

Exploration of a School Of Design

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ABSTRACT

Motivation: Architectural discourse is divided between intellectual theory and built reality. Design Schools want to achieve contemporary architecture through the static image intending to publicise the avant-garde nature of Design School image within its creative industry at the expense of students.

The unification of a School of Designs learning process (reality) and the speculative academic philosophy (theory) would create an innovative contemporary School.

Methods: Research into design, theory, site analysis, literature and precedents illustrates the constant balance between the image and built reality.

The research identified the conflicting and contradictory nature of design theory, terminology. The research resulted in the key principles of function-specific and flexible space, site vitality and stagnation and Pedestrian and occupant movement being established.

The conclusion drawn was the connection between the learning process and the image a School of Design is achievable, reinforced through applying the key principles and responding to site conditions.

TABLE OF CONTENTS

Acknowledgments	5
Abstract	7
Table of Contents	8
1.0 Introduction	13
1.1 Introduction	14
1.2 Research Question	14
1.3 Project Definitions	14
1.4 Research Objectives	14
1.5 Projected Outcomes	15
1.6 Project Limitations	15
2.0 Methodology	16
2.1 Methodology	17
2.2 Method of Data Collection and Analysis.....	17
3.0 Current Knowledge	18
3.1 Research Process One	19
3.2 Research Process Two	19
3.3 Research Process three	19
3.4 Academic Programme.....	20
3.5 Programme Requirements	20
4.0 Precedents and Literature	21
4.1 School Of Design Precedents	23

4.1.1	The Aronoff Centre for Design and Art	24
4.1.2	Massey University School of Design	26
4.1.3	Nelson Marlborough Institute of Technology Arts	28
4.1.4	Arts and Design Academy	30
4.1.5	Sharp Centre for Design	32
4.2	Site Precedents	35
4.2.1	Im Viaduckt.....	36
4.2.2	Motorway Bridge and Control Centre	38
4.2	Literature Review.....	40
5.0	Urban Research and Analysis	41
5.1	Site.....	42
5.2	Site Statistics.....	40
5.3	Site Geology.....	44
5.4	View shafts and Vistas	45
5.5	Zoning	46
5.6	Site Circulation.....	46
5.7	Built Site Context	49
5.8	Viaduct.....	50
5.9	Existing Clovernook Road	51
5.10	Site Suitability.....	52
5.11	Site Analysis Conclusion	53
6.0	Design and Research.....	55
6.1	Guiding Principles.....	56

6.1.1	Function-specific and flexible space	56
6.1.2	Vitality and stagnation.....	56
6.1.3	Pedestrian and Occupant Movement.....	56
6.2	Process of Design.....	56
6.2.1	Exploration One.....	57
6.2.2	Exploration Two.....	58
6.2.3	Exploration Three	60
6.2.4	Exploration Four	62
6.2.5	Exploration Five	64
6.2.6	Exploration Six	66
6.2.7	Exploration Seven	68
6.2.8	Exploration Eight.....	70
7.0	Design Outcome	72
7.1	Design Outcome.....	72
7.1	Critical Appraisal	72
7.1	Final Design Presentation	74
8.0	List Of Figures.....	86
9.0	Bibliography	87
10.0	Appendix.....	89

1.0 INTRODUCTION

1.1 INTRODUCTION

“Architects design form, but hope for function.”¹

The role of theory and practice in architecture has come under increasing scrutiny since modernism. The argument can be made that the shift from the reality of architecture to the construct of an image has fractured the design process and building. With this shift, architectural discourse has been divided into two – discourse focused on intellectual theory and discourse concerned with the built environment and reality of architecture.

This document has evolved through an observation that within recent years, architecture for Schools of Design has become dominated by the theoretical and academic propositions trying to express the contemporary nature of Design Schools.

Schools of Design and contemporary ‘iconic’ architecture have mutually exclusive motives. A school wants to publicise itself through architecture that displays the avant-garde nature it fosters and teaches. Iconic architecture expresses the avant-garde nature of the building as a result of theories and manifestos. The function of the building is to sell itself as an image of the highest example of contemporary design. This constructs a unique image for the school creating a unique identity within a creative industry.

Creating a reciprocal relationship between the image and reality of design investigates the idea that more insight into practice and theory creates a common ground that the two conditions can interact within. This is illustrated through the Nelson Marlborough Institute of Technology Arts with its connection between the reality of the design, “enabling the sort of cross-disciplinary conversation and collaboration that generates innovative student work,”² with an award-winning building. This therefore creates a link between the two conditions.

The intended goals of this document are to unify the divisions of theory and design, illustrate and explore a Design School static image and investigate the idea of image versus the built reality.

The direction of research development has been contained within four significant stages: stage one, illustrating the origins of the research, stage two, describing the theoretical implications and assertions, stage three, comprising the articulations, with stage four being the summary.

This research will demonstrate the conflicting and contradictory nature of design theory, terminology and existing built environment. However, research conclusions are not intended to dictate design but create an informed framework of key principles for design.

1 Bill Hillier, *Space Is the Machine : A Configurational Theory of Architecture* (Cambridge ; New York, NY, USA: Cambridge University Press, 1996).

2 Nelson Marlborough Institute of Technology, “Introducing Nelson Marlborough Institute of Technology Arts and Media Building,”(2011), www.nmit.ac.nz.



Figure 1.1.1

Zaha Hadid Innovation Towers Design School

1.2 RESEARCH QUESTION

How to reconcile the learning process of a School Of Design with the theoretical construct of the school's image.

1.3 PROJECT DEFINITIONS

Form: *“two definitions of form - as structure or arrangement, and as perceptual image - stem from seemingly irreconcilable vantage points, the two can be linked if form is thought to be the structure of the object as presented to the sense.”*³ This research refers to the two definitions being linked.

Aesthetic: This thesis considers aesthetics primarily in its formal sense: *“Formal aesthetics in Architecture is concerned primarily with the appreciation of shapes, rhythms, complexities, and the sequences of the visual world although the concepts can be extended to the sonic, olfactory and haptic worlds.”*⁴

Function: This research refers to the original word *functus* which means performance, occupation, role, duty, work, use, purpose, behaviour, operation, activity. The word ‘functus’ is summarised within this document as function.⁵

Functionless Space: Functionless space is planned, undefined, flexible space.

Place: *“the concept of place is defined beyond its old morphological connotations (of that which was called ‘context’). The authentic cultural dimension of contemporary architecture comes from the disposition to effectively address the apparent ambiguity and weak definition of the local through a new logic that sees precisely in the idea of field (and in this crossing of forces-of tensions, of scales, of actions and activities, etc.- that ply it)... stimulating new bonds and connections”.*⁶

³ Ralf Weber, *On the Aesthetics of Architecture : A Psychological Approach to the Structure and the Order of Perceived Architectural Space*, Ethnoscapes (Aldershot ; Brookfield Avebury, 1995), 10.

⁴ Jack L. Nasar, *Environmental Aesthetics : Theory, Research, and Applications* (Cambridge Cambridgeshire ; New York: Cambridge University Press, 1988), 11.

⁵ Murni Rachmawati, “Redefinition Function in Architecture: Integration of Nature, Technology and Humanity,” *International Journal of Academic Research* vol. 3, no. 2 (2011).

⁶ Manuel Gausa and Instituto Metápolis de Arquitectura Avanzado., *The Metapolis Dictionary of Advanced Architecture : City, Technology and Society in the Information Age* (Barcelona: Actar, 2003), 480.

1.4 RESEARCH OBJECTIVES

The aim of this research is to create a functional learning environment showing the contrast between the preconceived images of what a School of Design should embody and the reality.

Determining appropriate spatial requirements, spatial arrangement, environment and design with connection to an urban environment will conclude in a building design. Researching the urban qualities and conditions of the site will enable a School of Design to attach and assimilate into the surrounding environment.

Research Objectives:

- Establish a programme that will influence the design process.
- Identify School of Design spatial requirements:
 - Graphic design requirements.
 - Industrial and Product design requirements.
 - Digital design requirements.
 - Visual design requirements.
- Identify spatial arrangements.
- Create a School of Design that connects to its environment.
- Research the existing environmental conditions surrounding the site to determine appropriate design information and possible responses.
- Establish with faculty and students of design schools specific functional and aesthetic requirements that may be necessary.
- Formulate a design that emphasises and enhances a learning environment.
- Investigate the history of design and how it relates to architectural function.
- Investigate design education and how it relates to architectural function.

1.5 PROJECTED OUTCOMES

The projected outcomes for this research are a collection of precedents, an understanding of theoretical issues and a building design.

The outcomes of this project will include:

- Reuniting the learning process of a School of Design with the theoretical construct of the school image.
- A greater understanding of how spatial requirements can create and influence a School of Design.
- A greater understanding of the function-specific and flexible spaces.
- Greater understandings of how urban environments affect a School of Design.
- A greater understanding of the public and private domains of architecture.
- An understanding of architectural design and how it connects with theoretical issues.
- An understanding of how architecture influences learning environments.
- An architectural proposal for a School of Design realised in the form of:
 - A master plan.
 - Floor plans.
 - Cross Sections illustrating structure, spatial arrangements and the function and functionless key internal spaces.
 - Elevations.
 - Internal and external perspectives of a building.
 - Physical model.

1.6 PROJECT LIMITATIONS

The project is limited by the preconceived assumptions and knowledge of the terms function, form and aesthetic.

This project will not be limited by budgeting costs or restrictions. Although these limitations are important they are not the intended design problem within this research.

Precedents are the primary influence combined with site analysis and academic programme. Consultations with industry authorities will also have a significant influence on the design.

2.0 METHODOLOGY

2.1 METHODOLOGY

A review of the literature, extensive site analysis and research through precedents has served as the foundation of this proposal. Research through design will then establish if the predicted outcomes are correct and that theory, image and learning process will achieve a resolved School of Design. The conclusion of research and design will be formulated within a finished design proposal presented at final examination 2011.

To determine if the research assumptions are correct, analysis of critical readings and relevant texts contained within books, journals, web articles and research papers has been conducted.

Extensive and thorough site analysis has given a comprehensive understanding of the Newmarket viaduct site and the wider context. Extensive site analysis has allowed a thorough understanding of the physical and social characteristics of the site. This analysis comprised of historical documentation, council plans and systematic. Analysis of environmental factors such as microclimate movement patterns, pollution, population and general demographics allowed for interpretation of data influencing the final design.

Research through precedents supplements the literature and site analysis in the formulation of the design.

Research through design has been the primary generator within this proposal. Understanding and applying research sourced through literature, site analysis and precedents has translated into research by design. Research through models, conceptual drawing and plans has been the design process.

2.2 METHOD OF DATA COLLECTION AND ANALYSIS

Methods of data collection and analysis in the research process have been through books and journals. Journals have contained the greatest relevant information about precedents.

Consultations with design school professionals and students have contributed significantly to the knowledge of functional requirements. This information has been invaluable and helped considerably in the formulation of the design brief.

Site analysis conducted through site context, pedestrian movement and environment and site culture illustrated through analytical drawing and diagrams has influenced the design proposition.

3.0 CURRENT KNOWLEDGE

The problem within the discourse of design is the divide between intellectual theory and built reality. Critical theories are dangerous design generators and are seen to put architecture first at the expense of the occupants. This problem is illustrated by the constant tension between the hypothetical world of academic teaching and the built environment.⁷

The ideal relationship between designer and School of Design is one that fosters the design process while allowing the academic proposition to take precedent. Often in the relationship, the client instigates the brief and will frequently be the external voice reminding designers of restraints such as budget and reality. The unique design detail specific to Schools of Design is the wanting of the image. An architect is hired to produce and realise the image by way of making design a statement.

Schools of Design want architecture that makes a visual statement through which they aim to illustrate the image of contemporary art. The construction of this image is important as it becomes the sellable feature that can be spread to the masses and potential students. The image, therefore, is the symbolic representation of a School of Design.

The contrasting positions of designers' on proposed situations relegate the needs of students as insignificant. The 'image' of school is an impersonal element while the learning process is personal. Peter Eisenman Aronoff Centre illustrates the idea of image and theory destroying the internal learning environment and process through design generated by theory.

Gordon Graham believed that writers on the topic of architecture dating as far back as Vitruvius observed that good building required both a practical and aesthetic element with the ability to adapt to changing needs and technologies.⁸ When either form or function is mentioned, there is an implied 'for or against' stance assumed by most, whether it be form following function or function following form, with the least argued logic being that form and function are one.

The problem that occurs is that division is created between image and reality. The function of a School of Design is to provide learning environments based on the needs of students and teachers. Often the required image of a school is impersonal which contrasts the personal demands of the curriculum.

The creative industry that a School of Design resides in is the same industry that acquires the iconic building. This project explores the concept of image versus reality.

7 Adriana Rossi, "Study the Works of Peter Eisenman? Why?!", *Nexus Network Journal* 1, no. 1 (1999).

8 Gordon Graham, "Art and Architecture," *The British Journal of Aesthetics* 29, no. 3 (1989): 248.

3.1 RESEARCH PROCESS ONE

The origin of the research process started with establishing form and function in equal balance. The terminology of function and form evokes strong preconceived concepts often summarised within a 'for or against' stance. The project was summarised at this stage as 'Form and Function: achieving the balance of an architectural cliché'. The problem encountered with this research process was that terminology created preconceived assumptions which interfere with the design. The idea of function and form in balance was viewed as boring and not challenging.

Through exploring the balance of form and function, arguments against were researched. Function is considered to be the unnecessary evil within architecture illustrated by the well-known statement "I don't do function"⁹ attributed to Peter Eisenman. The modernist argument of function was seen as being a singular response to needs and activities of architecture.¹⁰ Jack Nasar researched the idea of the function being visually assumed within form. Unfortunately for the world of functionalists, surveys conducted showed that function was generally not assumed through the form.¹¹ Arguments against form consist of form being the external expression of the internal function.¹² The second argument is that if form is the primary consideration internally the building must not work.

The terms function and form evoke such powerful connotations in architecture that it is hard to use the terminology without producing a reaction. Often critics of function believe the essence of architecture is in the form and its expression contrasted against function being the design generator.

Function and form is an achievable balance. However, when the client is a designer it becomes more difficult as they appreciate the design process and rather than restraining the architect and process, they encourage it. Hence, many Design Schools are extreme in form and questionable in function.

Research process one concluded that the terminology of form and function evoked strong preconceived notions, illustrating the strong theoretical debate that exists within architectural theory and the function of School of Design.

3.2 RESEARCH PROCESS TWO

Research into programme requirements initiated the idea of function-specific and flexible

9 Common phrase attributed to Peter Eisenman, source unknown.

10 Philippe Rahm, "Form and Function Follow Climate," *AA files*, no. 55 (2007): 3.

11 Jack Nasar, Arthur Stamps, and Kazunori Hanyu, "Form and Function in Public Buildings," *Journal of Environmental Psychology* 25, no. 25 (2005).

12 K. Michael Hays, *Architecture Theory since 1968* (Cambridge, Mass. ; London: MIT, 1998), 184.

space. The project investigated these contrasting elements that became the investigation of 'Function and Functionless space'. This investigation is still a significant element but the use of function and functionless terminology restricted the design process. The term 'function space' embodied a meaning different from what this project intended. The term 'functionless' creates the assumption of space void of purpose and therefore of design. However, that is not the intended meaning of the term and is instead referring to the flexible and malleable nature of the space.

The theoretical implications concluded were definitions of terminology (theory) and the connection of the reality of design (programme requirements).

3.3 RESEARCH PROCESS THREE

Continuing the exploration of function-specific and flexible explored the contrasting internal environments. The research and design process identifies the Newmarket viaduct as a contrasting external element. Research three concluded with problems of theory and practice being a dominant debate.

Theory in architecture and practice are often seen as two opposing ideas due to the highly academic nature of theory. Theory can be seen as unrealistic, not relatable or incomprehensible. A more rigorous engagement of theory with practice could generate richer, more relevant theory, and more creative and progressive architecture.¹³

Research process three concluded by articulating the terms 'function-specific' and flexible space and linked the concept of theory embodied within terminology with design reality.

13 Mary McLeod, "Theory and Practice," *Assemblage*, no. 41 (2000): 1.

3.4 ACADEMIC PROGRAMME

The framework of how academic teaching is taught in a School of Design is a strongly debated topic. There are two approaches to the academic curriculum, the first being a multi-disciplinary approach with the second being mono-disciplinary.

The multi-disciplinary approach requires that first year of academic study be broad spectrum across all design disciplines. Students can choose to specialise in any discipline from the second year of study onwards. Students are left with the freedom to construct an academic programme that suits them. It is criticised for generalising students, many of whom would like to specialise in one field but feel it is impossible.

Secondly, there is a segregated approach to the academic structure where your chosen discipline is your field throughout an entire degree. Many specialist academics believe if a student goes to university to study visual design they should not be forced to study Graphic, Industrial and Digital design. The criticism to this academic structure is that students are not being exposed and sufficiently challenged academically.

