Abstract

With the increasing population in Auckland there is a lack of housing being built to keep up with the population growth. We have been left with low density housing from the past which is being subdivided to intensify housing. However, the local town centres for these suburbs are in poor condition and lack appropriate building typologies and public open spaces which are necessary for the community.

This project explores how a local town centre can be rejuvenated by introducing high density housing, mixed use and public open space. The project will look at what type of elements will be useful in achieving these objectives such as housing typologies that will be useful in getting a variety of people into the town centre, public open spaces which will allow for different types of activities throughout the town centre, and mixed-use buildings that will allow for local businesses, and job opportunities.

The site selection for this project was Papatoetoe as it is a town centre that I grew up in and would like to see improved. Papatoetoe’s Town Centre is based along a major traffic artery and is primarily used as a way to access or leave South Auckland instead of stopping to access Papatoetoe. Much of the town centre’s open space consist of parking lots and car dealership yards instead of useable space for the community.

Many of the principal buildings in the town centre are obsolete, under-used, or in poor condition. For a future role in the district in which the population will be increased Papatoetoe will need planned public space, which is entirely absent in the present layout. Literature and precedent research has shown that there are multiple ways to explore the transformation of local town centres. These allow for less vehicle dominant town centres and will be used for design decisions throughout this project, in which the aim is to imagine a regenerated form for the Town Centre.
Acknowledgements

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Thank you to my friends who have inspired me and made me want to push myself further every day throughout this project. Special thanks to Aman Singh for helping me with all my site visits and helping me take photos.

Finally, I would like to thank my parents who have supported and encouraged me to never give up during the good and bad times through my seven years at Unitec.
Figure 1. Papatoetoe town centre along Great South Road showing Hunters Plaza.
1.0 Introduction
1.1 Background of the project

Suburban sprawl has been a long term problem with Auckland’s growing population. Large plots of lands are developed without thinking about the consequences of having low density housing. We are seeing higher density suburban areas being developed, such as Hobsonville. However, the topic that will be looked at in this research project is how a low density suburban local town centre can be redeveloped by introducing different building typologies and public spaces.

The local town centre that will be looked at is Papatoetoe. Papatoetoe consists of two local town centres named Old Papatoetoe and Hunters Corner. The focus of this project will be on Hunters Corner which will be referred to as Papatoetoe town centre in this document. The Papatoetoe town centre was formed along Great South Road in the 1860s\(^1\) and has consisted of single level local businesses. The spaces around the buildings of the town centre are made up of large parking lots, roads and car dealership yards. There is a lack of public open space and the current town centre is orientated towards vehicle access and circulation. These problems were the motivation for selecting this town centre for this research project as there is great potential for Papatoetoe’s town centre to be revitalized, renovated, and remodelled.

The first problem is that there is very little housing within the town centre. The Unitary Plan proposes that the town centre is where housing and other mixed-use buildings should start to be developed. The growing population needs to have the appropriate building types and spaces for the local community, otherwise they remain isolated from each other.

This leads to the second problem which is that there are very few mixed-use buildings. Mixed-use buildings will be essential if housing is to be introduced to a town centre, the occupants of housing in the town centre will need amenities and other functions at the public level (ground level) that are within walking distance, there is an opportunity to create office space for jobs, which will further improve the town centre and encourage people to live within walking distance to all routine functions.

The third problem is that there is a lack of public space and landscaped spaces; aside from the recreation grounds (sports) directly south of Papatoetoe’s town centre, everything is asphalt. Potential public spaces are made up of parking lots and car dealerships, which are located on ideal corner sites and have become the context for a town centre, and its historical building which has been there since the 1860s.\(^2\)

There is potential for Papatoetoe to be transformed and introduce a variety of high density housing, mixed-use buildings, and public spaces. The addition of these missing elements to the town centre will transform Papatoetoe’s town centre and provide an identity as a local centre.

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2 Auckland Council, *Papatoetoe: 150 Years of Civic Life*. 
1.2 Project outline

This project aims to re-vitalise, renovate and remodel a town centre over a period of 20-25 years to become a mixed-use local centre that can be independent of other town centres. The project will look at a hierarchy of spaces; roads, pedestrian focused access, public open spaces, semi-public open spaces, and shared private spaces. This will be done through introducing housing, mixed-uses and necessary amenities that are easily accessible by pedestrians and by reconfiguring the density as well as the distribution of public space.

1.3 Objectives of the project

The objectives of this project are as follows:

- Develop a new road plan that directs traffic flow around the town centre.
- Prioritize walking and biking spaces and public transport, but retain limited service vehicle access.
- Remove obsolete buildings and spaces (parking lots) to be redeveloped around mixed-use buildings and medium/high density housing.
- Bring people into the town centre by introducing diverse housing typology at medium-high densities + necessary amenities (local shops and services).
- To introduce medium and high density housing with an appropriate dph (dwelling per hectare).
- To introduce mixed-use buildings with functions that will benefit the town centre.
- To introduce different levels of public spaces in a variety of ways that will benefit the town centre; the different levels of public space will be looked at through a hierarchy of use.
- Provide local businesses better spaces to be able to handle the increase in population over the next 20-25 years.
- Develop the town centre through a spatial hierarchy ranging from public to private spaces and their relationships with other elements, defining different space types to match users and the intended use.
1.4 Research question
How does a town centre regeneration project use existing and new public open space to achieve identity and by this process re-establish its purpose as a local centre?

1.5 Scope and limitations
The purpose of this project is to look at how a local town centre can be transformed with different building typologies and public spaces. Each building in the town centre will not be fully designed due to the complexity of some building typologies: the primary elements that will be designed are building forms, access, circulation, and context to establish a prioritised future urban form.

The boundary of the site will be represented as a site plan later in the design part of the document. The recreation grounds to the south will be left alone as they are an important public open space in Papatoetoe.

Religious or cultural buildings will be left alone, the context of these religious buildings will however be developed if necessary. Important historical buildings along with the site will be left alone.

Financial Regeneration: It is important to understand who will fund these buildings and development for the town centre, where the money will come from and how the future town centre will generate money for itself for future projects. This will be looked at through overseas precedents that are able to generate value through a building with multiple housing typologies and mixed-use.

During the 20-25 year redevelopment plan for Papatoetoe town centre, local business owners will have to relocate, however this problem is beyond the scope of this research project.
1.6 State of knowledge in the field

Current theory in the field shows how local town centres can be improved by introducing different design elements that are absent (landscaping, public open spaces, housing, mixed-use buildings) in dying local centres. Sim Van der Ryn and Peter Calthorpe, in the book *Sustainable Communities: A New Design Synthesis for Cities, Suburbs and Towns* describe multiple elements that are important for a town centre. Some of these elements are sustainable design choices at different scales (building, streets, and courtyards), making the town centre predominantly for walking, biking and transit over vehicles, making agriculture a part of everyday life, and breaking down vehicle costs for an average household. There are also case studies that relate to the current state of Papatoetoe town centre, and there are multiple design strategies available to be looked at through these case studies that will be helpful in the redesign of Papatoetoe town centre.

*The Vancouver Achievement: Urban Planning and Design* by John Punter describes how important enclaves are for forming communities. An example in this book is the False Creek South Plan which explores a variety of rules that can be applied to Papatoetoe. The book also looks at the Olympic village site before any building had begun.

The report by Alan Johnson titled *A Mountain All Can Climb* and the website stats.co.nz both provide valuable data in different areas. This data is used in comparison for statistics between Papatoetoe, Auckland and New Zealand which reveal patterns that help in supporting the design decisions for Papatoetoe town centre.

In New Zealand, the recent developments at Hobsonville will be looked at in the precedent studies. Although it is completely different from Papatoetoe in many ways there are elements of the Hobsonville model that are relevant such as the location of public spaces, the surrounding densities, and housing typologies. Hobsonville will prove useful as a precedent as the aim is to get a variety of different medium-high density housing typologies/flats that could be introduced into Papatoetoe. Public space will also be looked at as it is important to understand the relationship between the housing units and the different types of public spaces within Hobsonville.

Avondale is another local town centre located in west Auckland that is currently in the process of regeneration. It has introduced multiple apartments into the town centre and nearby. One of the apartment buildings brings the street elevation up to 4 storeys as the other buildings along the street line are single level retail stores. The ground level of the apartments consists of offices and other uses. This is a useful precedent for Papatoetoe as it shows how a different housing typology is integrated into the current Avondale town centre.

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1.7 Methodology

The research methodologies used in this project fall into 3 categories; a general survey of relevant literature, a study of precedents that have application in this context, and a close survey of the site, which will include both social factors and (quantifiable) physical factors.

The research will begin with a site study of Papatoetoe and Hunters Corner; its history, context, contours, demographics, current condition of buildings and intentions set out in the Unitary Plan. This research will help identify the beneficial elements for the town centre that should be kept (religious buildings, apartments) while also showing which elements could be removed or transformed.

