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Re-thinking the production of mixed-use Architecture in the urban context

Explanatory Document

by

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Acknowledgement

Brevity is the soul of wit, so I’ll try to keep this short.

To my family and friends, thank you for sticking with me for the long haul.

To my colleagues and acquaintances, thanks for the snapshot of memories ... and the many more to come.

To my mentors - past, present, & future - thank you for the insight, wisdom & discipline.

It took me seven years to get this initial part of my architectural career out of the way, and I can’t wait for the next seven.

I’ll see you in the field.

- JM, 2016
# Table of Contents

Title Page ................................................. ii
Acknowledgement ............................................... iv

1 | Abstract .................................................. 2

2 | Introduction ............................................... 5
   2.1 | Project Background ........................................ 6
   2.2 | Project Outline ............................................ 7
   2.3 | Aims & Objectives ........................................ 7
      2.3.1 | Research Aims ........................................... 7
      2.3.2 | Research Objectives ...................................... 7
   2.4 | Research Question ........................................ 8
   2.5 | Scope & Limitations ........................................ 8
   2.6 | State of Knowledge in the Field ............................ 9
      2.6.1 Literature ............................................... 9
      2.6.2 Examples in the field .................................. 11

3 | Research and Discovery .................................. 15
   3.1 | Context Research .......................................... 17
      3.1.1 The Notion of Type in Architecture .................... 17
      3.1.2 Mixed-use Typology and the City ..................... 20
      3.1.3 Newmarket and the NZ Urban Context .................. 24
   3.2 | Precedents .................................................. 28
      3.2.1 Formal Precedents ...................................... 28
      3.2.2 Informal Precedents .................................... 35

4 | Design ..................................................... 41
   4.1 Concept & Brief ........................................... 43
      4.1.1 Concept ................................................ 43
      4.1.2 Brief .................................................... 43
   4.2 Methodology .............................................. 49
      4.2.1 Analysis: drawing out a narrative ...................... 49
      4.2.2 Synthesis: orchestration of components and processes 53
   4.3 Development and Experimentation .......................... 59
      4.3.1 Experiment One – the litmus test ...................... 59
      4.3.2 Experiment Two – changing scales ..................... 65
      4.3.3 Experiment Three – reading intent from the details .... 75
      4.3.4 Additional Design Notes ................................ 80

5 | Conclusions .............................................. 83
   5.1 | Summary ................................................. 84
   5.2 | Critique of Work .......................................... 85
   5.3 | Concluding Comments ..................................... 86

6 | Reference Lists .......................................... 87

7 | Figure Lists ................................................ 89

8 | Appendix ................................................. 91
   8.1 | Appendix A – Experiment One ......................... 93
   8.2 | Appendix B – Experiment Two ....................... 97
   8.3 | Appendix C – Experiment Three .................... 108
   8.4 | Appendix D – Final Design: concept & development .... 117
      8.4.1 Experiment One – Sketches and development ........ 118
      8.4.2 Experiment Two – Sketches and Development ........ 121
      8.4.3 Experiment Three – Sketches and Development ....... 127
   8.5 | Appendix E – Final Design: presentation graphics & visualisation 131
1 | Abstract

Scarcity of available land for development and an increase in real estate prices has led to the trend of utilizing mixed-use developments to solve the multitude of issues currently presented in twenty-first century cities. Mixed-use in architecture is not new; it has existed since the establishment of walled city-states¹. Mixed-use architecture was further utilized with the advent of the industrial era and the introduction of modern town planning, along with the introduction of the 1916 zoning laws in New York City².

This invites an exploration of the potential and the opportunities that these types of developments can provide in relation to their placed context. So why does the practice of mixed-use seem stale, relegated to a novelty, and even to the banal path of space making in architecture? This project therefore, will investigate the process of typology analysis in the context of the city as first principle aid for the production of mixed-use architecture.

Through the research of related literature and precedents, a defined methodology with a focus on analysis and synthesis will assist in the development of a series of mixed-use interventions that goes beyond the current understanding of this particular type of building development. This project will leverage the use of drawing as an act that is allied with the practice of architecture in the making of the proposed series of interventions. The project can technically be located in any definitive urban area in the world, but due to the project’s brevity, a portion of Newmarket in Auckland, New Zealand was elected as the site of this research.

Fig. 1 - Proposal on Site, Aerial Isonometric
2 | Introduction
2.1 | Project Background

The increasing scarcity of available land for development, coupled with rising real estate prices for both commercial and residential properties, has imposed restraints on living and working conditions for both the current and projected inhabitants of city centres. This led to the obscuring of the formal and functional understanding of building types, as it relates to domesticity, labour and work within the city context. This has also led to the current trend of and interest in mixed-use developments, which hopes to address the multiplicity of needs arising from these conditions. To this end, the ability and capacity of mixed-use architecture to respond is in question.

In architecture, the mixed-use typology is a building category that seems to be a new trend, yet it has existed since the establishment of the city-states. In the industrial era, urban design and planning focused on the division of activity within the city, which runs parallel to the idea of the separation of rooms within a household. With the use of zoning schemes and plans in major metropolises in the nineteenth century, mixed-used architectural type was utilised to maximise the capacity of an increasingly smaller parcel of land. Architects trained in the Beaux Art school now had to adapt to the challenges of oblique angles, and access to natural light was prioritized over torturously-decorated cornices. The investigatory and analytical methods of architectural typology in the urban context as the subject, can aid in the production of a relevant piece of mixed-use architecture embedded within the city infrastructure. Typology is discussed here as a tool used to organize and codify the way the built environment is organized. Of particular interest is its contribution to and influence on the growth of the city, vertically and horizontally.

The proposal of an efficient and effective mixed-use development is a worthwhile topic of research. Though, this amalgamation of multiplicity in terms of “form and function” needs to be based in an understanding of history, theories and precedents of relevant typologies. The following sections in this chapter will further outline the issues addressed by this research project. The aims and objectives, briefly the methodology and ultimately the research question, which will be considered throughout the entirety of this document.

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4 Aldo Van Eyck, re-quoting the statement about the 'Labyrinthian City'. Javier Mozas. This is HYBRID, a+t editions, Spain, (2011), 26.
2.2 | Project Outline

The project sets out to produce a series of three mixed-use architectural interventions, on varying scales, with the aid of typology analysis in the city context as a first principle aid. As a simple premise, a series instead of a single intervention considers future developments in the city. Varying the scale of the interventions is reflective of the heterogeneous nature of the city, which will be further outlined in section 2.6 and section 3.1.

Any metropolitan site could have been selected for this project, however due to the brevity of this research project, the chosen site is a section of Newmarket in Auckland, which is adjacent to the main avenue of Broadway. Further exploration and analysis of the site, specifically its qualification for this project, will be expanded on in section 3.1.3 of this document.

2.3 | Aims & Objectives

2.3.1 | Research Aims

The research project aims are outlined below:

1. Discuss the concept of “form and function” as it relates to architectural type via history, theory and precedents related to the subject.
2. Establish a design methodology using the concept of “analysis to synthesis” of existing typologies on a chosen urban context, thus aiding the production of mixed-use architecture specific on an elected site.
3. Propose a series of mixed-use interventions addressing the established modalities as defined in a formulated brief on an elected site.

The term modalities, or modality in the singular, is defined here as “… a particular mode in which something exists or is experienced or expressed”. The use of this term, instead of programme or function, will be further discussed in section 4.1.1. of this document.

2.3.2 | Research Objectives

To achieve the outlined aims, the following objectives are established below:

1. Collect and review relevant literature and precedents relating to the first point mentioned in section 2.3.1.
2. Derive and define from relating precedents the methodological concept of “analysis to synthesis”.
3. Apply the established design methodology from objective 2 to the elected site and its existing building typologies.
4. Determine a design brief, addressing the established modalities from objective 3, and;
5. Produce a series of mixed-use developments within the chosen urban site.
2.4 | Research Question

From the previous sections, the formulated research question is stated below:

“How can the analysis of building types in the city context aid in the production of mixed-use architectural interventions?”

The research question focuses on succinctly addressing the outlined aims and objectives from section 2.2. The question is also the issue to be addressed by the resulting design and its relating brief.

2.5 | Scope & Limitations

The focus of the project is covered by three overlapping subjects, namely the following:

- Form and function as it relates to Type in Architecture
- Type and its relation to Urban morphology
- The Mixed-use typology and the city

These overlapping ideas relate to the background of the project as initially outlined in section 2.1 and the aims of the research found in section 2.3.1. These topics influence the project as a whole, addressing the intrinsic complexity and issues that the project aims to engage and encounter in a realistic setting such as the city. The understanding of Type as it relates to the other concepts (Form and Function, Architecture and Urban morphology) will act as starting point in the consideration of the spatial remix that occurs in a piece of mixed-use architecture. Further discussion of each topic can be found in section 3.1.
2.6 | State of Knowledge in the Field

2.6.1 Literature

The topic of Type, as it relates to Architecture under the concept of “form and function”, has varied depending on the decade it is discussed. This ranges from establishing the primary derivative of all building types, i.e., the primitive hut, to it as a codifying tool, and even using it as a teaching method in academia. Type, as it influences the city context, adheres more to the dialogue of its morphology. In terms of mixed-use Architecture, it relates to the varying ways individual types are combined and negotiated into a single plot, making it more productive, with formal consequences to the architectural piece depending on whether the move is vertical or horizontal, or in certain cases both. The selected pieces of literature here are aimed at determining a relationship between the overlapping topics previously mentioned in section 2.5, with the goal of answering the established question of the research project at hand.

In terms of the historical and theoretical discussion of Type in architecture and urban morphology, the texts by B.C. Scheer, (The Evolution of Urban Form, 2010), Nikolas Pevsner, (A History of Building Types (1976) and Rob Krier establishes a base understanding on the origins, history and theory of the topic. Edmund Bacon cites Krier in Design of Cities on how to analyse historical urban settlements and their development. Through extensive academic knowledge and diagrammatic drawings, the text traces the development of each case study city found in the book. Bacon then applies the learned information through the design applications to his hometown city of Philadelphia.

Architectural type has a direct relation to the production of space, and Henri Lefebvre philosophically explores this through the concept of “spatial architectonics”. He describes this as the influence of built geometry to the bodily experience of space. This furthers the discussion of exploring what contributing factors (objects in space, enclosing surfaces) determines an activity in space. According to Lefebvre, these factors in turn produce the space itself. The question now leads to how does this convey to the concept of “form and function” as it relates to architectural typology? The idea will be further expanded and discussed in section 3.1.1.

