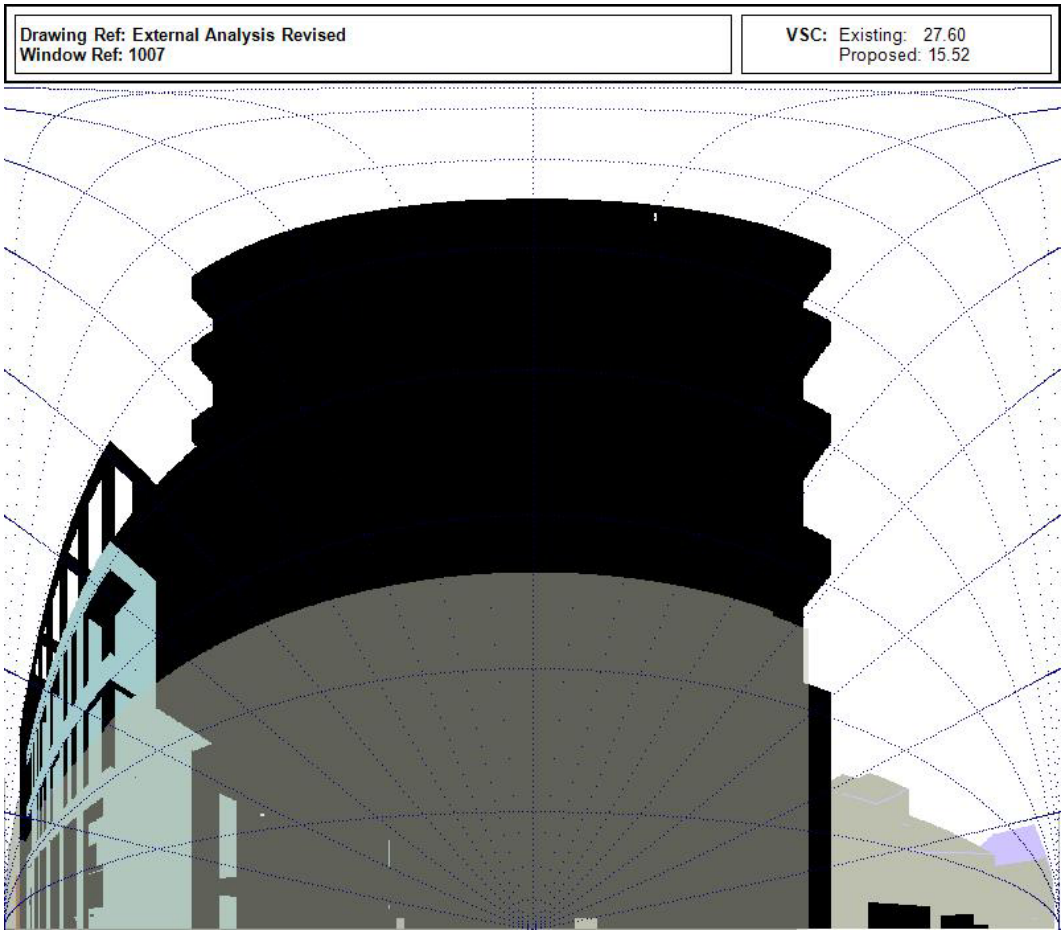
EAGLE WHARF ROAD
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
GROUND FLOOR



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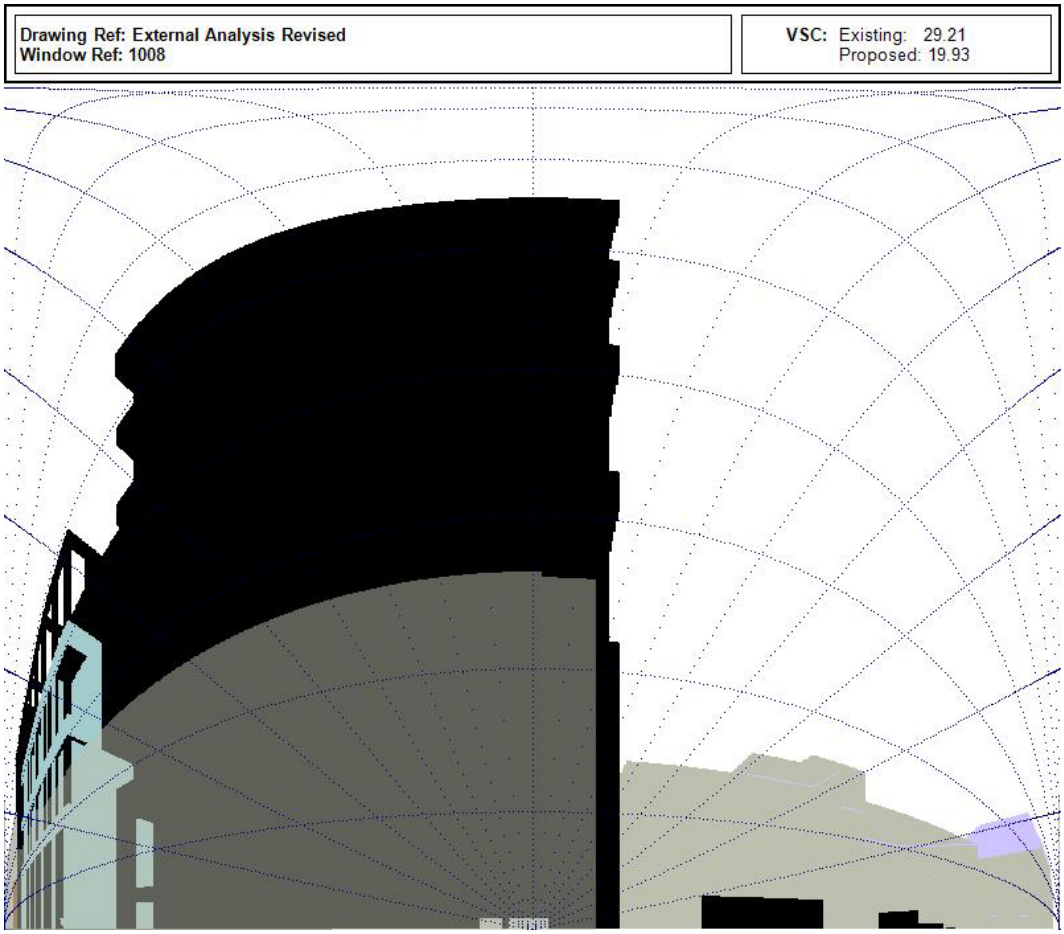

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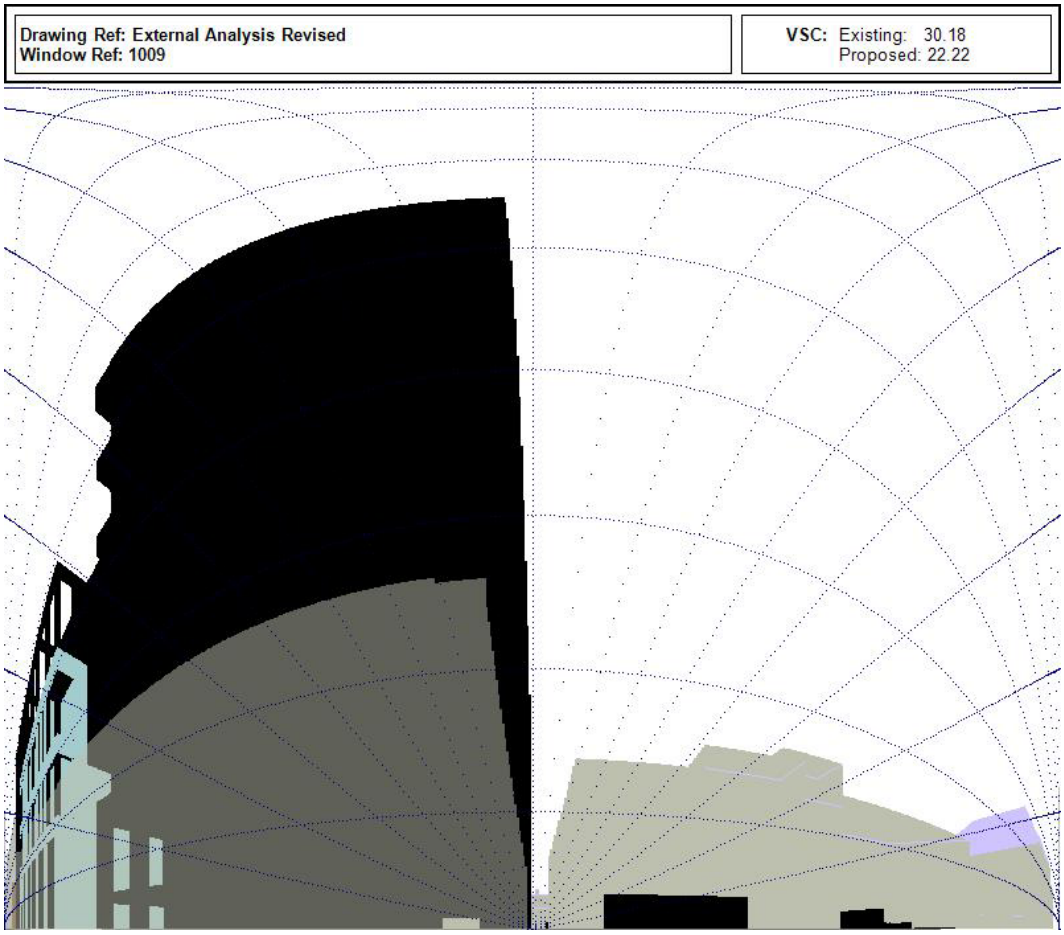
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
GROUND FLOOR



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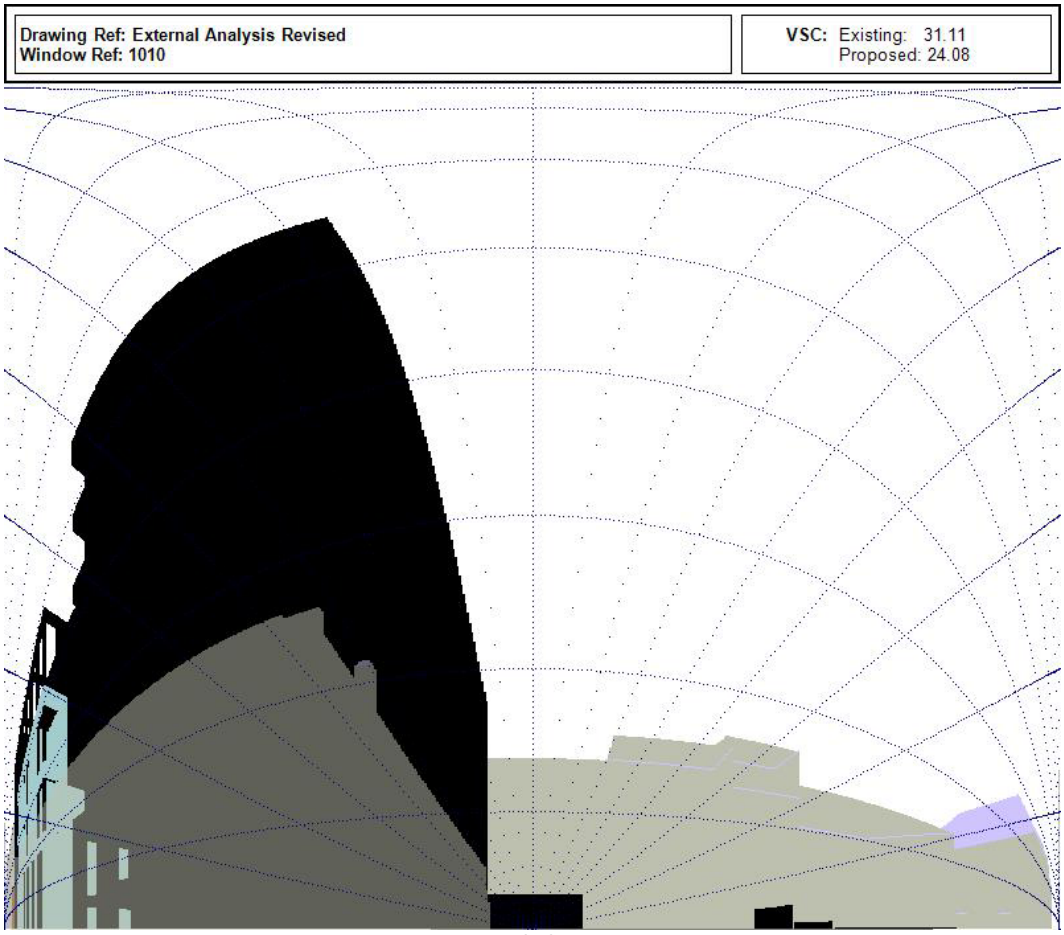

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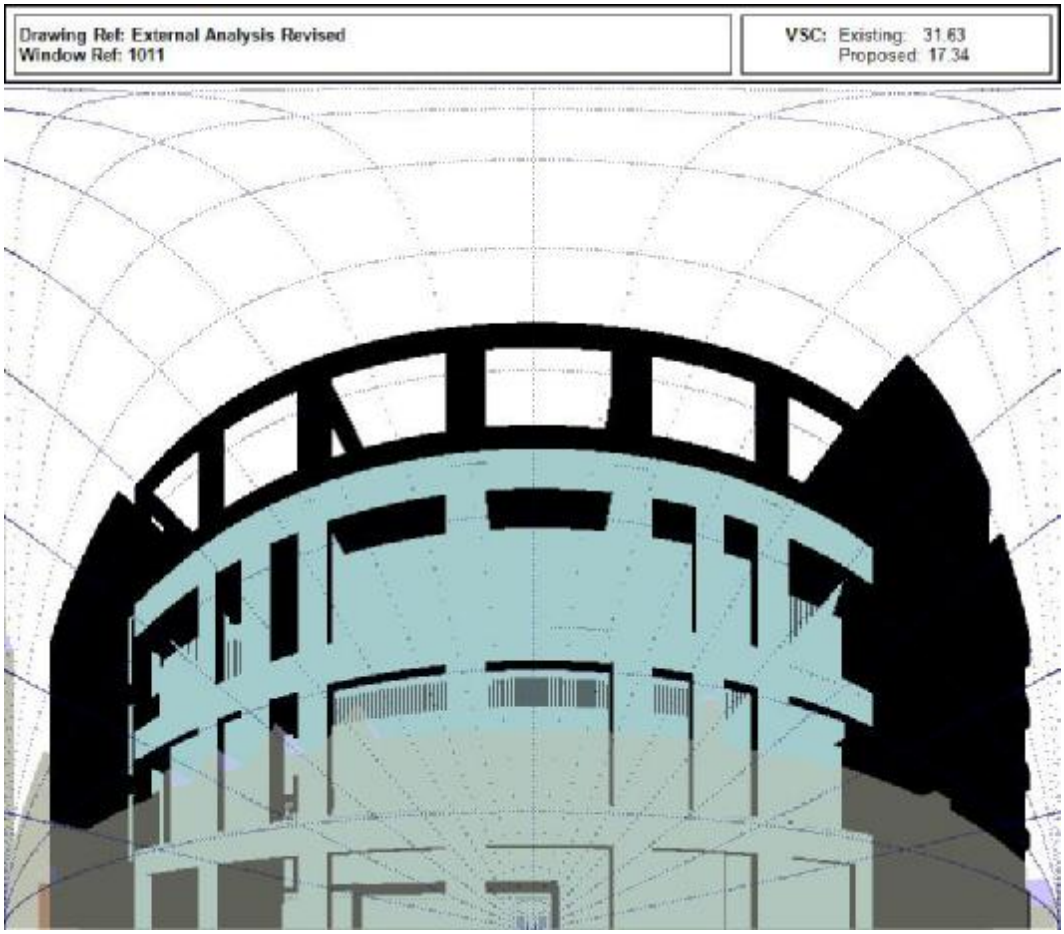
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
FIRST FLOOR