The next step in research will be selection of literature and precedents will be based on how it related to the objectives of the research project. Design elements and decisions will be based on the information gained from the study of the literature and precedents and applied to the long-term urban plan design strategy of the new Papatoetoe town centre.

The first design decisions will be the road plan at 1:2000 scale. This will be developed on a plan that locates what elements of the town centre will remain and what will be removed. This will be followed by 1:500 plan development of sections of the road that will need to be looked at in detail. The road plan will be the base plan from this point on, however it will be revised as necessary. The road plan will be looked at more in detail especially during the development of different levels of public spaces.

The second design decision will be to identify and plan site use. This will involve looking at boundaries and what functions will be located within this site along with what context and connection it has to other spaces and sites. These divisions will be represented on a developed plan carried on from the base plan. Sketching will also be used to represent these spaces along with annotations to identify data and building uses. Mass modelling will be used to represent the typical building heights that will be achieved in different parts of the town centre.

With the development of site use plan current users of the town centre that can be expected to expand their activities will be identified. These will be the local businesses and religious buildings. New building uses will be introduced based on the research done with demographics. This will include high density housing, community related buildings (library, community centre), new potential businesses and the opportunity for a home-work building typology.

Alongside the development of the plan the local businesses will need new places to operate from. As this is a 20-25-year long project, some business owners will have to relocate while parts of the town centre are redeveloped. They will require the same connection to the street that they had previously, a programming problem that will beyond the scope of this design study.

After the development of master plan parts of the town centre will be looked at and developed through 1:500 plans, sections and sketches. The spatial hierarchy in the town centre will also be revisited primarily in plan (1:2000) and 1:500 in detail. Sketching will be used to develop the spaces to give a better visual representation of what the “spaces” could be transformed into and what it could feel like to be in these spaces. Literature and precedents will continuously be referred back to for further development and to support design decisions.
1.8 Results of the research

The research of literature and case studies has revealed that in order to improve local town centres such as Papatoetoe high density housing with mixed-use must be developed along with public open spaces to allow for opportunities for new and old communities to meet. The research looked at building types that could support this such as local and oversea apartment developments with similar contexts to Papatoetoe. Larger scale examples were also looked at to provide an idea of where to develop public open space and mixed-use buildings.

The literature revealed the importance of making traffic circulate around the town centre to get ‘through’ or to access parking. This allows for better pedestrian space and encourages transit and biking as alternatives to be used. The town centre without unnecessary secondary roads linking to other roads allows for public open space to be developed. The use of spatial hierarchy is helpful in identifying where pedestrians or vehicles would have priority in the use of a variety of spaces. The research has led to a design that takes these elements into consideration and has great potential to be an example of what other similar local town centers in Auckland could be transformed into.
Figure 2. Papatoetoe town centre along Great South Road showing local businesses and vehicle traffic.
2.0 Site Analysis and study
2.1 History

Settlement in Papatoetoe was initially started in 1851 after the opening of the Tamaki bridge providing an easy access over the river. The Papatoetoe highway district was formed in 1865. The railway was opened in 1875 and the town centre known today as Old Papatoetoe grew up around the Papatoetoe Railway Station. However, while the rail service was important, the early 20th century growth of road-based transport, including bus routes generated a second town centre, 1km to the east of the railway on the junction of east-west routes to the station and the Great South Road. This intersection became known as Hunters Corner, after Elizabeth Hunter’s tearooms which became famous. Her house was where the bus service ended its route at the end of the day. This point then was referred to as ‘Hunters’ as the bus service referred people to Elizabeth for enquiries. Her house was located West of the intersection of East Tamaki Road and Great South Road. South of her house was Bert Moe’s Garage. He was known for teaching many people to drive and was one of the few garages in Auckland at the time. Currently the automobile garages and workshops are located behind offices South of East Tamaki Road, not far from where Bert Moe’s Garage was.

An important historical building in Papatoetoe is the St Johns Presbyterian Church, which is located along Great South Road being near the entry point for Papatoetoe town centre (Hunters Corner). It was opened in 1863 and was rebuilt in the 1922. The site is currently surrounded by car dealership yards.

There are multiple important buildings and recreational facilities that are located south of the town centre such as Papatoetoe Centennial pools, the Bowling Club and the Recreation Grounds along with the recent sports centre built in 2011.

Other notable buildings along Great South Road are:

- Hunters Plaza mall, which opened in 1991. It is a single level shopping mall with a partially underground carpark with 650-700 parking spaces.
- Kadampa Buddhist Temple, opened in March 2008.
- Sri Dasmesh Darbar, a Sikh Temple located on Kolmar Road, close to Great South Road.

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7 Papatoetoe Heritage Trail.
8 Ibid.
2.2 Demographics

The general demographic and statistics of Papatoetoe show valuable information that will be relevant in the design decisions for this research topic. The demographic data will be compared with the rest of Auckland and New Zealand and by comparison will identify problem areas of Papatoetoe. This demographic survey summarises the current profile of the suburb under the headings of population, transport, education, work/employment, housing, and family structures.

Population growth

Looking at the statistics it is clear that New Zealand’s population is continuously growing. Between the 2001 and 2013 census Otara-Papatoetoe had an increase of population from 66,405 to 75,660, a 13.9% increase. Auckland had a 22% increase in population in this time period and New Zealand had a 13.2% increase in population. By 2043 the population of Auckland is expected to be over 2 million.\(^9\)

Comparing the population growth data to the supply of dwellings being built we can clearly see that we are struggling to keep up. High density needs to be introduced to our suburban local town centres rather than expanding suburban sprawl. The single detached home makes up the majority of housing in Auckland, and in Papatoetoe as much as anywhere else. Medium-high density housing typologies being used in suburban areas such as Hobsonville. Is a recent event; most of Auckland’s housing has been built at densities of less than 15dph.

Transport

19.2% of Papatoetoe’s households own 3 or more vehicles, 17.6% of Auckland’s households own 3 or more vehicles and the rest of New Zealand has 16% of all households with 3 or more vehicles (majority of this percentage comes from Auckland). This shows that Auckland relies more heavily on vehicles, especially suburban areas that need vehicles to get around to jobs and other routine functions.

10% of households in Papatoetoe have no vehicles, this number is 17.6% for Auckland and 8% for New Zealand. We get a comparison between Auckland and a suburban zone within Auckland showing us that residents of Papatoetoe heavily rely on vehicles to get around for their day to day destinations (schools, shops, jobs). Household trips using vehicles will be looked into further in the content of other urban regeneration studies, including Sustainable Communities: A New Design Synthesis for Cities, Suburbs and Towns.

![Number of Vehicles Owned](image)

Figure 8. Number of vehicles owned per household.
Education

The percentage of people over the age of 15 with a qualification of at least NCEA level 1 has increased from 65.2% in 2006 to 71.3% in 2010 for Papatoetoe. For Auckland these figures were 80% in 2006 to 83.2% in 2010 and New Zealand. Education related community facilities are limited. There is a small public library in Old Papatoetoe, with few computers and limited facilities to support required activities for 2017. After school hours facilities are very poor.

The majority of schools in Papatoetoe are in the lower decile range schools. In A mountain All Can Climb⁷, Alan Johnson gives evidence of how much better a Decile 8+ school is in comparison to decile 1-3. 88% of students in decile 8 schools leave with at least Level 2 NCEA while only 61% of students leave with NCEA Level 2 in decile 1-3 schools. The data shows that this percentage has increased over the years but Papatoetoe still needs better up to date education facilities in the town centre.

Figure 9. Qualifications of population aged 15 and older comparison.

Figure 10. Percentage of students leaving high school with at least NCEA level 2 from lower and higher decile schools.
Area of Work

18% of the working population of Papatoetoe are labour workers and machinery drivers. This is significantly higher than the rest of Auckland which has 11.8% working in the same field. This is because there are factories located in Otara, a lot of these factories required forklift vehicle operation.

Over 25% of the working Auckland population have professional job, while only 14.5% of the working population of Papatoetoe are in professional jobs. This is due to lack of offices in the town centre of Papatoetoe or nearby, there is very limited opportunity for office spaces in the town centre. One solution to this that will be investigated is bringing in offices in mixed-use buildings and home/work building typology to provide a variety of opportunities.

The lack of professional workers in Papatoetoe can also be linked back to the qualifications of the population of Papatoetoe. This data suggests the types of functions need to be included in the redevelopment of the town centre.
Rate at which homes are being built vs population growth

During 2014 New Zealand had an additional 42,400 growth in population, Auckland made up 36,075 of this. In comparison the number of dwelling consents issued for 2014 in New Zealand was 16,736, of this Auckland issued 7,366. In comparison to the population growth, the increase in housing supply is inadequate.

Looking at the additional population for each new dwelling we can see that in 2014 we had a 4.9 increase in population for every dwelling built. With the average number of people in a household unit being 2.8 we can clearly see that we are unable to keep up with the population growth.

This is further evidence that there is need for medium-high density housing, with this growth we cannot afford to let suburban sprawl continue while our local town centres are left neglected.