This project will use the multi-disciplinary approach with each discipline being a separate programme, allowing students the ability to choose their academic framework. The disciplines will not mix, only the students will.

Academic programmes established the learning process. Learning process is the curriculum, needs of the students and study environment. The learning process is personal contrasting against the impersonal concept of 'school image'.

3.5 PROGRAMME REQUIREMENTS

Intentional separation of the four departments has been created because the need for departments to overlap is not required academically. Each department acts as a separate entity with a separate curriculum. The departments will connect and correspond in communal social areas such as public indoor and outdoor space, library, café and seminar rooms. The function has been separated into two distinct areas of multiuse space and dedicated space. Dedicated space is a fixed space that will house library, lecture rooms, seminar spaces, galleries, café, indoor/outdoor public spaces and workshops. The dedicated space is the studio spaces.

The School of Design encompasses Digital, Industrial, Visual and Graphic design.

- Digital design will accommodate a Bachelor of Digital Design for 3 years and 25 students for each year level. Following this will be a Masters of Digital Design for 2 years allowing 10 places.

- Visual Design will accommodate a Bachelor of Design and Visual Arts for 3 years with 25 places for each year level. Following this will be a Masters of Design and Visual Arts for 2 years allowing 10 places.
- Industrial design will accommodate the Bachelor of Design and Visual Arts (Product and Furniture Design) for a 3 year 25 roll capacity. Following this will be a Master's degree for 2 years and 10 placement possibilities.
- Graphic design will accommodate a Bachelor of Graphic Design and Visual Arts for a 3 year 50 student roll capacity. The Masters of Graphic Design will follow for 2 years with a 25 placement possibility.

4.0 Precedents and Literature

4.1 SCHOOL OF DESIGN PRECEDENTS

4.1.1 The Aronoff Centre for Design and Art

University of Cincinnati
United States of America
Architect: Peter Eisenman

Peter Eisenman has been described as formalist, deconstructive, late avant-garde and late or high modernist. He is infamous for his belief in liberating architecture from basic considerations of use and context through geometric forms. He believed that modern architecture was box-like with post modernism bringing all sorts of references from history and this building was to break away from history.¹⁴

According to Eisenman it is a transitional building that does not tell a story as he believes that it is not necessary for architecture to do so. He does not believe that the exterior façade is important, admitting he is unable to do facades very well and therefore underplays them. However he wants the façade to be full of excitement and energy which contradicts his earlier statement.¹⁵

The Aronoff building is all about the inside spaces where Eisenman believed tunnels and mystical places are created. The internal layout and structure of the building is intended to challenge occupants by always creating a sense of displacement. By creating displacement, Eisenman believes that occupants are forced to see space and the human body in a new way through the fragmented framed views that the architecture creates.¹⁶

Function, purpose and budget were not a limitation for the design. Eisenman was more concerned with public space and the areas that the students 'hang out in'.¹⁷ The building is generally noted for its poor internal connection, lack of natural lighting, inadequate acoustics and water leakage problems due to poor design and detailing. Students often find it hard to orientate themselves resulting in students often get lost or confused.¹⁸

It is a powerful modern building in the theoretical sense. Critical theories are dangerous as it is seen to put architecture first at the expense of the occupant, creating a tension between the speculative world of academic teaching and the built environment.¹⁹

This School of Design is an example of theoretical beliefs generating a physical reality. This illustrates how imposing theory neglects occupants.

14 Charlie Rose et al., *Architecture Summit at the University of Cincinnati* ([S.l.: s.n., 1996), videorecording.

15 Ibid.

16 Ibid.

17 Ibid.

18 Jack L. Nasar, Wolfgang F. E. Preiser, and Thomas Fisher, *Designing for Designers : Lessons Learned from Schools of Architecture* (New York: Fairchild Publications, 2007), 129.

19 Rossi, "Study the Works of Peter Eisenman? Why?!"



Figure 4.1.1.1 Aronoff Centre Internal Perspective



Figure 4.1.1.2 Aronoff External Perspective

4.1.2 MASSEY UNIVERSITY SCHOOL OF DESIGN

Massey University
Wellington, New Zealand

Massey University School of Design is known for its innovation, pioneering research, industry applicable learning and international and locally sourced teaching.²⁰ A research visit was conducted in May 2011 to investigate spatial requirements and teaching approach. Massey University of Design has a multi-disciplinary approach to the academic teaching where the first year of study covers all topics of design such as photography, painting, fashion, spatial design and textile design.

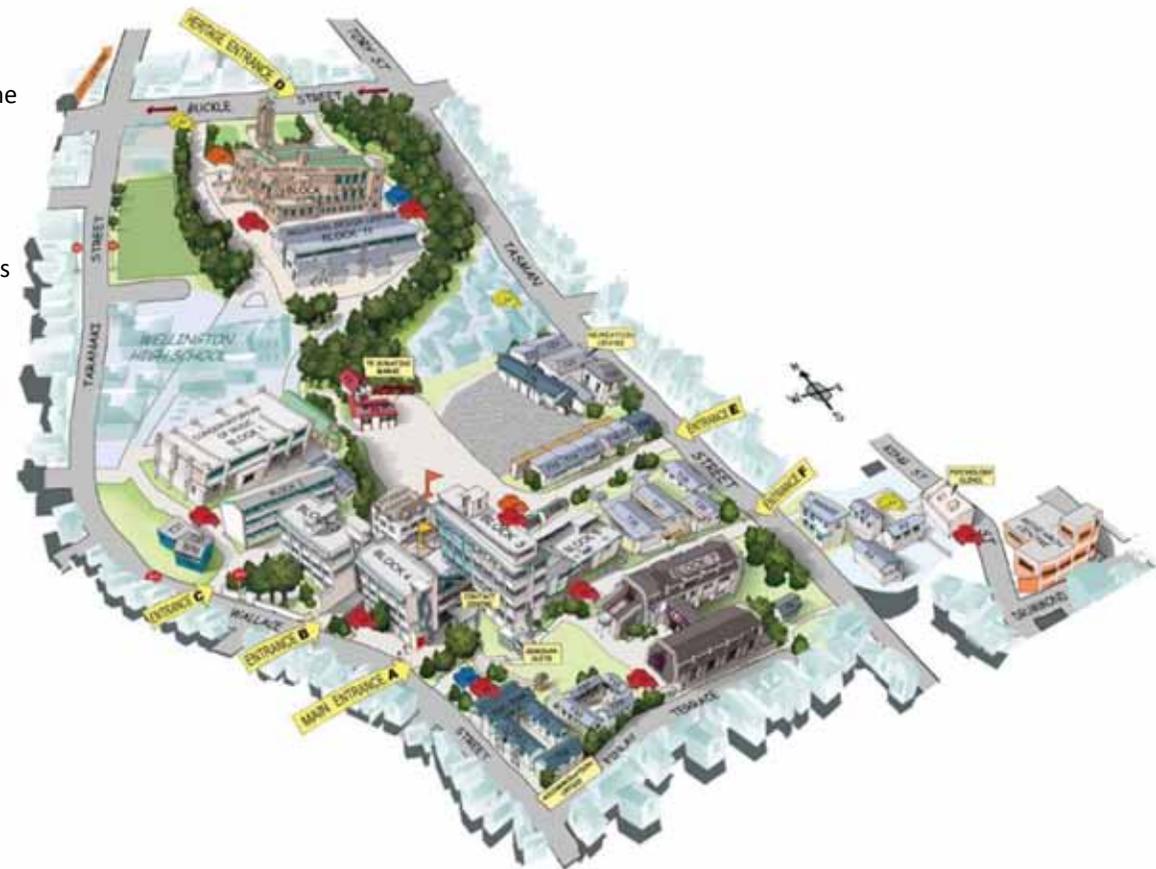
The first year space was not function defined with relatively basic workshops with emphasis on flexibility. This space was located in the old Wellington Museum building. The building spaces were all adapted to work for different situations but were not purpose built for its function requirements. The conclusion of the spaces provided was emphasis on flexibility.

The remaining campus buildings were discipline orientated. These spaces were generally large rooms with interchangeable furniture and partitions. The only design specific spaces were the small wet areas in the studio rooms. From second year onwards, studio spaces were allocated to teachers who have varying amounts of students across all year levels. This is to allow students to interact outside of their year level in order to stimulate a dynamic, creative working environment and broaden design knowledge. These studio spaces were fixed for a year and most students would pick the teacher.

The campus layout was hard to orientate as the paths and buildings were fragmented. During the research visit the University was constructing a new industrial design building which, according to the students, was the cause of the disrupted campus flow.

The general idea of Massey University is that students have a greater influence on their academic careers.

This School Of Design illustrates the importance of the learning process showing the benefits of contemporary academic teaching creating a respected and sought after university.



20 Massey University, "About Massey University," www.massey.ac.nz.

Figure 4.1.2.1 Massey University Wellington Campus



Figure 4.1.2.2 Massey University Industrial Design Building

4.1.3 Nelson Marlborough Institute of Technology Arts

Nelson, New Zealand

Architects: Irving Smith Jack Architects

From as early as the 1980s The Nelson Marlborough Institute of Technology Arts has been planning on having a purpose-built facility where all art students would be housed to meet the growing demands of the Institute. The school was originally located in multiple buildings throughout the campus creating a disjointed and frustrating work environment for both students and staff.²¹ A competition was created with stipulation that the design should accommodate principles of sustainability, and be made of locally sourced timber.²² Irving Smith Jack Architects successfully won the competition with the idea of expressing and exposing the structure so that all who interact with the building understand how it was put together, unmasking the architecture.²³

The structural junctions and connections are visible including pipe work with the intention of demonstrating that if you see the structure you can understand the structure – ‘Exhibit not inhibit’. Feedback from the students who were scattered around the campus demonstrated that the work environment is more collaborative.²⁴

“The building unifies the programme area for the first time, bringing staff and students together and enabling the sort of cross-disciplinary conversation and collaboration that generates innovative student work.”²⁵

The Nelson Marlborough Institute combines programme, structure and form without creating tension between the speculative idea and built form.

21 Matt Philp, “The Inner Workings on Show,” *Architecture New Zealand*, no. 3 (2011).

22 *Ibid.*, 22.

23 *Ibid.*, 22.

24 *Ibid.*, 25.

25 Technology, “Introducing Nelson Marlborough Institute of Technology Arts and Media Building.”



Figure 4.1.3.1

Nelson Marlborough Institute of Technology Internal Circulation



Figure 4.1.3.2 Nelson Marlborough Institute of Technology

4.1.4 ARTS AND DESIGN ACADEMY

Liverpool, England
Architect: Rick Mather Architects

The Art & Design Academy is the first stage of John Moore's University's campus development plan. The new development will connect the originally fragmented school of art and design into a dedicated purpose-built space. The building design concept features a serpentine spline with bends that echo the site and contours.²⁶

The splayed form of the building is intended to create a sense of arrival. The upper levels are stepped back to create roof terraces to allow views outwards. The intention of the roof gardens is to create space where most buildings choose to ignore. The public ground level programmatic requirements of exhibition space, café and bookshop and public area, open out to the external spaces with the obviously intended indoor and outdoor flow.²⁷

The internal layout is initially experienced through the main entrance that aligns with the axis of the cathedral, intending to draw students, staff and visitors through. The main staircase is intended to be the heart of the building with the intention of creating interaction between different departments and the public facilities. The exhibition of students' talents and achievements is facilitated in the project room, studios, public galleries, exhibition rooms and multi-purpose spaces.²⁸

Flexible studios and teaching spaces are designed for light and space to create stimulating work environments for students and staff. The western side of the building controls the environment through the splayed windows.

The Arts and Design Academy illustrates that programme requirements and site context have a large impact on design through the use of the splayed façade and flexible studios.²⁹

This School of Design illustrates the importance of flexible studios in the learning process. The design promotes the students experience over the 'image' of the school.

26 G. R, "Serpentine Academy," *Architectural Review* 222, no. 1331 (2008).

27 Ibid.

28 Ibid.

29 Ibid.



Figure 4.1.4.1 The Spline

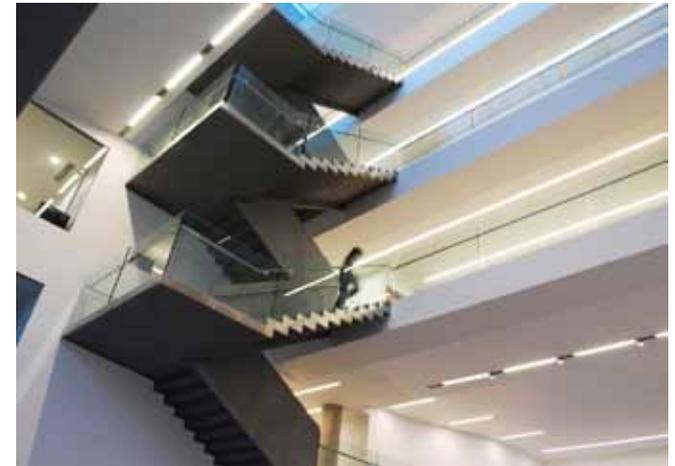


Figure 4.1.4.2 Arts and Design Academy Staircase



Figure 4.1.4.3 Arts and Design Academy Spline

4.1.5 SHARP CENTRE FOR DESIGN

Ontario College of art and Design
Toronto
Ontario
Architects: Alsop

The Sharp Centre for Design was Will Alsop's response to the expanding need of the School of Design housing new art studios, lecture theatres, exhibition spaces and faculty offices.

The structure was the result of the idea on elevating the structure to minimise the impact on the residents of the Grange condominium. It was treated "as a bit of fun"³⁰ instead of a precious object. The structure may not interfere with the views of the Grange but does create an imposing condition for the surrounding environment.

The building is 7000 square metres located 26 metres above ground level. The interior is neutral and considered to be a little bland.³¹ The design intention is to create a building that is provocative, whimsical, playful and innovative. This idea is the expression of the 'image' and theoretical reality of the avant-garde. However, it does not appear to create a dysfunctional internal space.

This School Of Design illustrates the image of a school. This image projects the idea that the school is contemporary and innovative at the expense of surrounding environment.

30 Marco Polo, "Suspended Animation [Sharp Centre for Design, Toronto]," *Canadian architect* 49, no. 11 (2004): 25.

31 *Ibid.*, 26.



Figure 4.1.5.1 Sharp Centre for Design Interior



Figure 4.1.5.2 Sharp Centre for Design External Context

4.2 Site Precedents

4.2.1 Im Viadukt

Im Viadukt – Refurbishment Viaduct Arches
Zurich, Switzerland
2004
Architect: EM2N

The Viaduct Arches refurbishment design in Zurich is a key example of how buildings and designs can relate to bridges. According to EM2N, the location of the arches is situated in a lively and socially dynamic area. On one side, there is the old workers' quarter with a very cultural and age-mixed population. Divided by the arches on the other side is the west area which is under development.³²

EM2N reused the viaduct and revitalised the arches as a new urban precinct of Zurich. In the large market hall, the imposing stone walls remained untouched emphasising the distinctive nature of the design. The often dark and cold arches are lightened through the use of bubble windows enhancing the space.³³

The top condition of a motorway viaduct is always a fast pace infrastructure connection. The environment underneath a bridge is often opposing the above condition. Underneath spaces are often leftover, forgotten and not desirable.

This project illustrates the importance of infrastructure being transformed and integrated to existing urban environments. Rejecting the normal urban response of a viaduct having spatial barriers below but being a transport link above allows the rejection of two opposing natures. Bridges now demonstrate the possibility that architecture can mirror the top condition of a bridge.



