

BEFORE COMMISSIONER DAYSH APPOINTED BY NEW PLYMOUTH DISTRICT COUNCIL

UNDER the Resource Management Act 1991
("RMA")

IN THE MATTER of an application under section 88 of
the Act by **KD HOLDINGS LTD** to the
NEW PLYMOUTH DISTRICT COUNCIL for land use consent
application to construct a six-storey
mixed use building and removal of a
notable tree at 45, 49 and 51
Brougham Street and 33 Devon Street
West, New Plymouth.

STATEMENT OF EVIDENCE OF SHAUN JAMES MURPHY ON BEHALF OF KD HOLDINGS LTD

1.0 INTRODUCTION

- 1.1 My name is Shaun James Murphy
- 1.2 I am an Associate at Boon Team Architects Limited
- 1.3 I have worked in the architectural industry for 11 years; the entire of which has been based in New Plymouth. I hold a Bachelor's Degree in Architecture from Victoria University in Wellington and have been a registered architect with the New Zealand Registered Architects Board since 2015.
- 1.4 In my professional capacity I have been involved in a number of developments which have included technical inputs and analysis for assessments of environmental effects and providing evidence for planning hearings. This has included site planning, shadow studies, animations, photomontages and 3D representations of proposed developments.
- 1.5 Some of those projects, for example, include:
 - (a) Top of the world Apartments, New Plymouth;
 - (b) Clarendon Apartments, New Plymouth; and
 - (c) Lyskey House, New Plymouth.
- 1.6 I have worked with principal architect Murali Bhaskar of Boon on the proposed Brougham Street development for KD Holdings Limited (the applicant) since early 2018.
- 1.7 I confirm that I have read, and agree to comply with, the Environment Court's Code of Conduct for Expert Witnesses (Environment Court of New Zealand Practice Note 2014). This evidence I am presenting is within my area of expertise, except where I state that I am relying on the evidence of another person. To the best of my knowledge, I have not omitted to consider any material facts known to me that might alter or detract from the opinions I express.

2.0 SCOPE OF EVIDENCE

2.1 My evidence will cover:

- (a) Description of the proposed site (in the context of shadow modelling);
- (b) Outline of modelling techniques and processes;
- (c) Permitted baseline development shadow study;
- (d) Proposed commercial development shadow study; and
- (e) Conclusion.

2.2 All of the relevant shadow study graphics discussed in my evidence (including all of those submitted to New Plymouth District Council pursuant to section 92 Resource Management Act 1991 requests) are attached as Appendix 1.

3.0 DESCRIPTION OF SITE

- 3.1 The site for the proposed development has been well described in the Application for Resource Consent and Assessment of Environmental Effects – Brougham Street, BTW Company Limited, 04 September 2020 (the application), the Officer's Report and in the evidence of others called for the applicant.
- 3.2 In the context of my evidence I wish to briefly highlight the following features of the site which have impacted on my evidence.
- 3.3 The site is comprised of four lots that align from north to south. The north-south site dimension is approximately 29 metres and the east-west site dimension approximately 16 metres. The site is contoured with the land dropping away from the southwest corner of the site with an RL of 12.14 metres (at footpath edge), to northwest corner with an RL of 9.64 metres. It has an overall change in level of approximately 2.5 metres.

4.0 OUTLINE OF MODELLING TECHNIQUES AND PROCESSES

- 4.1 To simulate the potential shade effects of the proposed development I used my expertise to develop a computer generated model of the proposal based on the survey data provided by Bland & Jackson Ltd. & BTW Company Ltd. and the architectural CAD drawings prepared by BOON Ltd. The model was generated with Autodesk Revit 2020 software which are typical software applications used in this type of work.
- 4.2 A fixed aerial perspective view, or 'birdseye view', using a simulated camera was established within the model to generate the shadow study images. This camera had a 35 degree. field of view. I have used this technique to simulate what would be similar to an aerial photograph.
- 4.3 The current topography of the property (51 Brougham St) and the neighboring Huatoki River has been surveyed by Bland & Jackson Ltd. and BTW Company Ltd. to provide accurate building outlines, relative levels and heights.
- 4.4 The contours of the extended neighbourhood geography and location of neighbouring properties are created using data from NPDC GIS database for land contours and property lines.

- 4.5 All existing neighbouring buildings (size/shape/height/location/levels etc) are shown approximate only, conservatively modelled, based on data from NPDC GIS, photographs and observations of their relative locations, and are NOT based on surveyed information.
- 4.6 The generation of the shading is created via the in-built location data in the Autodesk Revit software used by BOON Ltd. As all existing neighbouring buildings are modelled as approximate only, therefore all shadows generated are to be read as such.

5.0 PERMITTED BASELINE DEVELOPMENT SHADOW STUDY

- 5.1 A permitted baseline development (baseline development) shadow study was modelled using the same technology and survey data discussed above as a tool to compare the potential shadow effects of a compliant permitted activity development with the potential shadow effects of the proposed development.
- 5.2 The baseline development consists of a 14m high commercial development with one hundred percent site coverage which matches the proposed development.
- 5.3 Simulations of the shade effects of the baseline development were generated for June 21st and December 21st (summer and winter solstice) across various times of the day. Refer to Appendix 1.