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11 Johnson, A Mountain All Can Climb, 74.
12 Ibid.
Rent and ownership

From 2001 to 2013 there has been a clear decrease in owned homes. More and more of the population is renting, this includes the pattern in Papatoetoe. However, it is more evident in Papatoetoe than Auckland or New Zealand; The amount of dwellings being rented in Papatoetoe was 45% in 2001, a figure that increased to 54% in 2013. For Auckland this number was 35.5% in 2001 and 38.5% in 2013. For New Zealand this number was 32% in 2001 and increased to 35% in 2013. The greater rate of increase in Papatoetoe is most probably due to the pooper economic pattern of the suburb.

Figure 14. Ownership and rent comparison.
Rent Increase

The rent increase for Papatoetoe has increased from $180 in 2001 to $300 in 2013. For Auckland this was an increase from $220 in 2001 to $350 in 2013. For New Zealand the average rent per week was $160 and increased to $280. A home to rent in Auckland is more expensive than Papatoetoe however, the average income earned by the population of Papatoetoe is also less.

Income & percentage of income for rent

18.2% of Auckland residents income is spent on rent in 2014. Comparing this data from the census data gathered it is clear that Papatoetoe residents are struggling with rent. Over 15% of Papatoetoe residents are making no money, 46% of the population of Papatoetoe is making between $1-30,000, 34% is making $30,001-$70,000 and under 5% of the population is making over $70,000.

Johnson states that in 2014 the average income spent on housing was 18.2%. This statistic is for Auckland. With 48.5% of people in Papatoetoe earning $20,000 it is clear that Papatoetoe struggles in terms of income percentage spent on rent. $300 a week is the average amount spent on renting a home in Papatoetoe during 2014. With the median average of income being significantly lower than the rest of Auckland it is clear that residents of Papatoetoe struggle with percentage spent on rent compared to the rest of Auckland.

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Figure 15. Rent increase comparison.

Figure 16. Percentage of income spent on rent.
Family Types & Age

The Median age for Papatoetoe is 29.3 in 2013, which was an increase from 28.7 in 2006. Auckland has a median age of 35.1 and New Zealand has a median age of 38. This links to the family properties, 23% of family types in Papatoetoe being young couples with no children, 48% being couples with children and 29% of families being a single parent with children. Comparing this data with Auckland and New Zealand, Papatoetoe has significantly less couples with no children and a lot more single parents with children.

Ethnicity

It is clear in the comparison between Papatoetoe, Auckland, and New Zealand that there is a clear difference in ethnicity in Papatoetoe. This difference is mainly a smaller percentage in the European Population and a significantly larger percentage in Pacific population.
2.3 Context

Larger context – Auckland

Hunters Corner in Papatoetoe is located in South Auckland 18km south of Auckland’s CBD, 2.5km north of Manukau city centre and, 7km from Sylvia Park. Communications between Papatoetoe and Manukau are easily accessible with public transport. Bus Services operate along Great South Road which allow easy access to the shopping centres in Manukau.

Figure 19. Locality Plan.
Papatoetoe is made up of two town centres, one based near the railway track named ‘Old Papatoetoe’ and the other town centre which is based around Great South Road, commonly referred to as ‘Hunters Corner’. 800 metres east of Hunters Corner is State Highway 1. Papatoetoe is located near a number of important regional functions such as the Middlemore hospital, the airport, State Highway 1, State Highway 20 and Manukau city centre.

The Old Papatoetoe town centre has an identity as a town centre as there are a lot more historical links to the suburb. The Papatoetoe town centre that concerns this study is made up of local businesses and the Hunters Plaza mall which has two major retail anchors. Manukau, 2km south of Papatoetoe town centre, is a major shopping centre zone with a variety of major retailers and anchor stores in its shopping centres. With Manukau being so close there is no need for a building the size of Hunters Plaza which relies on retail anchors such as K-Mart, Countdown, Noel Leeming, and Number 1 Shoe warehouse which are now mainly located in larger, heavier premises in Manukau.
2.4 Public Open Space and Landscape Space

A site analysis plan of Papatoetoe town centre reveals that there are very few landscaped spaces and public spaces. There are trees along Great South Road in some spaces, however these do not provide shade as they are tall palm trees. There is green space in front of the Hunters Inn Hotel and a few deciduous trees around the offices in Papatoetoe. The majority of Papatoetoe public open space consists of vacant car parking lots. One of the strengths of the Papatoetoe town centre is the recreation ground located to the south of the town centre which are intensively used.

Figure 21. Site plan showing landscaped spaces, buildings, roads and parking lots. Scale: 1:4000 on A4
2.5 Buildings

Starting from the north side of the town centre there are many car dealership yards as you enter into the town centre along with a church amongst the car dealerships. Local businesses make up the strip along Great South Road from beginning where East Tamaki Road Intersects Great South Road down and ending where Hoteo Avenue intersects Great South Road. The buildings along this strip consist of single level buildings with local businesses such as takeaways, ethnic clothing and food stores, offices (lawyers, real estate, accountants), restaurants, bars, printing services, musical instrument shops, Jewelers and medical services. A large verandah canopy is provided for pedestrian shelter and additional signage.

The Hunters Plaza Mall is also located on this strip. However, unlike the local businesses it has a very weak connection with the street. The mall has a solid wall with no store front glazing, the entry point is located directly in front of Hoteo Avenue’s intersection with Great South Road, and creates a dangerous crossing point. The stores that make up Hunters Plaza are major retail anchors that do not help local businesses by being there. There is also a food court however, the only major fast food franchise, McDonalds, has relocated to a building along the strip shared with a bank and other restaurants. Located under Hunters Plaza is a carpark made up of approximately 700 car park spaces. During Friday night there is a night market that makes use of the large parking space.

Figure 22. Site plan showing building uses.
To the east of the Great South Road strip are automobile garage workshops that are hidden from East Tamaki Road by 2 level offices which are in good condition and a few older ones that are in poor condition. South of these buildings is a large parking lot. South of this site is a single level Hunters Inn Hotel, which takes up a large portion of land with very minimal landscaping. To the south of the Hotel is the division between the town centre and residential. There is an apartment building with decent density that will be preserved. To the West of the strip is a very large parking spot shared by an Indian restaurant and event building, a Sikh Temple and a motel. To the south of this are mixed-use offices, such as dentists, pharmacy, educational facilities, lawyers and accountants offices. To the south of these offices is the large Hunters Plaza and the Recreation Grounds.
2.6 Contours

The contours through the town centre are generally quite flat at 20 metres above sea level. The greatest slope along Great South Road is a difference of 0.5 metres over a distance of 200 or more metres. The major slopes are across Kolmar Road and the existing apartments south of Shirley Road.
2.7 Climate Conditions

Wind
The direction of wind typically comes from south westerly. The average wind speeds (km/h) and directions (degrees from north) for Auckland as taken from Auckland Airport are shown in the graph below:

Temperature
The average temperature in °C every month in 2016 is as follows:

Monthly Rainfall
The average rainfall in mm every month in 2016 is as follows:


16 New Zealand Climate and Weather
Sun

There are two extremes for sun angles during winter and summer. These are 29.7° during winter and 76.7° during summer. During the shortest day of the year, which is 22nd June, the sun will rise 7:29am and set at 5:24pm, during the longest day, on 22nd December, the sun will rise 5:59am and set at 8:41pm.

2.8 Traffic, Roads and Car Parking
There are two major roads intersecting in the town centre of Papatoetoe, Great South Road and East Tamaki Road. The traffic flow through the town centre is continuously busy throughout the day. Other sources of traffic are coming from Old Papatoetoe town centre, past Middlemore Hospital, and from State Highway 1, which flows along East Tamaki Road and intersects with Great South Road.

Vehicle users are primarily wanting to get through the town centre, vehicle users that are wanting to access the buildings in the town centre will park at one of the main parking lots accessed by secondary west/east axis roads. The town centre is built along Great South Road which is very busy, not helped by multiple smaller roads that intersect Great South Road feeding traffic into Great South Road. These smaller roads can be transformed for a better purpose instead of providing access to large parking lots. The traffic flow through Papatoetoe does make the town look busy but the pedestrian traffic flow is not as intense as the flow of vehicle traffic.

There are no bus lanes located within the town centre, however further north along Great South Road a bus lane begins. Bus traffic will still get stuck in traffic congestion which for Papatoetoe is all day from 7am to 8pm.

As stated in the landscape analysis of the Papatoetoe town centre the majority of open space is large parking lots scattered throughout the town centre. The majority of the larger parking lots are made up of 100+ parking spaces with the largest being under Hunters Plaza at 700 parking spaces.
Figure 33. Streets through Papatoetoe town centre.
2.9 Unitary Plan for Hunters Corner

The Auckland Unitary Plan has classified Papatoetoe Hunters Corner as ‘Business – Town Centre’. The definition provided for what this means by the Unitary Plan is as follows:

“The Business – Town Centre Zone applies to suburban centres throughout Auckland, the satellite centres of Warkworth and Pukekohe, and the rural towns of Helensville and Wellsford. The centres are typically located on main arterial roads, which provide good public transport access.”