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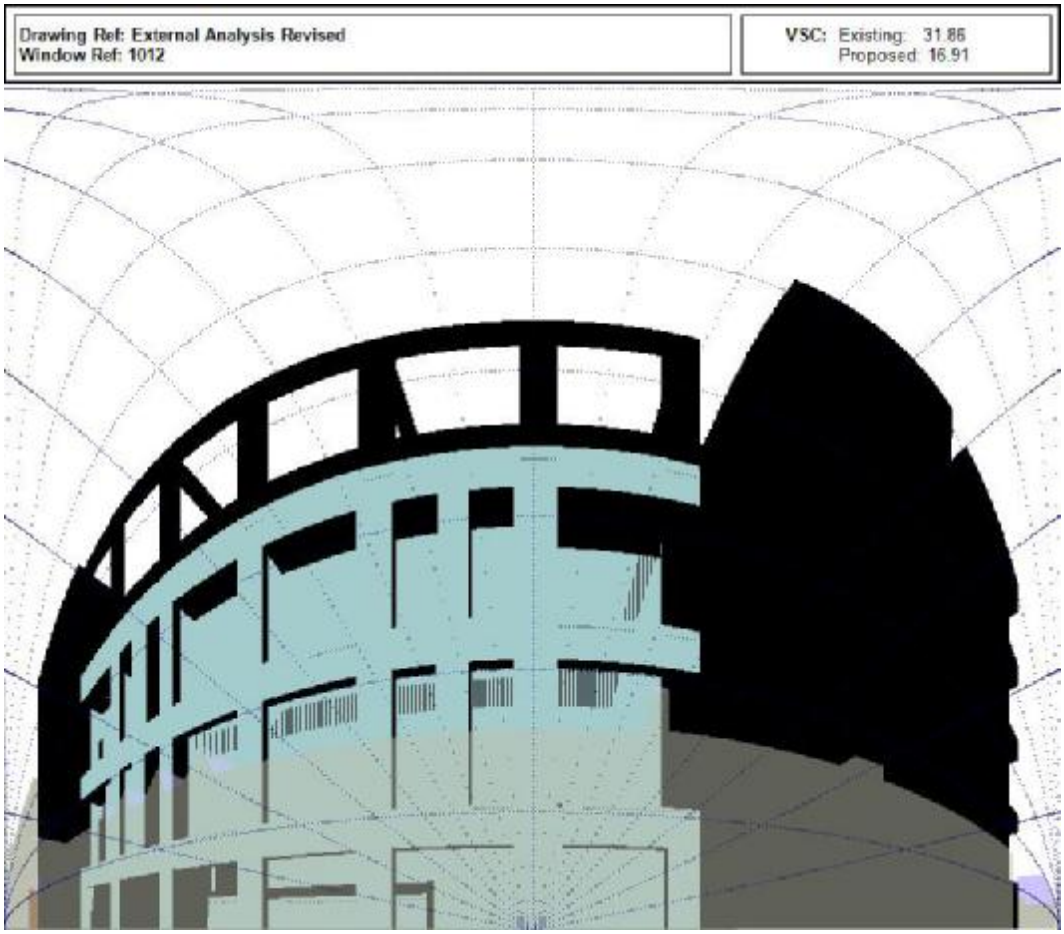

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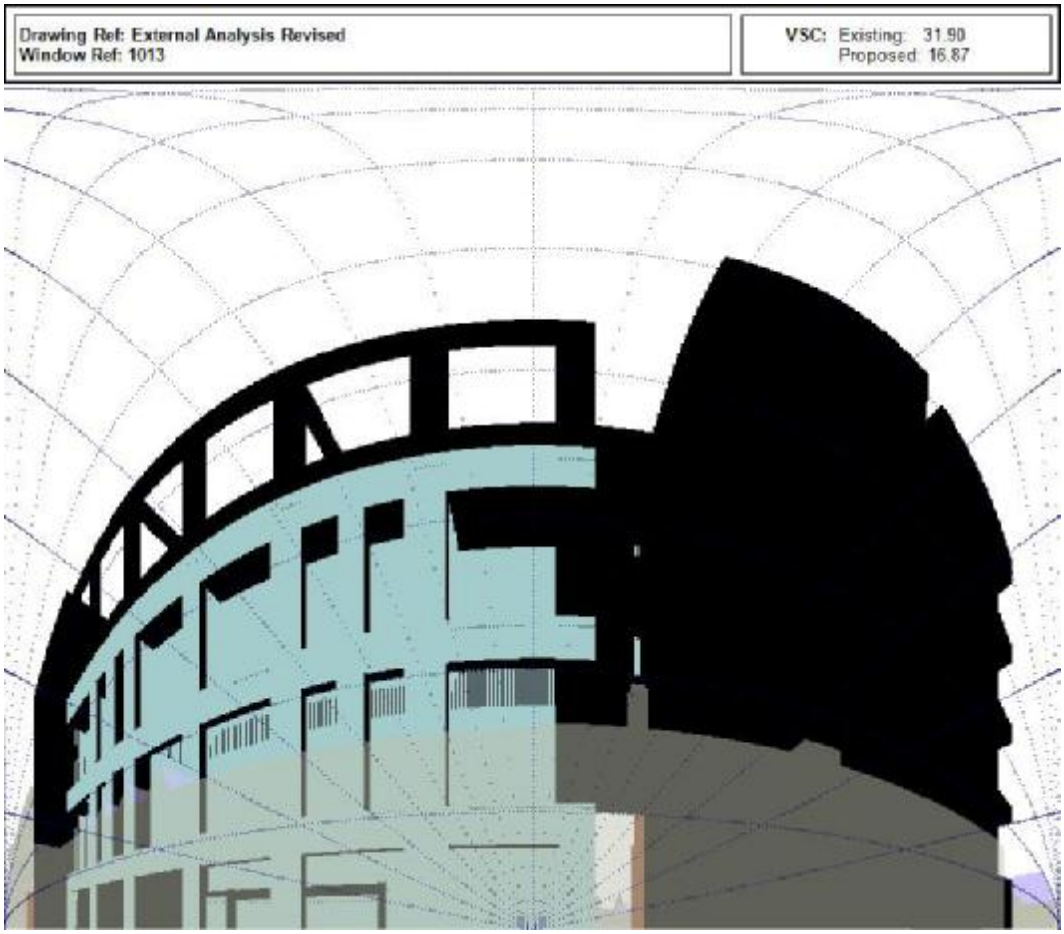
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
FIRST FLOOR



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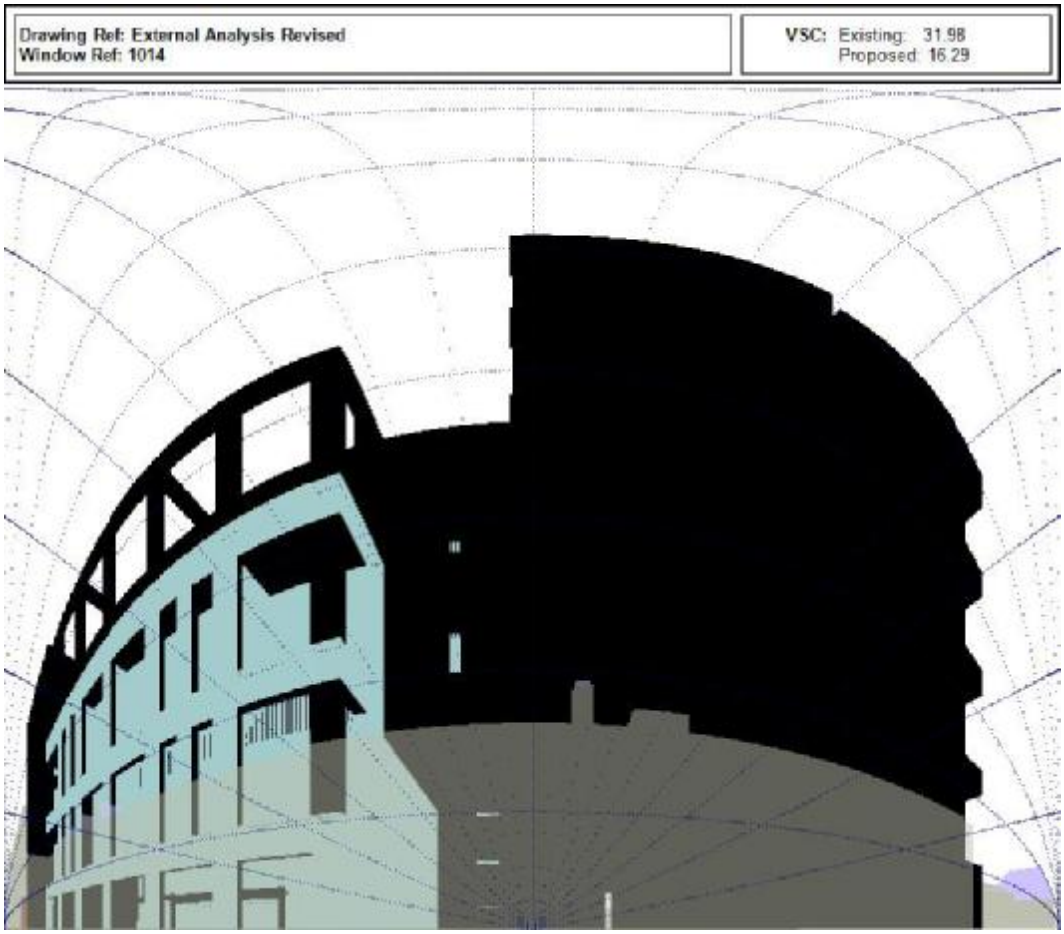

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DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
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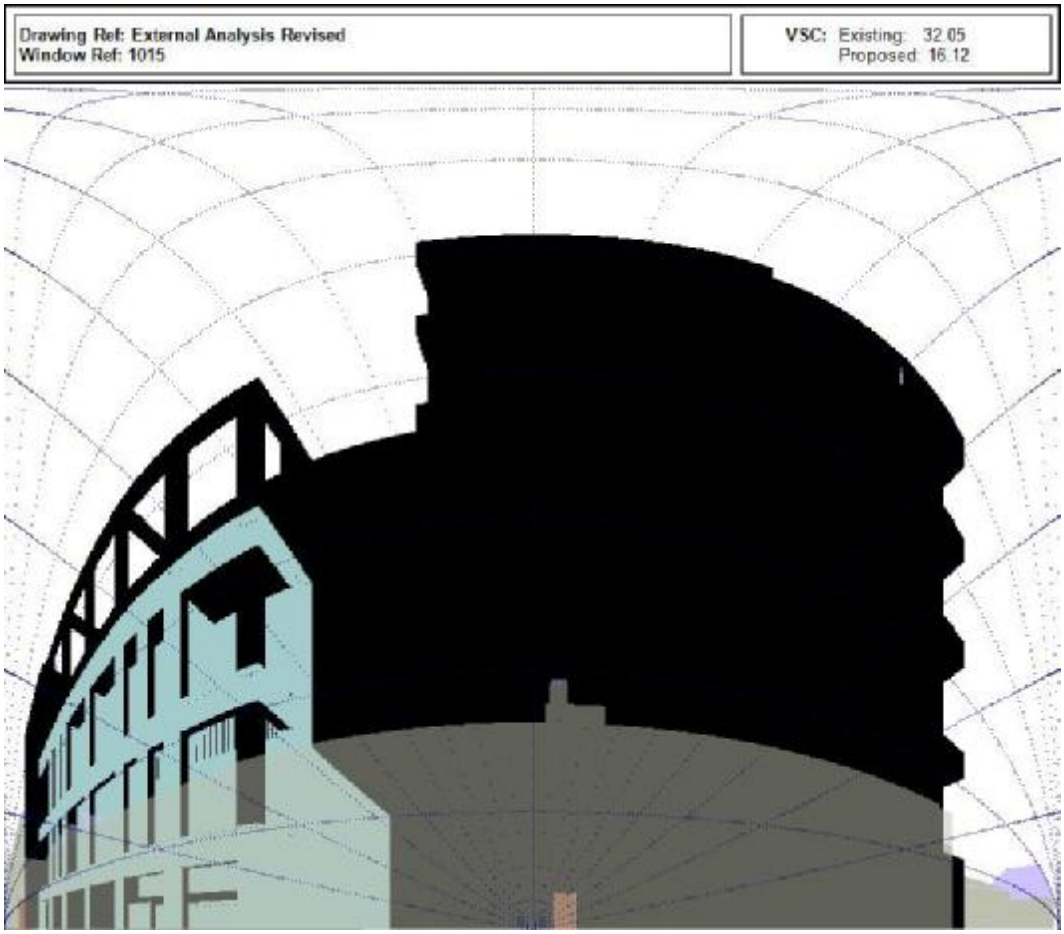

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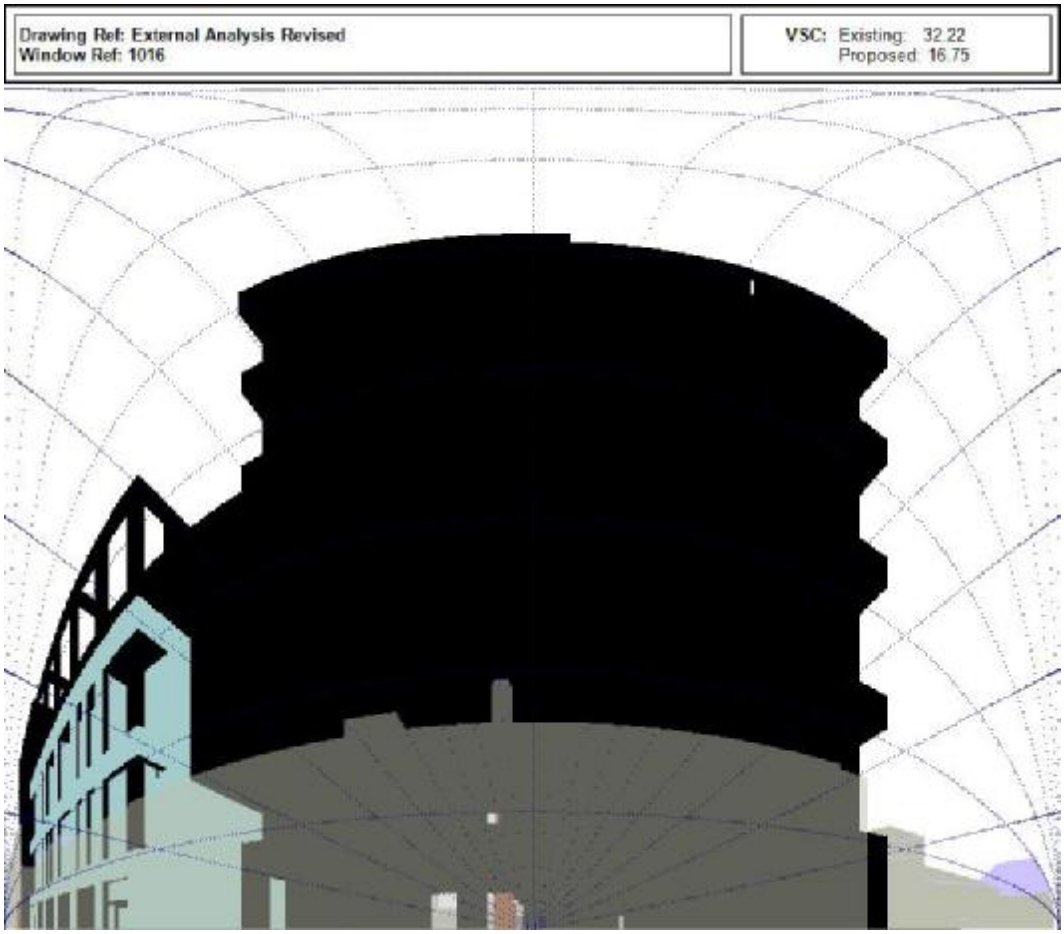