Figure 4.2.1.1 Im Viadukt Interior Image



Figure 4.2.1.2 Im Viadukt Exterior Context

32 EM2N, "Im Viadukt - Refurbishment Viaduct Arches," <http://em2n.ch/> (accessed 12th September, 2011).

33 Ibid.

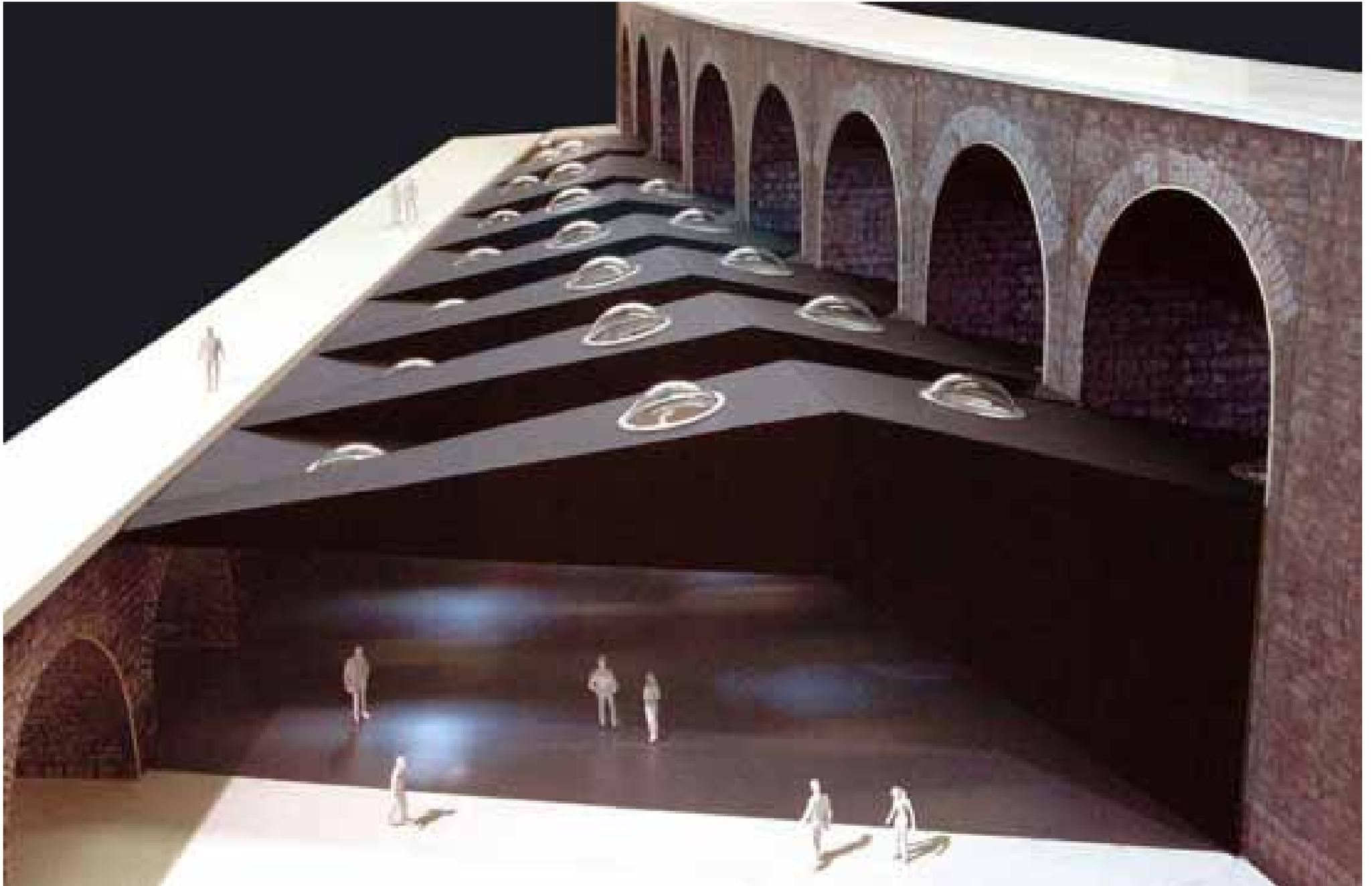


Figure 4.2.1.3 Im Viaduckt Model

4.2.2 MOTORWAY BRIDGE AND CONTROL CENTRE

Nanterre, France
1996

The new motorway control centre is located below the A14 motorway viaduct where the road begins from the tunnel. The viaduct is situated along the western side of Nanterre, bridging through suburbs, apartments and railway tracks.

The architect's theory was to consider the new building as an integrated extension of the motorway viaduct instead of an isolated structure dominated by an imposing viaduct. The control centre is a rectilinear building that is suspended between the viaduct supports. Due to planned civic improvements, part of the structure is raised above the ground awaiting the anticipated landscaping and park.³⁴

A series of slender curved bold red arches line the viaduct to support the control centre in contrast to the grey concrete pillars that support the viaduct. The arches are a response to the structural demands of two separate carriageways.³⁵

The functional requirements of the design were broken into three parts. The first being the control room, entrance hall and offices located on the suspended level followed by a small police station at ground level. The underground level concludes with technical services, a parking lot and deposit. The complex is designed to have vehicles underground and above on the viaduct while people inhabit the space in-between, which is essentially the ground and second level.³⁶

This complex design demonstrates the potential that sites under bridges and viaducts have. The surrounding urban environment can be strengthened by ambitious design. Spaces under bridges are no longer 'no man's land' with the ability to transcend the limitations of site and brief.



Figure 4.2.2.1 Motorway Bridge and Control Centre Context

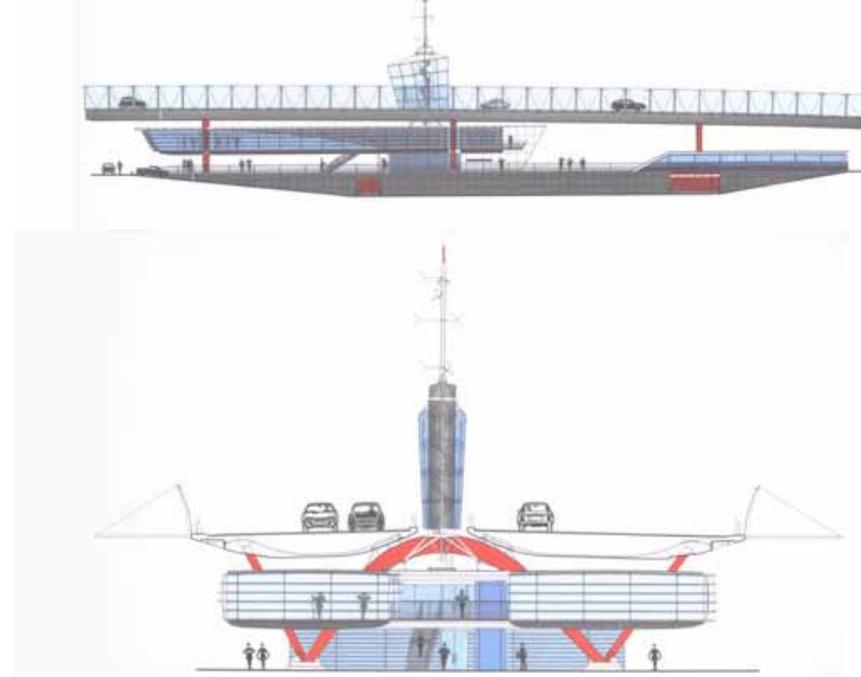


Figure 4.2.2.2 Motorway Bridge and Control Centre Elevations

³⁴ Catherine Slessor, "Highway Patrol," *Architectural Review* 205, no. 1227 (1999).

³⁵ *Ibid.*

³⁶ *Ibid.*



Figure 4.2.2.2 Motorway Bridge and Control External Site Context

4.3 LITERATURE REVIEW

produce an ideal outcome for both designer and client. However, often the reality is far from this as aesthetics are given priority at the expense of everything else.

Hillier, Bill. *Space Is the Machine: A Configurational Theory of Architecture*. Cambridge ; New York, NY, USA: Cambridge University Press, 1996.

Hillier shows it is the patterns of spaces created that are the key to how buildings work for occupants. He discusses that functionalism may not have worked but it still could with a better theory that is the concept of 'spatial configuration'.³⁷

Silber, John. *Architecture of the Absurd : How "Genius" Disfigured a Practical Art*. 1st ed. ed. New York: Quantuck Lane; Chichester: John Wiley [distributor], 2007.

John

Silber unmasks the "genius" architects by divulging their determined disregard for clients, budgets or occupants likening architects to sculptors only concerned with the external form. He investigates how the concept of the architect becoming the artist has resulted in buildings with inadequate functions and services. This book has given ample precedents of unfavourable examples and has been enlightening in what may be described as the decay of functional architecture.³⁸

Silber identifies Daniel Libeskind and Frank Gehry as instigators of 'absurd' architecture through designing only for invested self-interest. Unfortunately for the world of architecture Gehry and Libeskind are giving the world what it wants; contemporary and thought provoking architecture courtesy of the naive client.

Silber proposes the idea to architects that creative satisfaction should be derived from fulfilling the clients brief and practical needs. He believes the blame lies equally between architect and consumer of the 'absurd'.

Nasar, Jack L., Wolfgang F. E. Preiser, and Thomas Fisher, *Designing for Designers: Lessons Learned from Schools of Architecture*. New York: Fairchild Publications, 2007.

Designing for Designers is about the downfall of designs for architectural institutions. Nasar, Preiser and Fisher believe that after researching and viewing buildings, they noticed that the architecture was "so disparate in character and not infrequently disappointing"³⁹ when function was secondary to form or vice versa. The book is comprised of essays written by faculty members in respect to the building in which they are an occupant. This book outlines the general pitfalls of designing for designers. A natural assumption about a building for designers is that it should be the best building on campus. A mutual understanding between occupant and client regarding the process of design would

37 Hillier, *Space Is the Machine : A Configurational Theory of Architecture*.

38 John Silber, *Architecture of the Absurd : How "Genius" Disfigured a Practical Art*, 1st ed. ed. (New York: Quantuck Lane ; Chichester : John Wiley [distributor], 2007).

39 Nasar, Preiser, and Fisher, *Designing for Designers : Lessons Learned from Schools of Architecture*, xiii.

5.0 URBAN RESEARCH AND ANALYSIS



Figure 5.0.1 Newmarket Viaduct Night Image

5.1 SITE

The site is located in Newmarket, Auckland on Clovernook Road.



Figure 5.1.1 Newmarket Viaduct Site Location NTS

5.1 SITE HISTORY

Newmarket is located in-between Maungawhau (Mount Eden) and Ohinerau (Mount Hobson).

One of the most significant Maori pa in the Tamaki Isthmus was Ohinerau. Ohinerau is the early name for 'Remuwera' that was later miss-spelled and is now known as the suburb 'Remuera'.⁴⁰

Newmarket was seen as a busy transport hub reflected through its significance as the gateway to the south. It did not take long for Newmarket's strategic location to be acknowledged through railway lines, business and residential developments.

There were two significant homesteads that marked the Newmarket landscape in the 1860s. The sale of crown land allowed land speculators to buy and sell land which was seen at the time as a fast way to make profit. As a result of this, ownership of titles changed hands multiple times before any buildings were ever established on the land. Attorney General William Swainson originally purchased the site off Clovernook who then sold it to Dr Buchanan in 1858. Dr Buchanan completed and sold Clovernook homestead in 1861 to Charles Stichbury and from then on the homestead was known as Stichbury house. Unfortunately for Stichbury house, the arrival of the Newmarket viaduct in 1965 meant that the homestead had to be demolished.⁴¹



Figure 5.1.2 Highwic House between 1873 and 1885



Figure 5.1.3 Newmarket Viaduct Early 1960's



Figure 5.1.4 Stichbury House

40 Dinah Holman, *Newmarket: Lost and Found*, 2nd ed. (Newmarket, Auckland, New Zealand: The Bush Press, 2010), 21.

41 *Ibid.*, 69.

5.2 SITE STATISTICS

- 7.2% of people in Newmarket are under the age of 15 years.⁴²
- 4.7% of people in Newmarket are aged 65 years and over.⁴³
- 54.7% of people aged 15 years and over in Newmarket had a post-school qualification.⁴⁴
- The median income of people in Newmarket is \$29,700, compared with \$22,300 for Auckland City and \$18,500 for all of New Zealand in 2001.⁴⁵
- The average household size in Newmarket was 2.2 people, compared with 2.7 for Auckland City and 2.7 for all of New Zealand.⁴⁶
- In 2009 161,490 cars pass over the Newmarket viaduct a day.⁴⁷
- Broadway has 40,000 cars pass through a day.⁴⁸
- Newmarket has the second busiest train station in the region.⁴⁹

5.3 SITE GEOLOGY

The gully between Mount Hobson and Mount Eden is bridged by the Newmarket viaduct. As the site lies between two dormant volcanoes site geology is a culmination of numerous volcanic lava flows. The remnants of a native volcanic forest remain on the western slopes of Gillies Avenue but the slope from Gilles Avenue to Newmarket is planted with exotic species. Puriri Trees are significant and unique to Clovernook Road.⁵⁰

42 New Zealand Dept. of Statistics, "New Zealand Census of Population and Dwellings," <http://www2.stats.govt.nz>.

43 Ibid.

44 Ibid.

45 Ibid.

46 Ibid.

47 Auckland Motorways, "Newmarket Viaduct Replacement," www.aucklandmotorways.co.nz.

48 Statistics, "New Zealand Census of Population and Dwellings.;" New Zealand Transport Agency, "New Crossing for Broadway to Enhance Pedestrian Safety," www.nzta.govt.nz.

49 Auckland Transport, "Newmarket Station Judged One of Nz's Best," www.aucklandtransport.govt.nz.

50 Holman, *Newmarket: Lost and Found*.

5.4 VIEW SHAFTS AND VISTAS

Views of Mount Hobson, Rangitoto, Mount Eden and the Waitemata Harbour are visible from the Newmarket viaduct and subsequently are protected by the Auckland City Council's viewshafts protection policies. The origin of viewshafts being located on a viaduct are irrelevant as drivers don't experience the views as they are focused forward and passengers experience 15 seconds of it constricted by barriers. Viewshafts should be protected but not for the benefit of a viaduct.⁵¹



Figure 5.4.1 Newmarket Site

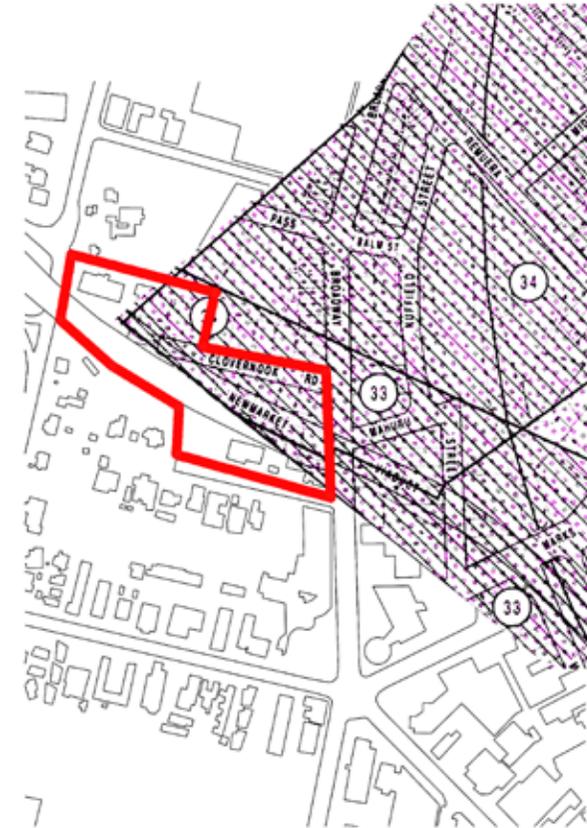


Figure 5.4.2 Newmarket Viewshaft

51 Kevin Brewer, "Newmarket Viaduct Improvement Project Viaduct Section: Urban Design & Visual Assessment," www.aucklandcity.govt.nz/.../UrbanDesignVisualAssessment.pdf.

5.5 ZONING

Newmarket zoning is a mixture of large footprint retail, small business retail, light industrial, mixed use, commercial, low and high residential. Khyber Pass, Broadway, Great South Road and Remuera Road are all major arteries for vehicular transport.

The rail corridor is located north of the site and is the second busiest train station within Auckland. Many new business and residential apartments now surround this transport hub as a part of redevelopment of the area.⁵²

The viaduct has a 12.2 metre height restriction 76.2meters outwards from the viaduct centreline. The density of this area is lower with larger building footprints with primarily car show rooms and car parking. The height restriction has created the environment that surrounds the viaduct at present. Relaxing the height restriction would allow the urban context to transform and soften the impact of the viaduct allowing this end of Newmarket to increase in foot traffic.⁵³

Commercial, retail and business industries are the primary contributors to Newmarket's identity. If the zoning along the southern end of Broadway was balanced equally for large or small footprint buildings, a continuity of scale could be achieved.



⁵² Transport, "Newmarket Station Judged One of Nz's Best."

⁵³ Brewer, "Newmarket Viaduct Improvement Project Viaduct Section: Urban Design & Visual Assessment."