5 BC. Scheer, Ch. 2 – The Origins and Theory of Type. The Evolution of Urban Form (2010) pp. 17
Fig. 2 - Experiment One: THE LITMUS TEST
The discussion of mixed-use architecture is best done through actual precedents in the field. The production of such architecture can be examined in terms of formal or informal means. This means either under the guidance of a professional, that is, an architect, or because of the needs of the everyday person, that is, architecture without architects. The Hybrid Series by a+t magazine is resource that covers a whole array of built and unbuilt projects by architects that are categorised as mixed-use. The publication is not only a source for precedents, but also an overview of the inception of mixed use in terms historical accounts.

Made in Tokyo and Made in Shanghai, both written by architecture professionals (in practice and in academia), are accounts of everyday architecture born out of the pressures and necessities of living by city inhabitants. The linking theme in both books is the cataloguing of architectural examples, (good, bad, and ugly), that form the identity of the city titled for each book. For Tokyo, it is “Da-me Architecture”, which translates to “no-good architecture”, a reference to the stubborn honesty seen in terms of the response of the architecture to its context. For Shanghai, it is the “Devilish City”, which refers to the moneyed interest that seems to be slipping into the everyday life and 30-year progression of the city into the financial capital of China.

The physical examples that act as precedents for the project can be divided into two parts: the formal and the informal. The formal relates to the pedigreed production of mixed-used architecture, through an analysis of examples from the Hybrid series. These are Linked Hybrid by Steven Holl Architects, along with Museum Plaza from REX Architects. The first development is composed of eight blocks of connected commercial, residential and public open spaces that horizontally span the landscape of old Beijing. The project opposes the isolation of each building through the use of a “ring bridge”, which link the variety of activities on all levels of the complex. The second, Museum Plaza, aims to change the approach to property development by distributing the financing of the design via the respective volumes and functions within the development. Culture is the central aspect of Museum Plaza, as it orients itself differently on the site in order to respond to the sophistication of its setting.

Both projects are notable for their high level of execution of the requirements of the client. These precedents are examined in terms of their conceptual, programmatic and execution aspects as it relates to the body of knowledge established in section 3.1. This is paramount in terms of determining the possible challenges with this version of architecture.

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10 Javier Asper. Linked Hybrid / Steven Holl Architects in Hybrid 1: high-rise mixed-use buildings (Spain, 2009), p.20.
11 ibid, p.90.
Fig. 3 - Experiment Two: A CHANGE IN SCALE
The informal relates to the un-pedigreed examples, particularly work produced by people who are not trained in architecture, in the traditional sense. These examples are primarily sourced from *Made in Tokyo* and *Made in Shanghai*, which were briefly mentioned in section 2.6.1. The precedents selected from these sources include titles such as *bucket housing*, *warehouse court*, *urban nests* – which reflects the whimsical and otherness that these examples bring into the mix. The identification of particular case studies with further analysis, and the reasons they have been chosen, will be further explored in section 3.2.2.

Using the term coined by Bernard Rudofsky, the informal examples can be considered as non-pedigreed architecture. This is architecture that sometimes has anonymous authorship due to misplaced pieces of documentation about their production or growth. These case studies, produced in anonymity, can be classified as vernacular, spontaneous or even indigenous. Nonetheless, they exhibit a certain identity and character that could only have been produced in the conditions that they are found in. For the case studies here, that is the city, which makes them analogous vessels that capture the effects of the surrounding forces of their environment. The term environment here is not only related to the natural elements, such as sun, rain and wind, but also to the environment invented by humanity, that is, to social, economical and political forces. The exploration of the formal and functional effects of these natural and man-made forces will be further explored in section 3.2 of the document.

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Fig. 4 - Experiment Three: COMMUNICATING INTENT THROUGH DETAIL
3 | Research and Discovery
Fig. 5 - Experiments Explode AXO
3.1 | Context Research

3.1.1 The Notion of Type in Architecture

The word Type varies in interpretation depending on the context in which it is mentioned. In biology, typology is concerned with putting specimens into groups due to their inherent similarities and characteristics. Thus, the theory of typology is that of conceptualising categories. The idea is similar to that of taxonomy, a practice of rigour, which determines relationships between similar observable traits and a stratified set of standards that tag a subject to a particular group.

For architecture, one notion of type, and for that matter of typology, is the one-to-one relationship of “form and function”, a concept most commonly linked to the Modernism movement and the International style. It is also a premise closely related to human production when it comes to the variance in building types. Specialisation in function, according to B.C. Scheer, can be cited as a primary contributor to the variation in building types. The level of need for specialisation differs from culture to culture of course, but this leads to a distinguishing narrative: “the house” and the “not house”. The dichotomy is one of separating the activity of dwelling and every other human activity confined within an interior. To this end, type as it relates to architecture is a matter of categorisation, relating mainly to how well a building performs its intended purpose.

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15 B.C. Scheer. Ch. 2 – the Origins and Theory of Type in The Evolution of Urban Form (2010) pp.15

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Fig. 6 - Driver for Typological Diversification: GENERAL to SPECIALISED
Nikolas Pevsner’s text A History of Building Types (1976), takes this further by developing a historical catalogue of building types. Admittedly, Pevsner states that the selection is arbitrary, yet it shows order and sequence; primarily an order of the transference of styles popularised by the ruling class, industrialisation, and an increasingly higher standard of living. The sequence reflects the forces (i.e., social, economic and political) that created the need for spatial specialisation to fulfil pragmatic ends. Change in function is also a response to evolving town planning schemes\(^1\). This is mainly seen in metropolitan areas with the creation of transport building types such as the train station and the building setbacks as they relate to the street\(^1\).

The topic of type is not limited to buildings of use, but also applies to the making of the urban realm. Rob Krier’s text Urban Space (1974) takes an analytical look at the typologies that “construct” urban space. It goes in-depth to the categorisation of the different elements of space in the urban realm, not focusing solely on the building mass, but also on the voids created by their organisation. Krier produces a series of diagrammatic drawings that are drawn out of a system of categorisation that analyses the morphology defined by the parts of the city - squares, al-

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19 Javier Mozas, *This is Hybrid*, a+t editions, Vitoria-Gastaeiz, Spain, (2011), 13.
The idea of the construction of space infers the recognition of a relationship between activity and built space, both in the urban realm and in the more private interior of a building. Henry Lefebvre discusses this idea as a relationship between form and function through the concept of signifiers in space. These signifiers are argued to trigger interactions between the body and the formal characteristics of space. All aspects of bodily interaction, including the olfactory senses (sight, smell, hearing, touch, and sometimes taste), are addressed in this concept. This takes into account the objects that are placed in that space as well, thereby evoking a certain behaviour towards the intended purpose of the space.

Lefebvre’s notion of type in architecture is primarily connected to spatiality and to determining the components that legitimise how the experience of it informs the activity and therefore the function of the space. This line of thought starts to question the narrative of specialised spaces as it relates to the human need for specificity and the re-categorisation of variations of building types. It is a certain humanism in architecture, that Geoffrey Scott defines as the “tendency to project the image of our functions into concrete forms.”

The key trend in typology in architecture, as discussed here, is specialisation. Relating to function, it suggests that an intended activity in a space is best indicated by physical means, such as objects in space, dimensions and structure. This is not limited to the interiors of buildings, but also exists in the spaces created by the different parts of the city. However, how do we actually produce these spaces in an era where land scarcity is an increasing trend, and specialisation requires established criteria to be met? The knee-jerk answer is to condense them into a single area and mix them.

This line of thinking is simple enough, and it is here that the mixed-use type of building comes into the conversation. The next line of questioning is about how a distilled notion of type and typology in architecture better informs the method of production of spaces within a mixed-use type of development. How can this mixed-use type contribute to or influence city growth and development? Additionally, the term type for the remainder of this document will be used to refer to building types.

22 Ibid: 211.

Fig. 8 - The Body and Spatial Activity (H. Lefebvre, Spatial Architectonics, 1974)
3.1.2 Mixed-use Typology and the City

The mixed-use type of building is not new. It has its origins in the early inception of medieval city-states, where it was a necessity because of the increase in population and scarcity of land for further development, due to the limits marked by defensible walls. Increasingly busy streets, tight alleys and service lanes, prefaced the stacking up of building masses and functions in order to have both living and working quarters in the same area. The most common is the house on top of a store, where the grocer has his stocks on the lower level where they can easily be viewed and inspected by pedestrians, while he, and sometimes even his family, continue daily life in the domestic space(s) provided above.

In the nineteenth and twentieth century, the mixed-use narrative concentrated on development and expansion. In terms of building types, this is the trend in transference of style, reinvention in function and adaption to evolving planning regulations. One regulation of note is the 1916 New York Zoning resolution, which introduced the consideration of the correct incline of the sun to the centre of the street. This coincided with the minimum setback required for New York skyscrapers, which forced building volumes to be set back from the street, relative to their height. There was a need for a literal interpretation by architects trained in the ideas of the Ecole des Beaux-arts, which forgets the traditions of the past. As a result, well-lit spaces, pragmatic requirements for building structures and economy were more valuable than torturously-designed French cornices.

North American cities such as New York are built on grids, which provides both order and a limit to growth and expansion. Mixed-use architecture has a reputation for augmenting the rigid reality and limitations that the city grid provides. The Downtown Athletic Club (1930) and the Equitable Building (1919), were places of incubation for this type of disruption, which aimed to superimpose functions like retail on the street level, offices on the upper to middle floors, and recreation spaces (theatres) on most upper floors. Both buildings are vertical examples of the physical interpretations of the zoning laws of the time and each maximises the potential use of available land.

In considering this, the architect Raymond Hood had a premonition that “every businessman in the city must have realised the advantage it would be to live in the Building where his office is located’. Hood suggests a vision of building a “City under a Single Roof”. This concept combines offices, apartments, businesses, hotels and

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25 Martin Musiatowicz, Hybrid Vigour and the Art of Mixing, Hybrids I = high-rise mixed-buildings (2008), 5.
26 Steven Holl. Prologue from This is Hybrid. (2011) pp. 7.

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Fig. 9 - Equitable Building, New York City (ca. 1919)
theatres in a massive volume in such a way that all daily activities can take place in the building\textsuperscript{30}; the best example of this is the Unit Buildings (1931). This was a preface to mixed-use development in architecture and a more elaborate version of the hybrid complex.

Hybrid as a term is defined as "\textit{a thing made by combining two different elements}". In biology, it is the offspring of two plants or animals of different species or varieties. The term acts as a metaphor in architecture that elevates the practice of mixed-use into a more unified and cohesive result. The distinction between a common mixed-use example and a hybrid is based on determining the level of quality of multi-functional integration with the single building volume. Is it merely decorative or is the integration complete so that the constraints of time and work hours are blurred, blending the functions into a new typology that is beyond the segregated practices of each individual form? This is for the cosmopolitan, who “moves comfortably in diversity, who is at home in situations which are not connected or parallel to what is familiar to him. Just like hybrid buildings are”\textsuperscript{31}.