6.0 PROPOSED DEVELOPMENT SHADOW STUDY

- 6.1 The proposed development shadow study was undertaken to determine the potential adverse shadow effect of the proposed development on the adjacent properties. Prior to this, various building forms were modelled and tested with the architect during the sketch design phase of the project in regard to minimising the potential shade effect. Measures were undertaken during design to mitigate any shadow effects where possible (as is also discussed in the evidence of Mr Bhaskar). Such measures included the building materiality and the setback design of the penthouse level to limit the shade.
- 6.2 The baseline development and proposed development shading were overlaid to allow a clear visual representation of the effects of a permitted baseline development and that of the proposed development.
- 6.3 I have read the evidence of Mr McEwan. His evidence, amongst other things, assesses the potential shading effects of the baseline development and the proposed development on neighbouring properties and public amenities to the east, west and south of the site. I agree with his assessment and conclusions reached.

7.0 RESPONSE TO SUBMISSIONS RECEIVED

- 7.1 As a result of the submissions received in regards to possible shading of Sir Victor Davis Park, I undertook additional modelling using detailed CAD data provided by BOON of the proposal, and data from a registered cadastral surveyor with a specific focus to the subject area.
- 7.2 All existing site contour information, trees and flora (size/shape/height/location/levels etc) are shown approximate only, conservatively modelled based on data from NPDC GIS, photographs and observations of their relative locations and are NOT based on surveyed information.
- 7.3 Simulations of the shade effects relevant to the above were generated for June 21st 4pm when the said area is potentially worst affected. Refer to Appendix 1.
- 7.4 I have read the evidence of Mr McEwan in regards to potential shading effects of Sir Victor Davis Park. I agree with his assessment and conclusions reached.

8.0 RESPONSE TO S42A REPORT

- 8.1 I have read the Officers report (Luke Balchin) dated 02 February 2021 and have the following comments:
- 8.2 I agree with the Officers conclusion that any potential adverse shading effects would be less than minor in nature.

9.0 CONCLUSIONS

- 8.1 I have undertaken detailed modelling of the development and surrounding area utilising industry standard software and techniques. I have also used detailed CAD data provided by BOON of the proposal, and data from registered cadastral surveyors to produce a series of shadow studies and montage images that can be used by others to determine the extent of the effects of the proposed development in regard to shading and amenity.
- 8.2 I have read the submissions and in relation to shading effects, in my view, Mr McEwan's evidence comprehensively addresses potential adverse shading effects on the relevant environment. In the interests of brevity I will not duplicate what he has already addressed in his evidence, which I agree with.



Shaun Murphy

10 February 2021

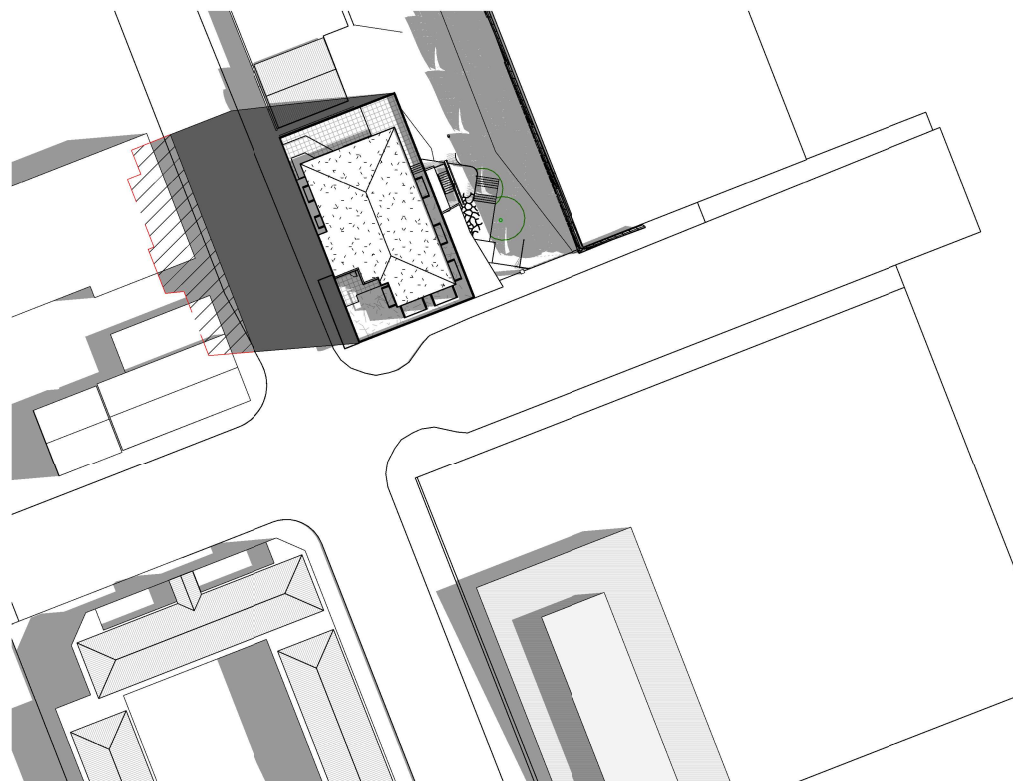
APPENDIX 1:

Shading diagrams prepared by Boon Ltd. for Resource Consent submission.
Submitted to NPDC 29 April 2020