Figure 5.5.1

Newmarket Zoning

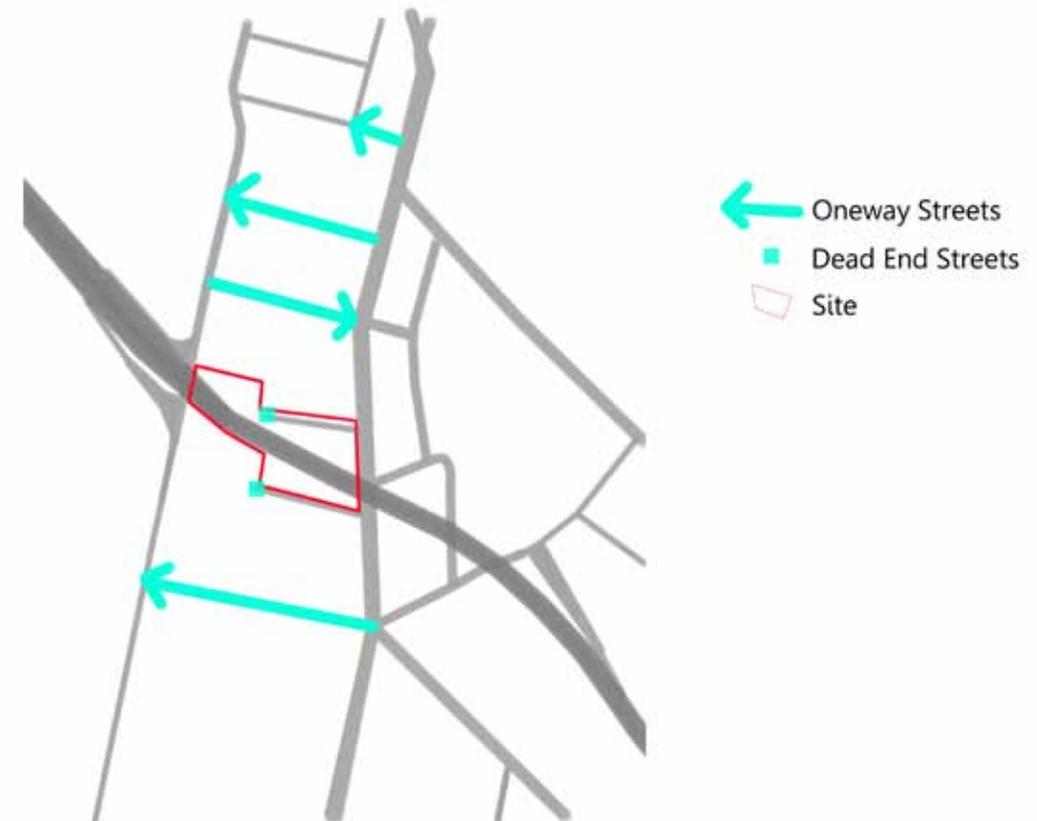
5.6 SITE CIRCULATION

The current circulation of Newmarket is located around Broadway, Remuera Road and Great South Road and naturally public transport facilities and routes are located along these roads.

There are more dead end and one way streets on the Mortimer Pass end of Newmarket, allowing a safer and uncomplicated pedestrian area. Broadway is the main thoroughfare through Newmarket and suffers from traffic congestion and public transport influxes during peak commuting times.

The Auckland City council launched the Broadway Streetscape Upgrade in August 2007. The upgrades included safer footpaths, a revamp of Nuffield Street and strengthening the connection from Mortimer Pass to the railway.⁵⁴

The Newmarket Railway Station recently upgraded their services and premises. The station now has stronger pedestrian links, weather protected platforms and increased line capabilities with the anticipation of electrifying the tracks soon.⁵⁵



54 Transport Auckland, "Broadway Streetscape and Footpath Upgrade," www.aucklandtransport.govt.nz.

55 Transport, "Newmarket Station Judged One of Nz's Best."

Figure 5.6.1

Newmarket Circulation Paths

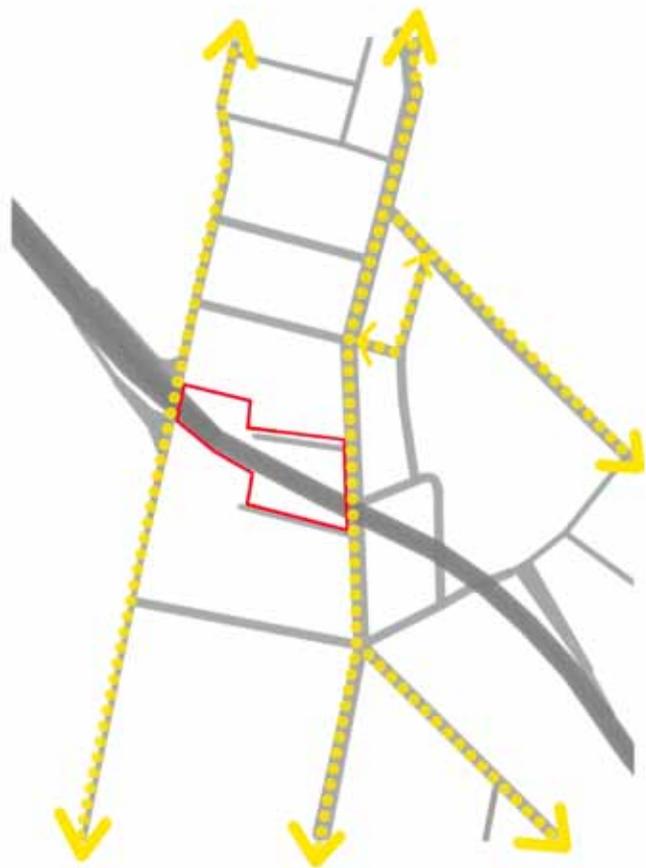


Figure 5.6.2 Newmarket Bus Routes

⋯→ Bus Routes
 Site



Figure 5.6.3 Newmarket Pedestrian Circulation

⋯→ Primary Pedestrian Circulation
 Site

5.7 BUILT SITE CONTEXT

The existing architecture and built form of Newmarket is characterised by commercial buildings, generally 2 stories high. Commercial buildings stretch from as far as Parnell Road to Cloverbrook Road and are generally a block deep.

Newmarket is well established as a shopping precinct and the architectural character reflects this, featuring Victorian restored facades complemented with modern facades. Farmers, Two Double Seven and The Warehouse are the large footprint shopping areas which have generous car parking available for shoppers.

The Newmarket built environment has a mixture of styles along Broadway. Many small buildings have maintained a 1-2 story height with late nineteenth and early twentieth century characteristics such as narrow shop widths and tall parapets.

The site has a unique spatial type in comparison to the rest on Newmarket. The site has a horizontal spatial type in contrast to the linear seen within the narrow shop widths of existing buildings.

Dormant development opportunity currently exists at the southern end of Newmarket where the viaduct bridges. Newmarket's Future Framework plan proposes a southern extension of the retail area to the viaduct.

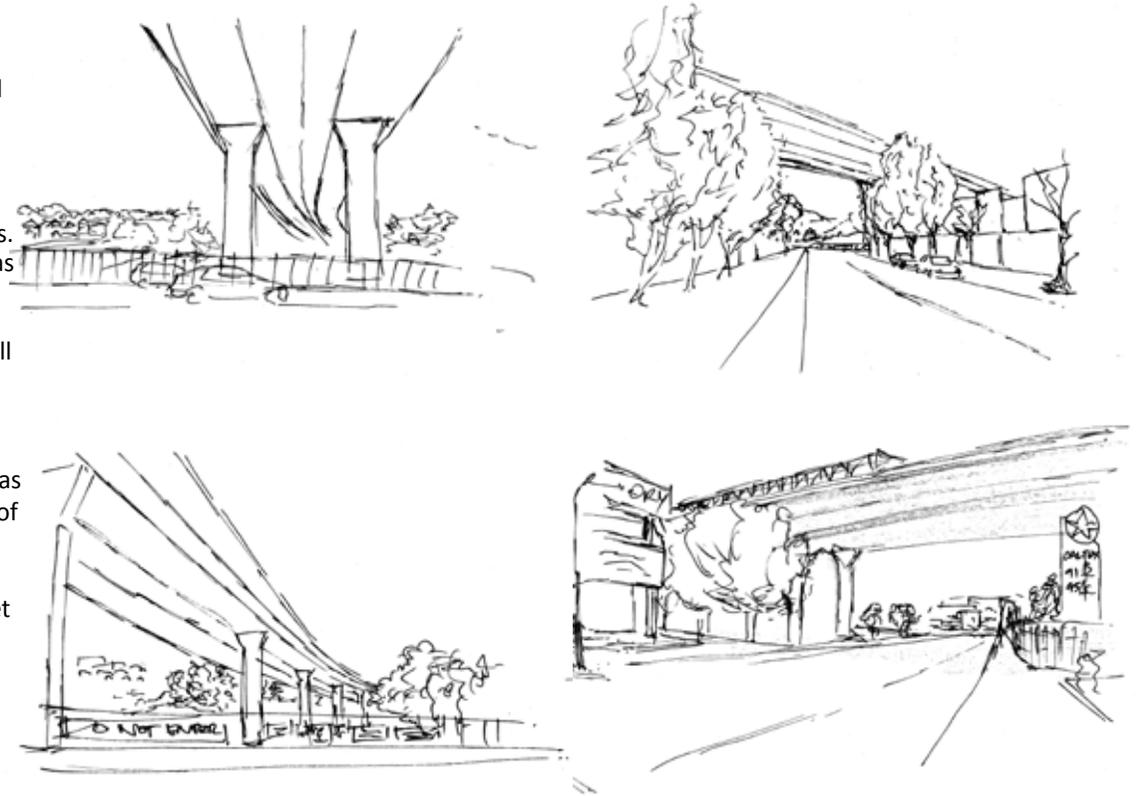


Figure 5.7.1 Newmarket Shoe Cobler

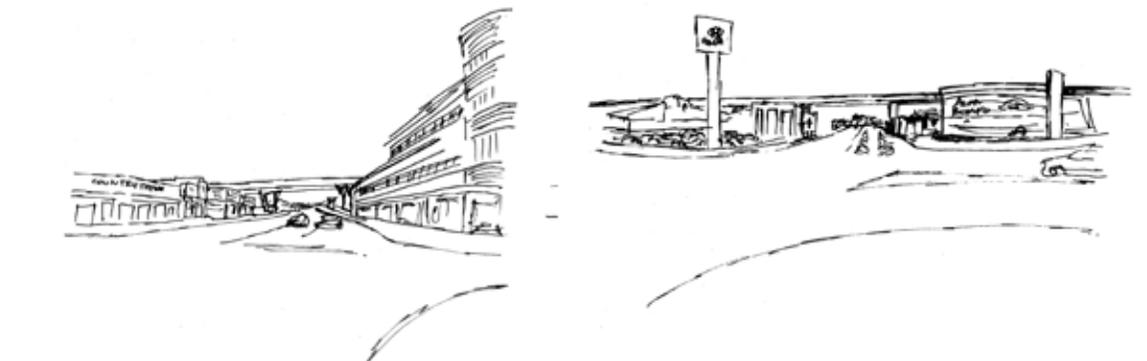


Figure 5.7.2 Newmarket Site Sketches

5.8 VIADUCT

The viaduct was originally completed in 1965 and is currently being replaced as it was the weakest link in the Auckland motorway infrastructure and failed to meet current seismic requirements.⁵⁶

The viaduct replacement upgrade is a fascinating dismantlement and part by part reconstruction has been carried out in four stages. Stage one was to construct new southbound lanes. Stage two was the dismantling of the old southbound lanes. Stage three is constructing new northbound lanes. Finally, stage four is the deconstruction of the old northbound lanes.

The largest impact has been the visually imposing blue gantry that slowly travels along installing segments to the viaduct. A design feature of a 50 metre pier spans to allow further development underneath the bridge has been devised, acknowledging the viaduct's potential underneath.⁵⁷

The viaduct and motorway illustrates the fluid elements of movement, experience and arrival. The viaduct in Newmarket creates a threshold space; it is the entry into Newmarket and the departing corridor into the outer suburbs. Above on the motorway the viaduct is a threshold between work and home or the departure from city to suburbs.

This viaduct highlights the importance of infrastructure being integrated into the existing urban environment of Newmarket. The viaduct currently does not create a spatial and visual barrier but is underutilised. A bridge is no longer a balance of two opposing natures but illustrates the possibility of architecture to strengthen the connection that the bridge already signifies.



⁵⁶ Mark Longley, "Building Bridges," *Progressive Building: The Magazine of the New Zealand Institute of Building Inc.* 2011.

⁵⁷ *Ibid.*

Figure 5.8.1

Newmarket Viaduct Looking From Eadgerley Ave

5.9 EXISTING CLOVERNOOK ROAD

Clovernook Road currently is a road that time long forgot. The road has no distinguishable features other than the adjacent Farmers building and the viaduct next to it. The site is a vacant lot providing car parking for the business locals.

The Farmers building currently defines the southern end of Newmarket and is the primary reason for foot traffic along with the Post Shop across the road. Clovernook Road is lined with large mature Puriri trees which reduce the visual impact and scale of the viaduct. The trees mark the emergence of vegetation that extends upwards of Gillies Ave. Many older established streets in Auckland are recognised by the maturity of trees that line them and they are often a sought after feature.⁵⁸



5.10 SITE SUITABILITY

In this project, two essential questions about the site are investigated: How can infrastructure integrate into an urban environment? How can architecture adapt and revitalise spaces abandoned or underutilised?

A viaduct is more than a bridge. It is a vehicular thoroughfare that has the ability to bridge an environment, culture, work and infrastructure. Just as a bridge connects two ends, architecture has the possibility to become the same medium for the forgotten space under the viaduct. This site offers Newmarket the opportunity to connect the southern end to the northern and introduce a School Of Design that will enhance Newmarket's creative and unique identity.

Newmarket is a transport hub capable of handling the increased demands of potential new students. Most people think of Newmarket as a high end shopping precinct lined with exclusive boutiques and the finer things in life. Although this is not so far from the truth Newmarket is also a suburb overflowing with individuality and creativity. Before the title of the 'fashion capital' of Auckland was associated with Newmarket, it was founded and regenerated by individuals of different design industries acknowledging the uniqueness that the area provided.

5.11 Site Analysis Conclusion

The site analysis created a clear idea of where the building massing and the connections that needed to be constructed and strengthened should be.

The site currently has no visual connection to Broadway shops from the bridge as there is no real architectural continuity. Once the Westpac building is reached on the corner of Mortimer Pass and Broadway, the street frontage leading up to the site becomes an empty void that discourages any need to continue through. The only foot traffic that actually flows through the area is the school children from Dilworth College, Diocesan Girls College and Epsom Girls College. The need for a strong façade that strengthens the connection from the Westpac building to the bridge is a prerequisite. This façade must be of adequate substance to balance with the overpass but must not exceed the overpass's height, as anything that were to do so would be out of scale with the surrounding buildings and context.

The idea of having large massing at the Gillies Ave end appealed as it would create a threshold space similar to St Peter's College and Auckland Boys Grammar which can be identified when passing on the motorway. The site is currently anchored approaching from the northern motorway by the 'Clock Tower' building that follows the site's natural rise of contours.

The site analysis showed a large void on the street façade of Gillies Ave where the motorway entry and exits are located which could be strengthened through design. This end of the site has a very serene atmosphere and although the traffic runs through this area at high frequency the large trees on the Highwic property create an inner city calm space.

Theoretical implications of the spatial type of the site and the influence of inserting function into horizontal space under the viaduct.

In conclusion, the site analysis demonstrated the site's lack of built continuity within the context of Newmarket. The rise of contours on the western end creates a private tranquil space that needs to be utilised. The bridge offers the possibility of integrating infrastructure and the urban environment. The bridge indicates direction of movement above that can be mirrored and explored below.

6.0 DESIGN AND RESEARCH

6.1 GUIDING PRINCIPLES

Through critical research into School of Design precedents and theories integrating to an existing urban environment under and around Newmarket viaduct created the awareness to the guiding principles.

Guiding principles that generate this design are:

- Function-specific and flexible spaces
- Pedestrian and occupant movement: How to achieve successful student interaction and approach to internal and external environments.
- Vitality and stagnation

6.1.1 FUNCTION-SPECIFIC AND FLEXIBLE SPACE

Function-specific and flexible space in a School of Design is the contrast between changeable space and fixed-use space. Flexible space in a Design School is studio spaces and exhibition spaces whereas fixed-use spaces are workshops, lecture theatres, bathrooms, seminar rooms, cafes, offices, administration areas and certain outdoor spaces.

Functionless space is the epitome of user controlled space where the ability to adapt and manipulate is essential. The struggle that occurs within the design process is the struggle to intentionally design ambiguously and loosely. To achieve this space, design must be articulate and simple, transformable and permanent. Achieving this balance will be the heart of the design. The heart is echoed and reinforced by the students that constantly interact between the two contrasting environments. Functionless design is not a crude box void of design intention but the conclusion of design restraint and articulation.

The site precedents show how the underside of urban viaduct infrastructures can link environments and create diverse urban experiences. The underside element of any motorway or bridge is obviously not designed for or considered and this design allows the proposition of giving the bottom of the Newmarket viaduct a function and purpose other than holding up a bridge.

6.1.2 VITALITY AND STAGNATION

The site has contrasting conditions of vitality, movement and connection above the bridge but the underside is stagnated. Research within this project has illustrated that the contrasting elements of image and reality, intellectual theories and built reality, this has been reinforced through site condition of vitality and stagnation.

6.1.3 PEDESTRIAN AND OCCUPANT MOVEMENT

Pedestrian movement between the function-specific and flexible spaces, internal circulation, external circulation, approach to the site and vistas are key influences in this design project.

The circulation of function-specific and flexible spaces illustrates the idea that the design curriculum is a theoretical movement controlled by the students. All four disciplines make up clear separate spaces that are connected by student circulation.