Geometrical scaling of hybrid building developments in the context of the city is commonly done in two directions: vertical and horizontal\textsuperscript{32}. The vertical iteration

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Fig_10.jpg}
\caption{Downtown Athletic Club, 1930\textsuperscript{1}}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Fig_11.jpg}
\caption{Unit Building by Raymond Hood (1931)\textsuperscript{1}}
\end{figure}


\textsuperscript{2} Javier Mozas, This is Hybrid, Spain, a+t editions, (2011).

\textsuperscript{30} Ibid.

\textsuperscript{31} Richard Sennet, qtd. in THIS IS HYBRID. Vitoria-Gasteiz, Spain (2011): 42.

\textsuperscript{32} Javier Mozas, This is Hybrid, Spain, a+t editions, (2011).
superimposes functions so that one function is laid on top of another; while horizontality is treated by on-floor additions, such as increasing the number of activities on each floor. Hyper-urbanisation in the twenty-first century has seen countries like China fostering a sprawl aimed at making developments more effective and efficient in both geometrical directions. Dedicating selected land-areas and plots to a single purpose is not efficient anymore. The increasing density of the human population, which begets an increase in activity, is addressed by the “floor area ratio” method of measure.

In the project at hand, the mixed-use typology in architecture will be put under the test in terms of addressing these current issues in the city and will look at how it can influence its morphology, pre-empting future developments. For the purposes of clarity, the term “mixed-use” will be used to describe the functional pairing of building typologies. While “hybrid”, as an adjective, will be used to described an elevated result of functional blend between building typologies, elevating the conversation of mixed-use architecture.

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Fig. 13 - Mixed-use program scaling: VERTICAL superimposed programs
3.1.3 Newmarket and the NZ Urban Context

Urban design as a phrase was first mentioned in a conference at the Harvard Graduate School of Design in 1956. European industrialised cities and much of the Old World, with their abundant growth and specialisation of the land, referred to the practice of classical accumulation of material and form, starting with the progression from hamlet to village, village to town, and town to city, which imposed the culture of the inhabitants into the context of the given landscape.\(^{34}\)

In the New Zealand urban history, this process was done in reverse. New Zealand was the last land mass to be settled by people, in particular by the Polynesians and then Europeans. The city as a colonising tool was already a “well-oiled machine” and such was used to expedite the development of urban settlements by stamping grids on any available flat terrain.\(^{35}\) This was as early as 1911, after just sixty years of European colonisation. Europeans settlers had urban design ideas in their back pockets when arriving on these shores, utilising experience from settlements such as Australia in the eighteenth century.\(^{36}\) Admittedly though, the intent of the European settlements in New Zealand was in a more democratised and liberal direction, away from the penal colonies of Australia.

Two urban types were used in this process: the port and the rural service town. The port was a point of first contact to the land, and the rural service town helped propagate further development outward into the wide open landscape. Improvements in roads and railways gave access to rural hinterlands and to the birth of small towns in those areas, with the aid of useful building types often constructed in timber and/or brick.\(^{37}\) European and Polynesian people were both edge dwellers, and these urban settlement types helped establish the role of the newly formed nation as the colonial breadbasket.\(^{38}\)

Newmarket in this narrative can be categorised as a rural service town type of urban settlement. Topographically, the area has access to fresh water from the springs in the nearby Mount Eden area, via Khyber Pass road, which made the production and brewing of beer one of the first industries of the area. In 1851, the area received its name by being the site of the “new market” of livestock trade for farmers driving up from Manukau and the southern regions of the early city. This was due to being more easily accessible than the Auckland proper stock markets at the time. The opening of the local railway station in 1873\(^{39}\)

36 Ibid: 15.

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**Fig. 14 - Urban Settlement Types**
gave a further advantage to the area, and helped preface its modern identity as a major retail spot in the city.

Newmarket is quintessentially commercial in terms of its urban development. Mixed-use is manifested within this context in the form of the “house on top of a store”, a mix that was prevalent in the early nineteenth century, and also commonly seen in the early settlements of townships in industrialised Europe, and even Rome. Such a mix is an indicator of the mixing of living and working in the context of the city. It needs to be noted that this is not exactly the case currently, but rather something implied by the traces of the existing physical attributes of the structures found on the site.

Currently, the area is predominantly engaged in the retail business, with 400 stores along its main road, Broadway, in mid-2010. This continues today, with the current improvements focused on the pedestrian engagement of businesses via urban design. One example of such improvements is Osborne Lane by Isthmus, which was aimed at activating the street towards pedestrian engagement.

The identity of Newmarket as a “fashion capital”

not only for Auckland city but for New Zealand, is referenced as a main driver for re-invigorating this section of Newmarket.42

With these known facts about the site, and specifically about Newmarket, the next line of questioning focuses on the potentials and opportunities that can be harvested from the site's current condition. Though New Zealand has a relatively young urban history and context, it has mature references rooted in the colonial past. With this in mind, how can it influence the making of a morphology that embraces the multiplicity of mixed-use, which engages beyond the commercial typologies such as production and manufacture link itself to the aspect of “dwelling in the city”?

Further analysis of the existing patterns and conditions of the site relating to previously discussed topics in this section will be conducted in later parts of this document. This is with the aim of determining the possibilities, and unknown issues on producing a proposal on the elected site. This is further elaborated via graphical means and can be seen in section 4.1.

42 Isthmus, City – Fashion Captial: Newmarket Streets (2015), 34

Fig. 16 - Newmarket, Auckland: area of focus
Fig. 17 - Newmarket -- houses, businesses, paddocks (ca. 1890s)


Fig. 18 - Osborne Street, Newmarket - redevelopment by Isthmus (2013)

3.2 | Precedents

The precedents presented in the following sections are divided into two groups: formal and informal. The formal precedents refer to works that have been formulated and developed by a professional who has engaged in formal training, at some level, in the profession of architecture. The title they hold is the architect. Specifically, the two architectural practices further examined are Steven Holl Architects and REX Architects. The informal precedents here are sourced from the two influential books used in this project: Made in Tokyo (2000) and Made in Shanghai (2013). The books present a catalogue of buildings to choose from, though for the purposes of this document a selection will be presented that demonstrates the concept of mixed-use developments as previously discussed in section 3.1.2.

3.2.1 Formal Precedents

The two precedents analysed in this section of the document are examples of mixed-use architecture that are elevated to a status of hybridity as described in section 3.2.1. These examples are primarily extracted from the Hybrid Series of publications by a+t, with a focus on "verticalism" as a scale reference. These are authored examples, that is, designed by architectural professionals, and can be generalised as public, dwelling (i.e. housing), and a mixture of commercial spaces (i.e. retail, hospitality, entertainment). In one case, Museum Plaza, there is also the consideration of cultural and civic typologies, such as galleries, which are incorporated into the greater mass of the developments. Further elaboration and analysis of each project is conducted in the following sections.

Fig. 19 - Linked Hybrid, Steven Holl Architects

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Linked Hybrid by Steven Holl Architects. The building is composed of eight blocks of connected commercial, residential and public open spaces that appear to sprawl on the urban landscape of the old city walls of Beijing. The project opposes the isolation of each building through the use of cantilevered bridges, linking the variety of activities on all levels of the complex.

The primary concept of the development according to the architect is “a new twenty-first century porous urban space”. This is a response to the over-privatised nature of real-estate developments in China as of late, with buildings as “objects” free standing against the fast developing urban landscape. The architect envisioned a mix of civic, commercial and living functions, and uses elevated services, the ring, to aid connection in the daily life of the inhabitants of the building development. A sort of “city-within-a city” scenario.

The project is a great response to the site, as it addresses the existing grain of the city by the use of multiple towers that spread out across a public green space, accessible at any time of the day. A primary issue recognised by the architects here are the issues of isolation and disconnectedness that are often born of a monolithic form of real-estate development that has been prevalent in the last decades of hyper-urbanisation in China. The smaller scale and finer grain of the city, where the vibrancy and life is most abundant, has inevitably been shunned by the increasing number of developments that uses overt verticalism. The network of streets and alleys that are the life vein of the older city settlements of Beijing are systematically flattened with the aim of maximising floor area for profitability.

Fig. 20 - Linked Hybrid concept diagrams

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43 Javier Asper. Linked Hybrid / Steven Holl Architects in Hybrid 1: high-rise mixed-use buildings (Spain, 2009), 2
Linked Hybrid merges Modernist functional tendencies with public sensibilities of place. On the ground level is the public green space, accessible by residents, business tenants and the greater public as a form of breaking up the usual hulking mass of a development. The success of the project is the aspect of accessibility through a shared space for the public and the tenants. Along with questioning the idea of business hour limits within a development. Does it only need to be 9 to 5? Or can a formal solution be provided to add another aspect to a mixed-use development beyond the normal work day?
Fig. 23 - Precedent Analysis - movement pattern through public green space

Fig. 24 - Precedent Analysis, Linked Hybrid (Steven Holl Architects) - circulation pattern relevant to tower volumes
Museum Plaza – REX Architects. This project aims to change the approach to property development by distributing the financing of the design via respective volumes and function within the development. Culture is a central aspect of the project, and it orients itself differently on the site in order to respond to the sophistication of its setting. This concept is further elaborated by the architect via a conceptual diagram.

Formally, the execution of the idea is in a way literal. On the other hand, it identifies the formal quality that the finer grain of the city has relative to the aspect of "culture", which is central to the project. The smaller grain, that is, the smaller buildings of the city inhabited by the majority of the people in the city, is where most of the social activity occurs.

46 Javier Asper. Museum Plaza by REX Architects in Hybrid 1: high-rise mixed-use buildings (Spain, 2008), 9
The success of this project is the identification of where the idea of “culture” in the public realm actually occurs, which is at street level. This is where, morphologically speaking, the grain of the city is smaller and the variety of activity abundant. At this scale, accessibility by the public is easy. According to the architect, the variety of activity is a primary instigator for culture in an urban context, and is most abundant at this scale. Social life is more vibrant and apparent here.

One critique is given here, as there was no mention of the aspect of time, such as accessibility beyond the normal business hours, in the proposed idea of “putting culture at the heart” of the project. The form of the building suggests that there is access to the heart of the project via vertical mechanical means, but how accessible is this? And how public is this “cultural heart”?

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Fig. 27 - Precedent Analysis, Museum Plaza (REX Architects), extended analysis

LEGEND

Access Point
Disruption to Vertical Imposition
Volumes Superimposed
3.2.2 Informal Precedents

In 1964, Bernard Rudofsky held an exhibition in MOMA (Museum of Modern Art) in New York, titled *Architecture without Architects: a Short Introduction to Non-pedigreed Architecture*. The exhibition attempted to break down the narrow concepts of the art of building by introducing the unfamiliar world of non-pedigreed architecture. Little is known of these examples, they possessed no name; rather they were given generic labels such as vernacular, spontaneous, indigenous, and sometimes rural.