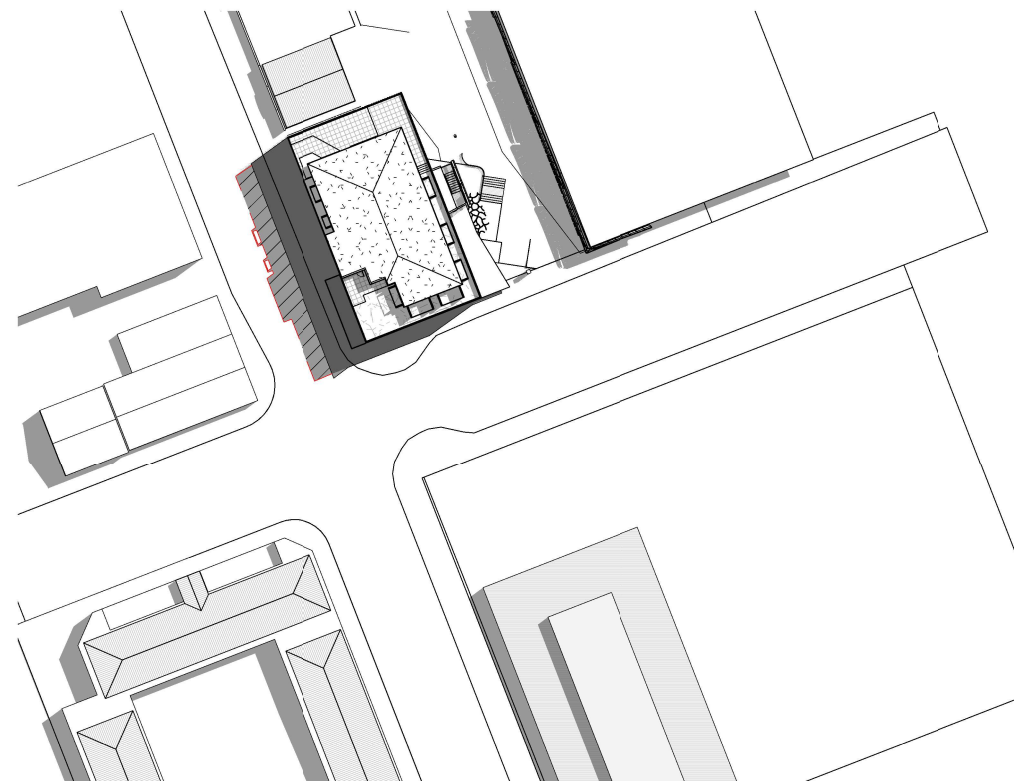
- A9.01 Shade Diagrams Summer Solstice;
- A9.02 Shade Diagrams Winter Solstice.

Additional shading diagrams prepared by Boon Ltd. in response to submission received from Anne Sanderson in regards to shading effects of Sir Victor Davis Park.

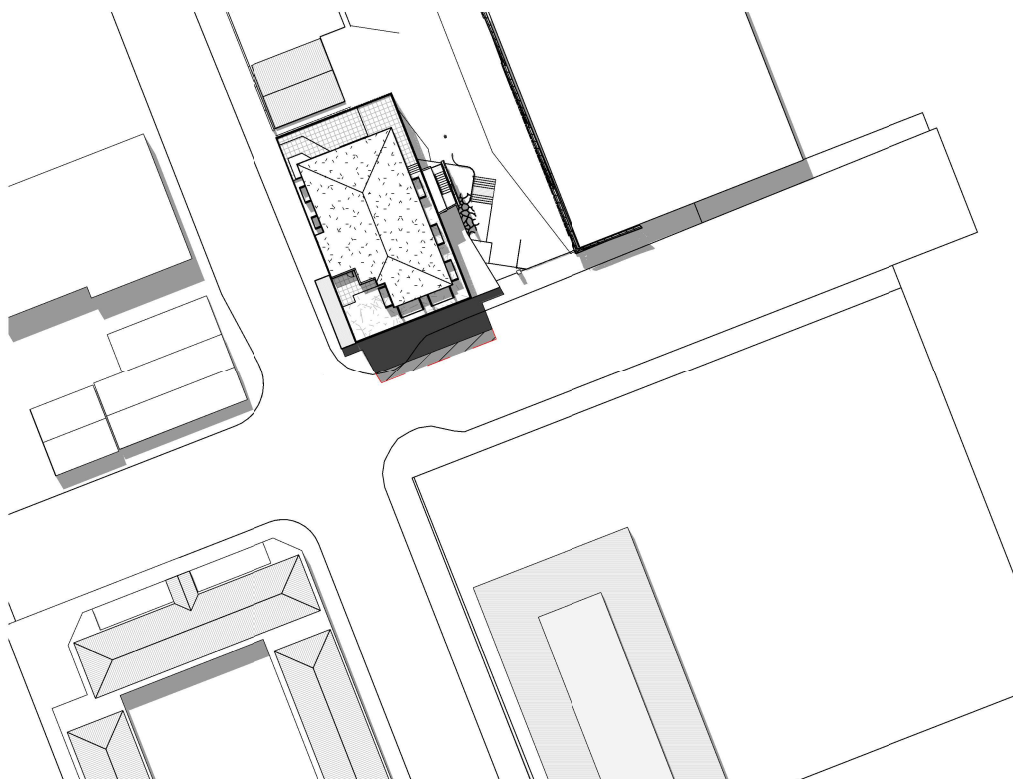
- A9.04 Shade Diagrams;
- A9.05 Shade Diagrams.