External circulation will strengthen the unique environment of the site. Acknowledging the level change of Gillies Ave and the serene environmental experience that occurs will strengthen the idea of movement contrasted against the heavy traffic flow above.

Approach to the site from Broadway must be strengthened due to the lack of visual continuity that occurs along the street facade. Strengthening this element will increase foot traffic and create the visual continuity and anticipation that the site and environment requires; this will also link the vistas that end at the site.

6.2 PROCESS OF DESIGN

6.2.1 EXPLORATION ONE

The original site analysis expressed the idea of rejuvenation. The idea of the site penetrating the surrounding context was investigated. The southern end of Newmarket is a dead space with no pedestrian connection to the main strip of Broadway and the idea of rejuvenation becoming a process of infestation became an intriguing concept.

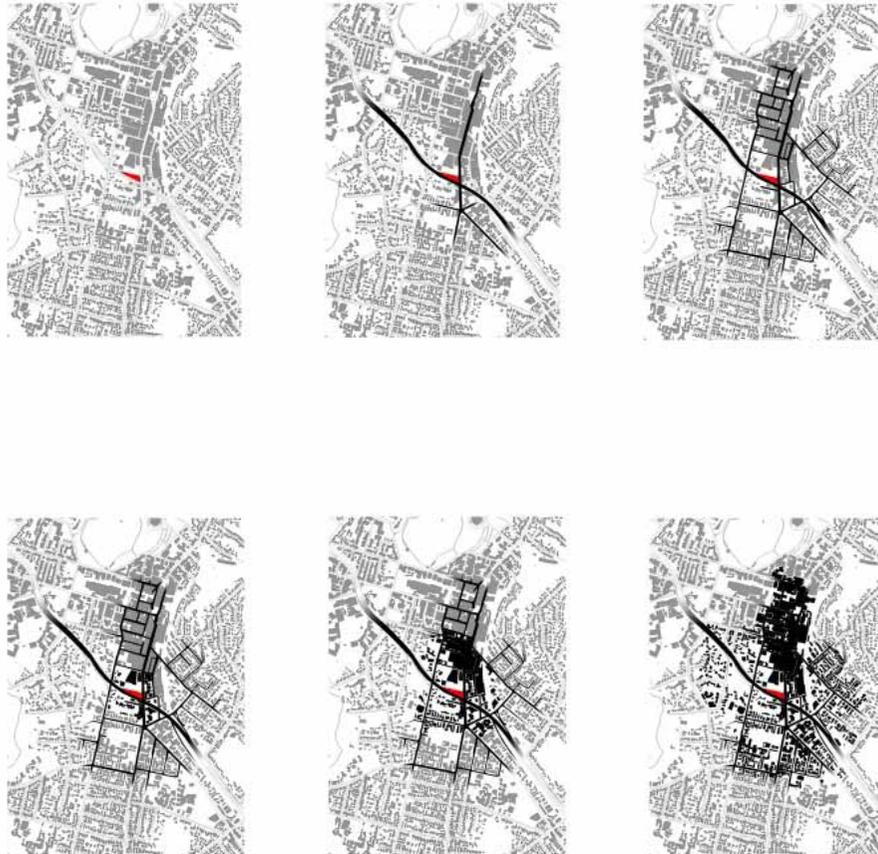


Figure 6.2.1.1 Site Investigation

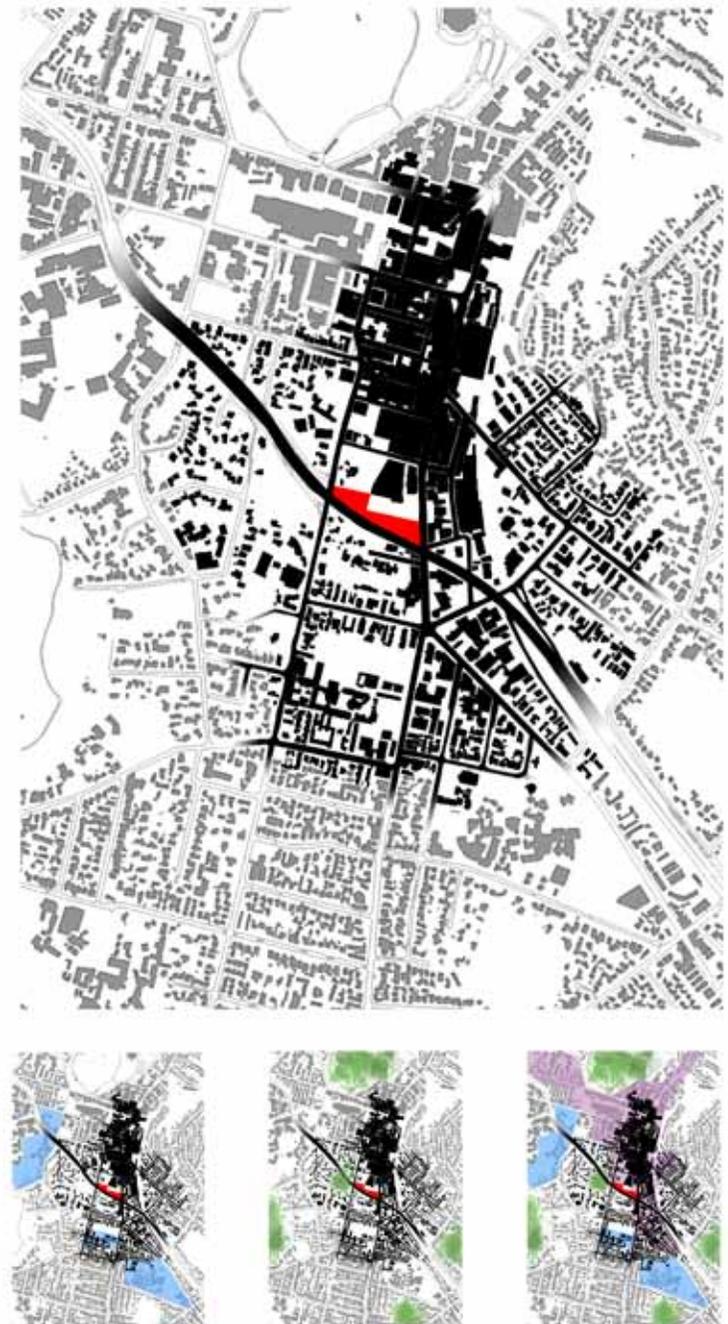


Figure 6.2.1.2 Site Investigation Through Context

6.2.2 EXPLORATION TWO

Exploration two continues the idea of fragmentation with the process of pixelating the site.

Progressing from the idea of rejuvenation penetrating Newmarket progressed into the fragmentation of function. Through the analysis of dividing the four departments in the School of Design the idea of fragmenting the site became the idea of exploration and investigation.

There is an intended visual language insinuating movement within the image. The fragmentation looks like a picture of an object constantly in a state of movement, mirroring the site's peak hour traffic flows and influx of students before and after school.

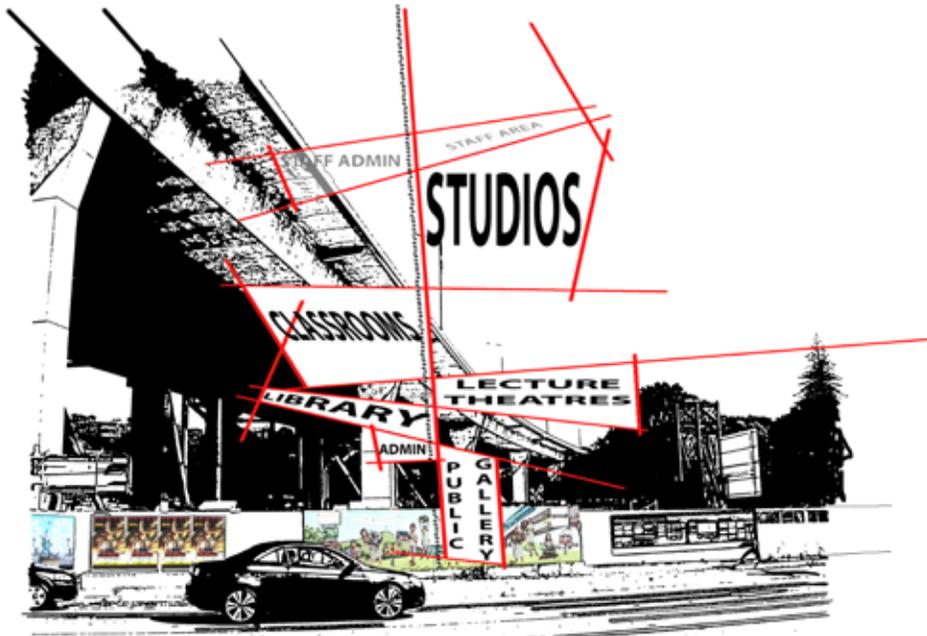


Figure 6.2.2.1 Site Concept, Imposing Function



Figure 6.2.2.2 Site Concept, Exploration of Fragmentation



Figure 6.2.2.3 Site Concept, Exploration of Fragmentation Extended

6.2.3 EXPLORATION THREE

Exploration three investigates the manipulation of programme onto the site. An early language was developed of strong right angles and thick heavy line weights illustrating separation and threshold spaces. These spaces continue investigation into the idea of separating the four disciplines

Environment, place and context were not strong influencing design guides at this stage which concluded with the design lacking grounding and anchoring within the site.