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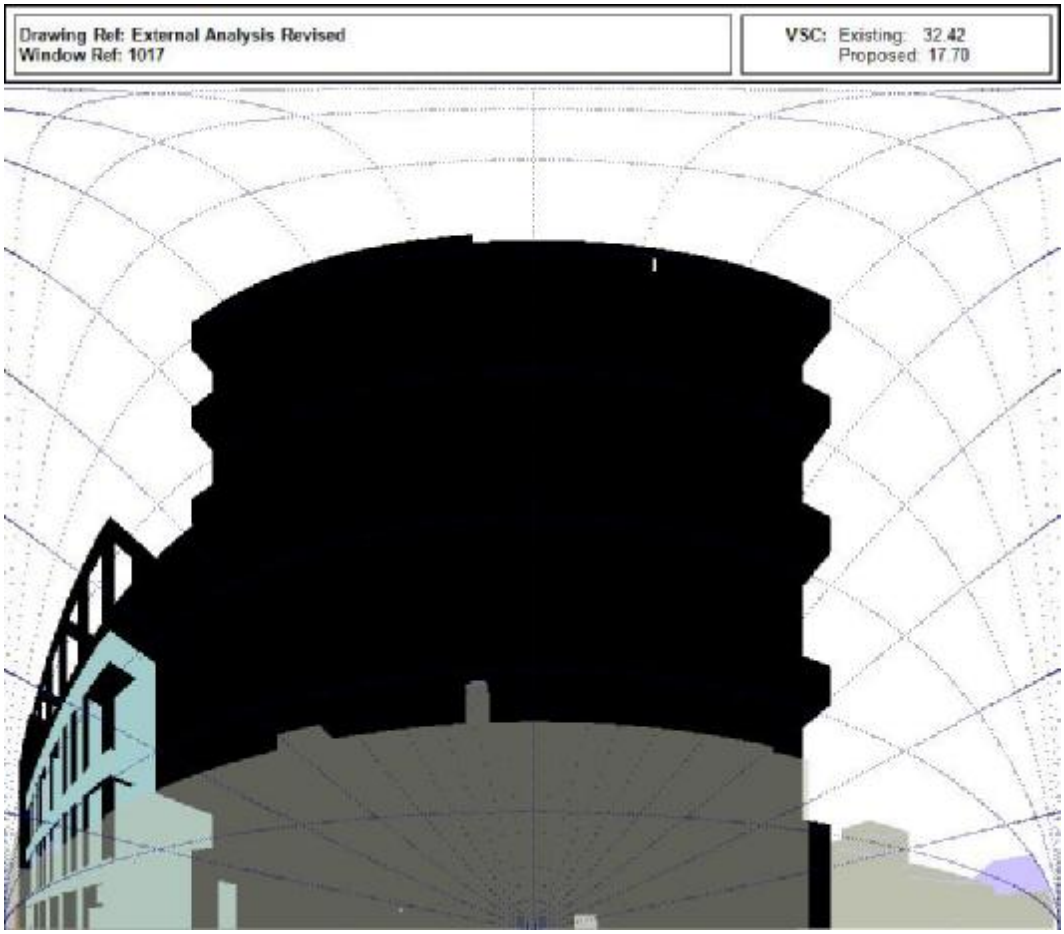
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
FIRST FLOOR



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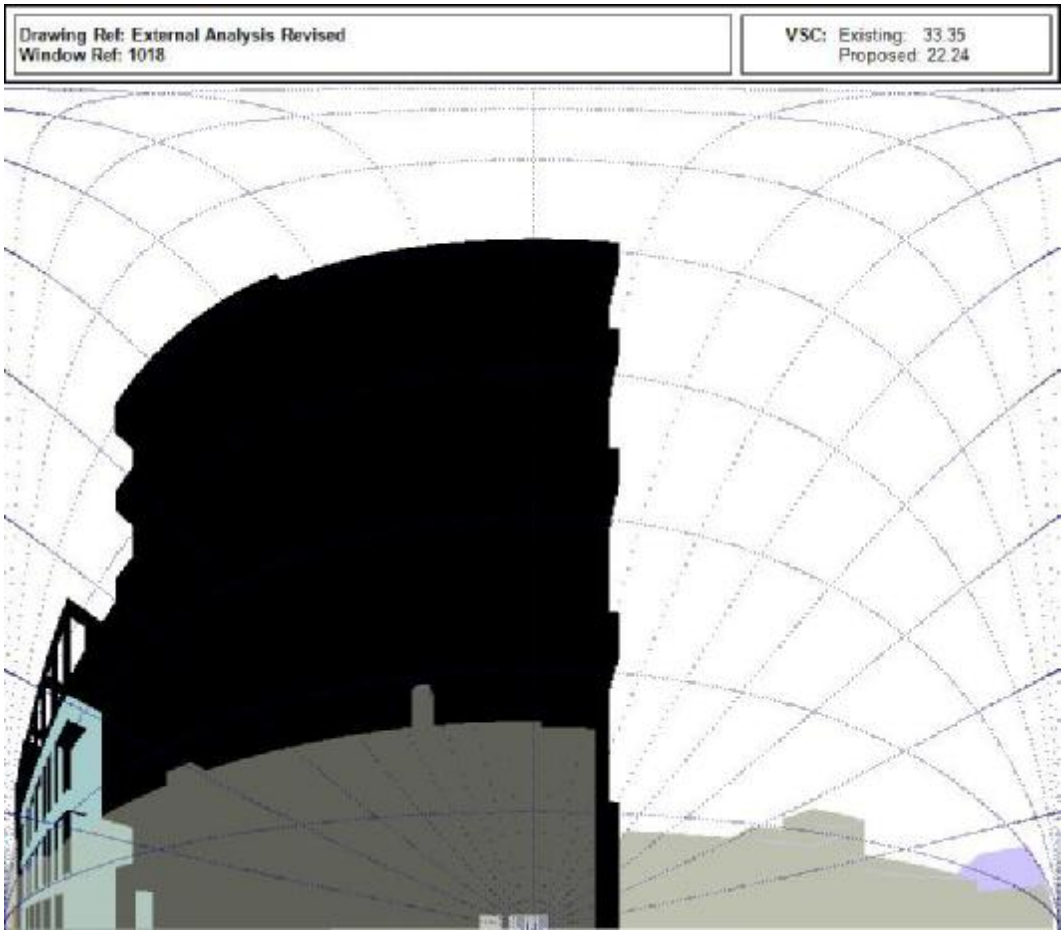

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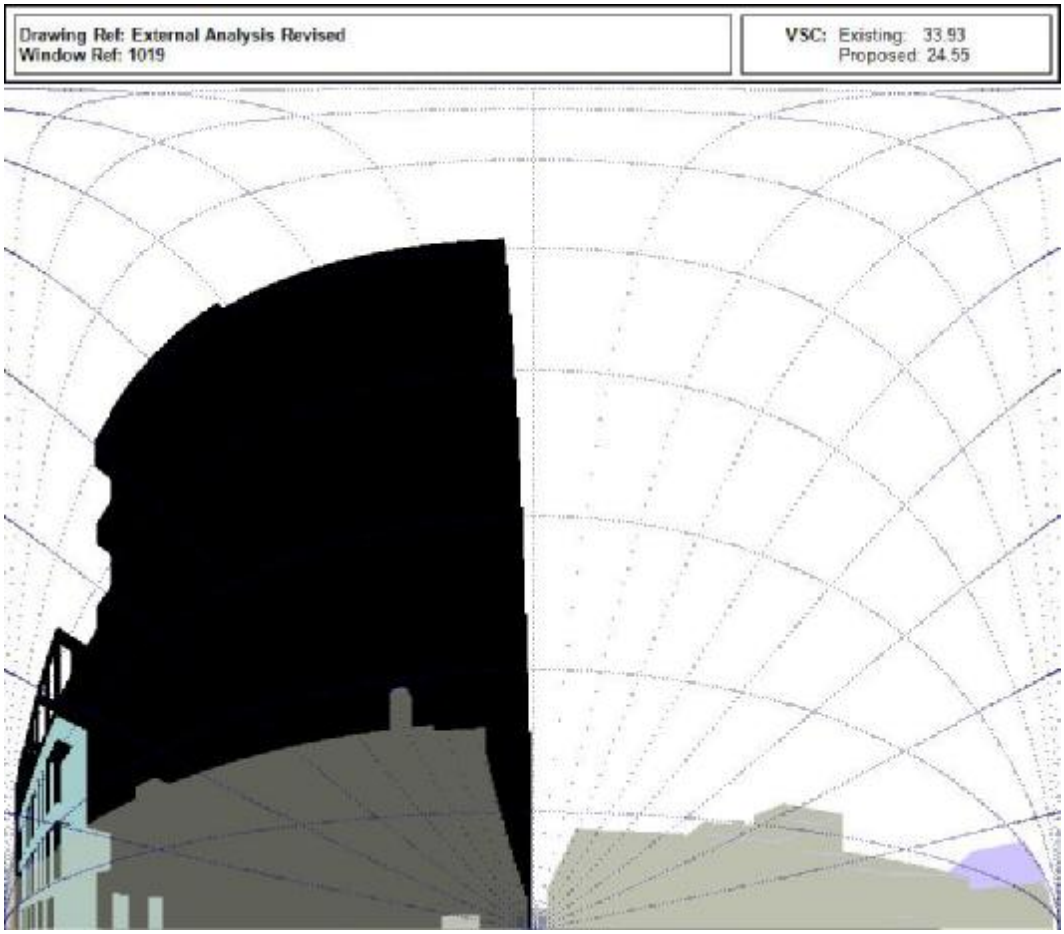
DAYLIGHT ANALYSIS - 14-27 EAGLE WHARF ROAD
FIRST FLOOR



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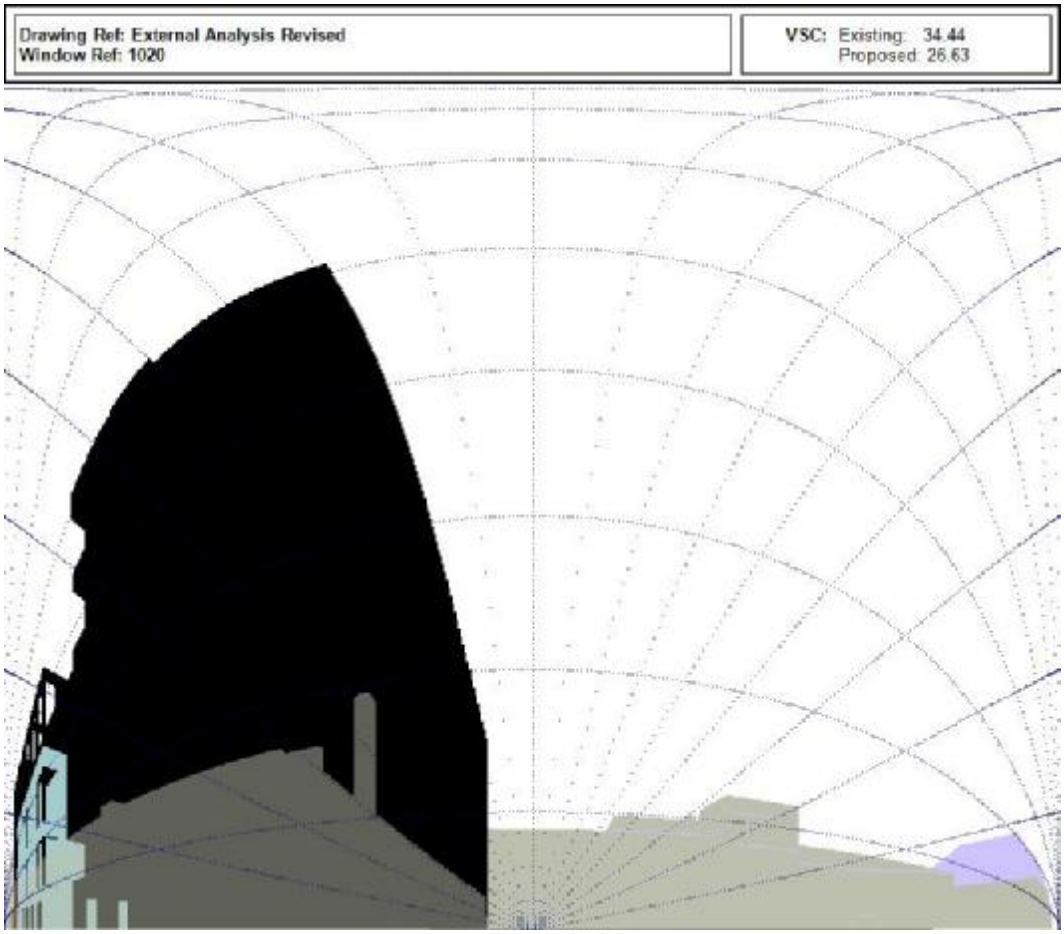