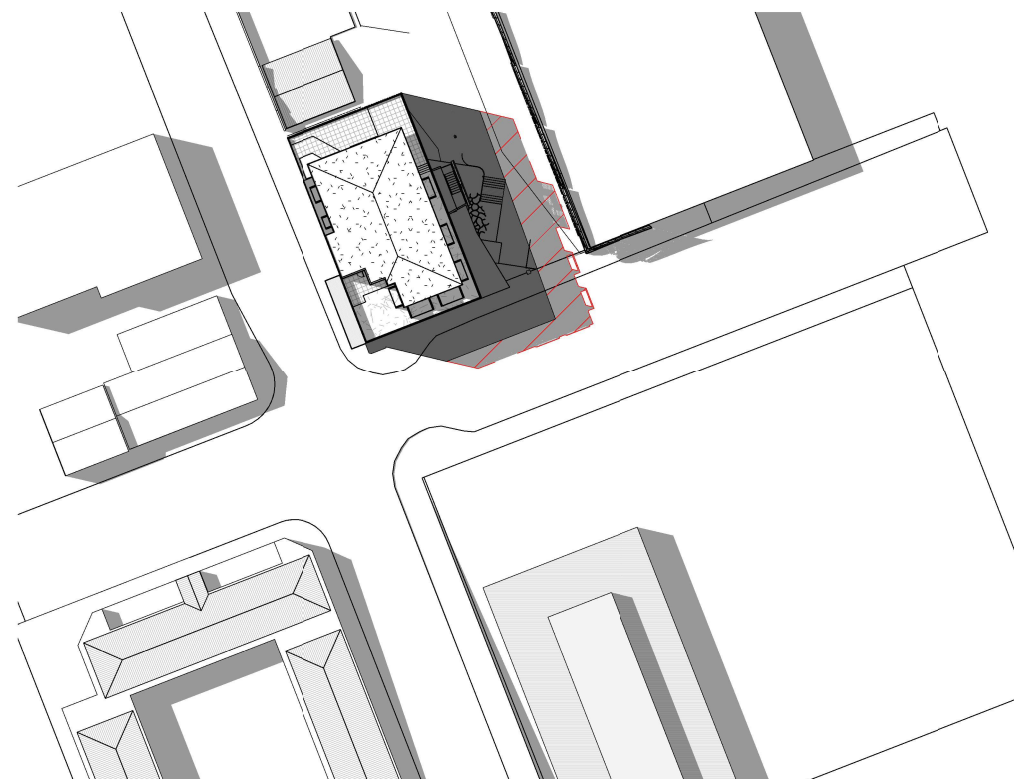
21 Dec 10am
Scale 1 : 1000 (A3)



21 Dec 12pm
Scale 1 : 1000 (A3)





21 Dec 2pm
Scale 1 : 1000 (A3)



21 Dec 4pm
Scale 1 : 1000 (A3)

Key

-  Projected shade for 14m height building (approx)
-  Projected shade above 14m (infringement)

Disclaimer

Accuracy of the shading diagrams shown is affected by the coordinated data available as follows.

Modeling:

- The current topography of the property (51 Brougham St) and the neighboring Huatoki River has been surveyed by Bland & Jackson Ltd. and BTW Company Ltd. to provide accurate building outlines, relative levels and heights
- The contours of the extended neighbourhood geography and location of neighbouring properties are created using data from NPDC GIS database for land contours and property lines (NPDC GIS Viewer T&Cs apply)
- All existing neighbouring buildings (size/shape/height/location/levels etc) are shown approximate only, conservatively modelled based on data from NPDC GIS, photographs and observations of their relative locations and are NOT based on surveyed information

Shading:

- The generation of the shading is created via the in-built location data in the Autodesk Revit software used by BOON Ltd.
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- ALL SHADOWS SHOWN ARE APPROXIMATE ONLY

Brougham Street Development
51 Brougham Street, New Plymouth

Resource Consent
AUGUST | 2020

job	a3	drawing no	rev	drawing title	print date
6400	As	A9.01		Shade Diagrams Summer Solstice	3/09/2020 9:42:38 am
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Key