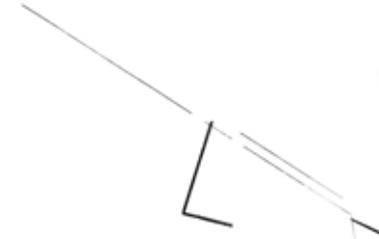


Figure 6.2.3.1 Site Concept, Site Barriers and Boundary

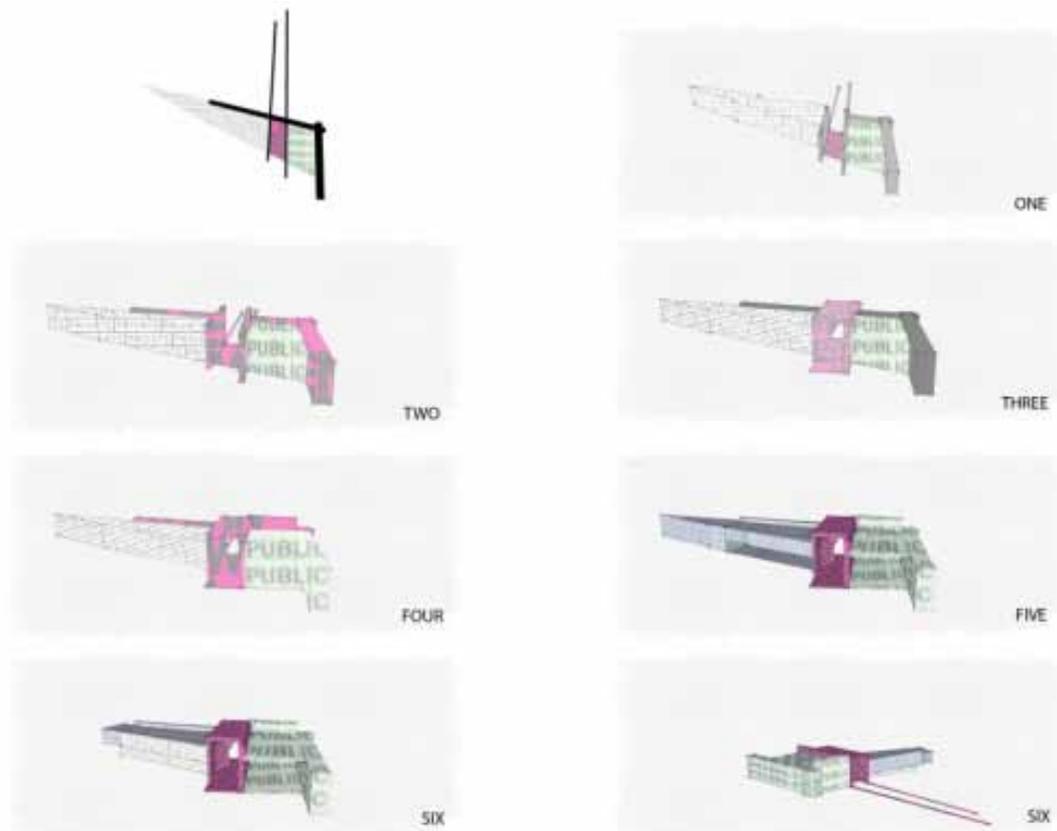


Figure 6.2.3.2 Site Concept, Division of Public and Private

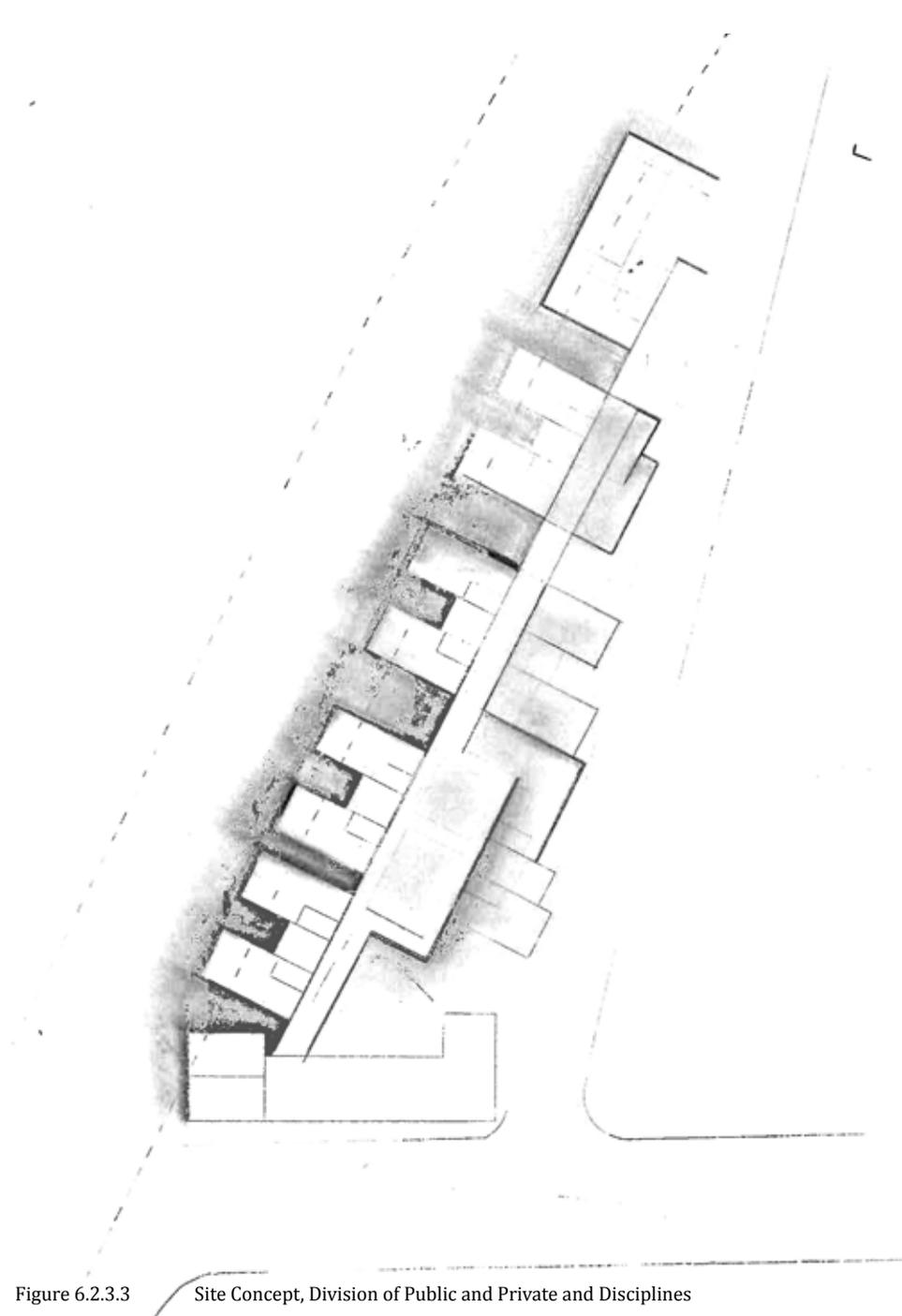


Figure 6.2.3.3 Site Concept, Division of Public and Private and Disciplines

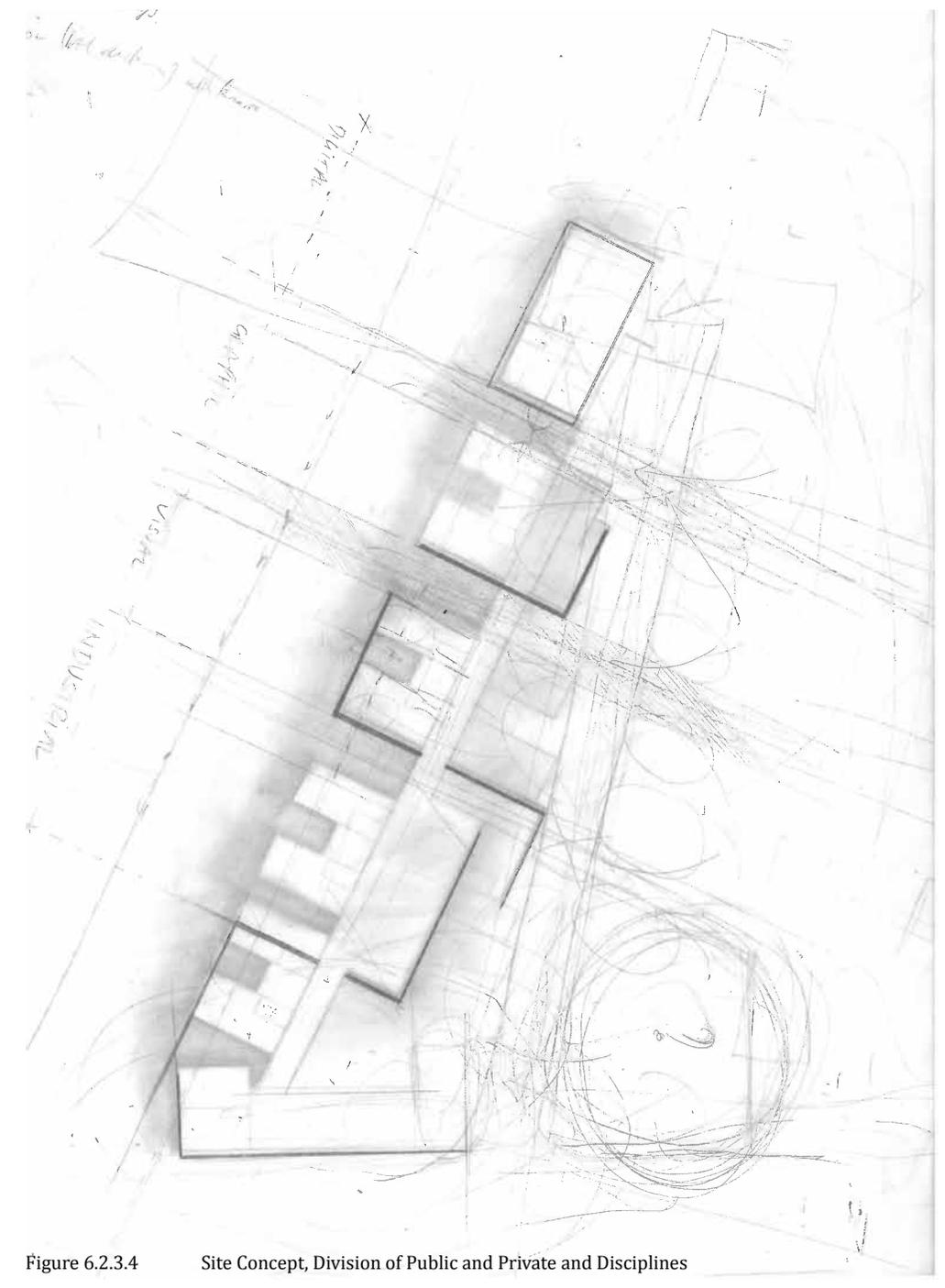


Figure 6.2.3.4 Site Concept, Division of Public and Private and Disciplines

6.2.4 EXPLORATION FOUR

Through analysis of the programmatic requirements, the concept of dividing public and private became a strong design influence. Public spaces are the administration, lecture theatre, library etc. Private spaces are studio spaces and workshops. The division is the crucial separation between multi-use space and fixed-use space whilst emphasising the separation between the four departments of the School of Design.

Investigating the division of function and spatial connections conceptualised through the rough site massing of the functional requirements progressed the design possibilities.

Initially the designs are only residing next to and just sitting underneath the bridge. However, it becomes very apparent that the bridge is having an impact on how the design is being realised on site.

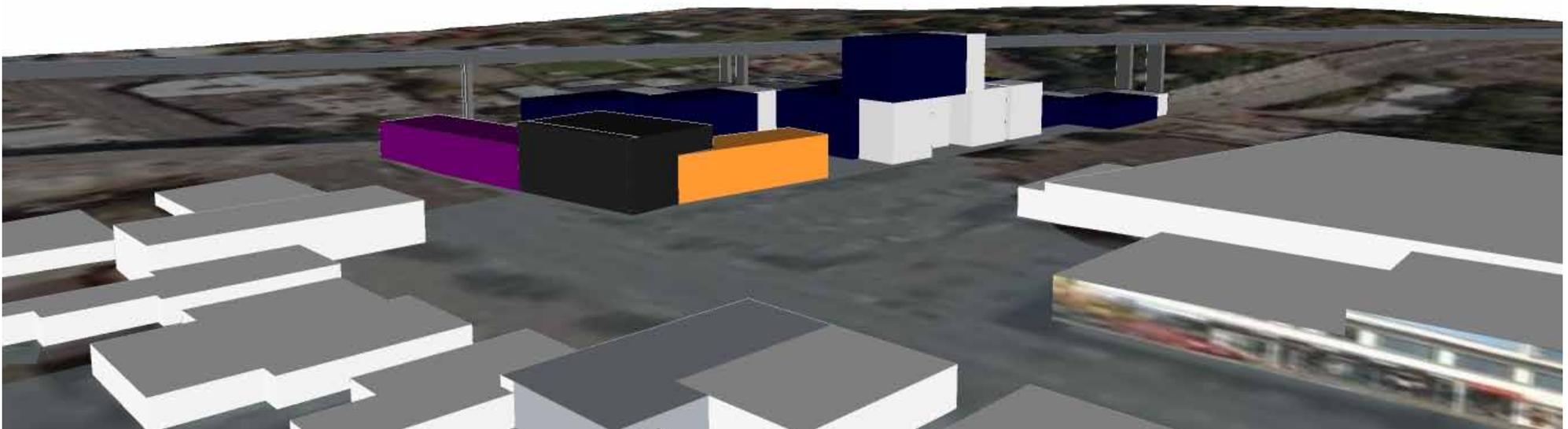


Figure 6.2.4.1 Site Concept, Through Massing

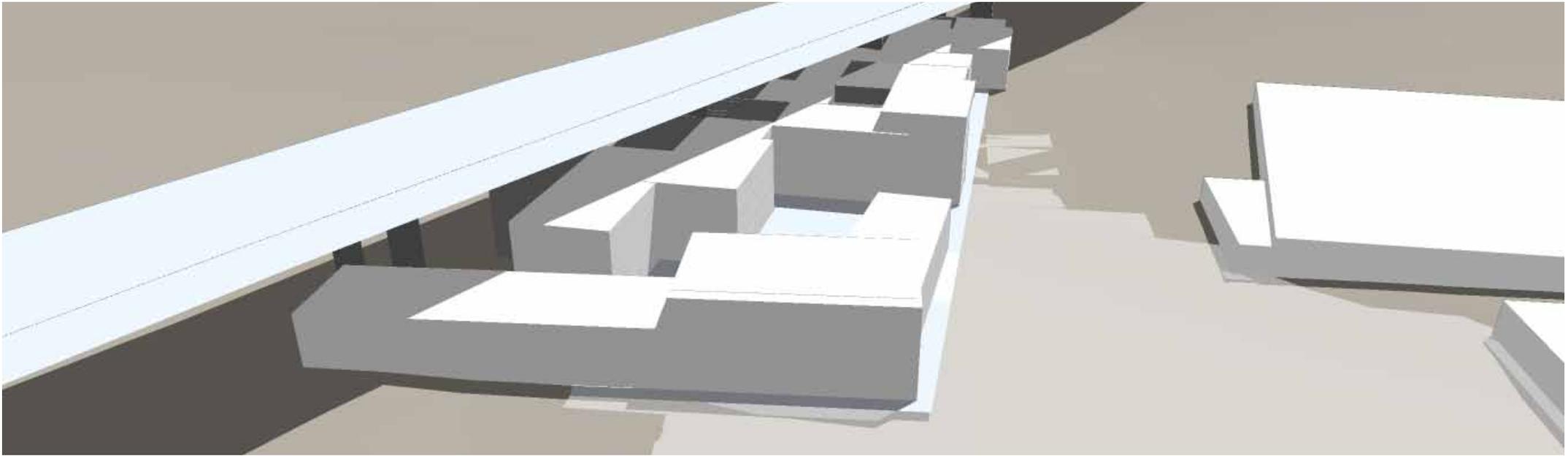


Figure 6.2.4.2 Site Concept, Through Massing

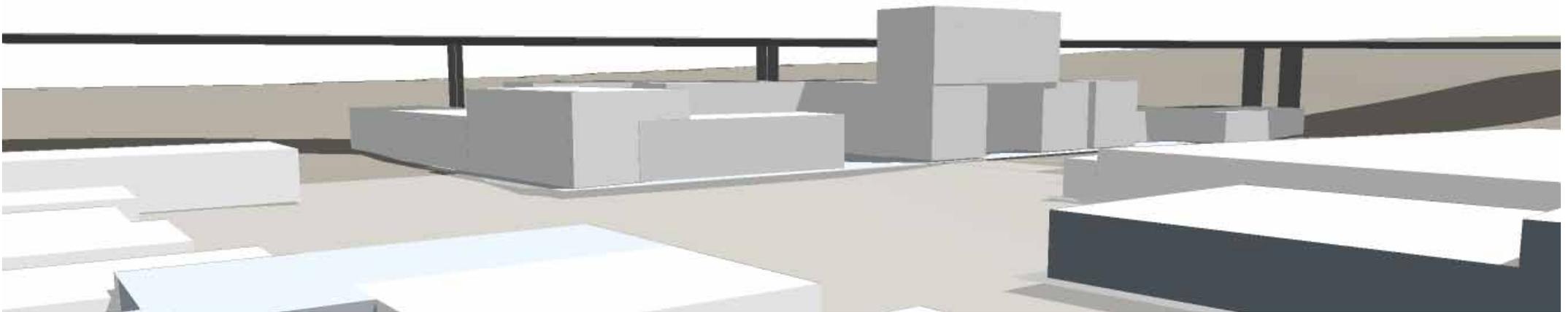


Figure 6.2.4.3 Site Concept, Treatment of Facade

6.2.5 EXPLORATION FIVE

The first initial design was largely influenced by the idea of fragmentation and segregation of the four disciplines that the school comprised. The design consisted of large cubed forms connected through a ground level space that linked the four disciplines. The Broadway frontage housed the essential public spaces such as the gallery spaces, lecture theatres, staff and offices. A strong design intention was to create segregated space so once a student was familiar with the School they could enter at different points, emphasising the segregated space.

The investigation into design history and programmatic requirements developed a clear design intention encompassing the balance between purpose and form. After researching the two main ways design is taught I felt there was a clear answer in the division of the programmatic requirements that would influence the design.

The disciplines of Visual, Graphic, Industrial and Digital designs first year curriculum would all be located programmatically on ground level. This unification on the ground level illustrates the multi-disciplinary approach realised through the physical connection the ground level provides.

After students progressed from their first year the programme starts to separate and internalise in its intended environment, this is a reflection of the students specialising in one or more subjects. The fragmentation of the programme is mirrored in the fragmentation of the form where each discipline becomes a clear individualised form. Each discipline has dedicated workshops and studio spaces emphasising the fragmentation.

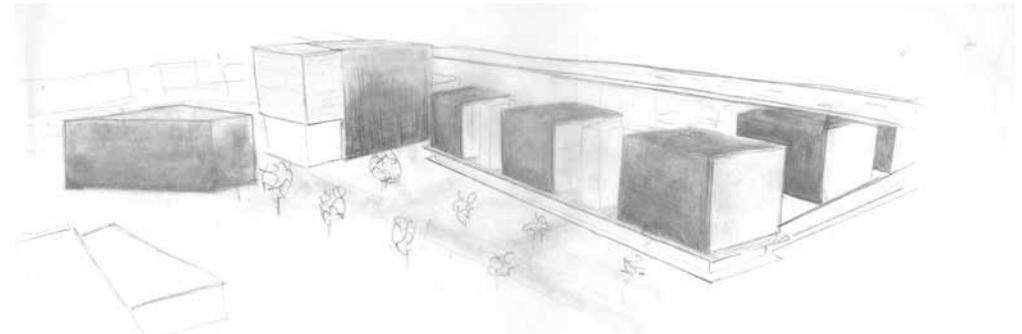


Figure 6.2.5.1 Site Concept, Massing of Singular Disciplines

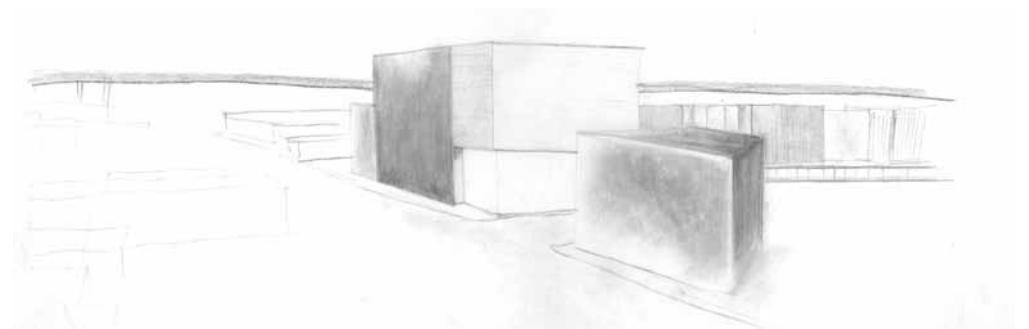


Figure 6.2.5.2 Site Concept, Massing of Singular Disciplines and Treatment of Facade

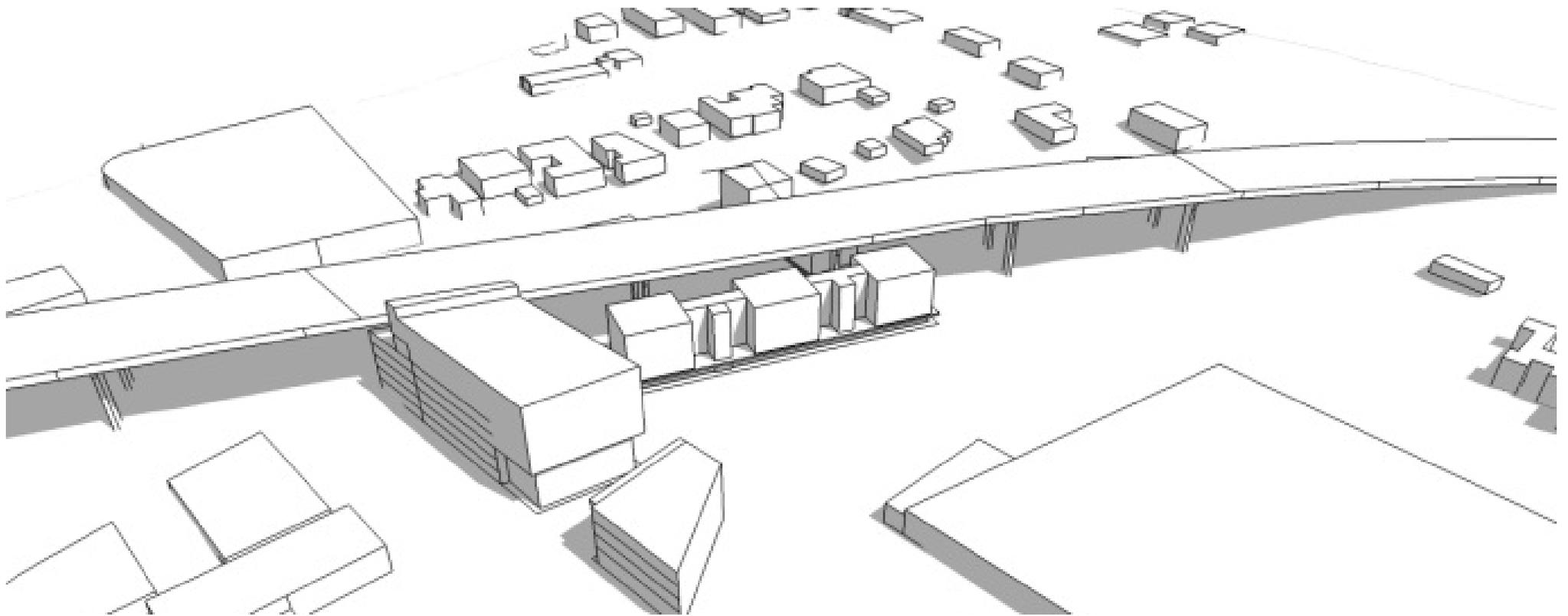


Figure 6.2.5.2 Site Concept, Massing of Singular Disciplines and Treatment of Facade Perspective

6.2.6 Exploration Six

The design becomes an extension of the bridge. The internal circulation mirrors the traffic flow that slices through the surrounding environment. The four design disciplines become internalised environments that create a clear distinction internally. The internal volumes have the circulation corridors pass through them creating a clear transition space emphasising the internal and fragmented nature of the programme. The internal volumes architecturally reject the external environment and create a clear distinction within the internal environment but do visually connect to the internal circulation spaces through glass facades.