The shortage of documentation on anonymous architecture means that often the view is distorted. This initial exposure influenced the survey and eventual publication of the book titled *Made in Tokyo* (2001), which then influenced another publication on the same theme entitled *Made in Shanghai* (2013). These books were done in collaboration with practitioners, academics and students in the field of Architecture, with the aim of selecting pieces of architecture that contribute to the definition of each title city’s identity. These books are also the primary source of the informal precedents analysed in this section.

The examples derived from each book can, on a simple level, be considered as mixed-use. They are buildings that functionally perform more than one elected capacity. These are three or more, with a consideration of functions that are, as much as possible, parallel to the current modalities found in the design brief of section 4.1.2 and the physical attributes, scale and grain, of building types of the chosen site.

The three case studies here are analysed in terms of the results of the functional mixing demonstrated in each. The effectiveness is secondary and is only used as a reference in order to comment on the formal negotiation of functional types within a single volume. It is also used to discuss about the possibilities beyond the established theoretical requirements of single building typologies, and the inception of mixed-use architecture.

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The first batch of case studies are from the book *Made in Tokyo*. In 2001, Momoyo Kajima of Atelier BOW-WOW engaged a group of students in an effort to catalogue examples of architecture that would help establish an expression of the identity of the city of Tokyo. They steered away from the typical glossy pieces of architectural cover pages, but rather engaged in finding examples of *Da-Me Architecture*. These architectural pieces are examples that give “priority to stubborn honesty in response to their surroundings and programmatic requirements without insisting on architectural aesthetic and form”\(^\text{49}\).

The connecting theme for this set of examples is the maximisation of unused surfaces found on the buildings, similar to that on the *Warehouse Court*. The building is intended as a warehouse/storage building for the local newspaper publication in the area, with the roof to be used as a tennis court. Access to the recreation area is through the use of elevators, that are isolated to that single area alone. This effectively separates the two typologies, although through a single surface the two types are still unified in the same geometry.


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**Fig. 28** - Made in Tokyo Precedents, #01 - Warehouse Court and #16 - Car Tower examination\(^1\)

\(^1\) Momoyo Kajima. Made in Tokyo, Tokyo (2001): 42.
As with the *Sand Apartment House*, the building allocates a juxtaposed volume, already part of the building site, which has workers' accommodation along with amenities necessary for full domestic living. The sand manufacturing plant and admin office are also adjacent, making the daily running of this type of industry easily manageable. The *Car Tower* is a public parking space, car showroom, office/admin and repair shop. A single industry, the automobile, is catered for in this singular volume. The ribbon ramp around the building provides easy access for the public and clients alike, along with the workers. The ramp also reinforces the primary function of the building, and what type of end-user it intends to serve.

There is a banality in the way that the examples approach their mix, which is targeted at making the most of the given volume and surface of each building. A design cue that can be taken from this is the identification of “left over surfaces and volumes” that can be better re-used / utilised to foster another function. This is practical in nature, and is born out of looking further than the indicated function of a building.

The second group of case studies are from *Made in Shanghai*. Published in 2013, it is a continuing collaboration with the authors of *Made in Tokyo*, following the same theme of cataloguing pieces of architecture, pedigreed or non-pedigreed, that contribute to the identity of the

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**Fig. 29** - Made in Tokyo Precedents, #22 - Sand Apartment House

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1 Momoyo Kajima. Made in Tokyo, Tokyo (2001): 84
examined city. Though both are major Asian cities, the treatment and intent of selection of the buildings catalogued for this particular book is focused on the “economic, social, and political” forces that have pushed the hyper-urbanisation that has occurred in the city in the last thirty years. The catalogue is a “vaudeville-style collage, which represents the uniqueness of the landscape of a ‘devilish city’”\(^{50}\).

The case studies here have a dwelling type incorporated into the commercial aspects of their respective masses, with two of them incorporated into a single mass. This is seen on the *Wedge-shaped building* and the *Corner Bloc*; both buildings are so-named due to their shapes, which have been caused by the plot conditions they are placed in. The dwelling types are mixed through on-floor additions on the upper levels, along with the commercial aspects (i.e. shops, billboard advertisements).

Additions to the buildings were done by the residents to accommodate shared recreational spaces, such as that on the roof top of the *Corner Block*\(^{51}\). The two buildings are examples of adapting function to the morphological state of the site they are located in. Surfaces and the height of the forms have been taken advantage of for other sources.


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**Fig. 30** - Made in Shanghai Precedents\(^{1}\)

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of income.

On the other hand, *Bucket Housing* is composed of two parts: the outer Lilong housing, connected by a network of passages, and an internal mass, which is a mixed-use space composed of commercial spaces and short-term dwelling (i.e. international youth hostel, clinic and miscellaneous city facilities). This is a great example of a high density container that has embedded the activities of its users into physical spaces, in a way that excites and extends the initiative of space variation\textsuperscript{52}.

Looking through these examples, the aim is not the idea of "architecture without architects", but rather, these are examples of what people can do beyond what current government laws and regulations prescribe about urban planning and development. The strategies for producing a mixed-use building type seems banal on the surface here, but are a by-product of necessity, which is making the most of the lack of space or the given conditions that an established plot has. The inventiveness of the residences and their identification of primary physical alterations to make the most of their condition is worth investigating further as part of this project.

\textsuperscript{52} Ibid, p.17

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\textsuperscript{1} Li Xiangning et.al. *Made in Shanghai*. Tongji University press: Shanghai (2013), 208.
4 | Design
Fig. 32 - Conceptual Diagrams, drawing out design narratives for experiments One, Two and Three.
4.1 Concept & Brief

4.1.1 Concept

Given the insights gained in section 3, the idea of multiplicity is a quality intrinsic to mixed-use buildings. This denotes the ability of such a development to negotiate the programmatic requirements within the realities of the given context. This also has a banal connotation; thus the need to elevate developments to a level of hybridity that considers a knowledge of the individual types to be used in the mix.

The design concept here is therefore characterised as “spatial remix”, which is a sequence of mixed-use interventions on three different scales (medium, large and small) born out of the process of analysis of the existing building typologies within an elected urban context. The design methodology employed and its respective precedents will be further discussed in section 4.2.1. of this document.

4.1.2 Brief

With the information presented in section 3.1.3 and the analysis of the site further elaborated in section 4.3, the proposed design will operate in three simultaneous modalities (dwelling, manufacture and consumption) across three varying scales, conducted through three experiments across the site. For the purposes of this research, modality refers to the spatial and structural configurations that best signify a particular activity in a space, and will be the term used when referring to the programming of each experiment for the project. A brief description of each modality to be used in the mix is outlined in the following paragraphs:

Fig. 33 - Design Thematic Diagram
**DWELLING.** Primarily referring to the residential typology, this accommodates liveability in the city. In the New Zealand context, the most prominent sub-type is the single-detached house\(^5\), either in the villa or bungalow style\(^4\). For the purposes of this project, the “apartment block” type will be used as a reference, due to its almost apologetic relation to the New Zealand housing woes in 1935 to 1949\(^5\).

Though important to incorporate into the mix as it addresses the current issue of housing at the time of the writing of this document\(^6\), exploration of the type will be limited on its stereotypical knowledge. The topic of the residential type is simply too large for this project to fully address. The concern is the known facts about the type that can be incorporated into the proposal(s) instead.

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Fig. 36 - MANUFACTURE Precedents - Historical

MANUFACTURE / PRODUCTION. This references the factory / warehouse typology, which when mixed with the dwelling aspect of the proposal, engages the live-work duality of building developments in the city. Pevsner gives an extensive look at this particular type, albeit from a European point of view. For the purposes of this project, this typology is simply described as “any building of some size in which products are made in some quantity”\(^{57}\). From historical accounts, a certain stereotype is developed and expanded with the corresponding physical qualifications diagrammed in the following pages.

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**The FACTORY**

For the purpose of definition, the a-typical type for this modality is the “factory”, i.e any building of some size in which products are made in some quantity. By this definition, the products need not be made with the aid of machines though most products are.

1. Roof - surface protection
2. Structural Frame
3. Upper Floor(s)
4. Factory Floor

Fig. 37 - Modality Analysis: Production/Manufacture Type - factories and warehouses
MODALITY: CONSUMPTION

Fig. 38 - Consumption Precedents - Historical

**CONSUMPTION.** Observably, this is the most prevalent typology on site, the shop/store. The typology has not changed dramatically throughout its history in terms of style and execution, though technologically it has been of interest to historians, in the form of the “glass front-age”\(^{58}\). As with the previous modality of manufacture, Pevsner again gives an overview on the type and its development. Certain physical qualifications for this type is diagrammed on the following pages, and will be used as the base for the design experiment(s).

The application of these modalities will vary depending on the physical conditions analysed from the site, based on the knowledge gained from section 3, with their necessary components and modal requirements further elaborated as each design experiments are presented. Each experiment is located on a different section of the site, which also varies the scale by which the modalities will be incorporated. The level of influence of each modality will be kept equal throughout the extent of the project, to provide a more considered *hybridisation*, rather than a banal mixing.

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\(^{58}\) Ibid. Chapter 16 – Shops, stores and department stores. p.271

*Fig. 39 - Modality Analysis: Consumption Type - shops, stores & department stores*
4.2 Methodology

4.2.1 Analysis: drawing out a narrative

Analysis as a process can be executed in a variety of ways. Because of the brevity of this project, this will be conducted through a series of analytical drawings, both of the site in question and the found typologies there. Drawing, as a disciplinary ally to architecture, need not only be engaged in the practice of issue resolution and measurement but, as Kulper stated, it can also give the opportunity to have “ideas augmented through an emerging visual field of study that is discovered in the act of constructing a drawing”\(^{59}\). Drawing also establishes an examination of the known and unknown of the subject of this project. The method acts as a form of Cartesian laboratory by seeing the world as objects, sets of objects and objects reacting to one another\(^{60}\).

To this end, the following steps have been established to identify the known aspects of the subject matter to be analysed. These steps are as follows: 1) POINT + LINE + SURFACE, 2) VOLUME + VOID, 3) PATTERNS ON SITE. The steps are further discussed following sections:

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*Fig. 40 - Establishing a narrative - links and analysis of literature and narrative*
**Fig. 41** - DRAWING PRECEDENT(S): Perry Kulper, Thematic Drawing, Central California History Museum speculative project (2001)


**Fig. 42** - DRAWING PRECEDENT(S): Bryan Cantley/FormcuLA, CSUF Sentinel (2012)

01 | POINT + LINE + SURFACE. Visually, form has its genesis in the graphic elements of “point + line + surface”. This is focused on the existing rigid pattern of the subject to be examined, commonly known as the grid. The most basic of steps, this works both in the macro and micro scale, and both the vertical and horizontal geometrical scaling. The steps are expanded as follows:

1. **POINT.** Identify the structural points within the constraint of the existing context of the site, such as columns, foundations and wall sections that are used to delineate the volumes on site.