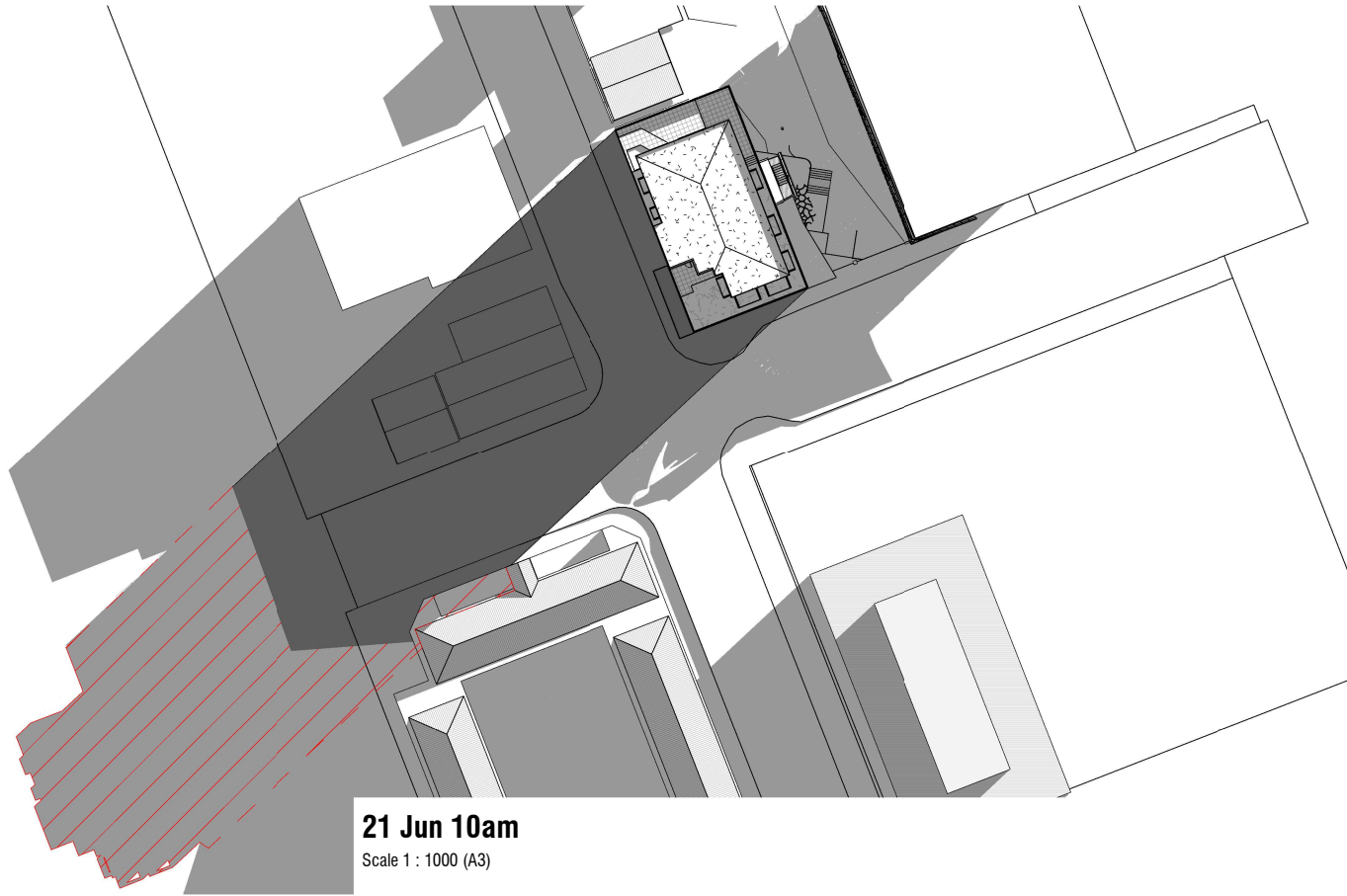
- Projected shade for 14m height building (approx)
- Projected shade above 14m (infringement)