The 'Business - Town Centre' are described as follows:

“The zone provides for a wide range of activities including commercial, leisure, residential, tourist, cultural, community and civic services, providing a focus for commercial activities and growth.”

These are the goals for what a business town centre should aim to be under the unitary plan. The current Papatoetoe town centre achieves very little of the description for a business town centre. It needs improve commercial spaces; currently the town centre has no residential units, there is very little reason for tourists to go to this location, the cultural aspect of Hunters Corner is very lacking, and there are absolutely no civic spaces as the town centre is orientated towards vehicle priority.

The aim of this project is to provide for these elements and to also focus more on the pedestrian’s circulation and spaces which will require walkable access to the described elements. Looking more specifically at Papatoetoe, the denser housing units are to be developed around the town centre. This document is about introducing these housing typologies into the town centre first, however the development of these housing typologies around the town centre later on is definitely a positive step as it allows for a more active town centre within walking distance for residents.

Height restriction for Hunters Corner is 16.5m or 4 storeys. This building height is necessary as it prevents a 60m building next to a suburban household. However, in the heart of the town centre this limitation will need to be removed where density will be at its greatest.

The Unitary Plan removes the need for minimum parking spaces in centres that are well used by the public. This is very important as higher density buildings will have residents of 100+ people on a limited sized site. This prevents the need for large underground car parking and encourages a pedestrian focused town centre. The town centre will need everyday amenities to support the local population so this will be taken into consideration during the design stages. The removal of minimum parking spaces also provides the opportunity for the parking lots in Hunters Corner to be redeveloped into public spaces or building sites.

Figure 34. Unitary Plan for Papatoetoe town centre.

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19 H.10 Business – Town Centre Zone.
3.0 Literature
3.1 Sustainable Communities: A New Design Synthesis for Cities, Suburbs and Towns

The book *Sustainable Communities: A New Design Synthesis for Cities, Suburbs and Towns* by Peter Calthorpe and Sim Van der Ryn looks at town centres and different design strategies that can be applied to town centres to improve them from the current model to a town centre model that focuses on pedestrian circulation, community, mixed-use buildings and public open spaces. This book provides multiple elements that are important to the redevelopment of Papatoetoe town centre which are looked at under the following: The Strip, The Mall, Transportation, Spatial Hierarchy and Sustainability.

The Strip

Van der Ryn describes a common element in many small town centres as “the strip.” The strip consists of single level buildings along the major road running through the town with multiple lanes for each direction where parking is located at the back in large lots and signage on the buildings along the strip is used to attract attention from vehicle users that are passing by.\(^{22}\)

Van der Ryn proposes a design strategy to make the journey from home to neighbourhood shopping walkable, the strategy would be achieved through introducing housing at high densities behind the strip and make circulation primarily for pedestrians.\(^ {23}\) This creates a safe walkable distance between housing and local businesses, one of the objectives for this research project.

The large parking lots and many unnecessary secondary roads in Papatoetoe town centre is a problem. A case study by Van der Ryn of El Camino Real in California can be related back to these problems. The case study describes the town centre as single level, cheaply built structures with parking lots on front and back of the site.\(^ {24}\) A solution that is proposed by Van der Ryn is to relocate the parking lots to the ends of blocks, remove any through traffic on ‘through’ traffic roads.\(^ {25}\) Peter Calthorpe states that East-West Axis roads should be treated as a paved path, vehicles should only access these paths for emergency and drop off zones with a few parking zones provided. The North-South axis roads should remain as they are, carrying major traffic through the town centre.\(^ {26}\) These solutions relate directly to the grid layout of Papatoetoe, with north-south routes prioritised and east-west routes with a secondary status, and will be applied and developed in the urban plan for Papatoetoe town centre.

\(^{22}\) Van der Ryn and Calthorpe, *Sustainable Communities*, 42.

\(^ {23}\) Van der Ryn and Calthorpe, *Sustainable Communities*, 43.

\(^ {24}\) Ibid.

\(^ {25}\) Ibid.

\(^ {26}\) Van der Ryn and Calthorpe, *Sustainable Communities*, 25.
The Mall
Van der Ryn describes the shopping mall as a “an innovation of the 1950s.” He states that the success of these malls were because they eliminated the need for trips to the city, and they provided adequate parking, and has an assortment of services and goods that could be purchased by buyers. However, the problem with this is that there are major retail stores required in order to anchor the mall and make it successful. This kills off other local businesses over time and eventually the major retail stores start to occupy the main strip. A well-known fast food franchise transitioned from the Hunters Plaza mall to the strip along Great South Road provides an example of this erosion of local small-scale businesses.

Transportation
Fred Reid breaks down typical vehicle transportation from home to destinations into grouped percentages. These groups will be helpful to determine the building functions that are needed within a walkable town centre. Firstly, 24% of transportation from home is to shopping, education and religious locations. Secondly, 15% of vehicle trips are to services such as banks and laundromats. Thirdly, 33% of vehicle transport from homes are for work. This can be eliminated by providing office buildings to create an opportunity for professionals to move to the town centre for jobs. Lastly, 20% of vehicle travel from homes is to recreational activities. Calthorpe proposes that private vehicle users should only occupy a 30% of the road, the other 70% should belong to public transport, pedestrians and cyclists. The destinations provided within this data will prove useful in placing routine functions within walking distances from the housing units in the town centre. A case study of Sunnyvale in California also reveals how a street pattern can be reorganized to enforce major arteries and eliminate ‘through streets’.

Figure 37. Aerial view of Hunters Plaza.
Figure 38. Vehicle trips from the home to destinations.

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27 Van der Ryn and Calthorpe, Sustainable Communities, 44.
28 Fred A. Reid “Real Possibilities in the Transportation Myths” in Sustainable communities, 169.
29 7 Principles for Building Better Cities | Peter Calthorpe
30 Van der Ryn and Calthorpe, Sustainable Communities, 47.
Spatial hierarchy.

“Without the hierarchy of public street, courtyard, and private room, our cities become anonymous, one place much like the next, with both the individual and the community losing the locus of identity.” – Peter Calthorpe.31

A case study in Golden, Colorado influenced the cross axis design in this project between two different public spaces. The case study of Golden, Colorado showed that the pedestrian focused spaces were on a 90° axis across the major road. This contrast allowed for a pedestrian dominant space and in contrast a vehicle-user dominant road. This formation allowed a lot of housing to be able to access these pedestrian focused spaces lined with local businesses, schools, and services.32 This clearly defined the spatial hierarchy between vehicle orientated spaces and pedestrian orientated spaces along with access into these spaces and the services that lined them. Instead of allowing vehicles ease of access to these spaces, pedestrians have priority in getting to the services more directly and with greater safety.
Sustainability

The type of trees used is important as they serve different functions. A Deciduous tree will provide shade during hot summers and during winter it will lose its leaves letting sunlight through to heat up pavements and access buildings. As the majority of Papatoetoe is currently paved roads and parking lots it creates a large zone that stays warm and forces people to walk across unshaded parking lots and pavements. Using trees along circulation paths will prevent the pavement from heating during summer. The location of trees on either north or south side of the street is important too depending on the location. On a pedestrian path that is east-west axis, trees would be located to the south side of the street. The north side will be shaded by buildings and canopy. The trees to the south will provide shade to the buildings south of them and let light through in winter to heat up those buildings.

A case study of Sunnyvale in California revealed that it was well known for its fruit trees. A design solution that was proposed used a drip irrigation system to feed grey water to the surrounding fruit trees, trees and other vegetation. As the design for the Papatoetoe town centre will including new dense housing typologies and trees, the grey water from these homes can be used to feed.

Seven Elements for a town centre

In a Ted Talk, Peter Calthorpe describes seven elements that are important for a town centre.

1. Preserve natural environment, agriculture and history
2. Mixed-use, mixed income, mixed land use, housing typologies
3. Walking opportunity
4. Bike access
5. Connection of primary elements
6. Access to public transport
7. Focus on location in place

Previously Van der Ryn stated that high density housing needs to be introduced into town centres behind the strips. Peter Calthorpe proposes that these high density housing typologies should vary and cater to multiple groups of people. Mixed does not mean only mixed-use buildings, but means mixed income, mixed land use, mixed variation in housing typologies that are affordable to a range of different people. This attracts a diversity of people into the town centre and relates to the demographic study of Papatoetoe as it shows at present no variation in housing and limited jobs in professional areas.

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33 Van der Ryn and Calthorpe, Sustainable Communities, 46.
35 7 Principles for building better cities | Peter Calthorpe
3.2 Residential Flat Design Pattern Book: A Resource of Ideas and Precedents to Guide Better Design of Residential Flat Development

The *Residential Flat Design Pattern Book: A Resource of Ideas and Precedents to Guide Better Design of Residential Flat Development*\(^{36}\) provides good design elements that will be applied at urban plan scales. These elements include setbacks in different types of environments, good building precedents of mixed housing types and multiple housing typologies. Several examples illustrated in this design guide are relevant to the development proposed in this thesis.