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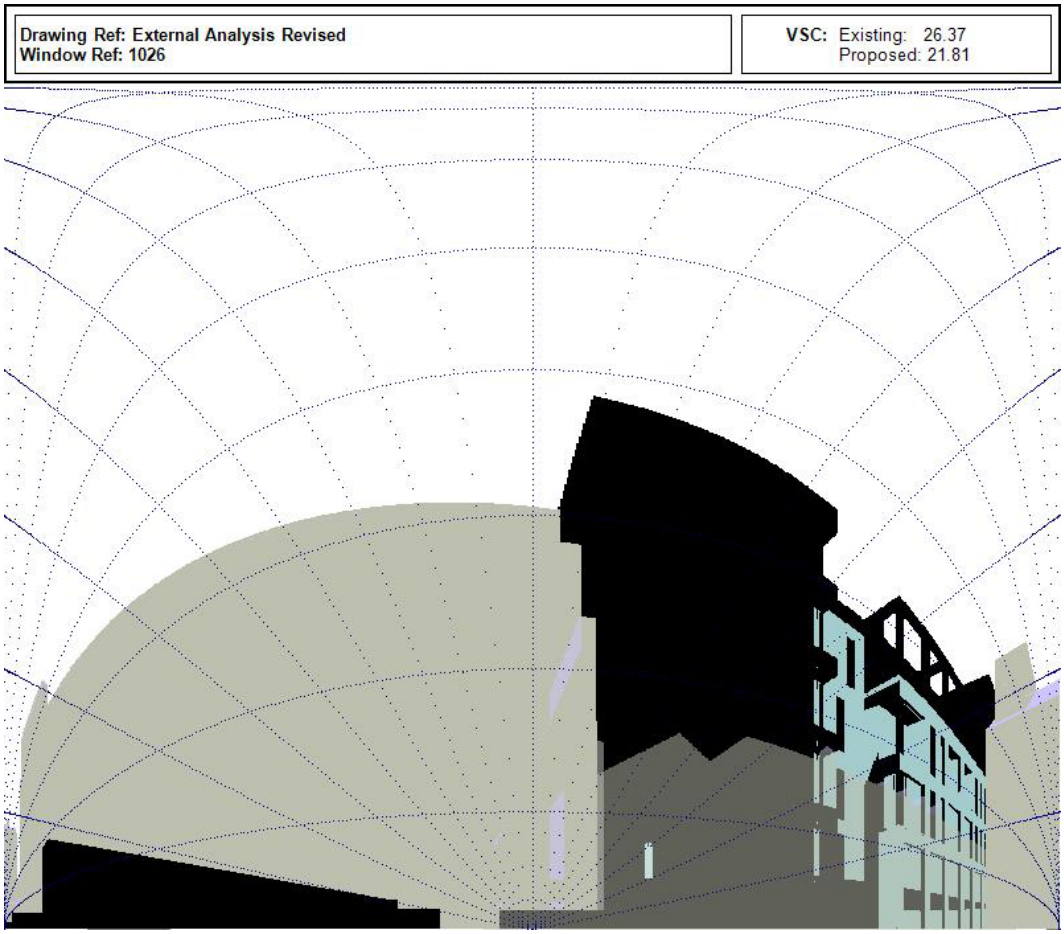
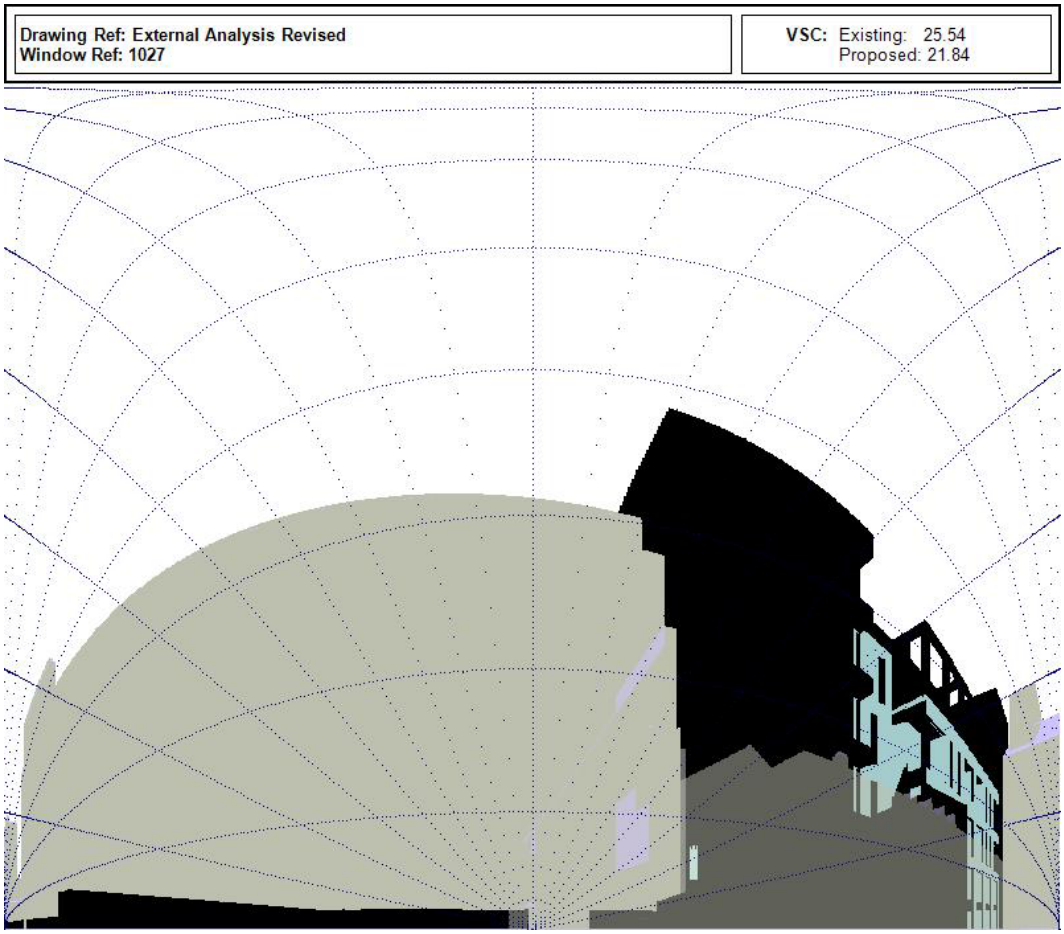
EAGLE WHARF ROAD
DAYLIGHT ANALYSIS - BLETSOE WALK
GROUND FLOOR