Disclaimer

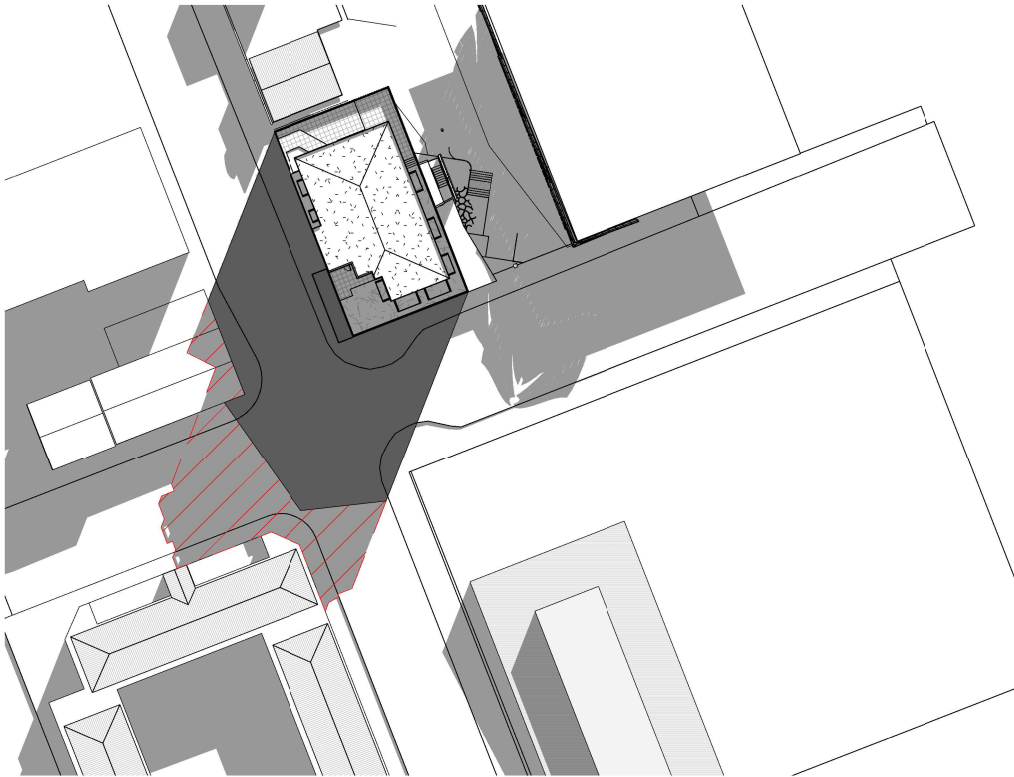
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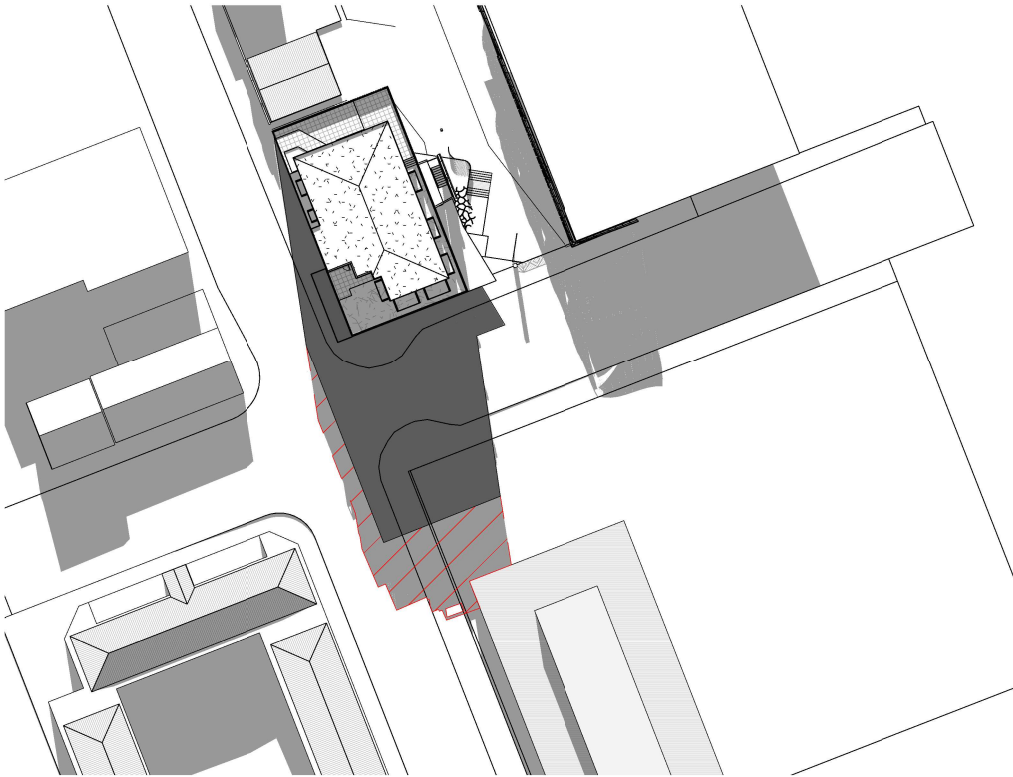
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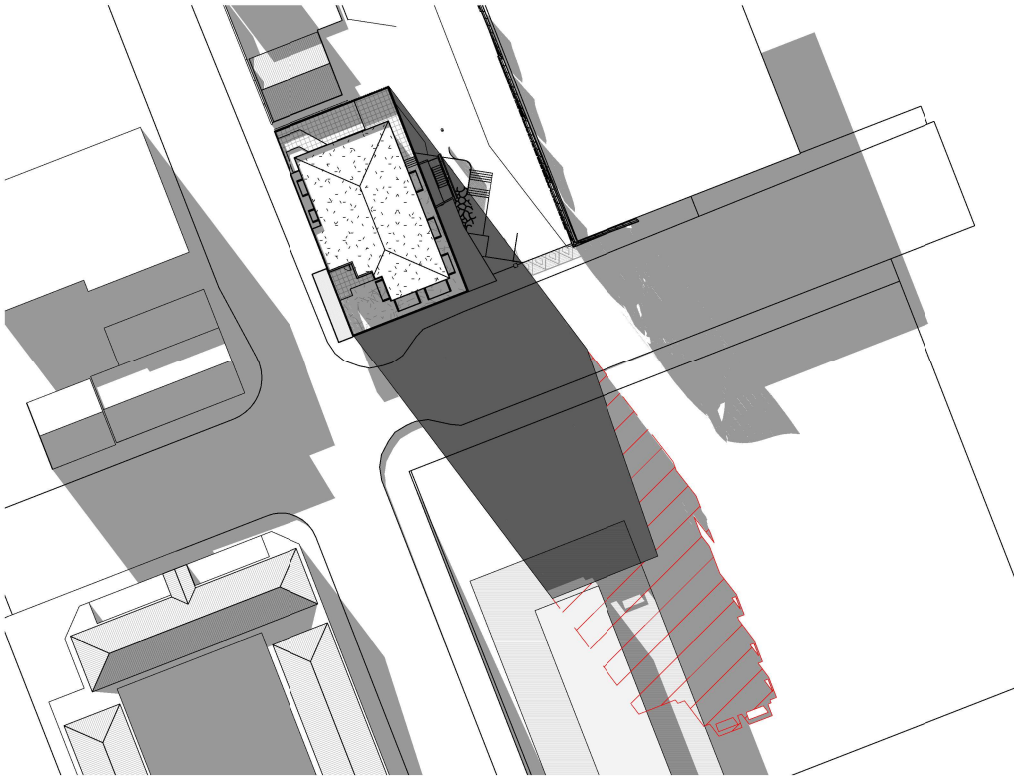
21 Jun 10am
Scale 1 : 1000 (A3)



21 Jun 12PM
Scale 1 : 1000 (A3)



21 Jun 2pm
Scale 1 : 1000 (A3)



21 Jun 4pm
Scale 1 : 1000 (A3)

Brougham Street Development
51 Brougham Street, New Plymouth

Resource Consent
AUGUST | 2020

job	a3	drawing no	rev	drawing title	print date
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Key

- Projected shade for 14m height building (approx)
- Projected shade above 14m (infringement)
- Projected additional shadow into public reserve space