The Hudson building by Allen Jack and Cottier located in Alexandria NSW is a useful precedent that will be relevant in the regeneration plan of Papatoetoe town centre. The focus on this building is pedestrian circulation and meeting spaces in the courtyard formed by the apartments surround it. The density that this building achieves is 226 dph on a 12,000m\(^2\) site with 272 housing units.\(^{37}\) An important element that this building provides is a ‘public through-link site’, used by pedestrians to get from one point in the city to another. The courtyard is not for residential units only, but will be partly mixed-use so the public have access to the courtyards in most cases.

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\(^{37}\) *Residential Flat Design Pattern Book*, 10-11.
The Point Building by Candalepas Associates located in Pyrmont, NSW is made up of 76 units on a 2000m² site and achieves 380dph. The building is located near accessible public transport and relates to context in terms of height and use of materials relating to the site’s history. Deep, recessed balconies are used to provide private outdoor spaces to each unit. There are also private courtyards for the residents too, a contrast to The Hudson. The courtyards are divided up into two different enclaves, separated by the building form and orientation, each of these courtyards have two openings to provide for cross ventilation through the central space. Solar gain is achieved by larger glazing spaces protected with louvres/screens for living spaces while private spaces in apartments have limited glazing sizes.

Figure 43. Top Left: Location of the Point building in context. Middle Left: Street section showing relationship to surrounding buildings. Top Right: Floor plan of the Point building showing courtyard shapes. Bottom: Photo of the Point building showing use of materials.
The Residential Guide also describes how an apartment building in an Urban or Garden (suburban) context should be designed. Urban Apartments are set to the edge of the street. This allows for the bottom levels to have potential use for businesses. The courtyard is protected by the building form from the street to create a private space. The apartment openings for balconies are recessed into the building form. Cross ventilation is possible due to the long shape of the building form as it follows the street edge.39

In contrast to this the hypothetical Garden Apartment is set back from the edge of street to provide space for vegetation and trees. Private outdoor spaces are typically formed as terraces, which also provides good daylight for internal spaces compared to the recessed form of the urban apartments. Cross ventilation is possible for apartments with the internal courtyard.40

39 Residential Flat Design Pattern Book, 28-29.
40 Ibid.
Both types of buildings have similar shaded terrace elements at the top of the building for larger apartments, while the balconies make up the middle form. Garden apartments use the bottom section as an entry component and outdoor terraces while the urban apartments use the bottom section for retail use.\textsuperscript{41}

Although this Guide is designed for Sydney developments, the information and building examples provide useful design elements for what building typologies could be proposed in Papatoetoe and where they would be best located.
3.3 City Sense and City Design: Writings and Projects of Kevin Lynch

Kevin Lynch describes important elements in the book City Sense and City Design: Writings and Projects of Kevin Lynch. The topics covered are size, density, grain, shape, pattern of a city and public open space. Firstly, the size of the city is important as it shows how familiar residents are with each other. The size of the town determines the activities and building types that could occur. At a population of 70,000, residents are unfamiliar with each other, however a social mix occurs along with cultural activities. The town is full necessary everyday amenities and job opportunities and shopping can be found. Papatoetoe is growing toward 70,000 residents and it is clear that the town centre lacks any kind of open space to support cultural activities, and the economic patterns are too poor for a social mix in its current state; in other words, Papatoetoe has little higher income population.

Secondly, increase in density in existing cities to support population growth “influences the character and functioning of a city.”\(^{42}\) Lynch describes that the increase in density in medieval cities pushed for homes to be densely packed and the consequence of this is the loss of open space such as gardens.\(^{43}\) Papatoetoe is following the demand for new housing by subdivision of land in its suburbs for more housing and to increase density, however the issue is that with the loss of the large open backyard and garden it is difficult to find open space.

Thirdly, the pattern of a city reveals a lot about its origin and character. As seen with Papatoetoe, it was a town formed around transportation elements, the railway for Old Papatoetoe and Great South Road for Papatoetoe town centre. The advantage of this is that buildings are easily accessible and easy to find along a linear strip but a problem occurring in these types of towns is the fact that there is too much “local movement” through these roads.

Lastly, there are 3 types of patterns discussed by Lynch, the axial pattern, the grid and the open space dominant patterns. The axial pattern usually is made up of parallel paths leading to an important point within the city, the grid layout is systematic and provides square sites for buildings. The open space pattern allows for space to be dominant over buildings and streets. This pattern type will be essential for Papatoetoe as it lacks useable open spaces. The current town centre is an axial pattern and primarily for vehicle movement through the town centre.

Lynch states that there are four faults with cities, summarised as discomfort, diversity, legibility and openness. Lynch proposes that to strengthen the characteristics of an urban centre, it must be studied in terms of history, landform, building type, population, and mix of activities.\(^{44}\) Analysing these elements would reveal ‘hidden potentialities’ of a centre.

Suburban sprawl has led people away from the city which has meant that other uses such as shopping, businesses, industrial uses have been dispersed. These businesses take advantage of available large land spaces which provides for parking resulting in lack of useable public open space within a local town centre,\(^{45}\) clearly seen as the case with Papatoetoe town centre. Lynch states that his ‘goal’ for these local town centres is to reinforce them with high density housing along with educational and recreational institutions. An important point Lynch makes is that we should preserve important historical buildings but we should also not restrict ourselves with the pattern of use. “We need not be bound by the structure of the past,” meaning the patterns of use should not stay the same, they need to continue changing and adjusting to be suitable in time and place.

\(^{42}\) City Sense and City Design, 39.  
\(^{43}\) Ibid.  
\(^{44}\) City Sense and City Design, 92.  
\(^{45}\) City Sense and City Design, 91.
Open space should be distributed throughout a town centre with variation in the qualities of each space to allow for different types of activities. These open spaces can be placed in unused spaces such as vacant car lots. Lynch breaks down multiple elements that would be useful for analysis. These are element types, quantity, density, grain, focal organisation, and generalized spatial distribution. Open space in a city is valued because it provides the opportunity for activities that otherwise cannot occur. Secondly, it provides a relaxed atmosphere as the density of people is lower in these spaces. Thirdly, it provides a place to communicate with other people in a relaxed space to allow opportunity for communities to form.

“Choice” is the objective used by Lynch to propose how to design open space. Choice for these open spaces in terms of activities that will occur in this space and these activities must be looked at without personal preference and without looking at vague generalized uses such as the use of open space for a normal family. Instead, Lynch proposes that these spaces should be planned for the existing communities who are likely to be using them. Accessing these open spaces also needs to be perceived as part of the public realm; Lynch states that designing access is a matter of both physical and psychological conditions, where the public perception of access right is clear.

Lynch suggests a new pattern of design, in which the following points can be used in the design for public open spaces:

- Goals that should be continuously referred to.
- Detailed studies about existing open spaces and the community.
- Flexibility in the use of open spaces.
- Patterns of open spaces should be studied and applied in a way that public open space becomes a part of the urban environment.
- View must be considered in the journey through public open space, to provide connectivity with other features of the neighbourhood.

Figure 48. Left: Diagram showing direction of view along a path. Middle: Typology of surrounding in relation to viewer. Right: Important viewing points along the path.

46 City Sense and City Design, 398.
47 City Sense and City Design, 399.
48 City Sense and City Design, 401.
49 City Sense and City Design, 411.
3.4 The Vancouver Achievement: Urban Planning and Design by John Punter

Vancouver in Canada is another North American city that has many lessons for Auckland’s suburban town centres. The book *The Vancouver Achievement: Urban Planning and Design* by John Punter provides a valuable precedent to be explored named False Creek. Before the development of Olympic Village in 2010 False Creek went through a number of development projects based on urban design planning policies.

There were three main design philosophies that were to be achieved by the development of False Creek South. These were to integrate a social mix regarding incomes, to provide enclaves for housing neighbourhoods to promote social contact, and thirdly to promote a hierarchy of open space including private yards, semi private open spaces such as enclaves or courtyards and public spaces such as parks. The sizes of enclaves are suggested to be a maximum of 166 metres across and should be used by a neighbourhood of 150 to 700 people.

Relevant design guidelines under the *False Creek South Plan: design guidelines* are as follows:

- Allowing communities to flow over traffic arteries
- Create pedestrian activity focus
- Place pedestrian thoroughfare through public spaces
- Shape and development to provide vistas of natural amenities or other urban reference points, this can be seen in the public spaces through the village centre consisting of a village square, an important building and the waterfront.
- Ensure social mix by combining various household types in adjacent enclaves,
- Create usable, visually accessible courtyards with private areas

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50 Punter, *The Vancouver Achievement*, 35.
51 Ibid.
3.5 Death of small New Zealand Towns

New Zealand literature also recognises many of the same solutions of decline and change. The report *Death of Small New Zealand Towns* by Quintin Howard discusses an important point relating to jobs and local businesses. He states that businesses such as The Warehouse and McDonalds do bring in new jobs, however this results in the local businesses being negatively effect and closing down. Although Papatoetoe is a larger town centre, it is full of local businesses that suffer because of large businesses being in the town centre.