2. **LINE.** With these point elements identified in the type and its respective context, they are then linked by the line, establishing the grid. Overlapping can occur at this stage, with the chance of eliminating redundancies to distinguish minor and major systems.

3. **SURFACE.** With the grid established as a reference for the existing conditions, surfaces (vertical and horizontal) can be constructed to help distinguish spatial types. Categorising these surface constructions will be identified based on the initial knowledge established in section 3 of the document.

The result of this initial process is a framework for identifying the initial “signifiers of space” as defined by Lefebvre. These results are isolated derivatives that will be catalogued as additive references for the following steps.

02 | VOLUME + VOID. The surface, as constructed in the previous steps, will aid in the further production of volumes and voids, that will act as vessels for activity in the site. Both terms are further elaborated below:

- **VOLUME.** These are the clear distinction of mass. These volumes will house the modalities, defined in section 4.1.2, and will be an additive to the existing physical conditions on the site.

- **VOID.** Either intended or residual, the voids here will be used to aid the level of adjacency of each the defined mass (or masses) in the site. Not subject to emptiness, these voids will still incur activity in the site.

The interplay of both establishes the spatial organisation of an intervention that can be tested to yield the most beneficial relationship between the existing type and a mixed-use development on the site. This is a framework yet again, as with the first section.

03 | SITE PATTERNS. Analysis not only applies here to the found typologies, but also to the site they are found in. To this end, the identification of the formal patterns on the site relating to found existing types need to be established. This can either be used as a point of augmentation or of reference to reinforce the notion of the newness of the proposal on the selected sites.
Fig. 43 - Design Method 1: Analysis Concepts

01 | POINT + LINE + SURFACE

02 | VOLUME + VOID

03 | PATTERNS ON SITE
4.2.2 Synthesis: orchestration of components and processes

Broadly, the word synthesis is understood as the “… combining of components or elements to form a connected whole”. In Hegelian philosophy, this is the final stage of dialectical reasoning, in which a new idea resolves the conflict between thesis and antithesis. For the purpose of this project, synthesis here is more akin to the orchestration of the material gathered in the initial part of the design method here, which is literature.

Drawing is again employed as a medium, acting as a laboratory for making. A variety of schemes will be employed for drawing, but are primarily digital in nature, and will be in the form of modelling, diagrammatic schemes, and photographic collage. The assembling of parts and the act of making through the agency of the computer will help engender a level of dexterity between mouse and screen.

01 | GRID ORGANISATION. This is an organisational step, which responds to the context established by the previous steps. This links back to the readings first established on how mixed-use architecture attains dialogue with its context. The recognised grid(s) from the previous steps of the method will serve as a guide and help establish the new, that is, the proposal / experiment. The grid does not exist independent of the site, but rather relies on its initial inception to further enhance the patterns extant in the urban fabric of this site.

02 | MODAL BLENDING. The organisational step previously mentioned will preface the logical blending of the pre-established modalities of each experimentation conducted for the project. The initial methodology of analysis via the medium of drawing fosters a healthy sense of speculation for the project. Hence, this particular part of the process of synthesis attempts to solidify the speculation.

03 | FORM + FUNCTION. The previous steps lend for the amalgamation of function and form relating to the existing typology in the chosen site, that is, the mixed-use development. The result of the previous step, this play, will be used to amplify the effectiveness of both context and types catalogued on the site. Note that this blending can either be vertical or horizontal with the aspect of experimentation and iteration of the design proposal.

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Fig. 44 - Design Method 1: Analysis Concepts

01 | GRID ORGANISATION
02 | MODAL BLENDING
03 | FORM & FUNCTION
Fig. 45 - Site Analysis - Patterns and Derivatives
Fig. 46 - SITE ANALYSIS: general field work, off-hours
Fig. 47 - SITE ANALYSIS: Material and Form Derivatives
4.3 Development and Experimentation

The following sections are the results of applying the proposed method of this project. These are done in three experiments, varying in scale and the scope of the site, which will eventually result in the production of the series, which is a particular aim of the project. The general aims and result of each experiment are as follows:

4.3.1 Experiment One – the litmus test

The goal for this first experiment is to act as a starting point of iteration. The section chosen for this is an area called Osborne Lane. To the north of the section is Khyber Pass Road, on the east is Osborne Street, south is Kent Street and on the West is the service access lane of York Street. Though the intended site for the series of proposals is large in nature, as a starting point of execution for the initial ideas derived from the references need to be tested at a manageable scale.

The area is newly developed, with the aim of a higher consideration for hospitality and boutique retail. This is primarily seen on Kent Street and on the Osborne Street side of the section, with Khyber Pass Road side more engaged with the hospitality typology, with a store-front

Fig. 48 - site focus 1, Osborne Lane

Aerial image of site sourced from Auckland GIS. Sourced on 20 April, 2016.
Fig. 49 - site focus 1, physical adjacencies
style approach. The renovated area of the section is focused on utilising the internal service lane of the section for pedestrian access. This moves away from making this area a service lane for the buildings that face the street. This, with the addition of the Sanderson Contemporary Art Gallery, creates a micro-community of businesses in the lane, and gives a more boutique feel to the area.

The analysis of the site is not only focused on the existing activities conducted on the buildings there but on their current physical state. It also considers, historically, what the original buildings existing there were first intended for. With this in mind, a building of significant interest emerged, which is a two-storey brick building parallel to and directly fronting Osborne Street. With further analysis, the building shows the traces of originally being a warehouse/factory space for lighting manufacture. This is based on the received knowledge of the physical requirements of what a factory or warehouse/storage typology would reveal. This is best illustrated graphically, and will be shown in the following pages.

Fig. 50 - Osborne Lane, existing condition & derivatives
From this, a negotiation of the modalities previously established was conducted to produce a proposal aiming at relevancy for the site. The level of relevancy was based on what would yield a more productive building in terms of addressing what is missing on this initial section, which are, in this case, the modalities of dwelling and manufacture. Dwelling here is portrayed as a single bedroom apartment at the top level, with the manufacturing floor adjacent to the retail side of the existing brick building.

Reiterating again the concept of analysis as design methodology for this project, the result of this experiment is a morphological portrayal of the functional goal of an intervention complimenting the existing status of the context. This result is best portrayed graphically on the following pages. The illustrations are both wire-framed-hidden-line, which has a clinical feel, in tune with the intent of the analysis.
The result is an intervention with three levels: the entry/street level is concentrated on a service access point. The first upper level is focused on the manufacturing modality, which is essentially a work platform that covers the overall length of the intervention. The second and upper most level of the intervention has a smaller floor area, and is focused on the dwelling modality. This is implied as a dwelling for a single person ideally for the same group of people working within the business or in the general vicinity of the area.

The main critique for this initial experiment is addressing the aspect of verticality. This is in relation to an underlying aim of a mixed-use intervention in architecture; efficiency. Primarily this comments on the resulting intervention, which developed more in the horizontal direction, utilising on-floor additions instead of super-imposing functions. Though the superimposition is there, there is a greater horizontal attention to functional juxtaposition, meaning the addition of shared space and working space on the first upper level.

Opportunities for furthering the formal demonstration of the functions proposed that should be merged in the intervention need to be explored. The resulting form is substantial, but does not fully elevate the conversation around developing a mixed-use piece of architecture beyond the banality of historical precedents that do not fully hybridise an intervention of multiple functions, and which can be adaptable beyond the agreed normal work hours of the city. For the next experiment, it would be best to explore and expand on the aspect of scale and verticality and further the formal interpretation of the function of each modality in a more expressive manner. Direct or literal interpretations from the analysis diagrams could be employed to achieve this result.
Building: Retail Brick Building
Mode: Consumption
Amalgam: Factory Nest(s) --- 3/4x6m modules, starting on the level above the highest point of the existing structure facing Osborne Street.

The modality of production/manufacture would be the obvious choice for this as consumption already exists (and strongly) on site.

Historically, production and storage is the main function of the existing context (i.e. brick building), the amalgam proposed here brings this function back.

Critique: The legitimacy of the additive typologies here need to be questioned as the forms are in question and seem to be vague, random, and produced out of whim instead of being born of the precedents analysed using the tools previously established as part of the background research on the notion of type in architecture.

OSBORNE ST | Analysis & Synthesis #2

1a | Factory --- with minor access via Osborne street. (i.e. 2-wheeled vehicles) and pedestrian access.

1b | Factory --- with access via Kent street. Bigger vehicles allowed.

2 | Existing facade --- brick face patina.

3 | Factory Platform --- linking production.

Fig. 52 - Osborne Lane, formal derivatives
4.3.2 Experiment Two – changing scales

The change of scale for the second set of the design experiments is done to address the comments previously mentioned for the results of experiment 1. The comments are previously concerned about the relation of increase in height and the floor area ratio of a proposal aiming for efficiency and multiplicity on a small plot of land.

The site of the second experiment is an empty lot, currently used as an impromptu parking space for the businesses surrounding it. It is sandwiched by two streets: Kent Street on its Northern-most side, and Teed Street on the Southern end. On the West is Gillies Avenue, which furthers stretches on to the Southern end of the greater site. Immediately to the East of the lot is the Newmarket Food Plaza, a commercial block used for short term parking on the upper three levels, while the lower level is focused on food sale (fresh produce and immediate consumables; a food court) and edge boutique retail on the North and South streets.

Fig. 53 - Experiment Two Site Focus, Newmarket Food Plaza

\[1\] Aerial image of site sourced from Auckland GIS. Sourced on 20 April, 2016.
Fig. 54 - Identifying Links and Patterns on Site

1 Building footprint and property lot sourced from Auckland Council GIS, sourced on 20 April, 2016.
The Newmarket Food Plaza is a reference to mixed-use development that does not exhibit aspects of hybridity, as previously defined in section 3.2.1 of this document. The execution of the mix of commercial, food sale, and parking space encourages commerce, but does not qualify for substantial personality to address the particular aims of the design brief for this project. Though, it is of interest due to the initial framework. This refers in particular to the rigidity of its reinforced concrete bays.

As a starting point, the analysis illustrated for the site of the second experiment exposes the rigidity of a grid. It organises structure and volumes and voids, communicating a designated activity. At a certain level, this is a banal finding that can be found in most commercial spaces. The aim, of course, is to maximise the possible profit allotted for the activity. This reflects on the amount of resources needed in the first place to execute a building at this scale. This is an economic reality that needs to be addressed, given the potential of a well-designed mixed-use architecture.