Disclaimer

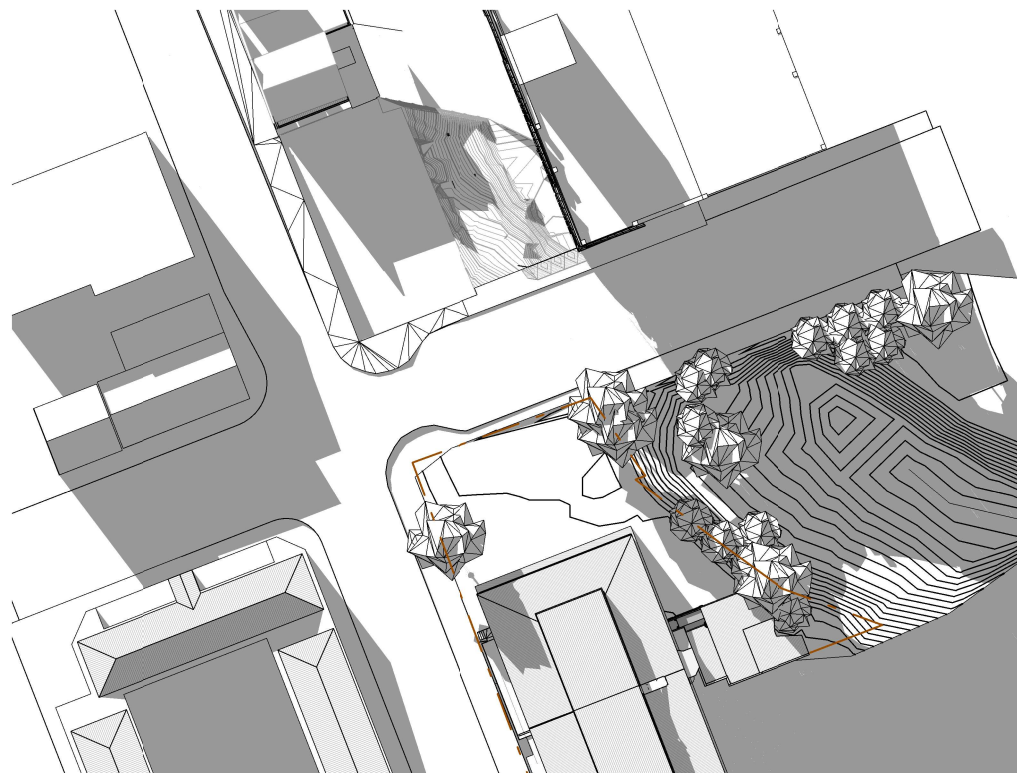
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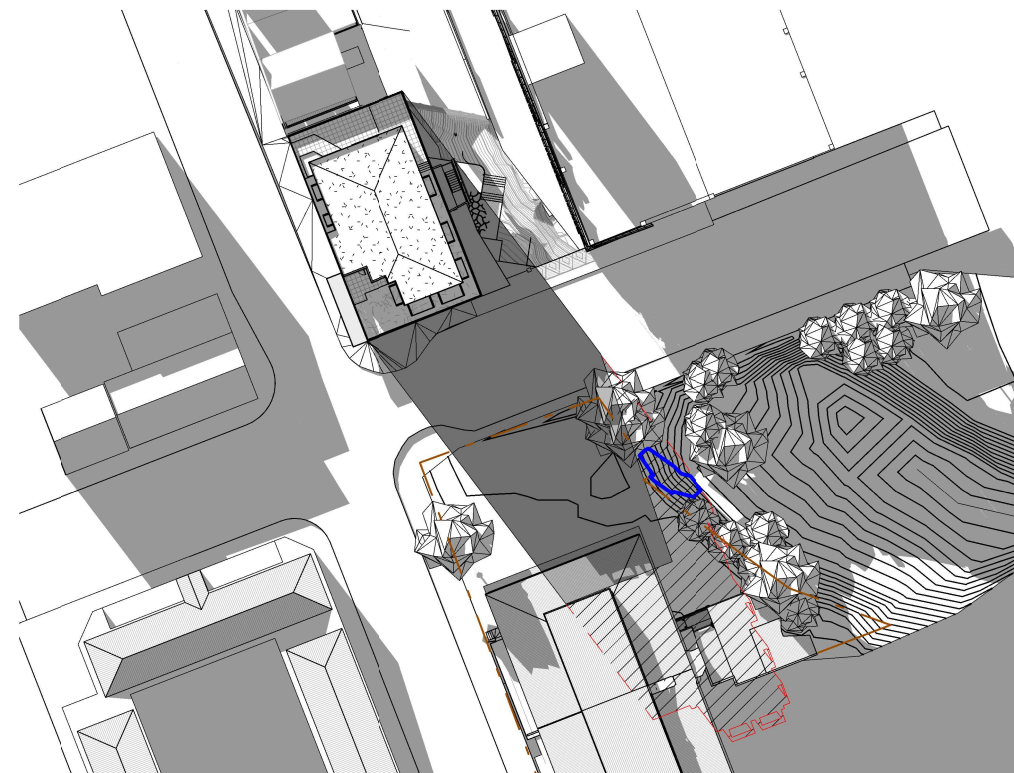
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21 Jun 4pm - Existing

Scale 1 : 1000 (A3)



21 Jun 4pm - Proposed

Scale 1 : 1000 (A3)