It is important to understand that large retail stores belong in city centres such as Manukau, not suburban town centres where local businesses make part of identity of a local centre. This can be seen in Papatoetoe’s history as it has been made up of local businesses along the strip.

The experience of regenerating local town centres in Australia and North America, and theory in urban planning associated with it has been outlined and summarised to illustrate some of the general principles that will inform the project as it develops.

3.6 Definitions

**Affordable Housing** – “dwelling units designed to be affordable to persons who make up a core need household where such persons pay more than 30% of their combined gross annual income to rent an adequate and suitable rental unit, including utilities, to meet the basic housing needs of the household at an average market rent.”

**Public open space** - An open space that is freely accessible with no restrictions to the public for a range of activities. "These areas may be open to many kinds of activity, as a sandbank or grassy slope; or kinds of movement, as a prairie unobstructed wood; or to the roving eye, as a vista or the open sky.”

**Semi-Public Open Space** - Space that is privately owned but accessible to the public such as an open enclave for an apartment block with no access restrictions.

**Shared-Private Open Space** - A space that is accessible only to a select group of people such as a shared rooftop space for the residents of an apartment. Access is restricted to these spaces through entry into buildings, doors, gates, etc.

**Private Open Space** - Space with a high level of privacy that is used by a select group of individuals, accessibility is only intended for these people or with their permission.

**Spatial hierarchy** - The relationship between different types of spaces. What types of activates are intended to take place in the spaces determines who has priority in using this space, for example a road is primarily used for vehicle transport, the footpath is primarily for walking on foot, and a store is used by people to work and shop in.

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Urban Design - “Urban design is about how to recapture certain of the qualities (qualities which we experience as well as those we see) that we associate with the traditional city: a sense of order, place, continuity, richness of experience, completeness and belonging. Urban design lies somewhere between the broad-brush abstractions of planning and the concrete specifics of architecture. It implies a notion of citizenship: life in the public realm. It is not just about space, but time as well. Much of what passes for urban design is conceived only for one moment. Good urban design is more than just knitting together the townscape. Urban designers should be configuring a rich network in which buildings come and go: a framework of transport, built fabric and other features, which will create natural locations for things. Urban design structures activities.”

Suburban Sprawl - The spread of low density housing developments away from urban areas which results in communities that rely on private vehicles to get around.

Mixed-Use - A building with 3 or more functions which can be related to residential, commercial, community. For example a building with retail stores at ground level, offices and apartments on the upper levels.

3.7 Financial Regeneration

Financial Regeneration is important for the development of this town centre, a process that will be a 20-25 year programme. Firstly, the development plans will have to be priced. The money would then need to be borrowed from overseas banks to allow for the projects to be built over the next 20-25 years. The buildings can then be sold to pension funds which would be a safe investment with some return. Tenants for housing and retail and office spaces will pay rent, the local taxes from the rent will go towards paying off the bank loans and generating value for future projects for the town centre. This results in the community benefiting from the redevelopment of the town centre by having better buildings with higher rentable value and public open spaces.

Affordable housing will be integrated to housing developments, which will not be paying local taxes. An example of a building that has successfully generated value with a mix of high-end apartments and affordable housing units is ‘The Point’ development located in Sydney which will be looked at as one of the precedents for this project. Local businesses occupying the retail stores will continue to pay current tenancy prices so that routine function requirements are met as residents start moving into new housing developments within the town centre. This preserves local commerce, and is subsidy paid for by rates generated by ‘new’ land (floor space created by development of upper levels to be built over existing single storey retail.

The mixed-use buildings and housing typologies can be developed by companies such as Ockham Residential who have experience in developing buildings within local town centres, an example of this is the ‘Set’ Apartment in Avondale.

As development of the town centre is happening local business tenants along Great South Road will need to relocate temporarily. The Hunters Plaza mall can be used to allow for a temporary space to allow businesses owners to continue running their businesses. In other words, Hunters Plaza can be temporarily developed to allow for this process to happen. Hunters Plaza will be the last step in the redevelopment of the town centre.
4.0 Precedents
4.1 Avondale – The Set development by Ockham

Avondale is a suburb located in West Auckland. The current conditions of this town centre are relatable to that of Papatoetoe town centre. However, it is in the beginning stages of developing into a town centre with higher density housing. There is a 4 story apartment building with retail and office spaces at ground level occupying a site along ‘the strip’ of Avondale.

Ockham have also developed apartments 200 metres west of the town centre named ‘Set’. There are 72 units on a 7270m² site with a density of 99 dph. The interior courtyard in this building is primarily for car parking with a few trees. The floor plans have private recessed balconies looking out to open space (a race course). Entry and stair access is provided from the carpark side. There is a limited variation in the housing typologies with 1 bedroom and 2 bedroom units with a couple of 1 bedroom units having a study space that gets daylight. As it is located 200 metres from the town centre, residents have access to busses, a train station further away and local shops that are all within walking distance. Unlike Great South Road the primary road going through Avondale only has 2 lanes, but the main traffic route to the southwest has been repositioned in the west side of the town centre.
4.2 Onehunga – FABRIC by Ashton Mitchell Architects

The Fabric building shows how apartments and retail uses can mix together and be introduced to a transition zone between suburb and town. This is important and there are multiple sites in Papatoetoe’s town centre that could potentially have similar building types. The building consists of 239 apartments and is located on a 10,290m² site reaching a density of 232 dph. The amount of shared landscape space reaches 7000m², car parking is located underground which is accessible from the building. It is 520 metres from the town centre and public transport is also very easily accessible.

Comparing the information from Residential Flat Design Pattern Book with FABRIC shows that it sits in between the Garden and Urban apartment type. It sets back the residential units and places storefront units up to the edge of the footpath. The stairs lead up to a lobby for access to residential units. The residential unit types found in FABRIC are 1 bedroom units, 2 bedroom units and 3 bedroom units.

The purpose of this building is incorporate a ‘pocket neighbourhood’ into a transition space from the town centre to the suburban area. One of the landscape architects for FABRIC is Stuart Houghton, when interview by architecturenow he was asked for key design principals for the large open space. He stated that “The size of this development, with five buildings over four levels, mean it is important to create social spaces that help foster a sense of community.”

FABRIC is an important precedent that will be useful as the shared courtyard design element is anticipated for the regeneration plan for Papatoetoe.
4.3 Hobsonville

Hobsonville has seen a lot of high density housing developments through a range of housing typologies that will be a useful precedent to study. Although Hobsonville and Papatoetoe are two completely different suburbs there are elements that will be useful such as housing typologies, circulation by vehicle and pedestrians and shared public spaces.

The housing typologies seen in Hobsonville are terraced housing, standalone detached housing, apartments and housing that allow work from home situations.62 The standalone detached housing units are not going to be looked at as this building typology does not belong within a town centre. Terrace housing provided a dense housing typology, and located close to a main street there is opportunity for work at home situations.

The two apartment buildings that were looked at in this precedent study for Hobsonville are called Brickworks by Greenstone Group and Bernoulli Gardens by Ockham.

Brickworks is an apartment development made up of 4 blocks with a total of 60 housing units on a 4620m² site, reaching a density of 130dph. The functions at ground level consist of a convenience store, dentist, Physiotherapy, Medical Centre, Café and a restaurant. The housing types that make up Brickworks are 4 one bedroom units, 55 two bedroom units and one three-bedroom unit.63 There are 12 housing units that are low cost to meet affordable housing requirements. The courtyard is primarily for parking, there is very little green space as the green open space to the east is intended to be used by residents. However, on site visits to Hobsonville the public open spaces were often empty during different times of the day.

Bernoulli Gardens designed by Ockham is made up of a total of 113 apartments on a 6900m² with a density of 164dph. The types of housing units are 14 one bedroom units with a study, 48 two bedroom units, 13 two bedroom units with a study, and 17 three bedroom units. Circulation is located to the south for each block of apartments with services being located near the circulation at the deep end of the plan. There is green space in front of each apartment at ground level providing plenty of space in between blocks for daylight. The residents lounge is a shared private space intended for use by residents which also provides access to the upper levels of another block of apartments.

Bernoulli Gardens does the opposite of Brickworks in terms of open space. The car parking is located under the apartments as a parking lot while the courtyard is a green space intended for use by the residents but still accessible to the public.

Transport in Hobsonville proved to be very different to Papatoetoe, there are a lot of one way streets with restricted turning. Instead of median strips between lanes there are planted strips which are the main element to enforce single way turning points.

4.4 Olympic Village in False Creek, Vancouver by Merrick Architecture

False Creek South East was previously the location of a lumber and steel industry, leaving the site contaminated. The response to this was through a sustainable village named Olympic Village which looks to explore new potential design principals for the future of Vancouver.