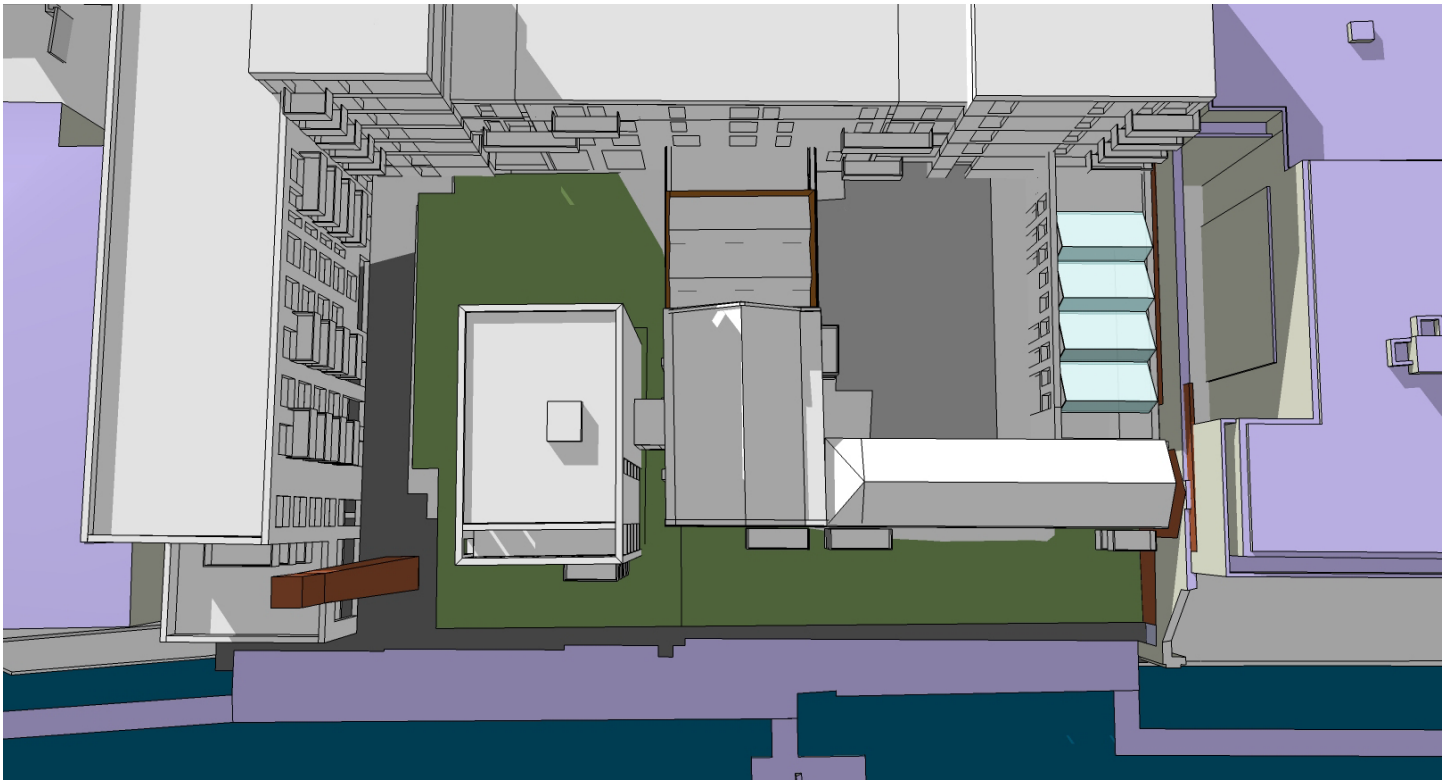


1026

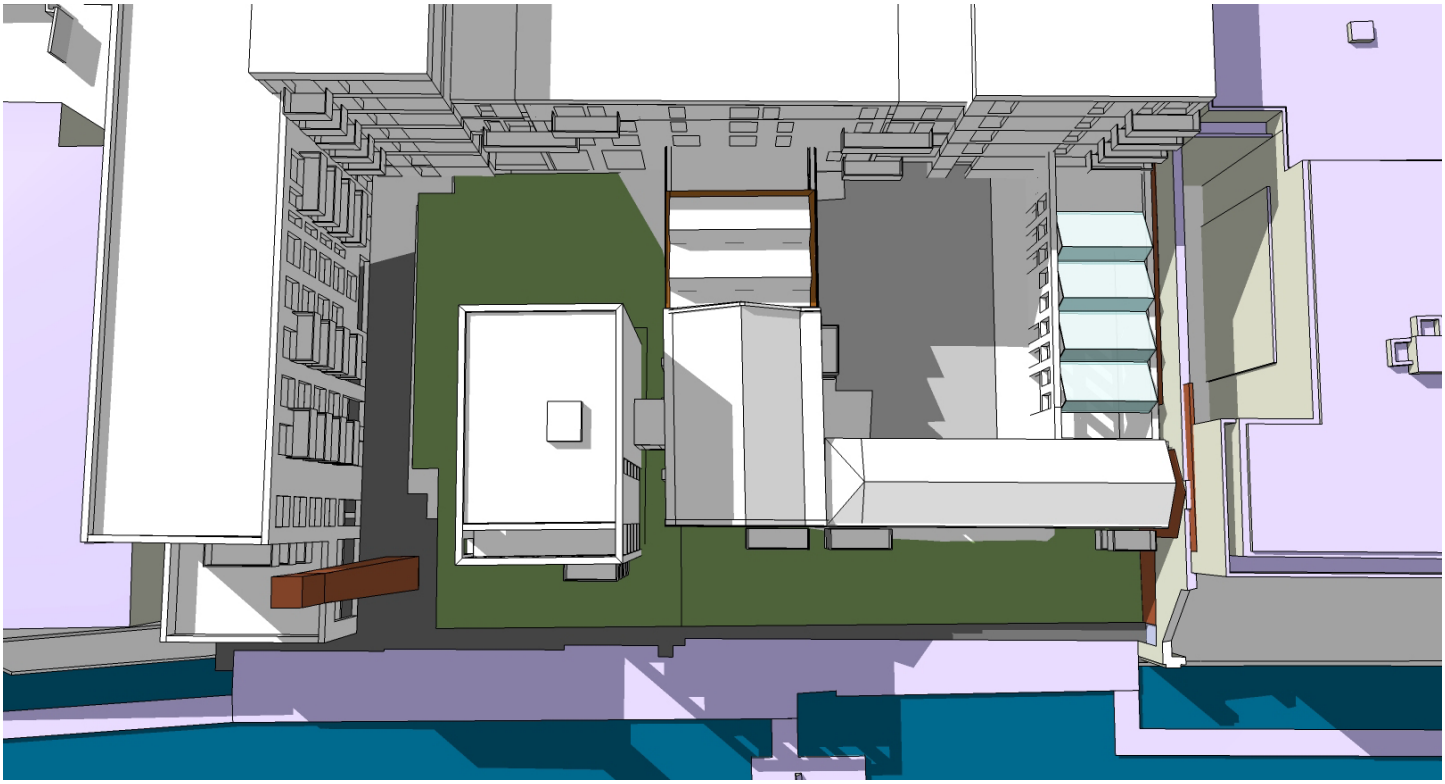


1027

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

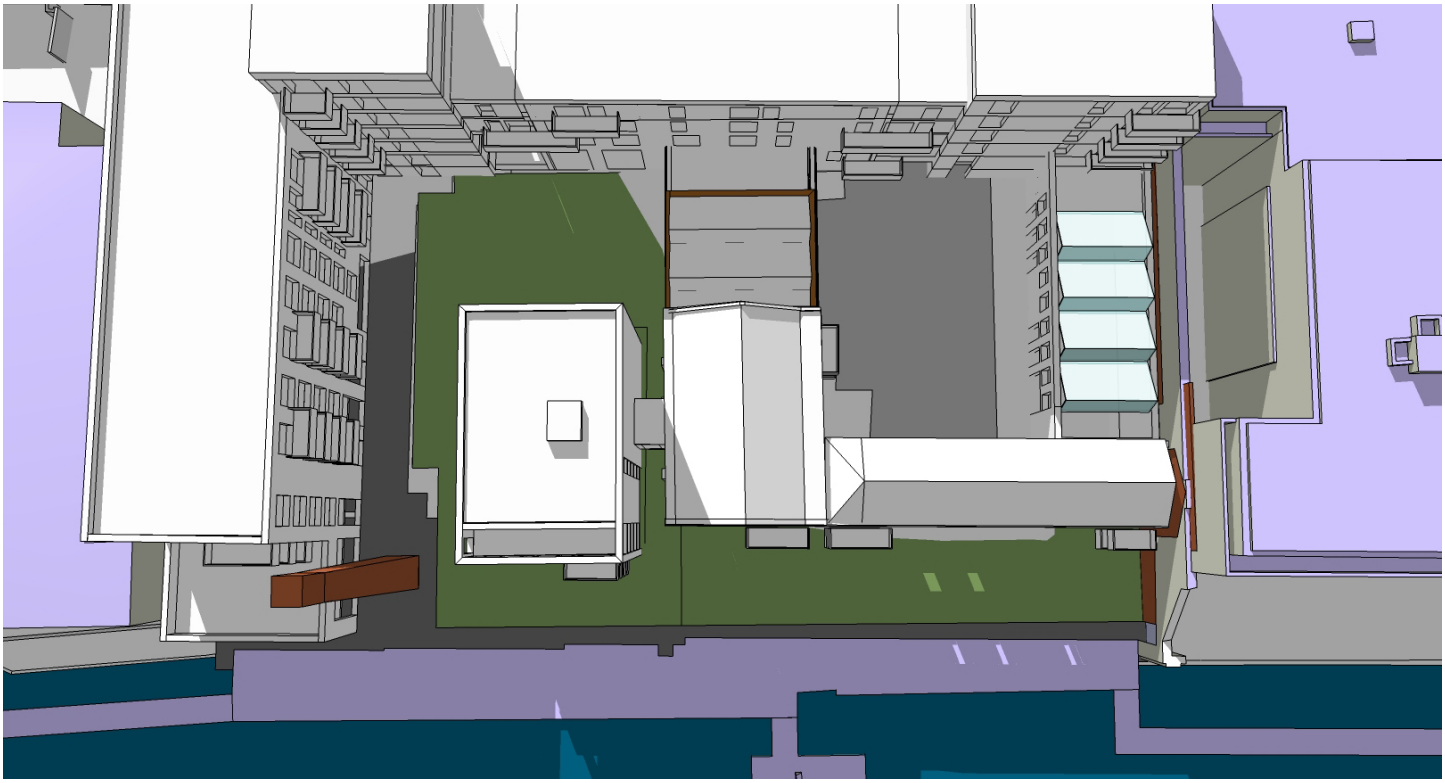


8.00am March 21

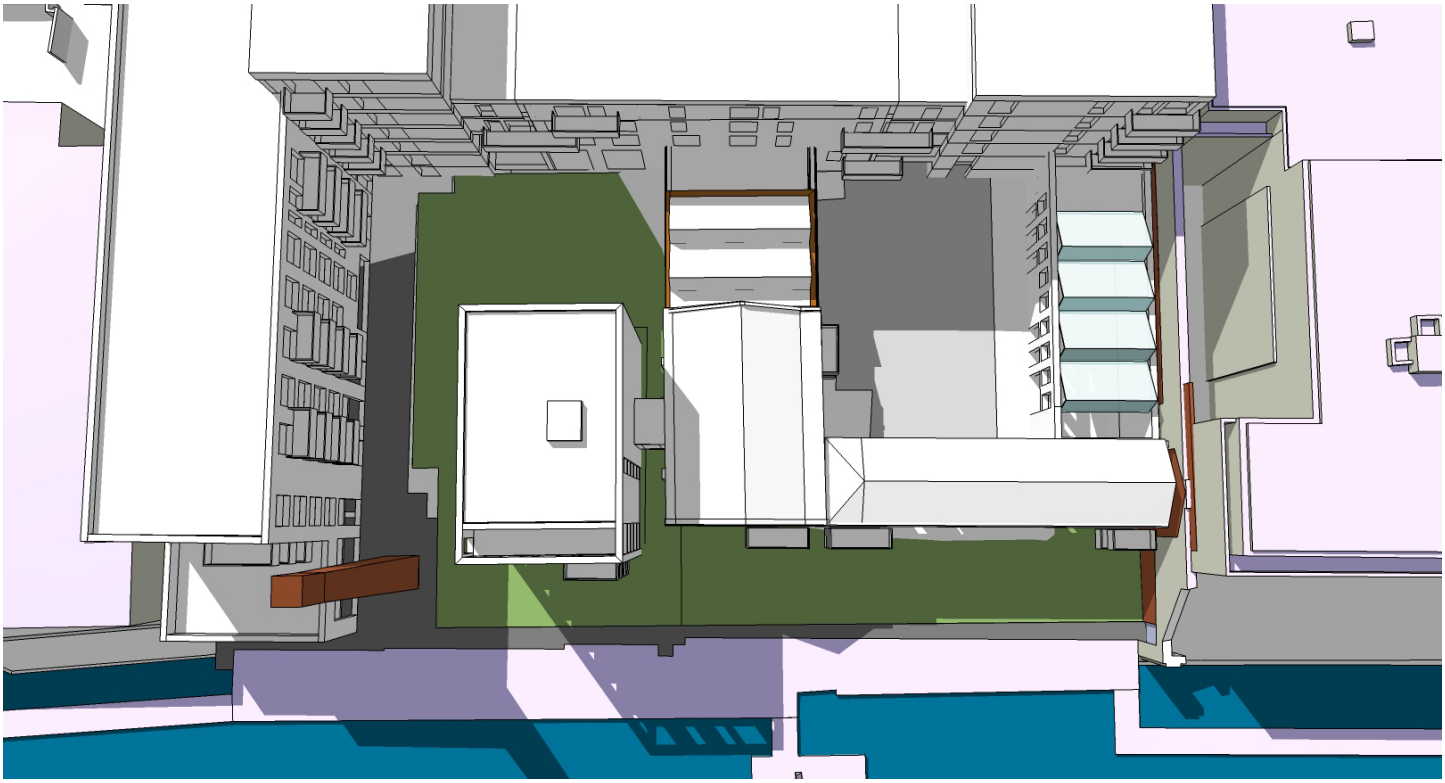


8.00am June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

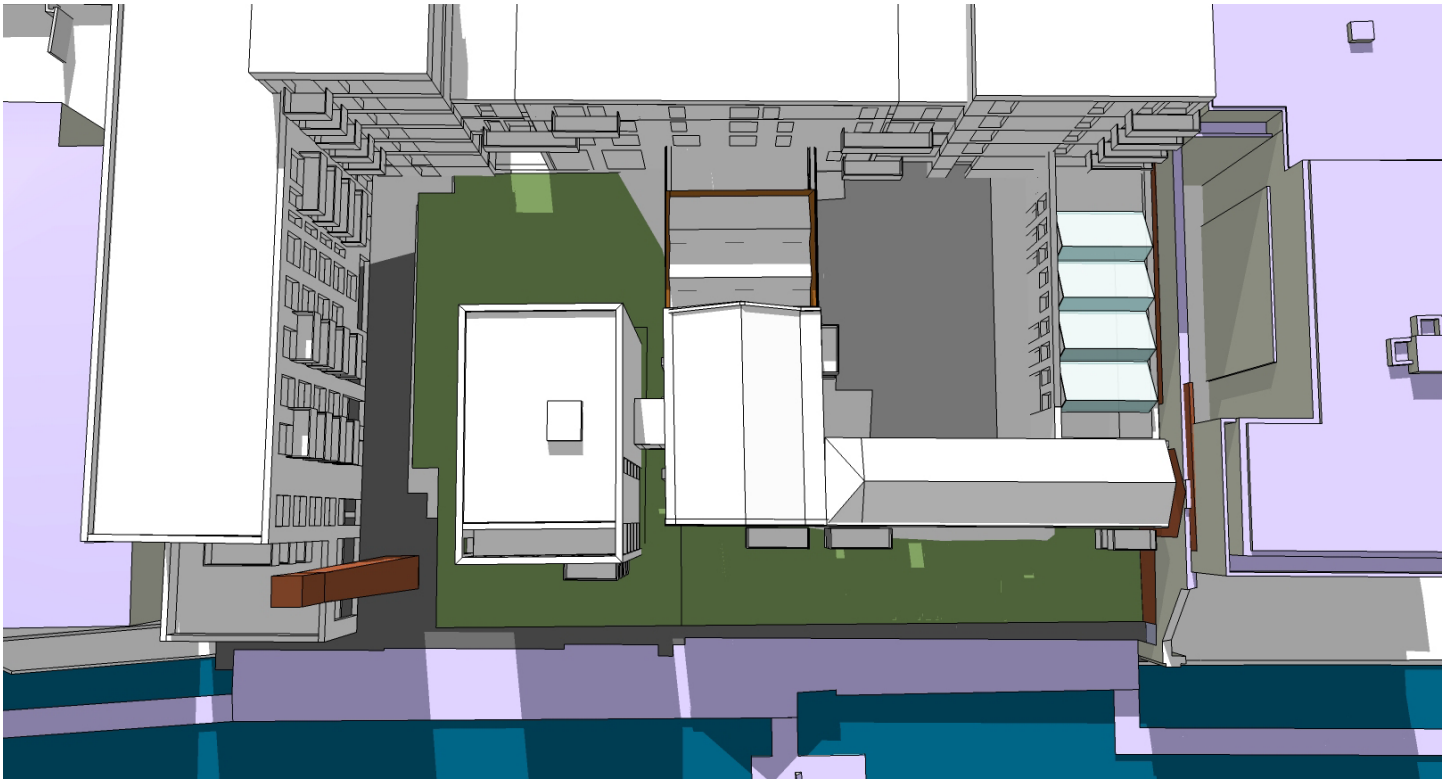


9.00am March 21

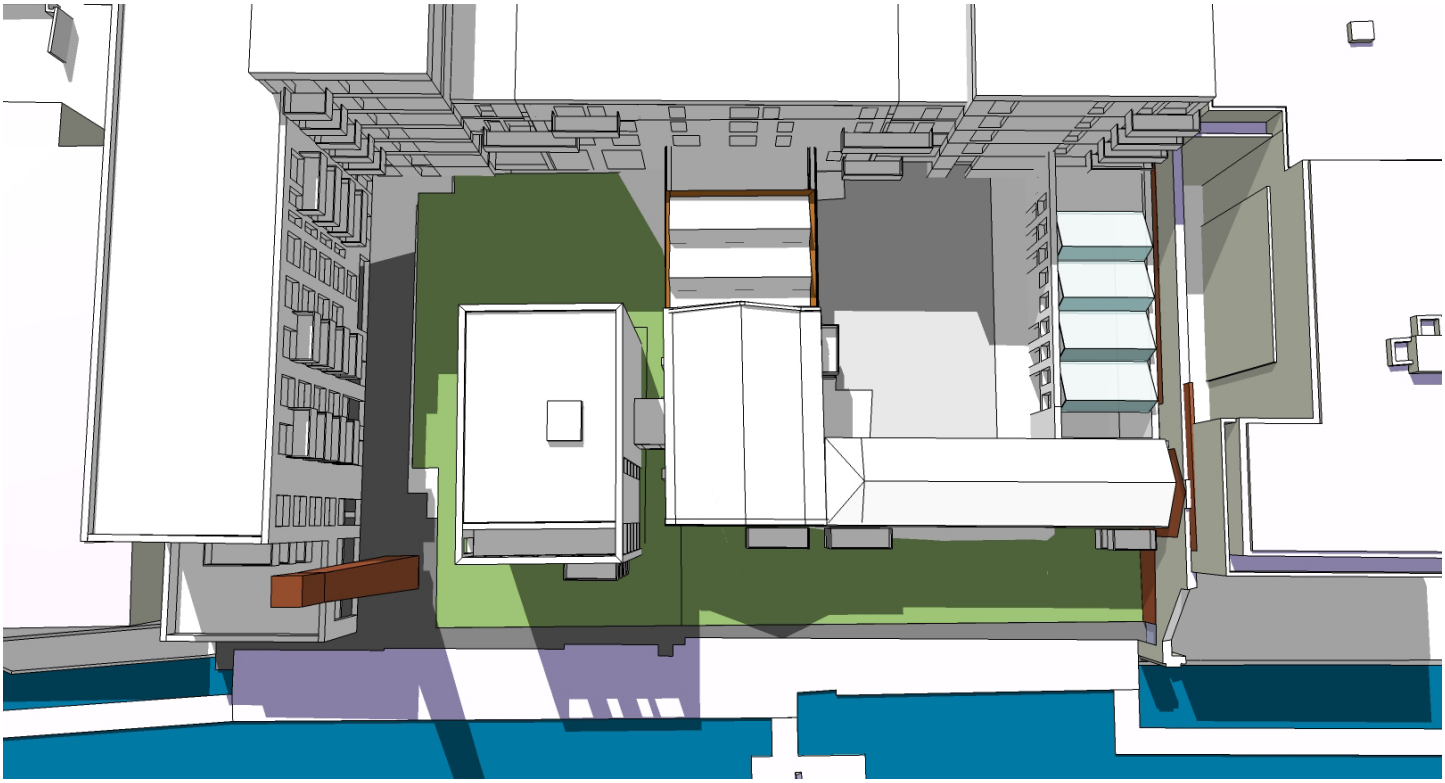