At the macro level, there is also the issue of addressing the street in terms of the placement of the development and how it engages with it. The street here acts as a sort of “connective tissue” between the existing buildings on either side of it. No one really owns it, yet everyone has some claim to it63. There is a shared consensus of action and re-action between the car and the pedestrian in this area. The demarcation of the sidewalk and the main road is physically indicated, yet merging in this sense.

The resulting design unifies the varying functions established in the design brief. Stepping into this line of questioning, a simple massing exercise was conducted that responded to the known environmental factors - site, sun and orientation, views and wind, and accessibility to the site. Accessibility here is not only by car but also on foot. The result is a U-shaped building, with a courtyard at the most northern elevation of the proposal, which the majority of the spaces will face, stemming from the aim of having a well-lit space while maximising useable space with as much variety of activity as possible. The illustrations on the following pages will focus on that.

63 Georg Perec. Species of Space, The Street (1974), 4
Fig. 55 - Formal Analysis of Existing Conditions - points to line, surface to volume, volume to function
Fig. 56 - Massing Study, facing the most northern side of the proposed building mass
Fig. 57 - Massing and Facade Study, southern most side of proposed building mass
To conclude, this design has a more monolithic result than the previous one. The focus here is the engagement of the design to the wider context of the site, and an increase of scale is the simplest means to that end. Admittedly this is obvious and to a certain level questionable. Critically, the concept of analysis, and in turn the identification of existing formal patterns relating to function and activity on site, is a driver for the general planning strategy for the blending of the modalities established for this experimental version.

The main critique is the question of the mix in this proposed mixed-use development. Simply put, the three modalities are not readily identified by the viewers. This can be attributed to the formal unification of the programme, due to the inclination of the author to respond to the environmental factors known on site. Detail is also an issue that needs to be addressed in the experiments, referring to the construction and material detail in a project that addresses the existence of multiple typologies. For this experiment, the scale is simply too big to consider and to further explore this aspect of a critique. Therefore, the third and final experiment will seek to address this aspect of the mixed-use type through the smallest building scale found on site.
Fig. 59 - Tectonics #1, axonometric projection
Fig. 60 - Tectonics #2, axonometric projection @ 1:200 scale on A3 sized sheet.

ENTRY TO THE MANUFACTURING FLOOR IS ALSO ACCESSIBLE ON THIS FACADE SYSTEM.

1. Street level & pedestrian scale interaction.

2. Underground parking, 2 levels for residents (primarily) and commercial renders (secondary).

3. Internal production courtyard.

4. Transition spaces between East (residential) & West (commercial) wing.

5. Transition roof top spaces.
Script | Facade and vertical transportation for the 'dwelling wing' of the development.

South-east transport service core, with facade engaging the street for a more pedestrian scale consideration.

1. Sidewalk & Pedestrian scale interaction.

2. Underground parking, 2 levels for residents (East wing).

3. Entry level production space, various industry not exclusive to the existing work on site.

4. Residential wing and clusters for the development.

5. Residential roof top space.

Fig. 61 - Tectonics #3, axonometric projection @ 1:200 scale on A3 sized sheet
4.3.3 Experiment Three – reading intent from the details

The third experiment focuses on communicating the intent and concept of the proposed project through details of the physical construction. Executed on the smallest grain found on the site, this will build on the insights gained from previous iterations. The concept for this particular experiment is about geometry performance, while constantly considering the blend of modalities that was previously established.

With this purpose in mind, the chosen site for this iteration is found on the more Southern part of the site. The location can be described as part of the "service laneway" of the area. This is primarily linked to the existing condition of this area, which is: first, a laneway for service access, which is defined as a delivery of goods and services for the different businesses found there. Second, an area mostly made up of smaller auto-shops that services private vehicles both in terms of repair and custom work.

Fig. 62 - Experiment Three Site Focus
Continuing on from the previous experiments, the same method of analysis was used. Though to vary it, the focus here is on the finer details of the typologies in question. This implies material, construction techniques, and components that contribute to the making of space. This is a literal interpretation of the idea, though this is needed in terms of testing the idea of how mixed-use can be interpreted, not just in the bigger picture of merging functions, but also in the construction details.

The following illustrations show an analytic approach on the macro level of the area of the third experiment, down to the details of the site, such as components, connections and material surfaces. Drawing compositions will continue to be the method of analysis and extraction and information, though the introduction of digital collage will be used to imply materiality in this third experiment. Diagrammatically, the aspect of horizontal scale is engaged for this iteration of the design. For the brevity of this section, further drawings and illustrations relating to this experiment are placed in the appendix section of this document.

**Fig. 63 - Experiment 3, site analysis and breakdown**
AIM | Continuing from the trend of the previous experiments is the goal of locating the formal characteristics of the site, in relation to the found types on site.

EXIST. CONDITIONS | For this scenario, the prevalent type is the light-industrial, warehouse type, which is in adjacent aesthetics with the ‘factory’ type.

RESULT(S) | The resulting graphic shows possibilities of an interaction between the possible intervention to be produced and the exist. industry on site. Consideration on how the ‘dwelling’ modality can hybridise with these exist. conditions would be a challenge, and will be a developmental issue for the design.
Since the scale and allotted area for this intervention is the smallest out of the three experiments, the result is rather compact. The programming is still the same as in the previous experiments - dwelling + manufacture + consumption - with a further focus on negotiating these requirements in the interior rather than on the external premises of the intervention. Due to the horizontal shape of the plot for this experiment, an approach of on-floor additions is used based on the previous information regarding scale and mixed-use.

The modalities are programmed on each level as follows: on the entry / street level are the manufacturing modalities – a wide-open space where industrial equipment can be placed. Circulation is moved to the side through the use of industrial platform lifts. The first upper level is shared space for administration, with open voids that allow the users above to look at the lower level. The most Southern end and also the second upper level are related to a smaller dwelling space for the works or for the immediate owner of the business.

---

This particular intervention has a finer consideration with regard to tectonics, which is not only about the composition of structural components, but also refers to the use of materials. This builds on the idea of “spatial signifiers”. Specifically, on the concept that form and material, referring to the physical attributes of the built world, all act the same when contributing to communicating the intended activity for the chosen space. With reference to the site, it would be concrete structure and masonry concrete units (MCU), steel and prefabricated sheets (corrugated metal profile, timber panels). The material selection references the industrial character of the area. For variation, softer materials (like timber) were used to indicate the dwelling modality. These were also used to establish the office spaces in the resulting experimental building. The harder materials, steel and concrete and MCU, were used to indicate the primary structure that establishes the rigidity of the building.

The result of this experiment is bare-bones. The lack of decoration is due to the desire to maximise the potential of the structure and materials to indicate the intended activity in the space. In this case, the modality of manufacture/production is the most prominent. Consumption, in the form of retail and services, can be facilitated in the same space with the dwelling modality separated and put on the highest level to let that space have access to natural light and ventilation.

Fig. 67 - Experiment 3, exploded axometric
The critique here is the lack of consideration for the labourer’s well-being. The focus was on creating enough floor area for activity in terms of the manufacture and consumption modalities established in the brief for this project. There is a literal interpretation of the conceptual drawings, derived from the initial analysis of the both the site and the concept of the horizontal scale when producing a mixed-use building type. Perhaps a consideration of, again, increasing height relative to the zoning rules could be considered.

4.3.4 Additional Design Notes

The material produced, that is the drawings and imagery and composites, are selected to highlight the result for each of the previous three experiment. Additional supporting material and design process references can be found in the appendix section. Specifically, for experiment one in appendix A, for experiment two in appendix B, and for experiment three in appendix C. This aims to not overwhelm the reader and to succinctly communicate the main ideas that can be taken from each development in the project.

Fig. 68 - Experiment 3, material placement
**Fig. 69 - EXPERIMENT THREE:**
Front/Entry details

**Fig. 70 - EXPERIMENT THREE:**
Vertical Transport Transition Details

**ROOF to WALL**
- composite wall and roof with universal steel profiled beam

**FLOOR to WALL**
- composite wall on steel beam structure, connecting to prefab lightweight concrete floor

**FLOOR to SUB-FLOOR**
- concrete floor to sub-floor masonry structure

**SUB-FLOOR and FOUNDATION**
- concrete floor and wall, sub-floor structure and strip footing

**ROOF JUNCTION(S)**
- composite roof, with universal steel profiled bays

**FLOOR to WALL**
- prefab light concrete floor with universal profile steel beam

**WALL & FRAME**
- universal profile steel beam with prefab wall housing for vertical mechanical transportation

**SUB-STRUCTURE & FLOOR**
- concrete floor and wall, sub-floor structure
Fig. 71 - Experiment 3, design corner set b

Fig. 72 - Experiment 3, design corner set b

**FLOOR to WALL**
- prefab light concrete floor with universal profile steel beam and composite wall

**WALL to SUB-STRUCTURE**
- composite pre-fab wall to sub-floor concrete structure

**FLOOR & APERTURE**
- prefab light roof composite and skylight

**ROOF & STRUCT. FRAME**
- composite prefab roof and universal profile steel frame

**FLOOR & SUBSTRUCTURE**
- concrete floor and structure (subfloor)
5 | Conclusions
5.1 | Summary

The literature around the topics of types in architecture and mixed-use in the city, and a brief overview of the New Zealand urban history and context has given indications on the gaps in the state of knowledge about the project at hand. The literature review helped to establish an initial narrative, which was used to produce a design brief and concept for the project. Additional conceptual methodologies, spring-boarded by the literature review, were found and used to establish a design methodology of analysis and synthesis that helped conduct the three experiments located on the site in Newmarket.

The initial results from the site analysis constitute a brief that aims to programme three modalities - dwelling + manufacture + consumption - into a series of mixed-use interventions incorporating all three. A series of three design experiments using the method of analysis to synthesis was then conducted to produce the design proposals on site. The first experiment resulted in a medium scale intervention that stemmed from an existing building, growing itself from it. The second experiment, increased in scale, produced a monolithic high-rise, that has a north facing courtyard, with massing strategies intended to unify the modalities intended for each experiment. The third experiment, focused on detail, executing in the smallest scale for the site, resulted in a stripped-down version departing from the previous two.

After concluding and reviewing the results of the experiments, an updated version of the three interventions is produced, leveraging the identified strengths and addressing the learned issues of each. The final results is a framework reflective of both the existing typological conditions and the morphological realities of the urban site, where the series is located.\textsuperscript{65}

\textsuperscript{65} Author’s Note: The “updated” version mentioned in this paragraph will be added after examination has concluded and comments received.
5.2 | Critique of Work

Some unexpected insights came out of this project. The primary one was the concept of typology variation in architecture can be summarised simply as the dichotomy of “house” versus “not-a-house”. This was urged on by the need for specialisation, and gave way to the separation of dwelling and labour from human life. This idea has interest, not just to determine what is mixed-use in terms of architecture, its precedents and its current development, but also to tease out the concept of what cognitively indicates to a person the type of activity and behaviour they deem appropriate in a space.