An important aim for the Olympic Village design was social interaction through different places in the village including the town square, markets, plazas, the waterfront. These public spaces had no primary road arteries going through them, looking at the central public space in the village it consisted of three main elements. An important building for the community, a public square and an important focal point that is the waterfront. Enclaves of different types and sizes ranging from 800m² to 1200m² are provided to also support community interaction between residents.

Another aim for the Olympic Village was to provide a diverse neighbourhood by taking into account the need for affordable housing, buildings are requiring to have at least 20% of units to be affordable housing.

The precedent study will look at the highlighted Area 2A which has a maximum allowable residential floor area of 114,655m² which supports over 1400+ residential units as a maximum goal on a 70,000m² village, however the current model achieves 1,100 residential units due to the optimal level plan.

The maximum allowable building height is 40.5metres, however at the waterfront this limit is changed to 17.6m. To prevent every single building being 40 metres in height an optimum height plan is proposed which suggests parts of the building being at different heights. Buildings to the east and west side of their sites are typically between 8 to 12 levels. Buildings along the North and Southern side of their sites are between 3-4 levels, this prevents building heights from shading the courtyards and other parts of the buildings. The height limit along the waterfront are restricted to 2-4 levels.

In addition to the residential units, the Olympic Village included mixed-use through retail stores to support the community amenities and needs and to also include offices for local job opportunities within walking distance. Cultural, recreation and institutional uses are also included within the mixed-uses for this village.

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69 “Southeast False Creek Official Development Plan,” 23.
The street hierarchy provides for vehicle priority along the primary arteries. Vehicles are allowed access through the village for parking at limited speed, however the priority belongs to cyclists and pedestrians. Pedestrian circulation is supported by the use of trees to line the streets to provide shade for the population of the village.

Figure 63. Hierarchy of roads through Olympic Village.

Figure 64. Public open space with a town square, an important building and a focal point which is the waterfront.

Figure 65. Location of public open space in Olympic Village.
4.5 Summary of findings

Through the literature and precedent research, it is evident that to improve the Papatoetoe town centre there need to be major changes. Firstly, the roads need to be re-planned to circulate vehicle traffic around the town centre, Great South Road can continue to allow vehicles to pass through but with a limited speed and not to provide access to town centre facilities, the outer road ring can serve this purpose to provide access to parking and buildings. Doing this eliminates the need for secondary east-west axis roads within the town centre allowing them to be transformed into public spaces or sites for new buildings. The redevelopment of the roads needs to take into account the need for improved bus services as people will still need to be able to travel outside of Papatoetoe with ease.

Secondly, the lack of landscape spaces need to be addressed, the spatial hierarchy of different types of public spaces should include landscape elements to counter the current asphalt dominated town centre. The type of public open spaces should vary and suit the current population and any potential future communities that will use these spaces.

Thirdly, the strip needs to preserve local businesses and remove major retailers from Papatoetoe, this includes the removal of Hunters Plaza which supports major retails anchoring.

Thirdly, a range of high density housing needs to be introduced with variation in costs and housing typology. Further, useable public spaces and mixed-use buildings need to be designed to support these communities in a variety of ways as found in precedent studies at different scales, from villages to apartment complexes with courtyards.

Spatial Hierarchy will be the theoretical influence for the regeneration plan for Papatoetoe town centre.
5.0 Design
5.1 Site Boundary

The selection of the site boundary line was based on where the suburb portion of the town centre started. The boundary line will define what can be developed within the scope of the project. The cut off line to the south was the recreation ground, which mentioned before is in good condition, well maintained, in constant use, and does not need to be developed.
5.2 What will be retained

The buildings selected to be retained will depend on whether the building meets the objectives for this research project. Firstly, the St. Johns Presbyterian Church along with its site will be kept as it is due to being an important historical building and because it also has had extensions for community related activities. Other religious buildings such as the Sikh temple along Kolmar road and the Buddhist community centre along Great South Road will be untouched except for their external site spaces which are made up of car parking lots and will be redeveloped.

Secondly, the majority of the office buildings within Papatoetoe’s town centre are in good condition, and they will be left untouched except for two older offices along East Tamaki Road which are in poor condition. The mixed-use office buildings located along Kolmar Road have great potential to be redeveloped to allow this road to be developed from a ‘through’ street to a pedestrian focused space.

Thirdly, the recreation grounds south of the town centre will be retained. They are in very good condition and are one of the town centres strengths as they allow for communities to meet or for individuals to use this space. Improving access from the town centre to this public open space will be considered through the design process.

Lastly, the buildings along the strip along Great South Road (the main street through the town) will be redeveloped as most of these buildings are in poor condition, but the amount of space occupied by local businesses will be kept as is. Buildings in good condition along the strip will be kept and developed further.

Figure 67. What to be kept (black) and what to be redeveloped (orange). Scale 1:4000 on A4.
5.3 What will be removed

The selection of buildings and sites to be removed will depend on whether they are able to meet the objectives or requirements of this research project in benefiting the town centre. The first buildings and sites to be redeveloped are the car dealerships around St. Johns Presbyterian Church. An important building such as this should not have car yards as its context completely surrounding it and they should not be taking the best sites with the greatest urban potential.

The apartments located on Shirley Road have continuously had their cladding replaced due to poor choice in low choice material and design. This building will be demolished as it does not have any redevelopment potential. The other housing building is located along Kolmar Road and will need to be removed to allow for development of public open space.

Large car parking lots throughout the town centre will be reduced in size or removed completely to encourage pedestrian focused movement. The automobile garages located behind the offices along East Tamaki Road will be relocated to sites where the noise produced from these buildings will not be a problem for new housing units within the town centre, the automobile garage buildings are in poor condition and will be removed.

Buildings along the strip will be redeveloped as mentioned before. However, there are three buildings to be removed. These are the building to the south of the Buddhist community centre, and the two buildings at the intersection of Kolmar Road and Great South Road which are needed to allow for the development of public open space.

Lastly, there are a number of large buildings within the town centre at single level which cannot contribute to a regenerated intensified town centre. The Hunters Plaza is an extreme case occupying 2 hectares of land for a single level mall with 700 underground parking spots. Hunters Plaza has a lack of connection with public space (at present, streets) due to solid walls along the street façade with only a single entry point for an opening. This type of building belongs in city centres such as Manukau. The major retail anchor stores do not help local businesses. Another building occupying a very large site as a single level building is the Hunters Inn Hotel. This building will be removed as the majority of the site consists of asphalt for surface parking and a single level hotel with no other uses is not appropriate for a town centre.
5.4 Traffic – Base Road Plan

Changing the traffic flow to direct it around the town centre will be beneficial in multiple ways for the regeneration plan of Papatoetoe’s town centre. Firstly, it benefits the town centre as it reduces the traffic flow along Great South Road. This creates an opportunity to make the town centre more pedestrian friendly by improving pedestrian walkways and creating safer crossing points. Secondly, redirecting traffic flow around the town centre eliminates the need for unnecessary smaller roads that intersect with Great South Road. Access to parking can instead be accessible by the new roads around the town centre. Traffic along Great South Road then becomes more continuous and there can be a reduction in the number of traffic lights that fill the town centre roads. The more continuous traffic is achieved by reducing secondary roads feeding into Great South Road. To resolve the problem of through traffic at higher speeds than intended, there needs to be a threshold which will limit the speed vehicles travel at through the town centre. This threshold can be speed bumps with a change in material, which can also be pedestrian crossing points. Lastly, the redirecting of traffic flow around the town centre provides the opportunity to re-designate the now unneeded secondary roads into public spaces or buildings. Parking can be accessed from the perimeter roads to encourage use of these roads to get access into the town centre.

Figure 69. New Road Plan which forms the Base Plan for this project. Scale 1:4000 on A4.
5.5 Pedestrians, cyclists and transit users

With the change in traffic flow there is more space for development for other methods of circulation through the town centre. Calthorpe suggests that 30% of the road should be used for private vehicles while the rest should be used for other circulation methods. This has been applied to the design decisions to anticipate who will use these spaces.

The average total width of the road and footpath through the town centre is 25m. The proposed scheme provides a greenery median strip 1.5m wide with planting and pavement at crossing points. The first lane closest to the median strip is a private vehicle lane at 2.9m wide with limited speed of 40 km/hr through the town centre. The next lane is for cyclists at 1.5m wide. The third lane at 3m wide is for busses only, providing bus services with a bus lane to allow the lanes to link to existing bus lanes. The last lane will be parking spots for loading zones, bus stops and trees for shading. The remaining 2.4 metres will be for pedestrian circulation along the ‘strip’ which will be covered by a verandah canopy.

The current 4 to 6 lane roads through Papatoetoe occupy 50-60% of roads for private vehicle transport. The proposed plan uses 24% of the road being used for private vehicles, 36% for alternative circulation methods (bus and bike), 16% for loading zones, trees, and bus stops and 19% for pedestrian circulation.