9.00am June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

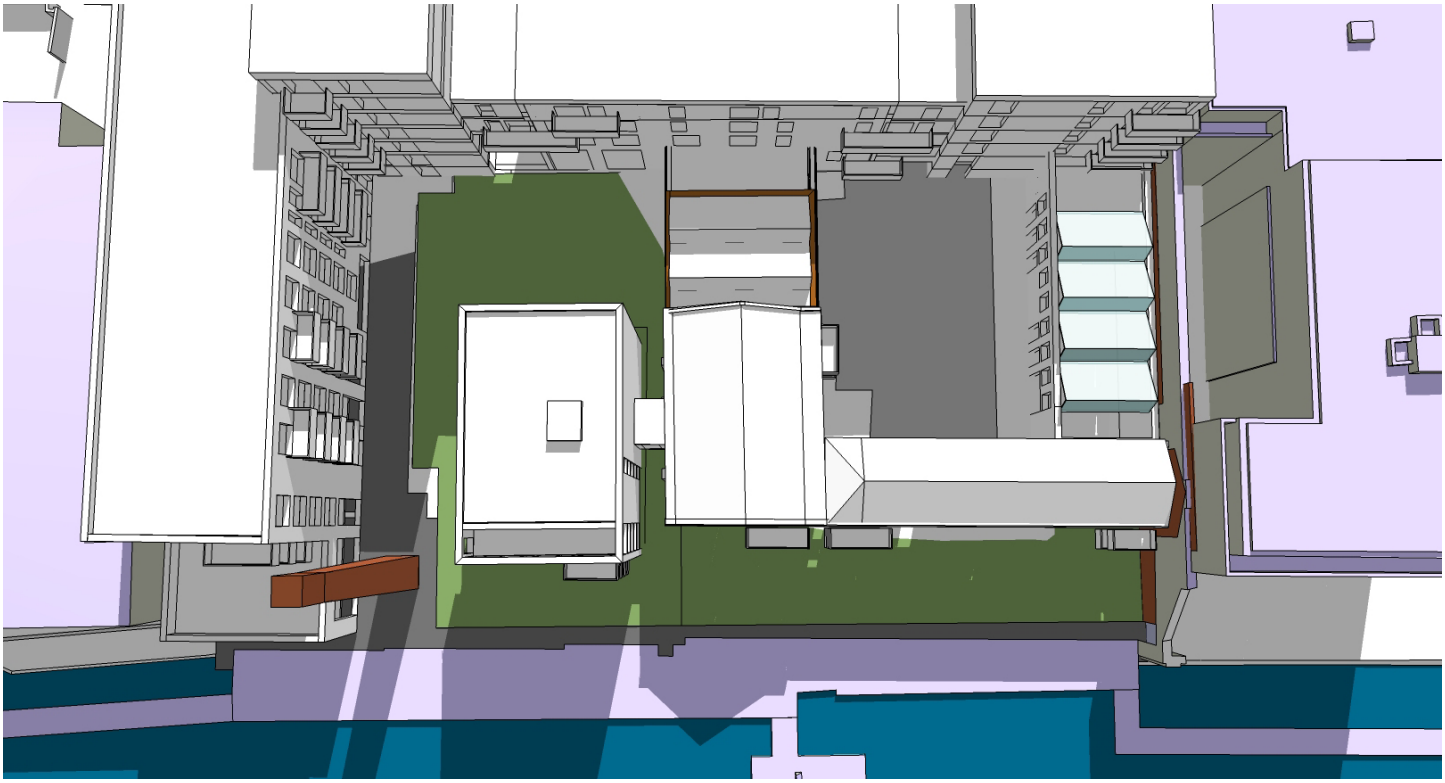


10.00am March 21

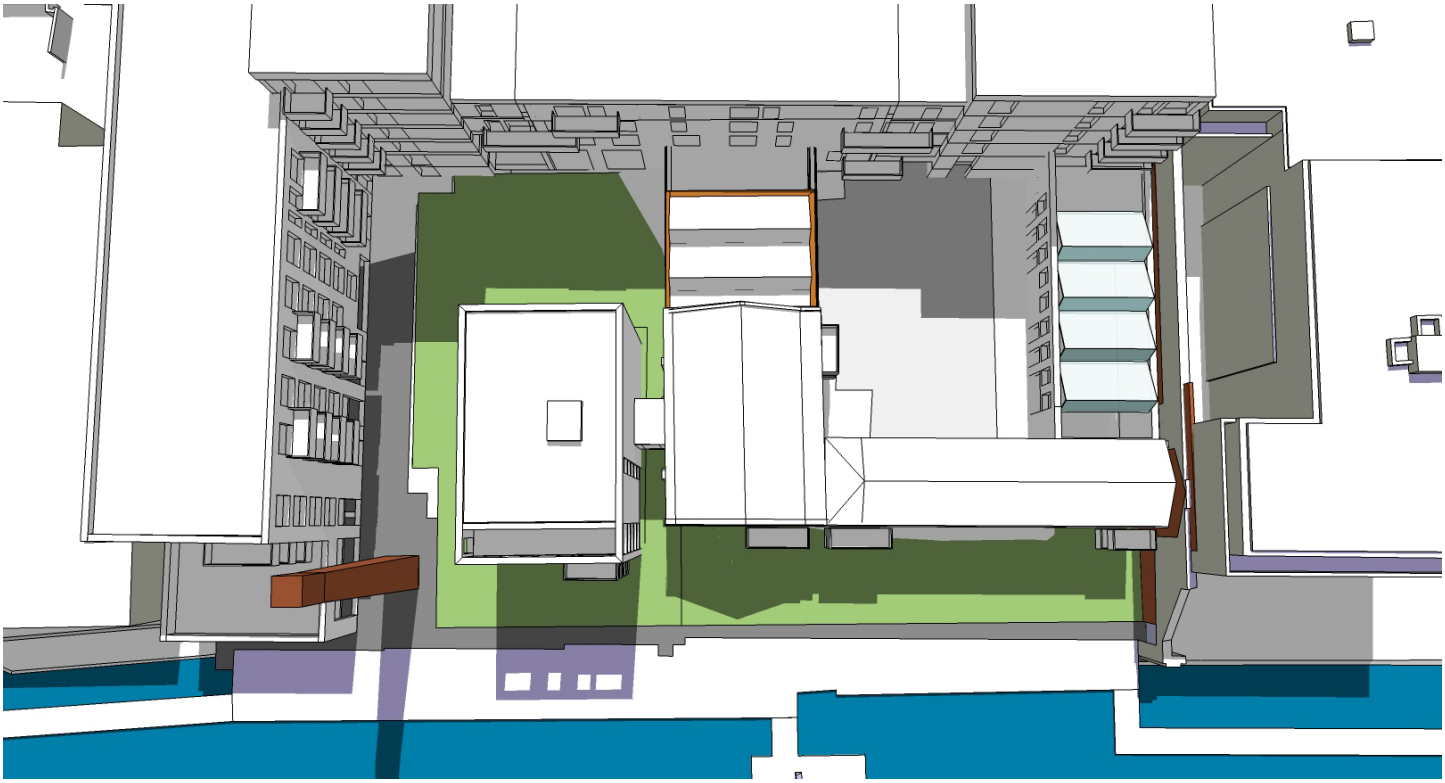


10.00am June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

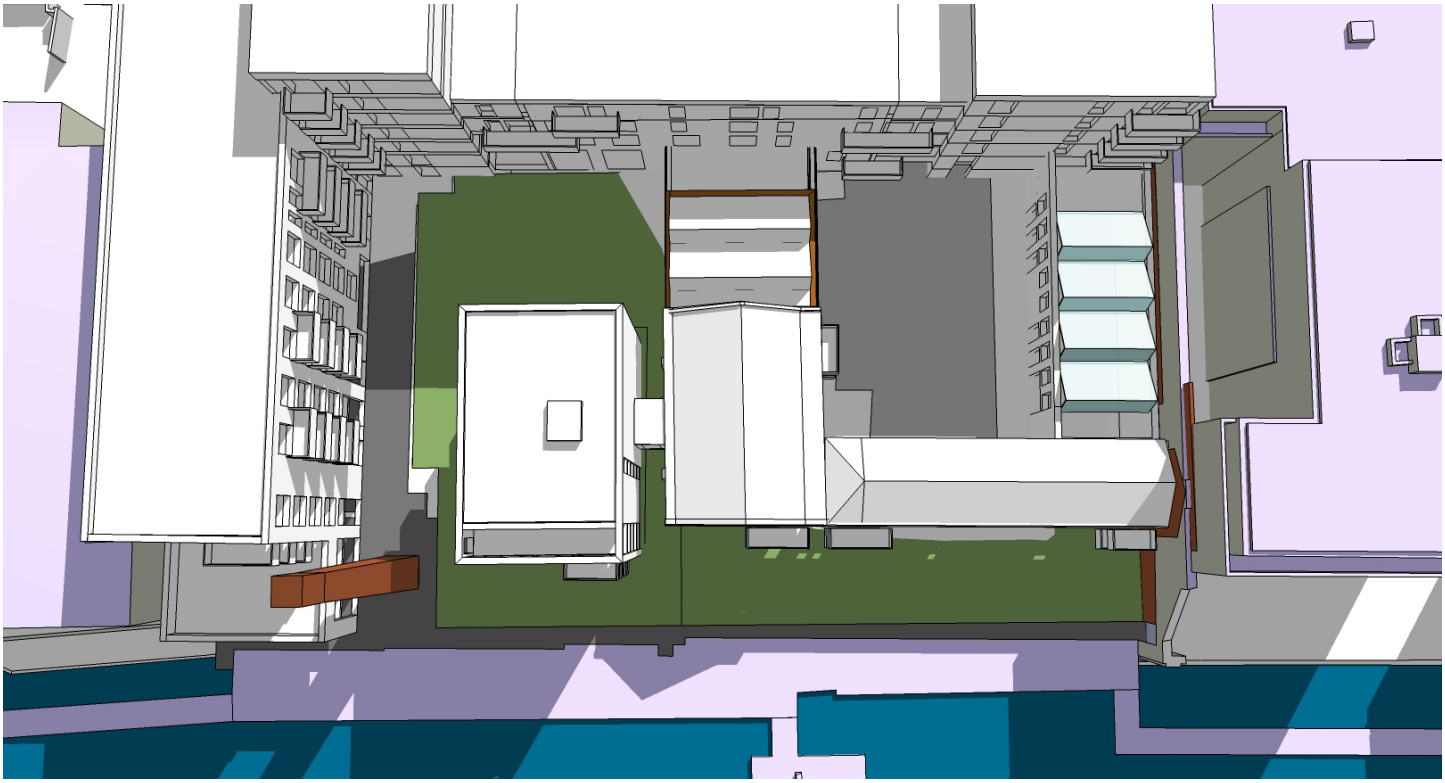


11.00am March 21

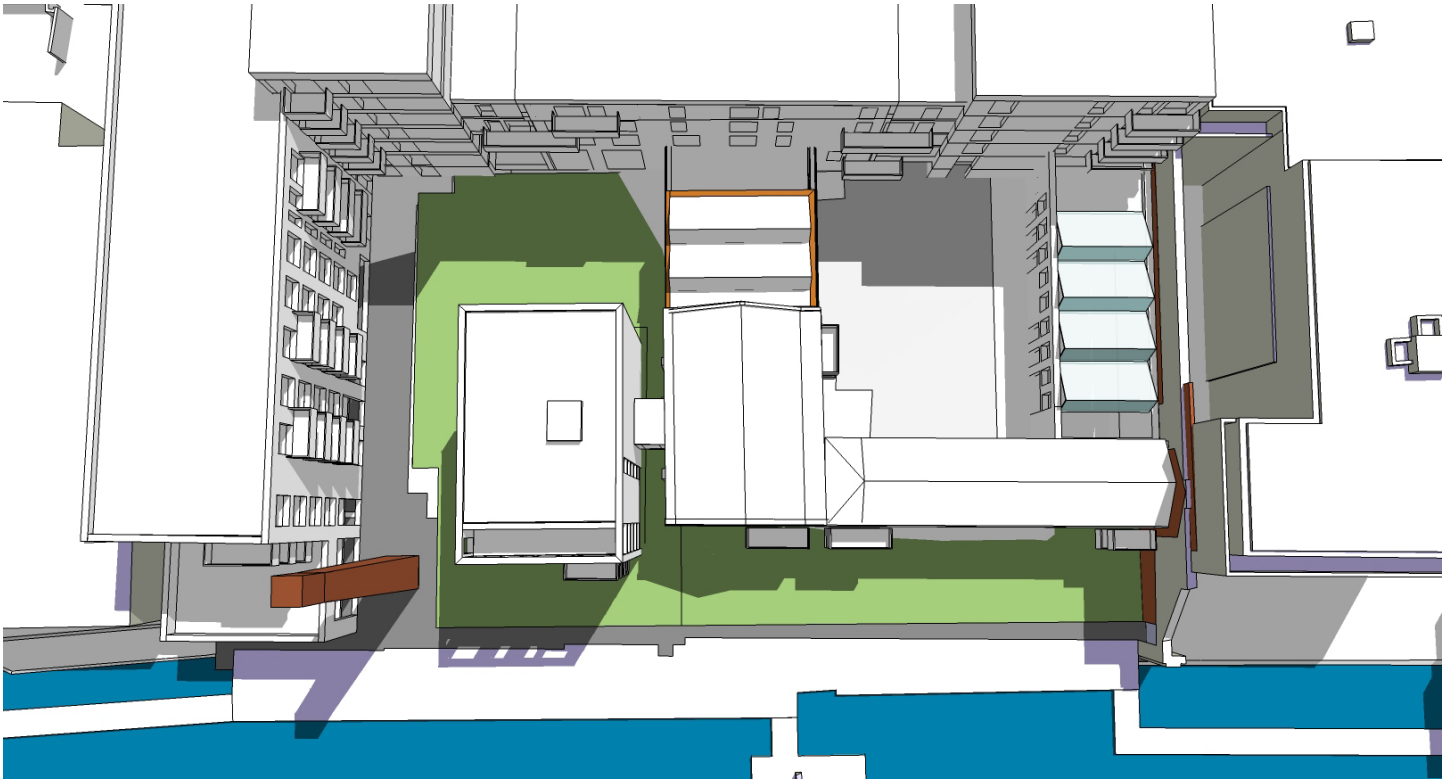


11.00am June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