This in turn gave way to a series of experiments that were born from a formal analysis of function for varying building types within an elected urban context. This elevated the question of not merely trying to make mixed-use architecture, but justifying why it is made and how it is made. Thus complicating the process of mixing functions into a singular building form. Though, from the findings it was necessary to elevate the mixed-use type of architecture from something trending and banal practice into something more meaningful. This was an issue that came from the early critique of the project, and was thus addressed by the discovery of re-thinking the production of space in architecture as its own premise. No matter how great this discovery was, it could have still derailed the whole process as it could also put the project on a tangent that was completely unrelated to the project.

The methodology employed in the making of the project needs to be expanded. The initial method of drawing is justifiable, due to its previously mentioned alliance to the practice of Architecture. The use of a computer to speed up production and clarity of the drawings in three-dimensions was a sound although predictable path to take, and the last experiment exposed that this wasn’t enough. This gave an insight in the need for expanding on the methodology and using alternate ones, if the current yielding any interesting results that progresses the project. This could, perhaps, be pursued by the method of physical modelling, that is actual material testing and construction. This in turn, could have affect on the scale that the project can manageably be engaged in.
5.3 | Concluding Comments

The design outcomes revealed several ideas about the bigger picture of making Architecture that were previously unknown to the author. The simple act of drawing as part of a primary design method and finely tuned analysis, based on established facts on the subject of Type relating to Architecture, revealed a narrative and gave indications early on in the research about the formal results of the proposal. The narrative is conceptual in nature, as the project is intended to address a wide range of issues, both in the realms of the conceptual and the practical.

The resulting series of mixed-use interventions gave a view on the variety of approaches that can be taken to justify and elevate the seemingly banal practice of producing this type of development in Architecture. From the whole process, the aspect of reiteration and critical reflection on design results and concepts was the best driver for development and can further the invention of how function, form, space and activity is questioned and negotiated in the built form of architecture within the city.
6 | Reference Lists


7 | Figure Lists
Fig. 1 - Proposal on Site, Aerial Isonometric .................................................. 3
Fig. 2 - Experiment One: THE LITMUS TEST .................................................. 10
Fig. 3 - Experiment Two: A CHANGE IN SCALE ............................................. 12
Fig. 4 - Experiment Three: COMMUNICATING INTENT THROUGH DETAIL ........ 14
Fig. 5 - Experiments Explode AXO ................................................................. 16
Fig. 6 - Driver for Typological Diversification: GENERAL to SPECIALISED .......... 17
Fig. 7 - Typological & Morphological Elements of the Urban Space (R. Krier, Stadtraum, 1979); Author’s interpretation ..................................................... 18
Fig. 8 - The Body and Spatial Activity (H. Lefebvre, Spatial Architectonics, 1974) .... 19
Fig. 9 - Equitable Building, New York City (ca. 1919) ...................................... 20
Fig. 10 - Downtown Athletic Club, 1930 ........................................................ 21
Fig. 11 - Unit Building by Raymond Hood (1931) ............................................ 21
Fig. 12 - Mixed-use program scaling: HORIZONTAL on-floor additions .............. 22
Fig. 13 - Mixed-use program scaling: VERTICAL superimposed programs .......... 23
Fig. 14 - Urban Settlement Types ...................................................................... 24
Fig. 15 - General Site Plan for Newmarket ...................................................... 25
Fig. 16 - Newmarket, Auckland: area of focus .................................................. 26
Fig. 17 - Newmarket - houses, businesses, paddocks (ca. 1890s) ....................... 27
Fig. 18 - Osborne Street, Newmarket - redevelopment by Isthmus (2013) ......... 27
Fig. 19 - Linked Hybrid, Steven Holl Architects ............................................... 28
Fig. 20 - Linked Hybrid concept diagrams ...................................................... 29
Fig. 21 - Precedent Analysis - figure ground pattern ....................................... 30
Fig. 22 - Precedent Analysis - closing the links ............................................... 30
Fig. 23 - Precedent Analysis - movement pattern through public green space ....... 31
Fig. 24 - Precedent Analysis, Linked Hybrid (Steven Holl Architects) - circulation pattern relevant to tower volumes ......................................................... 31
Fig. 25 - Museum Plaza by REX Architects ..................................................... 32
Fig. 26 - design diagram (REX Architects) ...................................................... 33
Fig. 27 - Precedent Analysis, Museum Plaza (REX Architects), extended analysis .. 34
Fig. 28 - Made in Tokyo Precedents, #01 - Warehouse Court and #16 - Car Tower examination ................................................................. 36
Fig. 29 - Made in Tokyo Precedents, #22 - Sand Apartment House ................. 37
Fig. 30 - Made in Shanghai Precedents ........................................................... 38
Fig. 31 - Made in Shanghai Precedents - Corner Block .................................... 39
Fig. 32 - Conceptual Diagrams, drawing out design narratives for experiments One, Two and Three ............................................................... 42
Fig. 33 - Design Thematic Diagram ............................................................... 43
Fig. 34 - Exterior of a bungalow designed by Samuel Hurst Seager, 5 The Spur, Sumner, Christchurch. Webb, Steffano, 1880-1967 .......................................................... 44
Fig. 35 - Newly completed Dixon Street Flats, Wellington (1943) ....................... 44
Fig. 36 - MANUFACTURE Precedents - Historical ......................................... 45
Fig. 37 - Modality Analysis: Production/Manufacture Type - factories and warehouses .......................................................... 46
Fig. 38 - Consumption Precedents - Historical ................................................ 47
8 | Appendix
Appendix A - Experiment One
A.1 - Osborne Lane Parcel Disection, ................................................................. 93
A.2 - Osborne Lane Parcel Disection, cont....................................................... 94
A.3 - MODALITY STUDY: The Factory, initial investigation, .................. 95
A.4 - MODALITY STUDY: The Shop and Store, initial investigation........ 96

Appendix B- Experiment Two
B.1 - Experiment Two Design Sketches.......................................................... 97
B.2 - Experiment Two, Plans Superimposed on site................................. 98
B.3 - Experiment Two, Plans Superimposed on site (level 3 to 5)............. 99
B.4 - Experiment Two, Northern Elevation.................................................. 100
B.5 - Experiment Two, Eastern Elevation................................................... 101
B.6 - Experiment Two, Southern Elevation.................................................. 102
B.7 - Experiment Two, Western Elevation.................................................. 103
B.8 - Experiment Two, Section AA - cross section................................... 104
B.9 - Experiment Two, Section BB - long section..................................... 105
B.10 - Experiment Two, Section CC - long section.................................... 106
B.11 - Experiment Two, Section DD - cross section.................................. 107

Appendix C- Experiment Three
C1 - Experiment Three, design sketches..................................................... 108
C2 - Floor Plan(s), entry/street level + upper level.................................... 109
C3 - Floor Plan(s), second level (dwelling) + roof level............................ 110
C4 - Floor Plan(s), Underground Level..................................................... 111
C5 - Experiment Two: Elevations NORTH +EAST...................................... 112
C6 - Experiment Two: Elevations WEST + SOUTH................................. 113
C7 - Experiment Two: Sections AA (scale @ 1:100, A2 paper size).......... 114
C8 - Experiment Two: Sections BB (scale @ 1:100, A2 paper size).......... 115
C9 - Experiment Two: Sections CC, DD, EE (scale @ 1:100, A2 paper size) 116

Appendix D - Final Design: concept & development
D.1 - Experiment One: initial Sketches, site analysis, form study and street elevation sketch, ................................................................. 118
D.2 - Experiment One: design and form development, programmatic evaluation, ................................................................. 119
D.3 - Experiment Two: initial site study sketches........................................ 122
D.4 - Experiment Two: spatial planning and strategy.................................. 123
D.5 - Experiment Two: massing development............................................ 124
D.6 - Experiment Two: spatial evaluation................................................... 125
D.7 - Experiment Three: initial sketch and massing study.......................... 128
D.8 - Experiment Three: tectonic evaluation............................................. 129

Appendix E - Final Design: presentation graphics & visulations
E.1 - Final Design Presentation, FULL PANEL........................................ 132
E.2 - Experiment One: Main panel, massing strategy and design in context, ................................................................. 133
E.3 - Experiment One: site map panel....................................................... 134
E.4 - Experimention One: site context analysis........................................ 135
E.5 - Experiment One: Exploded Section AXO 1-1.................................. 136
E.6 - Experiment One: Exploded Section AXO 1-2.................................. 137
E.7 - Experiment One: Exploded Section AXO 1-3.................................. 138
E.8 - Experiment One: Southern Elevation.............................................. 139
E.9 - Experiment One: West Elevation..................................................... 141
E.10 - Experiment One: Perspective 1-1, Kent St approach....................... 143
E.11 - Experiment One: Perspective 1-2, Osborne Lane............................ 144
E.12 - Experiment One: Shared platform interior..................................... 145
E.13 - Experiment Two: Design on site & massing strategy...................... 147
E.14 - Experiment Two: Site Plan for design............................................ 148
E.15 - Experiment Two: Context analysis................................................ 149
E.16 - Experiment Two: Exploded Section AXO 2-1.................................. 150
E.17 - Experiment Two: Exploded Section AXO 2-2.................................. 151
E.18 - Experiment Three: Exploded Section AXO 2-3............................... 152
E.19 - Experiment Two: South Elevation.................................................. 153
E.20 - Experiment Two: West Elevation................................................... 154
E.21 - Experiment Two: North Elevation.................................................. 155
E.22 - Experiment Two: Perspective 2-1, Teed St approach....................... 157
E.23 - Experiment Two: Perspective 2-2, internal courtyard....................... 158
E.24 - Experiment Two: Perspective 2-3, internal foyer............................ 159
E.25 - Experiment Three: Design on-site & massing strategy.................... 161
E.26 - Experiment Three: site plan for design........................................... 162
E.27 - Experiment Three: Context Analysis and derivatives....................... 163
E.28 - Experiment Three: Exploded Sectional AXO 3-1............................ 164
E.29 - Experiment Three: Exploded Section AXO 3-2............................... 165
E.30 - Experiment Three: Exploded Section AXO 3-3............................... 166
E.31 - Experiment Three: North Elevation.............................................. 167
E.32 - Experiment Three: East Elevation.................................................. 169
E.33 - Experiment Three: Section 3-1, upper level.................................... 171
E.34 - Experiment Three: Section 3-2, lower level.................................... 172
E.35 - Experiment Three: Perspective 3-1, apartment living area................ 173
8.1 | Appendix A – Experiment One

A.1 - Osborne Lane Parcel Dissection

BUILDING: Brick Retail
MODE: consumption
TEXT(S): street, instigated an engagement and priority on the "pedestrian" in terms of the street scape of Auckland. Newmarket being dubbed as the fashion centre of Auckland, maintains the identity of retail and in the sense, a walkability that should have the pedestrian primary, and the vehicle secondary but at the same time catering for both.