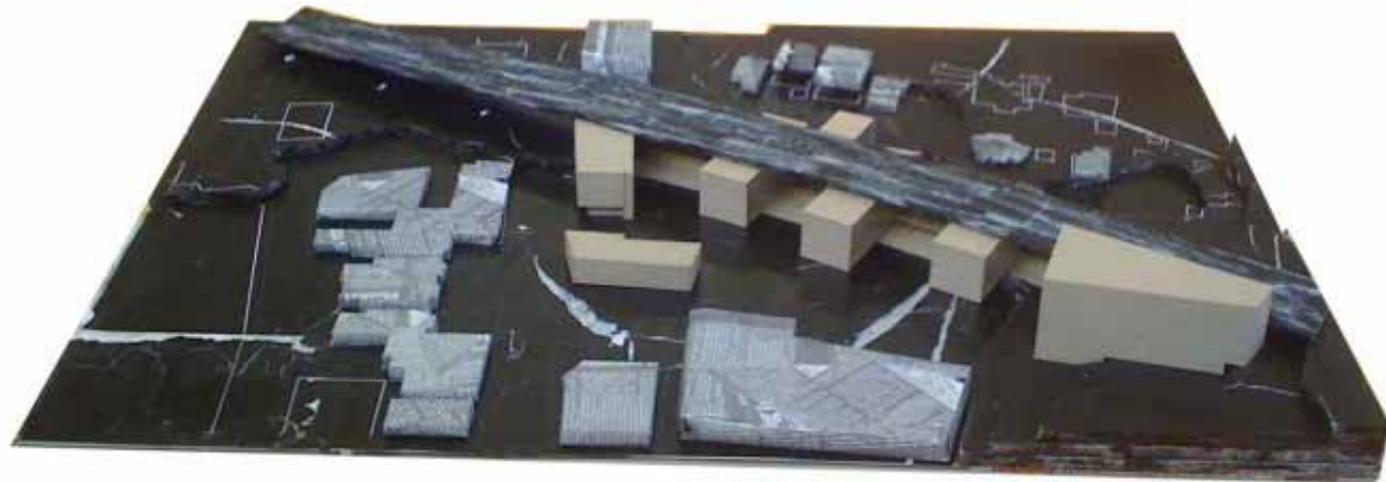


Figure 6.2.6.1 Site Model



Figure 6.2.6.2 Broadway Facade

6.2.7 EXPLORATION SEVEN

Exploration seven continued the linear and horizontal division of the four departments with emphasis placed on the approach from Clovernook and the treatment of the façade.

Original design ideas had entry points at communal and public entries along the main northern façade. Exploration into the idea of accessing through the extruding disciplines façade was investigated. This reinforced the students' ability to interact with just one department when entering or multiple. The result was that the entry compromised the unity of the disciplines' façades.

The different workshops are designed to withstand heavy demands; the strength the structure embodies is illustrated through the visual exposure of structure. The internal environments have exposed pipe work running through along with electrical powerpoints hanging above workshop desks. Heavy machinery remains on the outskirts of the space while dangerous equipment is contained in a separate room within the workshops.

The floor plan illustrates the continual change of internal environment and the change in sense of place. Each department is developed as an independent entity that is reinforced by creating threshold spaces when entering in and passing through them.

The criticism made of this design is that it emphasises division heavily and is most apparent in the external perspectives and elevations. Creating clear singular departments within a School of Design has become a visual contradiction that can be overcome by possibly having the departments more contained under the bridge in line with the edges of the bridge.



Figure 6.2.7.1 Site Plan



Figure 6.2.7.2 Site Cross Section



Figure 6.2.7.3 Internal Perspective and Site Massing

6.2.8 EXPLORATION EIGHT

Exploration Eight investigates the design going completely under the bridge. This creates a greater visual unity of the departments from the external environment while achieving an individual identity from within.

Place, culture and environment are created by two internal and external vistas. Firstly the site has a serene and unique environment along the rise towards Gillies Avenue with the remnants of a volcanic forest. This area is intentionally surrounded by the School of Design, creating a private outdoor space.

Secondly the building begins to articulate the internal thresholds and environments that the four disciplines create. The cross section illustrates the buildings circulation echoing the traffic flow above. The bridge has space within the trapezoid element that is now utilised within the design.

The eastern façade along Broadway has been further articulated with fragmented linear breaks in the façade allowing the once imposing original façade to create stronger visual continuity to the Broadway elevation and pedestrian movement.

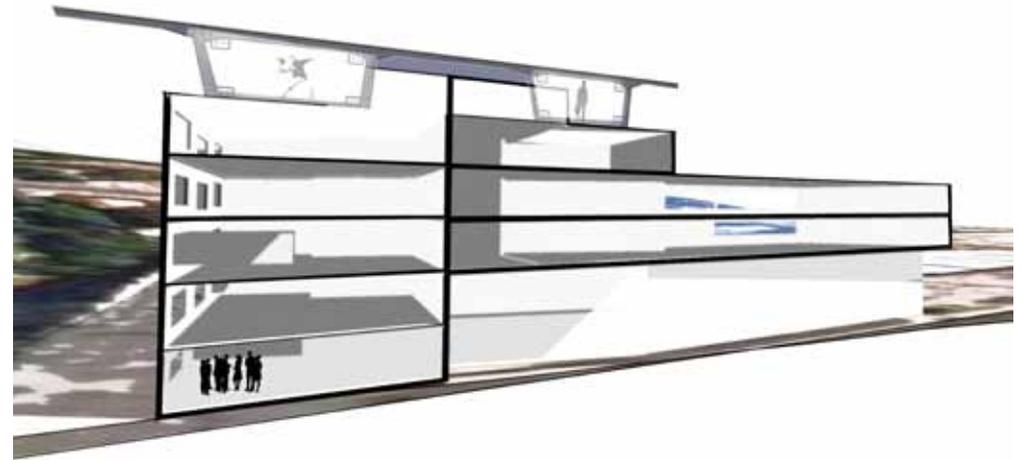


Figure 6.2.8.1 Cross Section Developed

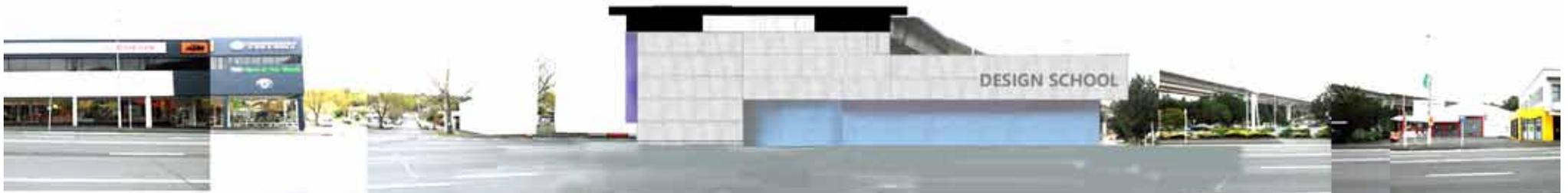


Figure 6.2.8.2 Broadway Facade Treatment



Figure 6.2.8.3 Perspective

7.0 OUTCOME

7.1 DESIGN OUTCOME

At the time of writing this the purpose of this project was to reconcile the learning process of a School of Design with the theoretical construct of the school's image.

The exploration of the School's programmatic requirements and curriculum through the exploration of conceptual architectural forms created the context for the design to sit within. This project investigated the position of theoretical issues and application into the built environment. The investigation of theoretical issues, theories, construct of the school's image and the balance of the image against the reality was explored through design.

Precedents into Schools of Design and site related examples explored the theoretical demands often imposed on buildings contrasted against buildings that valued the construct of school image. These precedents concluded into a framework that developed key guiding principles manifested within the design process.

This document has been heavily influenced by the theoretical process of research paralleled along the design process of the project. The finalised architectural proposal will be illustrated through physical models and drawings showing the connection between the image and reality of a School of Design.

7.2 CRITICAL APPRAISAL

The formal aesthetic of the School of Design building is always trying to create a unique image that signifies a contemporary school, linking the function of learning process and concluding in a design with a unique identity and image that enhances contemporary curriculum.

Function-specific space: Initially the function defined and flexible space was a requirement drawn from the programme and research. The impact on the design was not significant at the start of the design process. However, during the exploration process these spaces became an integral element of the design. Subsequently the spaces had a significant impact on the internal and external circulation and movement of the building.

The flexible space and function-specific spaces created an internal line of circulation early on in the design process that strengthened throughout the exploration process. The line of circulation mirrored the motorway's line of circulation. These conditions all created a unified ground plane.

Movement is emphasised through the sections showing the change in level reflecting the steep contours of the site and the contrast between studio and workshop spaces against the circulation spaces.

Exterior: The massing of the building revealed the ability of the Broadway and Gillies Avenue façade to create visual anchors on the site. The northern façade was shown to receive high amounts of heat gain and sun exposure which allowed the influence of the gantry structure to be introduced into the design, acting as a system of louvers. The triangulated treatment of the façade alludes to the industrial scaffolding that once lined the site.

The approach to the building became a significant design element as this building had to fill the void along the eastern and western facades of the street creating visual continuity that was absent originally. The unification of these facades connected the surrounding urban environment.

The Gillies Avenue side of the site was an important outdoor environment due to the remnants of a volcanic forest. The environment was a surprisingly tranquil and private space contradicting its location next to the motorway. This space was identified early on as an area for students to interact with. The building encloses the space in balance with the contours so not to impose on the space but enhance it.

Interior: Three types of workshop were identified which were individual to each discipline. The workshops were always intended to be raw spaces expressed through exposed structure. The workshops are intended to be stimulating environments that students can make their own and not feel precious about the space.

The studio environments required different environments to be created. Industrial design studios are heavily orientated around woodwork and metal workshops with study spaces that can hold and accommodate heavy duty design objects. Graphic design is better situated on the southern side of the site as the ambient southern light suited the discipline with studio space and digital workshop. Digital design has a darker studio environment and is based on a large computer workshop with individual desk space.

Visual design encompassed smaller amounts of studio spaces with a larger amount of design specific spaces such as a photography studio and screen printing facilities.

Overall the design reconnects the learning process of a School of Design with the theoretical construct of the schools image, through reinforcing the creative industry that a School of Designs resides in and establishing an image that does not impose or forget the role of the student and the learning environments that need to be achieved.