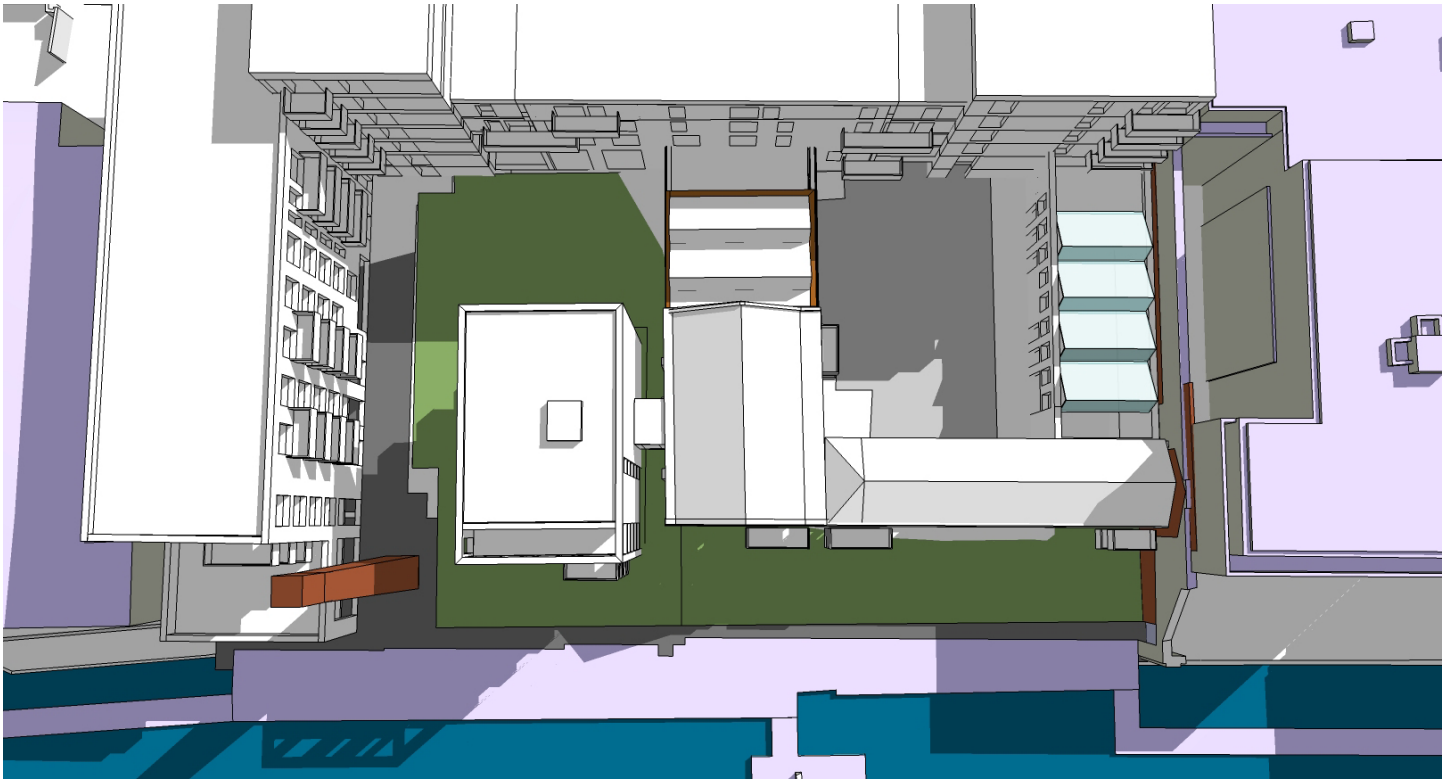


12.00pm March 21

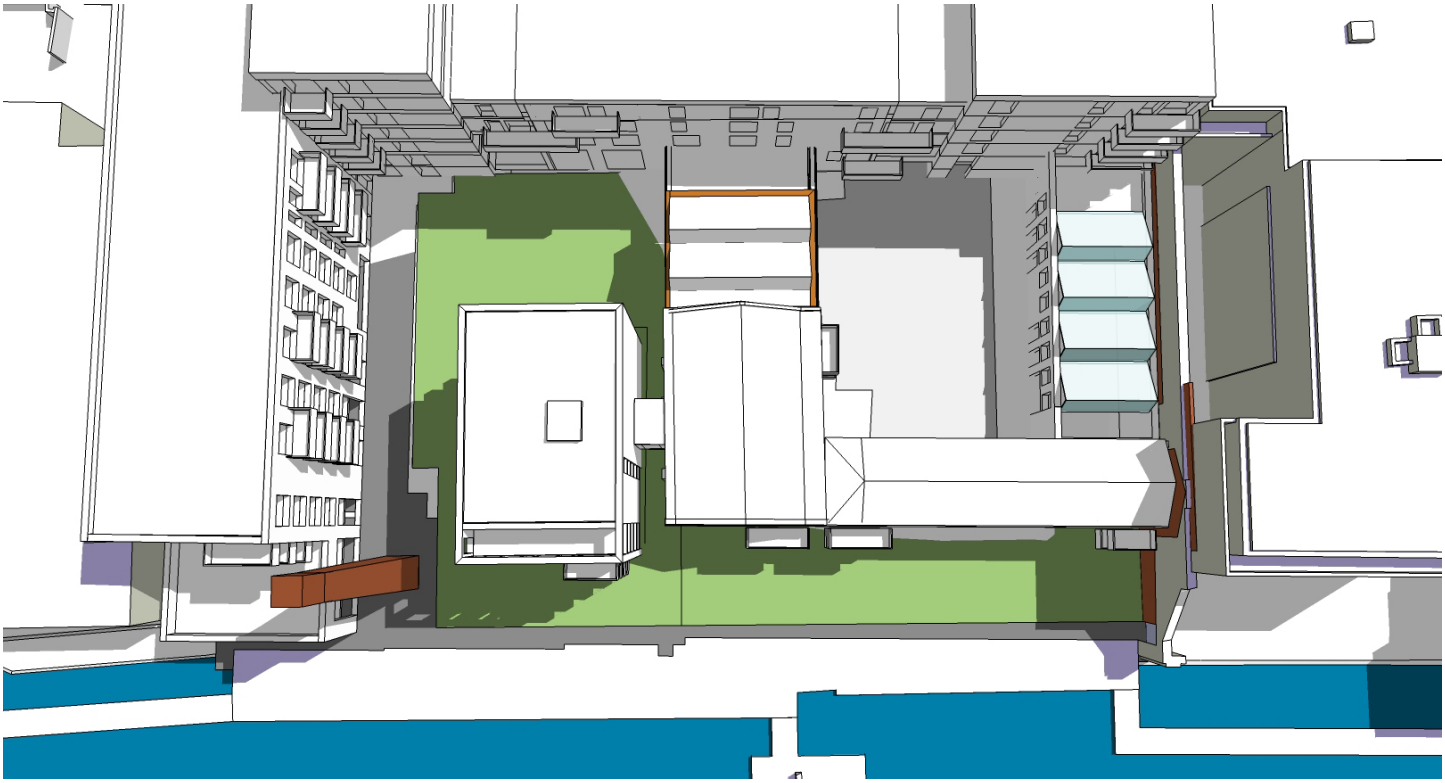


12.00pm June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

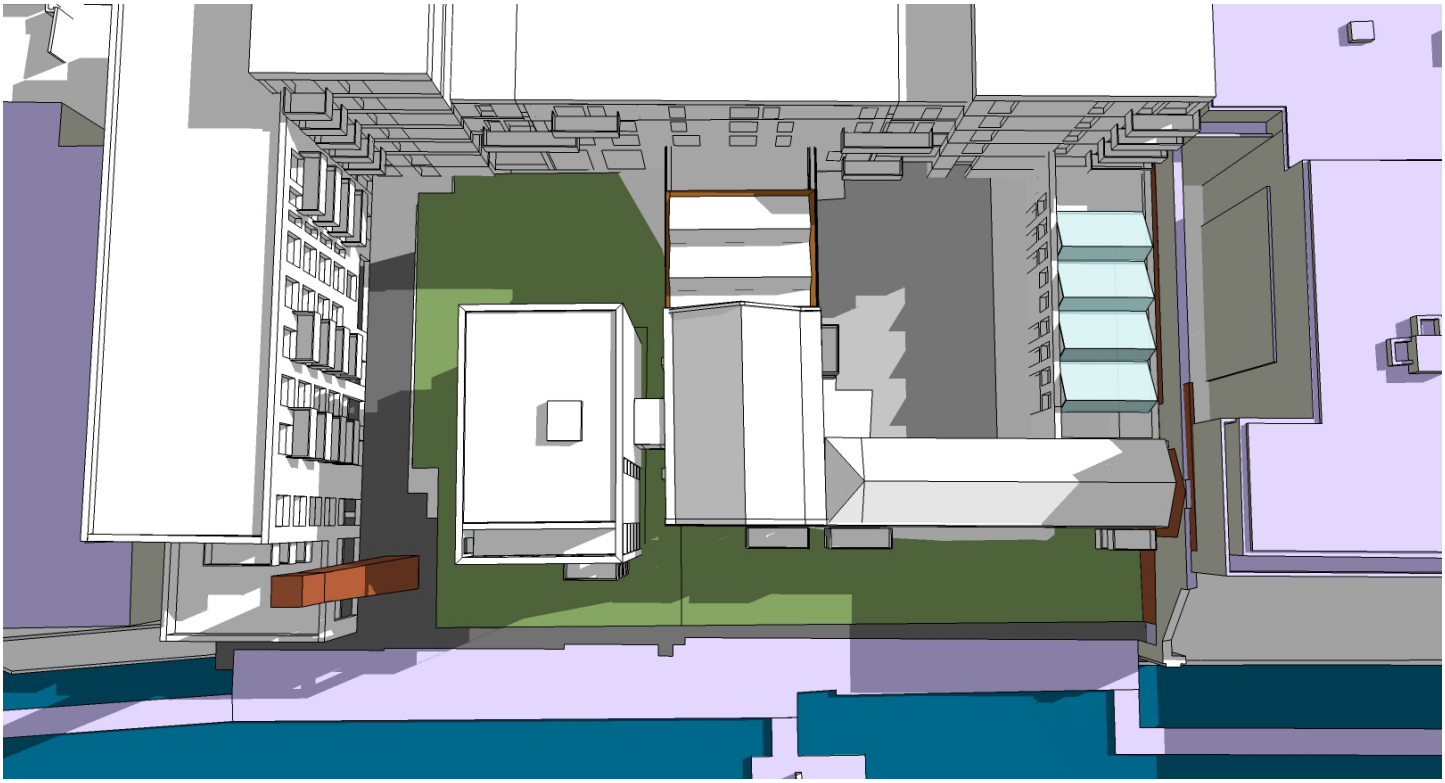


1.00pm March 21

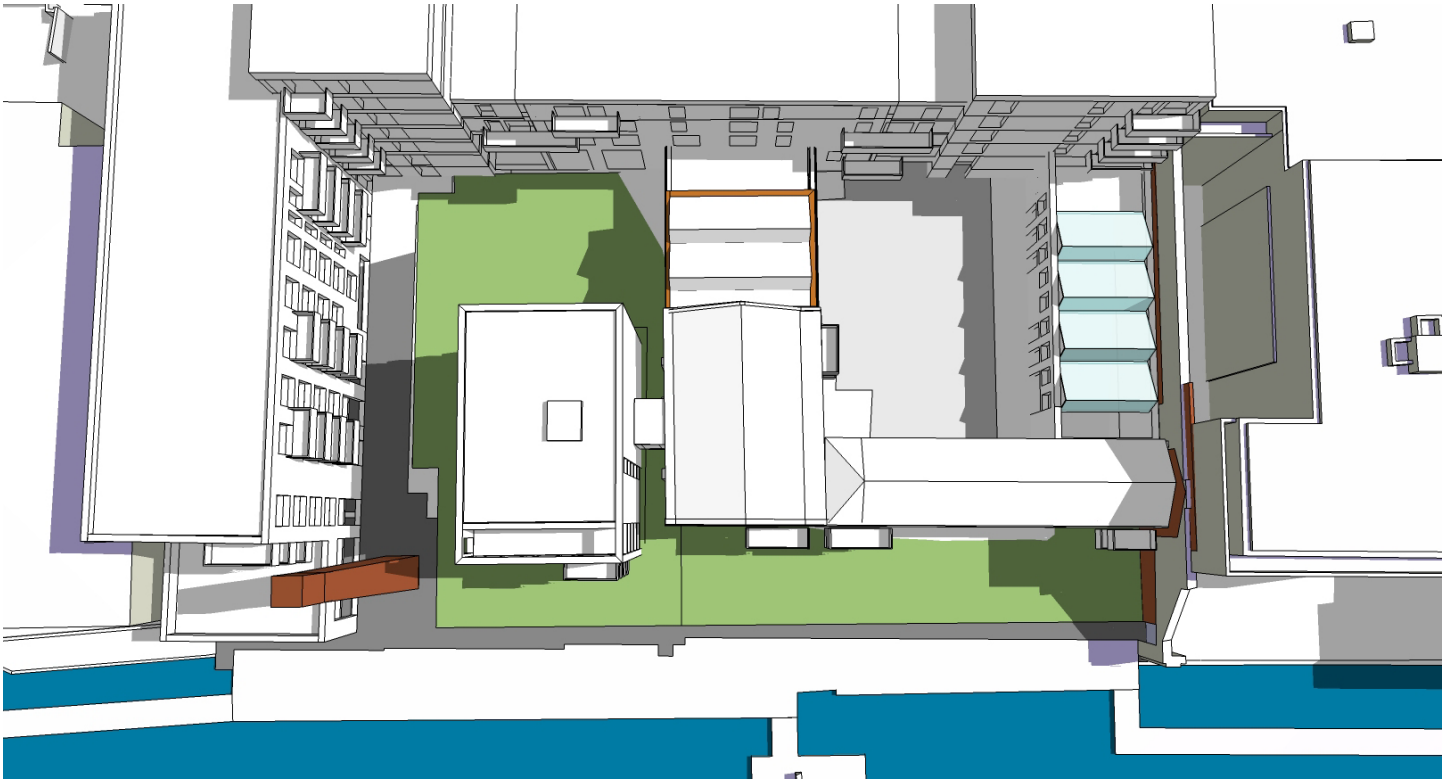


1.00pm June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

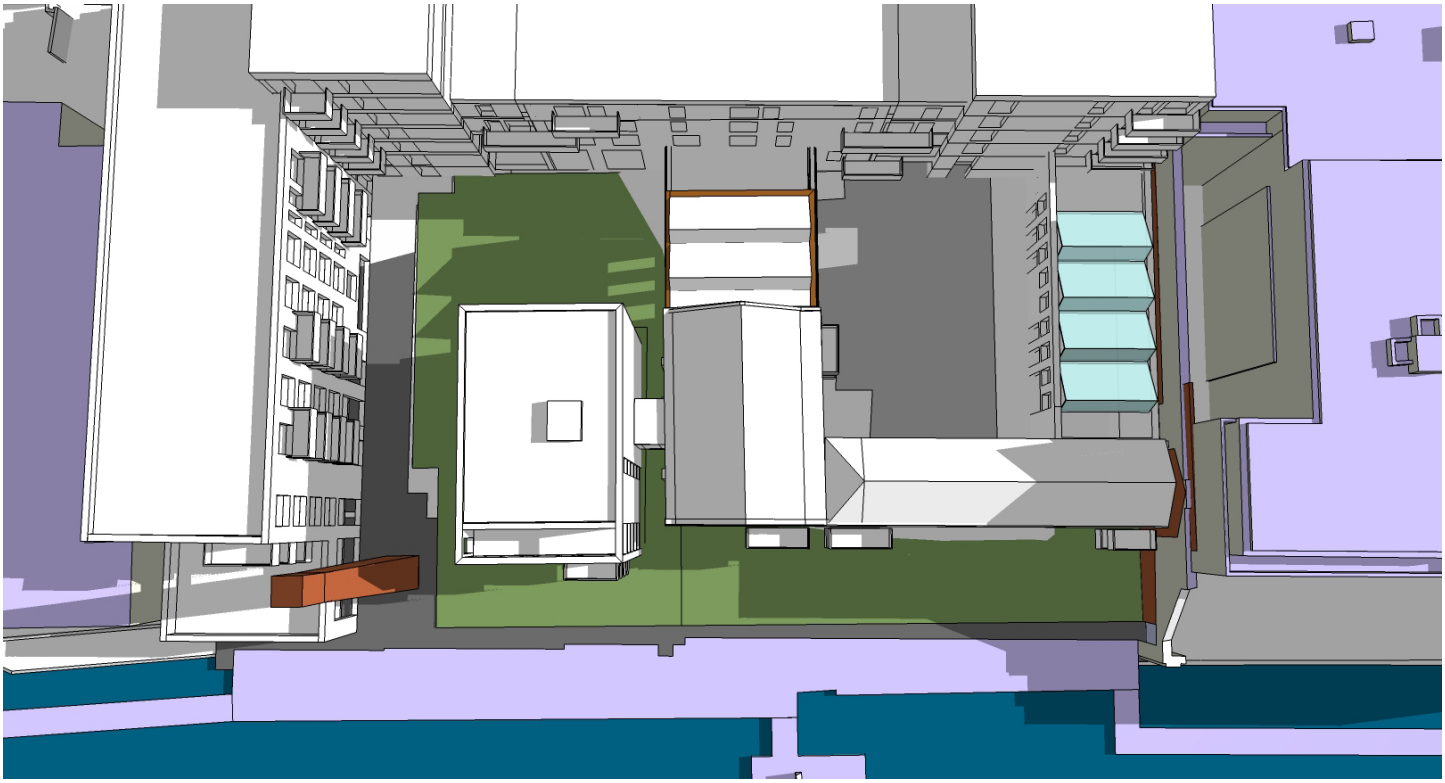


2.00pm March 21

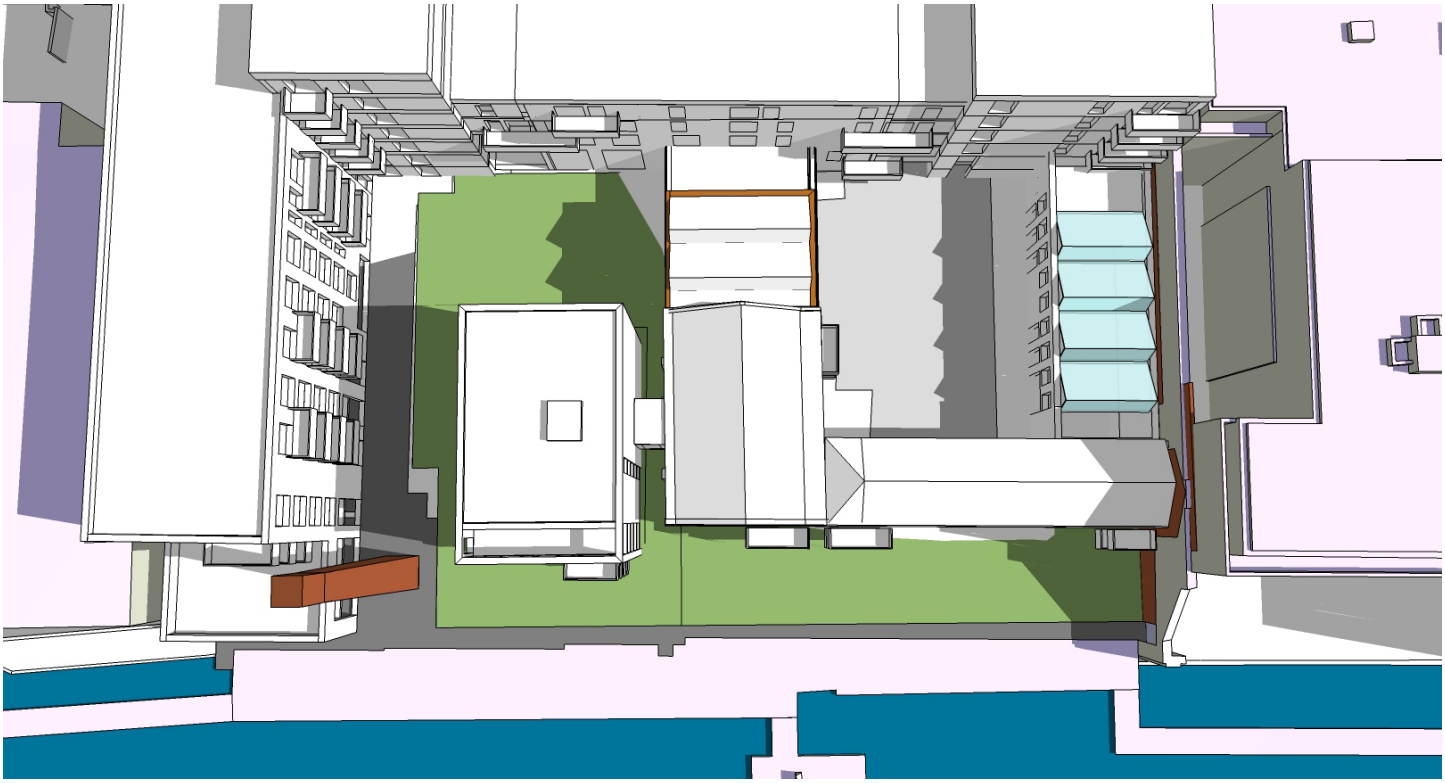