ANALYSIS: the approach to this building is its main descriptor. Reminiscent of what High Street would be in London, dialogue with the street and the pedestrian is primary. Surfaces, as part of the entry to the stores, are deconstructed from the original motif of the area of having them solid. In this interpretation, the entries of the stores use the surface above as a shelter and a signifier of the area, with a modern renewal aiming at the core business model in the area - fashion retail.

BUILDING: Restaurant / Eatery
MODE: consumption
TEXT(S): Facades found on Khyber Pass road, interact with the street. Observations found this to be a walkable area, but goal oriented instead of attracting exploration and interest solely based on discord of space.

ANALYSIS: here is consumption with a focus of perishable goods i.e. food products. Speed and access via facade entry adjacent to the street with a further surface i.e. the sidewalk overhang from the building, addressing shelter for the pedestrian. Facade treatment, the building will be treated as a single building given that the existence of parti walls have been identified to operate independently but the parti-wall acts as both structure and property line.

BUILDING: Osborne Lane Access / Fashion
MODE: consumption
TEXT(S): Quintessential to the area, fashion and retail come hand-in-hand in the pedestrian aspect of this quieter area of Newmarket. Comparatively opposite to the activity on the main boulevard of Broadway.

ANALYSIS: From the onset, the type here still maintains the modality of consumption, albeit on the more human scale, with sizes of each mass corresponding to the level of the pedestrian. Enough to introduce an aspect of intimacy that is akin to a neighbourhood. Structurally they follow the same lot of the existing grid, though internally it doesn't simply adhere to the aspect of consumption such as retail.
Osborne Lane Parcel Dissection, cont.
For the purpose of de-ENJPOUIFQSPEVDUTOFBE made with the aid of machines, though most products are.

A.3 - MODALITY STUDY: The Factory, initial investigation
Historically, the evolution of this type is done in “slow steps.” There is a sequential difference in the shape of the Forum of Trajan, to the Roman stall, to the street shop in London.

But technologically and architecturally it is, from the glazing of the shop front, formerly being open to the street but the development of larger glass panes merited the display of produce.

The output and evolution to the semi/larger subtypes of the department store gave way to the connection to the “market halls, conservatories, and exhibition buildings.”
8.2 | Appendix B – Experiment Two

B.1 - Experiment Two Design Sketches
NORTHERN Elevation
1:200 scale @ A1 paper size
E2  EASTERN Elevation
E:200 scale @ A1 paper size
SOUTHERN Elevation
1:200 scale @ A1 paper size
WESTERN Elevation

1:200 scale @ A1 paper size
Section BB - long section
1:200 scale @ A0 paper size
Section CC - long section
1:200 scale @ A0 paper size
8.3 | Appendix C – Experiment Three

C1 - Experiment Three, design sketches
C2 - Floor Plan(s), entry/street level + upper level (1:100 scale @ A2 paper size)
C3 - Floor Plan(s), second level (dwelling) + roof level
(1:100 scale @ A2 paper size)
C4 - Floor Plan(s), Underground Level 1 & 2
(1:100 scale @ A2 paper size)
C5 -  
Experiment Two: Elevations NORTH + EAST
C6 - Experiment Two: Elevations WEST + SOUTH
C7 - Experiment Two: Sections
AA (scale @ 1:100, A2 paper size)
Section BB

C8 - Experiment Two: Sections BB

(scale @ 1:100, A2 paper size)
C9 - Experiment Two: Sections CC, DD, EE (scale @ 1:100, A2 paper size)
8.4 | Appendix D – Final Design: concept & development
8.4.1 Experiment One – Sketches and development

D.1 - Experiment One: initial Sketches, site analysis, form study and street elevation sketch
D.2 - Experiment One: design and form development, programmatic evaluation
8.4.2 Experiment Two – Sketches and Development
Experiment Two: initial site study sketches
D.4 - Experiment Two: spatial planning and strategy
Experiment Two: massing development
D.6 - Experiment Two: spatial evaluation
8.4.3 Experiment Three – Sketches and Development
Experiment Three: tectonic evaluation
8.5 | Appendix E – Final Design: presentation graphics & visualisation
EXPERIMENT ONE
MODAL DISTRIBUTION MASSING STRATEGY
1. Dwelling - Apartment Block
2. Consumption - Retail On Street Level
3. Manufacture - services entry, storage and fashion workshop

A Change In Scale
EXPERIMENT TWO
MODAL DISTRIBUTION MASSING STRATEGY
1. Dwelling - Apartment Units
2. Consumption - Retail On Street Level
3. Manufacture - Food Prep & Office Spaces

Intent In Detail
EXPERIMENT THREE
MODAL DISTRIBUTION MASSING STRATEGY
1. Dwelling - Apartment Units
2. Consumption - Office & Sales
3. Manufacture - Light Industry, auto-repair and custom work
**The Litmus Test**

**EXPERIMENT ONE**

**MODAL DISTRIBUTION**

1. Dwelling - Apartment block
2. Consumption - Retail on street level
3. Manufacture - Services entry,acking and fashion workshop

**MASSING STRATEGY**
E.3 - Experiment One: site map panel

The Litmus Test

EXPERIMENT ONE

MODAL DISTRIBUTION MASSING STRATEGY

1. Dwelling - Apartment Block
2. Consumption - Retail On Street Level
3. Manufacture - services entry, storage and fashion workshop
Experiment One: Site Context Analysis

1. Dwelling - Apartment Block
2. Consumption - Retail On Street Level
3. Manufacture - Services entry, storage and fashion workshop

Surface: Unifying enclosure
Surface: Enclosure transition
Point: Structure boundary
Surface: Transition face
Surface: Business facade
Surface: Transition patina
Exploded AXO-SECTION 1-1

1. Dwelling - Apartment Block
2. Consumption - Retail On Street Level
3. Manufacture - services entry, storage and fashion workshop

MODAL DISTRIBUTION

1. Dwelling - Apartment Block
2. Consumption - Retail On Street Level
3. Manufacture - services entry, storage and fashion workshop
MODAL DISTRIBUTION

1. Dwelling - Apartment Block
2. Consumption - Retail On Street Level
3. Manufacture - services entry, storage and fashion workshop

1. D.PLAN | Entry / Street Level Retail
2. 1 PLAN | Tailors Manufacture
3. 2 PLAN | Open Shared Space
Kent Street Approach

PERSPECTIVE 1-1
Osborne Lane
PERSPECTIVE 1-2
Open Platform

PERSPECTIVE 1-3
A Change In Scale

EXPERIMENT TWO

MODAL DISTRIBUTION
1. Dwelling - Apartment Units
2. Consumption - Retail On Street Level
3. Manufacture - Food Prep & Office Spaces

MASSING STRATEGY
E.15 - Experiment Two: Context analysis

- Dwelling - Apartment Units
- Consumption - Retail On Street Level
- Manufacture - Food Prep & Office Spaces

MODAL DISTRIBUTION

E.15 - Experiment Two: Context analysis

VOLUME | Circulation Mass i.e. stairs, elevators

FUNCTION | Boutique Retail

POINT | Structural Signifiers

VOID | Thoroughfare through plaza

SURFACE | shared existing wall, contributing to scale of mass

SURFACE | derivative plot

VOLUME | Derivative
1. Dwelling - Apartment Units
2. Consumption - Retail On Street Level
3. Manufacture - Food Prep & Office Spaces
1. Dwelling - Apartment Units
2. Consumption - Retail On Street Level
3. Manufacture - Food Prep & Office Spaces
1. Dwelling - Apartment Units
2. Consumption - Retail On Street Level
3. Manufacture - Food Prep & Office Spaces
Teed Street Approach

Perspective 2-1
Internal Courtyard

PERSPECTIVE 2-2
Internal Foyer
PERSPECTIVE 2-3
EXPERIMENT THREE

MODAL DISTRIBUTION
1. Dwelling - Apartment Units
2. Consumption - Office & Sales
3. Manufacture - Light Industry, auto-repair and custom work

MASSING STRATEGY
E.26 - Experiment Three: site plan for design
Experiment Three: Context Analysis and derivatives

SURFACE | Function Container
... enclose site pattern(s)

VOLUME | Fabric Warehouse
... juxtaposed mass, major framework for site pattern

POINT(S) & LINE | Exist. Structural Indicators

SURFACE | Facade & Street Rhythm
... transition to proposed interior

SURFACE | Street Link
paved hard surface, foot and vehicle traffic

VOID | Auto-Workshop
paved hard surface, foot and vehicle traffic
MODAL DISTRIBUTION

1. Dwelling - Apartment Units
2. Consumption - Office & Sales
3. Manufacture - Light Industry, auto-repair and custom work
1. Dwelling - Apartment Units
2. Consumption - Office & Sales
3. Manufacture - Light Industry, auto-repair and custom work
MODAL DISTRIBUTION

1. Dwelling - Apartment Units
2. Consumption - Office & Sales
3. Manufacture - Light Industry, auto-repair and custom work
SECTION 3-2

Entrance/Street Level +0.000

Upper Workshop +3.000

Loft / Bedroom Level +9.000

Residential Level +6.000

Upper Level

Lower Level

Sections:

- Section 3-2 (Lower Level)
- Section 3-1 (Upper Workshop)
- Entry/Stree Level +0.000
- Upper Workshop +3.000
- Loft / Bedroom Level +9.000
- Residential Level +6.000
Apartment Living Area
PERSPECTIVE 3-1
Declaration

Name of candidate: JONNEL MAMAUAG

This Thesis/Dissertation/Research Project entitled: **SPATIAL (RE)MIX: unthinking the production of mixed-use architecture in the urban context** is submitted in partial fulfillment for the requirements for the Unitec degree of **Master of Architecture (Professional)**

Principal Supervisor: KERRY FRANCIS

Associate Supervisor(s): JULIAN RENNIE

**CANDIDATE'S DECLARATION**

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- Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set for this project by the Unitec Research Ethics Committee.

Research Ethics Committee Approval Number: ..............................................

Candidate Signature: .......................................................... Date: 30/09/2016

Student number: 1508181

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Full name of author: JONNH L. MANAVAG

Full title of thesis/dissertation/research project ('the work):
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Practice Pathway: ARCHITECTURE
Degree: Master of Architecture (Professional)
Year of presentation: 2016

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