7.2.1 FINAL DESIGN PRESENTATION



Figure 7.2.1.1

Final Design Presentation - Night Perspective

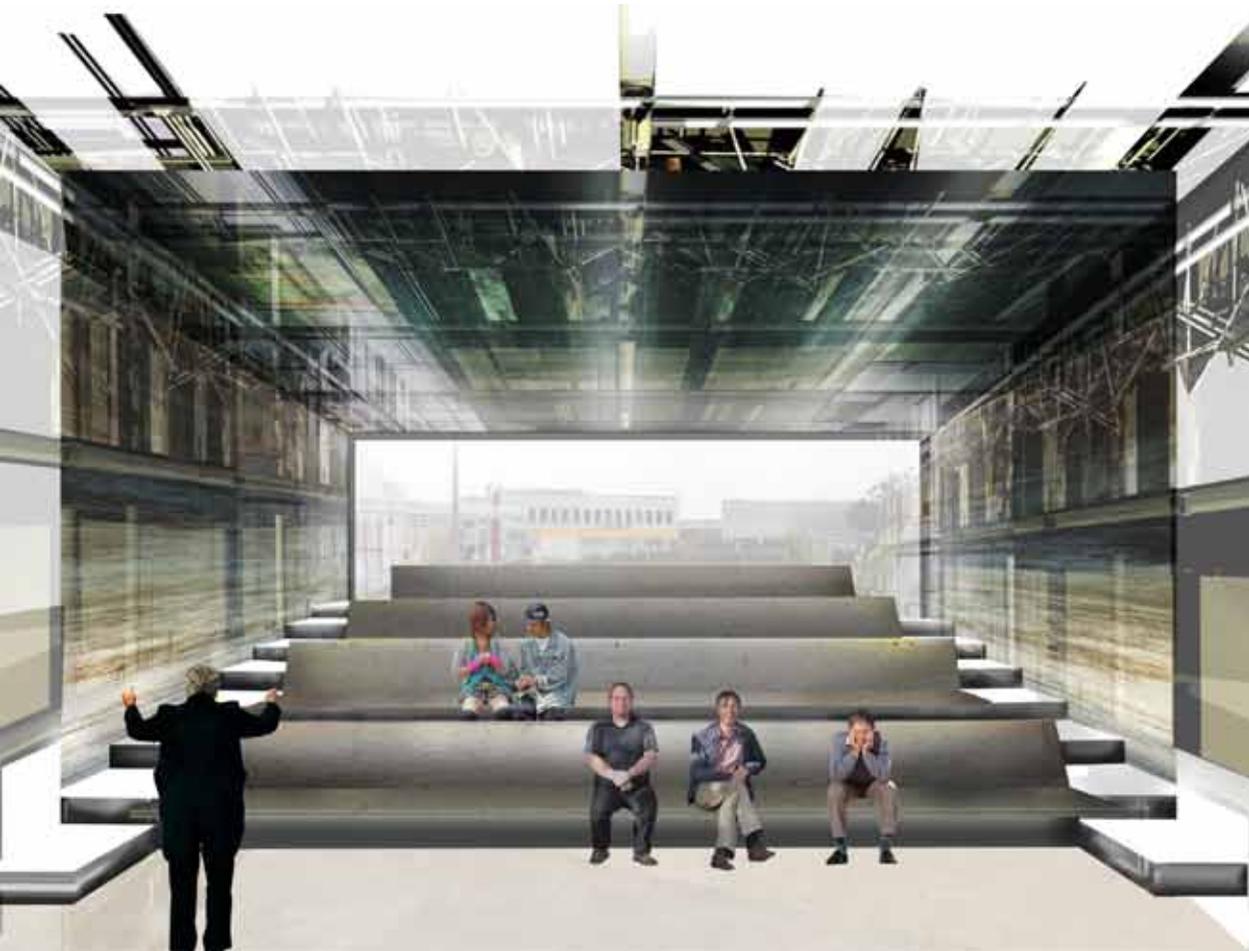


Figure 7.2.1.2 Final Design Presentation - Small Lecture Room



Figure 7.2.1.3 Final Design Presentation - Main Atrium



Figure 7.2.1.4 Final Design Presentation - Studio Section



Figure 7.2.1.5 Final Design Presentation - Workshop



Figure 7.2.1.6 Final Design Presentation - Broadway Entrance



Figure 7.2.1.7 Final Design Presentation - Short Section

Figure 7.2.1.8 Final Design Presentation - Long Section



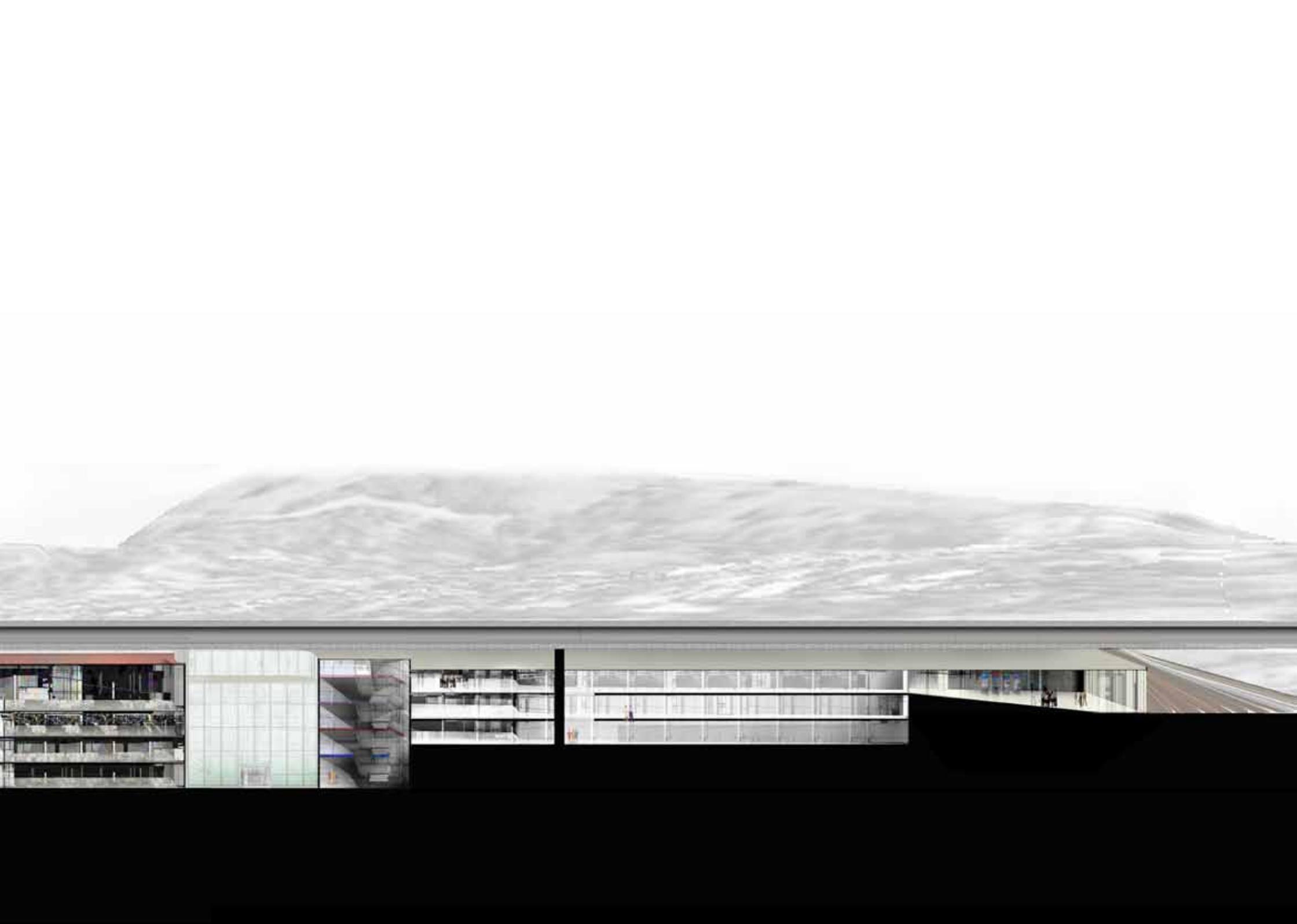




Figure 7.2.1.9 Final Design Presentation - Gillies Ave Entrance



Figure 7.2.1.10 Final Design Presentation - Ground Floor Plan



Figure 7.2.1.11 Final Design Presentation - Third Floor Plan

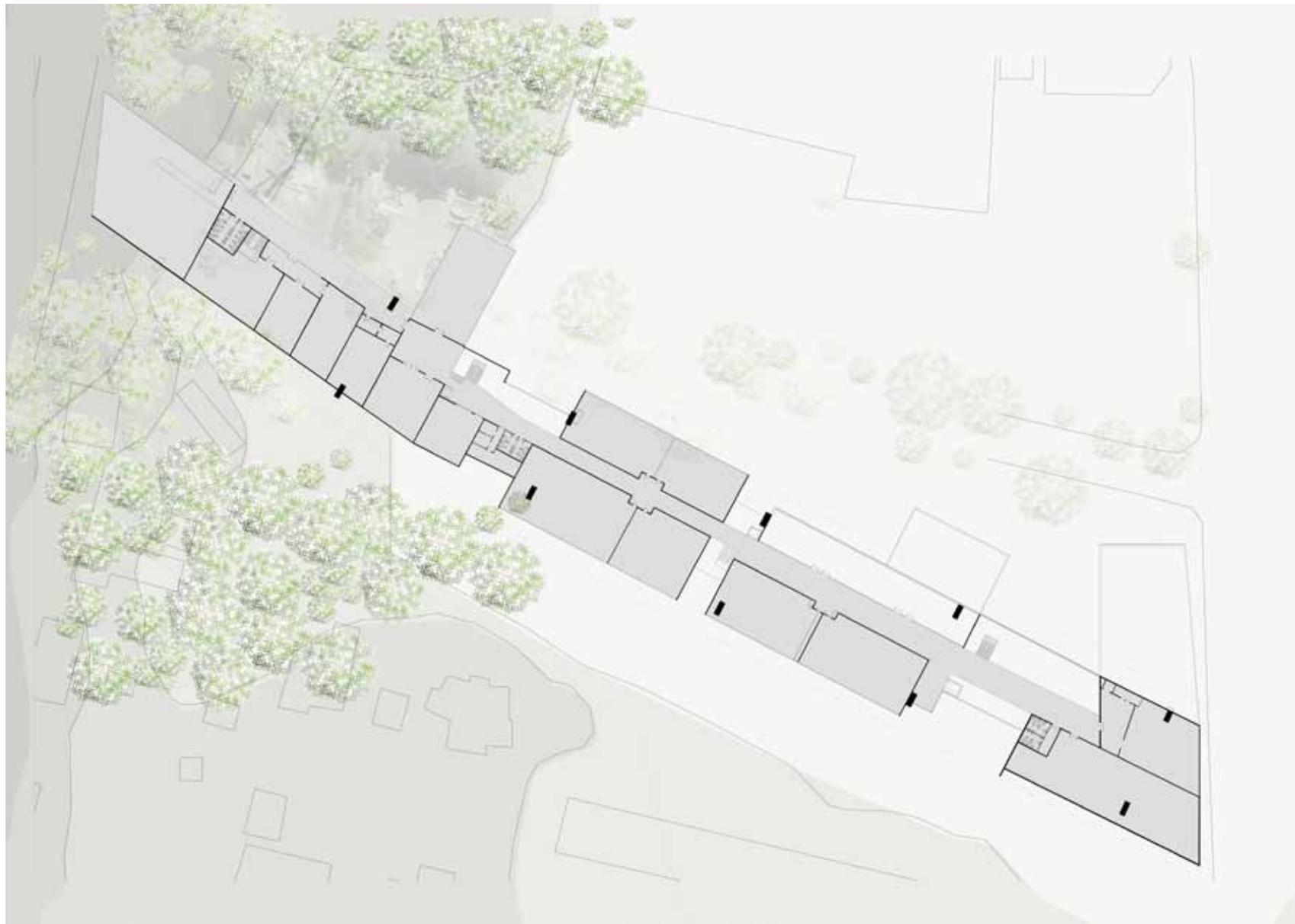


Figure 7.2.1.12 Final Design Presentation - Fourth Floor Plan

List of Figures

Figure 1.1.1: Zaha Hadid Innovation Towers Design School

Figure 4.1.1: Proposed School of Design, <http://www.zaha-hadid.com>.

Figure 4.1.1.1: Aronoff Building, <http://www.architecturerevived.blogspot.com>.

Figure 4.1.1.2: Aronoff Building, <http://www.architecturerevived.blogspot.com>.

Figure 4.1.2.1: Massey University Wellington Campus, <http://www.masseyuniversity.co.nz>

Figure 4.1.2.2: Photograph of Massey University Industrial Design Building.

Figure 4.1.3.1: Nelson Marlborough Institute of Technology Internal Circulation, <http://www.expan.co.nz>.

Figure 4.1.3.2: Nelson Marlborough Institute of Technology, <http://www.architecturenz.co.nz>.Figure

Figure 4.1.4.1: Arts and Design Academy Spline, <http://www.worldarchitecturenews.com>.

Figure 4.1.4.2: Arts and Design Academy Staircase, <http://www.worldarchitecturenews.com>.

Figure 4.1.4.3: Arts and Design Academy Spline, <http://www.worldarchitecturenews.com>.

Figure 4.1.5.1: Sharp Centre for Design Interior, <http://www.cityreview.com>.

Figure 4.1.5.2: Sharp Centre for Design External Context, <http://www.archidose.org>.

Figure 4.2.1.1: Im Viaduct Interior Image, <http://www.designboom.com>.

Figure 4.2.1.2: Im Viaduct Exterior Context, <http://www.designboom.com>.

Figure 4.2.1.3: Im Viaduct Model, <http://www.designboom.com>.

Figure 4.2.2.1: Motorway Bridge and Control Centre Context, <http://www.odbc-paris.com>.

Figure 4.2.2.2: Motorway Bridge and Control Centre Elevations Figure, <http://www.odbc-paris.com>.

Figure 4.2.2.3: Motorway Bridge and Control External Site Context, <http://www.odbc-paris.com>.

Figure 5.0.1: Newmarket Viaduct Night Image, <http://www.panaoramio.com>

Figure 5.1.1: Newmarket Viaduct Site Location NTS

Figure 5.1.2: Highwic House between 1873 and 1885

Figure 5.1.3: Newmarket Viaduct Early 1960's. Dinah Holman, *Newmarket: Lost and Found*, 2nd ed. (Newmarket, Auckland, New Zealand: The Bush Press, 2010), 71.

Figure 5.1.4: Stichbury House. Dinah Holman, *Newmarket: Lost and Found*, 2nd ed. (Newmarket, Auckland, New Zealand: The Bush Press, 2010), 76.

Figure 5.4.1: Newmarket Site

Figure 5.4.2: Newmarket Viewshaft

Figure 5.5.1: Newmarket Zoning

Figure 5.6.1: Newmarket Circulation Paths

Figure 5.6.2: Newmarket Bus Routes

Figure 5.6.3: Newmarket Pedestrian Circulation

Figure 5.7.1: Newmarket Shoe Cobler, <http://timespanner.blogspot.com>.

Figure 5.7.2: Newmarket Site Sketches

Figure 5.8.1: Newmarket Viaduct Looking From Eadgerley Ave

Figure 5.9.1: Newmarket Viaduct Collage

Figure 6.2.1.1: Site Investigation

Figure 6.2.1.2: Site Investigation Through Context

Figure 6.2.2.1: Site Concept, Imposing Function

Figure 6.2.2.2: Site Concept, Exploration of Fragmentation

Figure 6.2.2.3: Site Concept, Exploration of Fragmentation Extended

Figure 6.2.3.1: Site Concept, Site Barriers and Boundary

Figure 6.2.3.2: Site Concept, Division of Public and Private

Figure 6.2.4.2: Site Concept, Through Massing

Figure 6.2.4.3: Site Concept, Treatment of Facade

Figure 6.2.5.1: Site Concept, Massing of Singular Disciplines

Figure 6.2.5.2: Site Concept, Massing of Singular Disciplines and Treatment of Facade

Figure 6.2.5.2: Site Concept, Massing of Singular Disciplines and Treatment of Facade Perspective

Figure 6.2.6.1: Site Model

Figure 6.2.6.2: Broadway Facade

Figure 6.2.7.1: Site Plan

Figure 6.2.7.2: Site Cross Section

Figure 6.2.7.3: Internal Perspective and Site Massing

Figure 6.2.8.1: Cross Section Developed

Figure 6.2.7.3: Internal Perspective and Site Massing

Figure 6.2.8.1: Cross Section Developed

Figure 6.2.8.2: Broadway Facade Treatment

Figure 6.2.8.3: Perspective

Figure 7.2.1.1: Final Design Presentation - Night Perspective

Figure 7.2.1.2: Final Design Presentation - Small Lecture Room

Figure 7.2.1.3: Final Design Presentation - Main Atrium

Figure 7.2.1.4: Final Design Presentation - Studio Section

Figure 7.2.1.5: Final Design Presentation - Workshop

Figure 7.2.1.6: Final Design Presentation - Broadway Entrance

Figure 7.2.1.7: Final Design Presentation - Short Section

Figure 7.2.1.8: Final Design Presentation - Long Section

Figure 7.2.1.9: Final Design Presentation - Gillies Ave Entrance

Figure 7.2.1.10: Final Design Presentation - Ground Plan

Figure 7.2.1.11: Final Design Presentation - Third Floor Plan

Figure 7.2.1.12: Final Design Presentation - Fourth Floor Plan

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10.0 APPENDIX

10.1 LITERATURE REVIEW EXTENDED.

Marcus, George H. *What is design today?* New York: Harry N. Abrams Incorporated, 2002. *What is Design Today?* author George Marcus tackles the ambiguity of the term 'design' and tries to establish the role it has in modern day lives. Comprising of graphic, media and product history, it shows the evolution and depth of the design world.⁵⁹

Lawson, Bryan. *How Designers think : The Design process Demystified*. 4th ed. Amsterdam ; London: Architectural, 2006. *How designers think* author Bryan Lawson investigates how to better educate designers and develop their skills. This book provides a general understanding of design and the design process.⁶⁰

Conway, Hazel. *Design History : A Student Handbook*. London: Allen & Unwin, 1987. *Design History: A Student Handbook* is an overview of design history and the significant events, ideas and objects that emerged. Edited by Hazel Conway, areas such as industrial design and graphic design are thoroughly examined and demonstrate the strength of Louis Sullivan's influence in the field.⁶¹

Alexander, Christopher. "A City Is Not a Tree." In *The City Reader*, edited by Richard T. LeGates and Frederic Stout, xv,532p. London: Routledge, 1996. The essay *The City is not a Tree* by Christopher Alexander discusses the concept that when designers look for characteristics of the past they neglect looking for the 'abstract ordering principle' that allowed these characteristics. This relates to the design process applied to urban design and the clear misunderstanding of an environment.⁶²

LeGates, Richard T., and Frederic Stout. *The City Reader*. 4th ed. Amsterdam; London: Architectural, 2006.

The City Reader is a broad plan of urban studies in relation to the city which covers a range of authors. It is an essential read for any student researching urban planning and

59 George H. Marcus, *What Is Design Today?* (New York: Harry N. Abrams Incorporated, 2002).

60 Bryan Lawson, *How Designers Think : The Design Process Demystified*, 4th ed. ed. (Amsterdam ; London: Architectural, 2006).

61 Hazel Conway, *Design History : A Student Handbook* (London: Allen & Unwin, 1987).

62 Christopher Alexander, "A City Is Not a Tree," in *The City Reader*, ed. Richard T. LeGates and Frederic Stout (London: Routledge, 1996).

design.⁶³

Venturi, Robert, Denise Scott Brown, and Steven Izenour. *Learning from Las Vegas*. Cambridge [Mass] ; London: M.I.T. Press, 1972.

Learning from Las Vegas addresses the idea of architects creating less "heroic" statements in buildings rather than being concerned more with the connection of the building to its intended occupants.⁶⁴

Focault, Michel. "Of Other Spaces." In *Diacritics*, v. ill. 25-29cm.: Baltimore, 1986. *Of Other Spaces* is a short essay on the perception of space. Space is often thought of as a void but according to Michel Focault it can be seen instead as a starting point and a site can be described by the relationships that identify it. This essay inspired the notion of emancipation of site considered in this proposal. Free from restraint and influences, a site is able to function at the free will of its occupants.⁶⁵

Lukez, Paul. *Suburban Transformation*. 1st ed. New York: Papress; Enfield : Publishers Group UK [distributor], 2007.

Suburban Transformation is about the design methodology and process of urban transformation. Author Paul Lukez gives examples of a township's inadequate areas and their potential to change through analysis of ecology, site, pedestrian, historic and existing environments. This demonstrates how the strengths of a thorough analysis and the resultant interpretations have a vast impact on the concluding design.⁶⁶

Buckley, Brad, John Conomos, and Nova Scotia College of Art and Design. *Rethinking the Contemporary Art School: The Artist, the Phd, and the Academy*. Halifax, N.S.: Press of the Nova Scotia College of Art and Design, 2009.

This book examines the reason for the continued existence of art and design schools, what should be taught and the relevance in today's society. It has been a significant source of information of the relevance of design education and its connection to design history.⁶⁷

Pearce, Martin. *University Builders*. Chichester: Wiley-Academy, 2001.

The nature of universities has undergone a transformation over the past twenty years with increased roles and changing curriculum resulting in new architectural ideas in the field of university design. The Montmuzard University 'maison de l'universite de bourgogne' is a clear example of the balance between function and form.⁶⁸

63 Richard T. LeGates and Frederic Stout, *The City Reader*, 4th ed. ed. (London: Routledge, 2007).

64 Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas* (Cambridge [Mass.] ; London: M.I.T. Press, 1972).

65 Michel Focault, "Of Other Spaces," in *Diacritics* (Baltimore, 1986).

66 Paul Lukez, *Suburban Transformations*, 1st ed. ed. (New York: Papress ; Enfield : Publishers Group UK [distributor], 2007).

67 Brad Buckley, John Conomos, and Nova Scotia College of Art and Design., *Rethinking the Contemporary Art School : The Artist, the Phd, and the Academy* (Halifax, N.S.: Press of the Nova Scotia College of Art and Design, 2009).

68 Martin Pearce, *University Builders* (Chichester: Wiley-Academy, 2001).

Rowland, Kurt F. *A History of the Modern Movement: Art Architecture Design*. New York,: Van Nostrand Reinhold, 1973.

Rowland explains in succinct detail the evolution of modern art, architecture and design and explains the changing environments that surrounded the evolutions. The connection between design history and education is largely explained aswell as its connection to architecture.⁶⁹

⁶⁹ Kurt F. Rowland, *A History of the Modern Movement: Art Architecture Design* (New York,: Van Nostrand Reinhold, 1973).