2.00pm June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

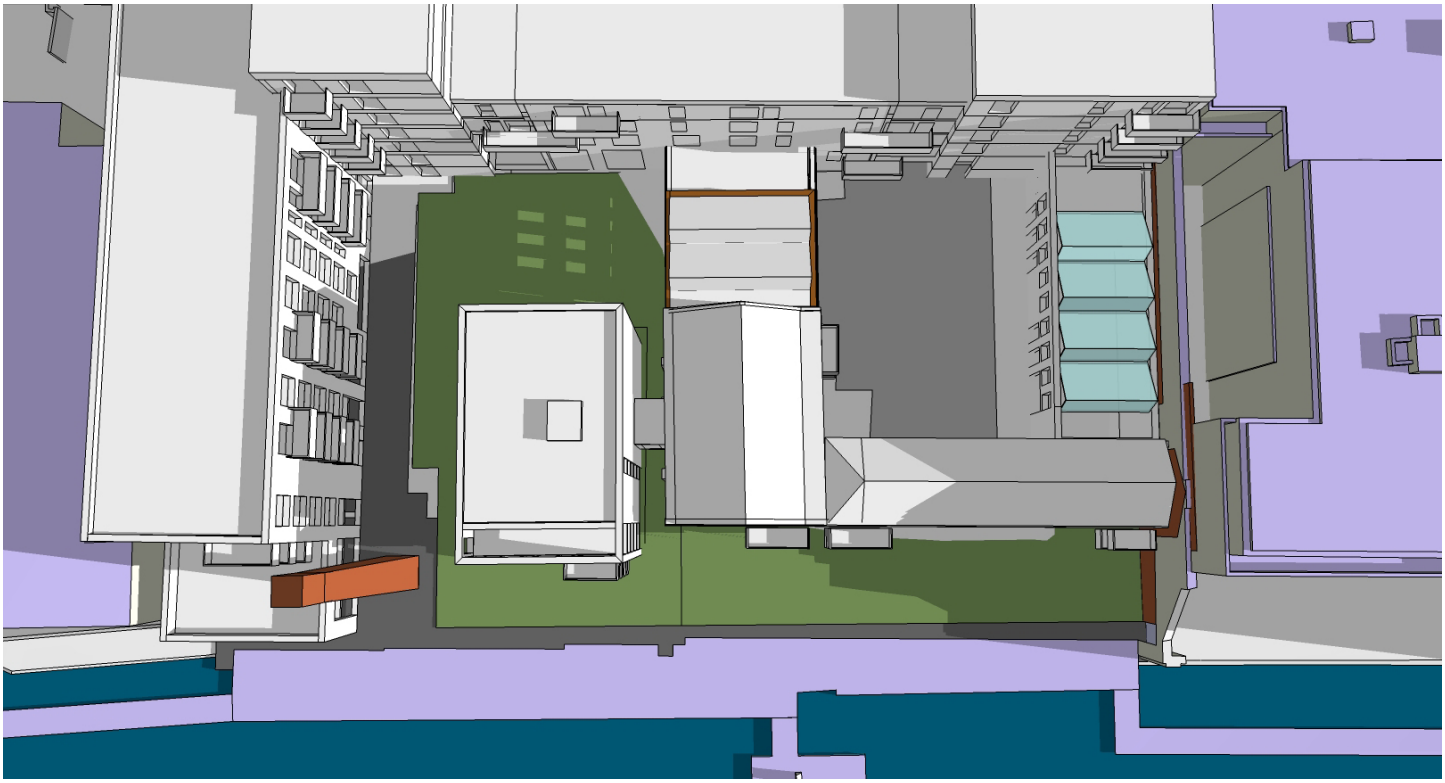


3.00pm March 21

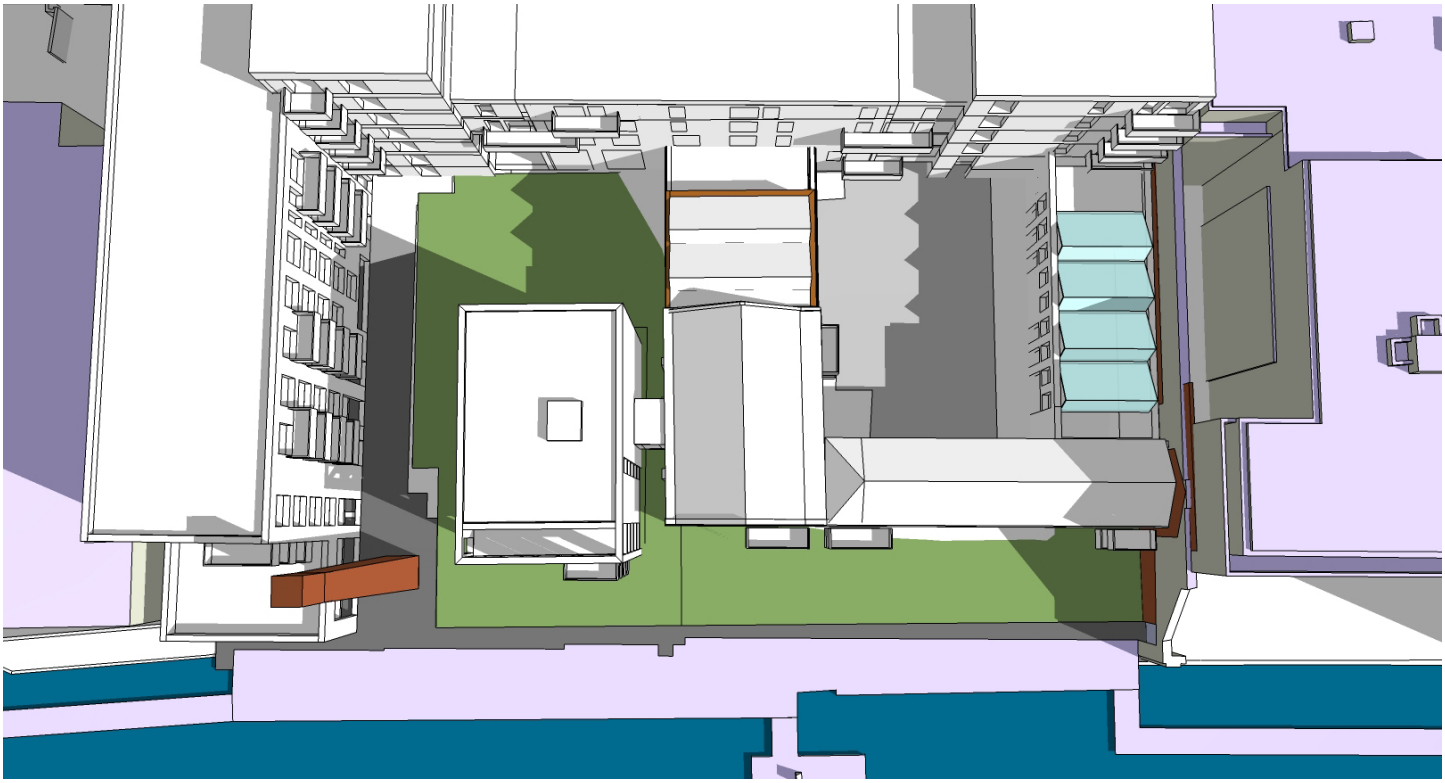


3.00pm June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS

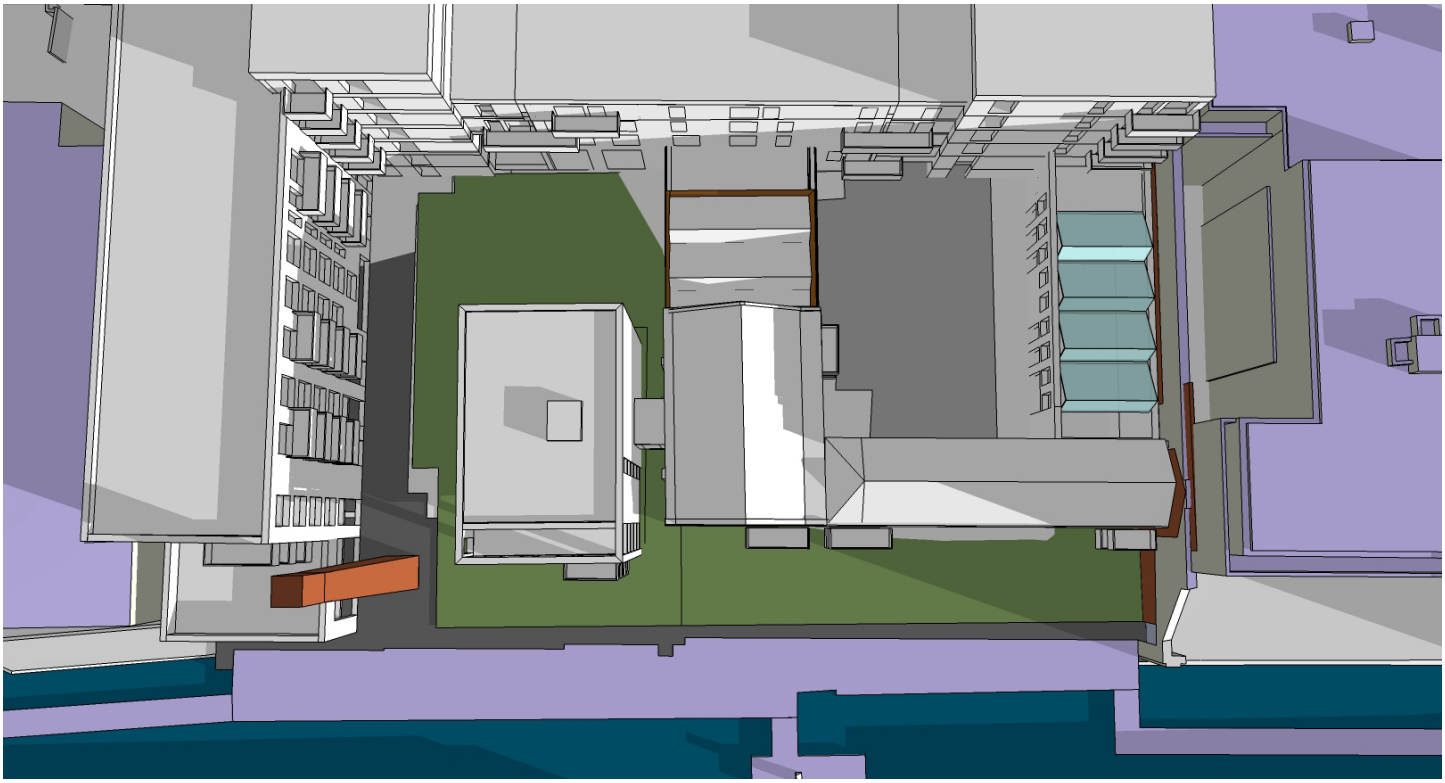


4.00pm March 21

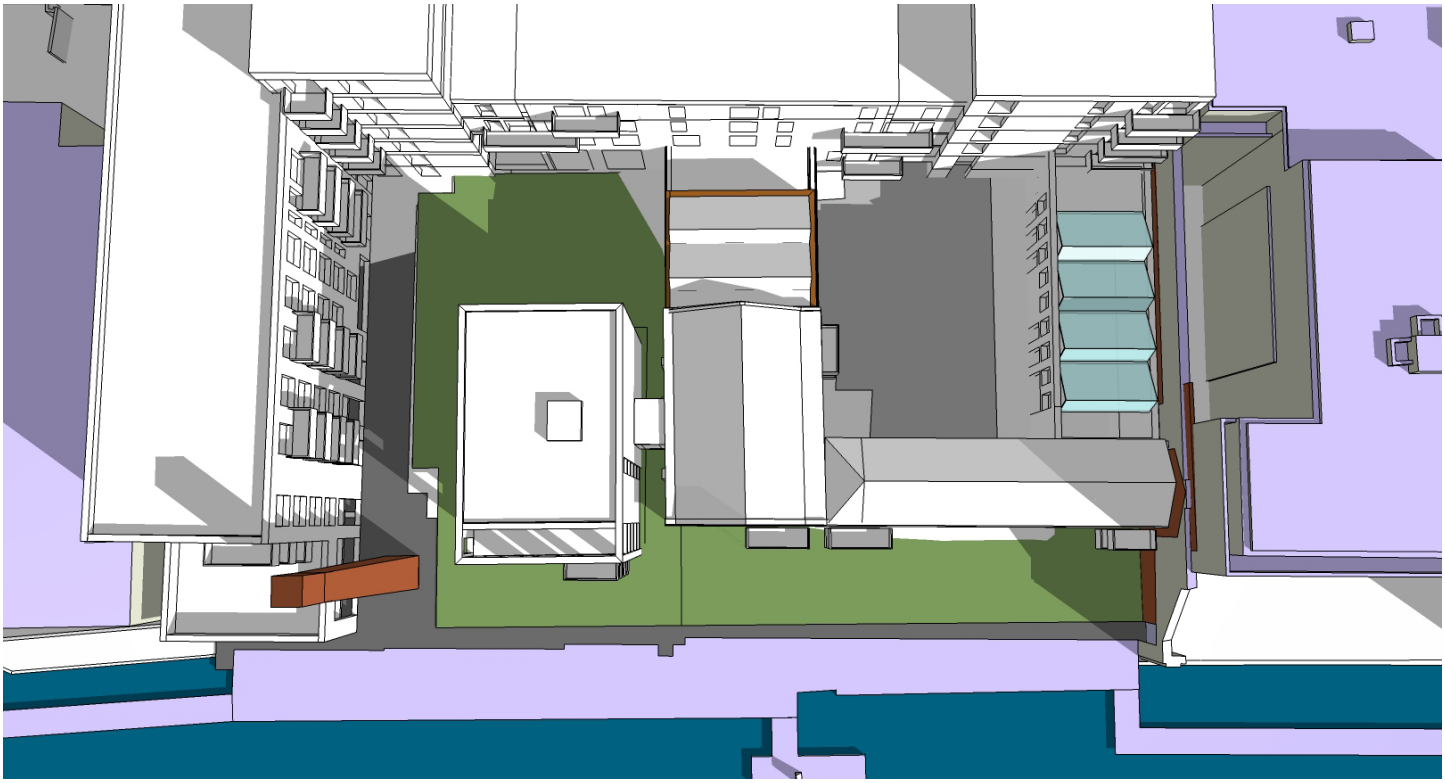


4.00pm June 21

EAGLE WHARF ROAD
OVERSHADOWING ANALYSIS



5.00pm March 21



5.00pm June 21