Brougham Street Development

51 Brougham Street, New Plymouth

Resource Consent

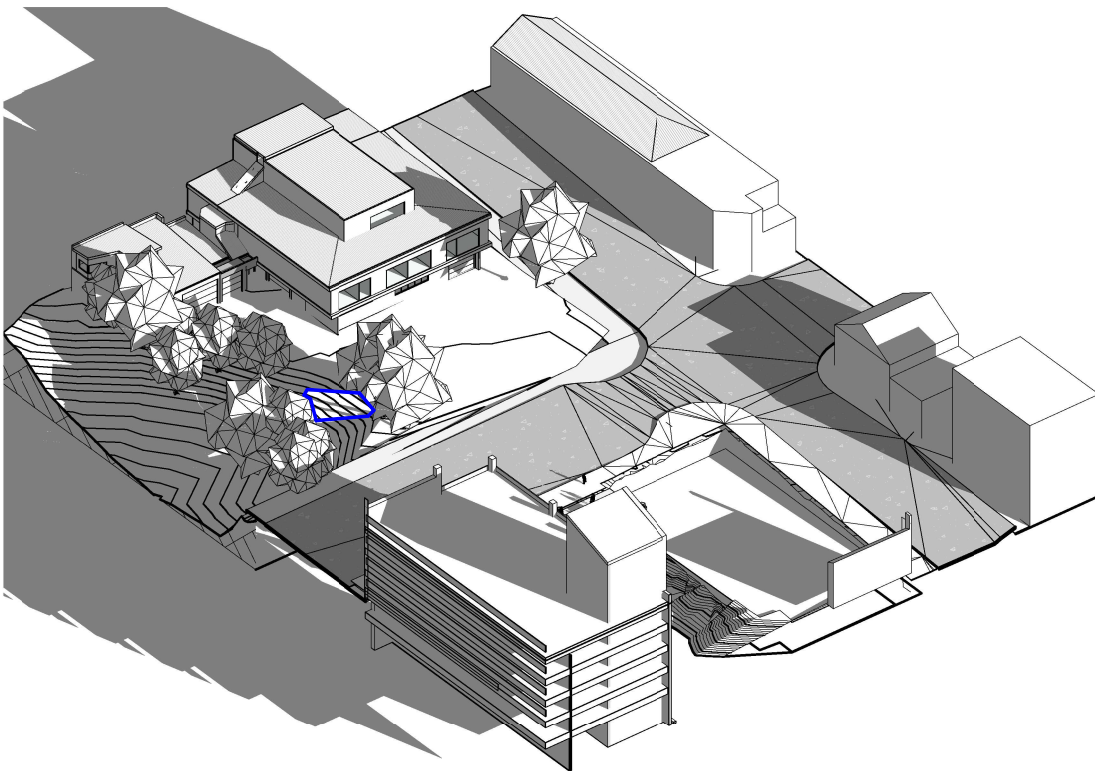
DEC | 2020

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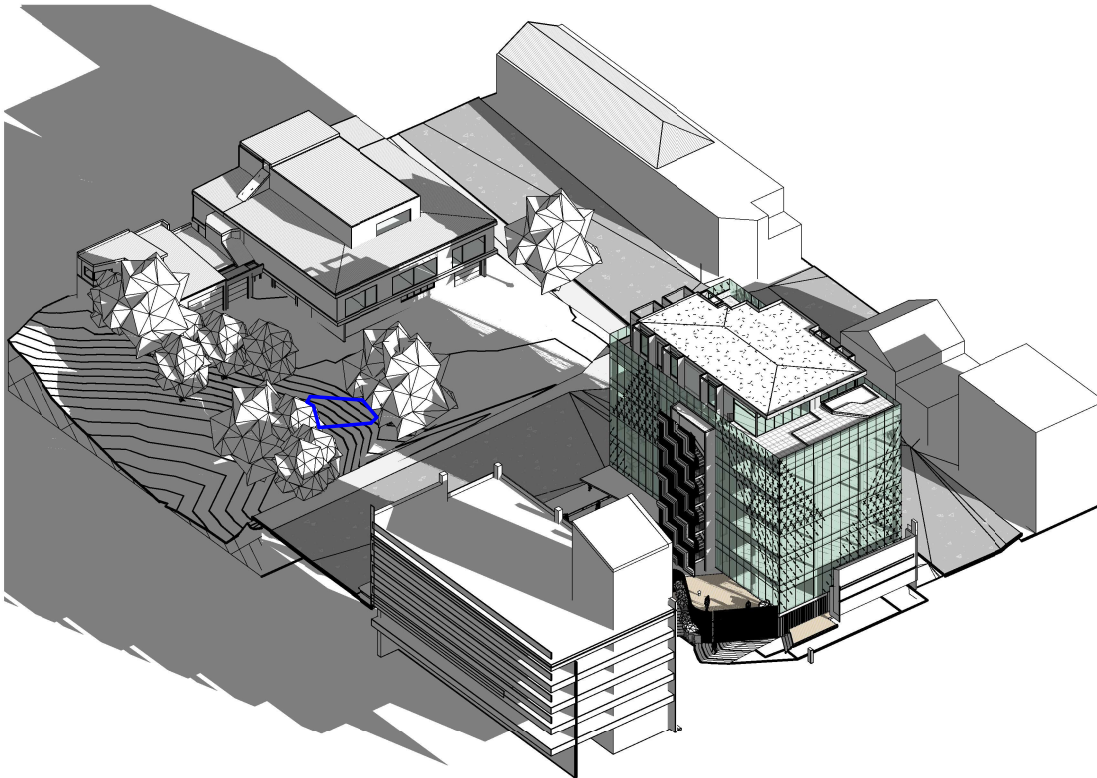
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21 Jun 4pm - Existing
Scale (A3)



21 Jun 4pm - Proposed
Scale (A3)

Key

Projected shade for 14m height building (approx)

Projected additional shadow

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Brougham Street Development

51 Brougham Street, New Plymouth

Resource Consent

DEC | 2020

job	a3	drawing no	rev	drawing title	print date
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