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Figure 70. New road layout plan along the previous main traffic artery (Great South Road).
Figure 71. Proposed redevelopment of the 'Strip' along Great South Road with local businesses and new mixed-use functions on top.
5.6 The proposed master Plan

The proposed masterplan makes use of the new base plan to form a new arrangement for the town centre using existing elements which will be beneficial for the community and will achieve the objectives for this project. The public open space crossing perpendicularly through the Great South Road is an idea taken from the pedestrian spine to cross a major traffic artery in the city of Golden, Colorado. Another idea that influenced this space was the arrangement of public space in Vancouver's Olympic Village. The courtyards for apartment blocks are left to be easily accessible as it was shown in False Creek's previous attempts that the courtyards were underused if perceived as private space. For this master plan, the main building in focus is a new Papatoetoe Historical Museum, which will use a slightly larger floor area to the previous one located near Old Papatoetoe. Next to the museum is a town square which is 30 meters wide. This axis continues across Great South Road, at a point where there will be a raised pavement to force vehicles to slow down and make crossing points safer. The planting on the median strip allows for a break while crossing the road which leads to the eastern part of the public open space. This part of the public open space is large in comparison but allows for a variety of activities such as cultural or community events.

Within the core of the town centre are apartments of different sizes to allow for a varied community. These apartments reach a density of 200dph while apartments and terrace housing on the outskirts of the town centre reach a density of 100dph, similar to the types of units seen with the Set development in Avondale which is also located on the outskirts of the town centre. The semi-public open space provided to each of these blocks of housing units is intended to be used by everyone. The floor plans and layout of the housing units will be based on existing successful housing unit floor plans explored in the precedent studies. Affordable housing will be mixed into each development to allow for a variation in the community within the town centre as seen in the example of Brickworks from Hobsonville which included affordable housing.

Car parking will be accessed from the outer road ring or in small limited quantities within the town centre for use by specific groups. The town centre core will restrict residents from having any vehicle park spaces to encourage walking to be the main way to get around the town centre, using public transport will have an advantage over using private vehicles to go to Manukau or other nearby larger centres.

Mixed-use building typologies are integrated into the lower and middle levels of buildings such as community related facilities, medical facilities, and offices to create job opportunities. Access to housing will be separated from other functions.

Circulation by walking is encouraged by shading the footpaths with deciduous trees along the north-south axis and providing verandah canopies attached to buildings. The west-axis roads will follow the diagram as seen in literature, deciduous trees will line the southern side of the west-east axis roads while the north side of the pavement is shaded by building forms.
Figure 73. Proposed Master Plan for Papatoetoe Town Centre
5.7 Function of buildings and spaces

The town centre will be broken down into 13 sections.

1 – Section 1 will consist of a small terrace housing and apartment village with public open space in front of the church. Access will be provided from the other side directly to the open space in front of the church.

2 – This space is to be further developed. At this stage in the design process it is a large park which will be changed to offer a different function.

3 – The north west section of this site will re-use an existing building which consists of an event room on the second level and Indian restaurants and takeaway on the ground level; access will be provided from the new street to car parking behind the restaurant. To the south west of section 3 is a community related building with offices and apartments on the upper levels. To the east the strip will consist of existing local businesses with similar floor area as existing. The upper levels will consist of offices and apartments reaching a maximum of 4 levels.

4 – The west part of this site will be made of existing retail stores along with apartments and offices on the upper levels. The eastern and northern side of the site will be made of work/home apartments, with the centre of this section as semi-public open space.

5 – This site will have existing offices that are in good condition and have small parking lots to the front and a shared parking lot at the near for residents in section 4 and 6. The western and eastern edges of the site will have pavements that allow for vehicles to enter at slow speeds for parking access only.

6 – To the north east are existing offices, the remaining buildings are terrace housing with 2-3 bedroom units.

7 – To the north of this section is the existing Sikh temple, which remain untouched but the site will be redeveloped to reduce the car parking size and allow access from new road 1. The front of the building will allow for community related space to be developed over what it is commonly used as a carpark. To the south of this is a large public open space with a small parking lot accessible from new road 2.

8 – This section was influenced by Vancouver’s Olympic Village. This is a public square with very limited vehicle access. The public space is lined with deciduous trees to shade the pavement during summers. The main difference between the Olympic Villages public square is that the village had a focal point which is the waterfront. Papatoetoe has no feature, instead the west will have a new Historical museum for Papatoetoe which is relocated; to the east will be section 9 which is a larger public open space.

9 – To the south of this site will be the new fruit and vegetable shop that was previously located next to the Sikh Temple. The remaining part of this building will be medical facilities gathered together which were previously scattered throughout the town centre; the upper levels of this medical facilities will be offices. There will be some housing above the fruit and vegetable store with separate access from the south. A large public open space allows the fruit and vegetable shop to set up stalls outside. The extra space can be used for a range of activities such as cultural or community events or the night market which is held under Hunters Plaza during Friday night.

10 – Section 10 is where the housing density is at its greatest. The buildings occupying the site to the north will be existing offices and a new library. There is a private courtyard located within this space intended to be mainly used by residents but accessible to the public.
11 – This part of the town centre will remain largely untouched except for the south west corner. The building will be removed to allow for semi-public open space for the Buddhist community centre. The reason for this space is that it is important to introduce public open spaces for existing communities within the town centre. A similar reason is used for the Sikh Temple semi-public open space for their community.

12 – The automobile garages will be relocated to the west and an existing line of trees will help to separate the noise from the suburban area of Papatoetoe. The eastern side of the site will be occupied by Countdown (relocated) and other retail stores. These have been positioned to the side of the town centre to allow local businesses to occupy the ‘strip’ instead of one large business occupying the majority of the street frontage.

13 – The section is the location of Hunters Plaza which will be removed. The basement carpark leaves a depth of 2.5m from street level which will be used as basement level and car parking spaces for the new buildings. The eastern side of the site will be made of local businesses and offices while the western edge of the site will be the location of K-mart offices which occupy Hunters Plaza. The existing barrier of green trees on the Hunters Plaza site will be used for a barrier between automobile garages and the suburbs. Kmart will be removed; it is too large and stores of this size now belong in Manukau which is accessible with public transport.
5.8 Design challenges

Design challenges that were faced throughout this project included how and where landscape elements could be placed. The removal of Hunters Plaza also left a very large hole in the site that had to be re-assigned for other uses.

Another challenge was the decision of how the outer road rings should circulate and how the layout could minimize the removal of buildings. The decision to put major roads around the town centre was necessary to make larger buildings possible, and to make the core of the town centre orientated for pedestrians.

Anticipating where and how future communities may need public spaces was also a difficulty; the existing communities needed expansions or improvements to their existing sites, and the solution provided is a variation of spaces in type and size throughout the town centre.

Figure 75. Hierarchy of roads showing new main route around the town centre.
6.0 Conclusion

The result of the research has led to a project that is based around pedestrian circulation through the core of the town centre. The rejuvenation of a local town centre would be based on a plan to encourage housing developments within to create a walkable town centre. The increase in population would require appropriate routine functions and public open spaces to be located within the core of the town centre.

Spatial Hierarchy was one of the main driving factors of this redevelopment project. The hierarchy of the roads, pedestrian spaces, town squares and courtyards were important in forming an idea of who could use a specific space and what types of activities were to take place. The roads are intended to be used by vehicles, resulting in the roads being pushed to the outer edges of the town centre, the public spaces cutting through the middle of the town centre are placed there intentionally to allow everyone accessibility to this space safely. The variation of courtyards allows ease of access to the public for some open spaces while other courtyards are restricted to the residents of a certain block.

Through research of literature it is proved that local businesses are important for identity in local town centres, along with the public open spaces that are provided for the community. A lack of public spaces restricts the formation of communities by the population of a suburb. One of the many strengths Papatoetoe has is the Recreation Ground which allowed multiple sporting clubs to use these grounds: this public space with a more positive relationship to the town centre is what Papatoetoe lacked.

One of the important elements in the redesign of Papatoetoe has been to firstly look at the current local communities and what they would require; the Sikh Temple, the Buddhist community centre, and the recreation grounds are the primary examples. It was also important to anticipate what types of public spaces and buildings future communities drawn from an expanded population would require, but at the same time existing communities should not be neglected, they need to be reinforced as the new population becomes a part of the town centre.

The existing building typologies needed to change due to the poor conditions apparent in the majority of buildings in Papatoetoe. Many of the buildings were single level local businesses and needed to be developed into mixed-use buildings. Through precedent research it is revealed that a variation of housing typologies with useable open space instead of car parking was necessary. The large parking lots encouraging vehicle use within the town centre needed to be removed and replaced, with public open spaces and a variety of housing typologies behind the ‘strip’ along Great South Road. All these strategies are designed to restore Papatoetoe as a place in south Auckland, and as a contributing suburb with a clear identity in the district.
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1:20,000
Redeveloped Strip Plan 1:500
Declaration

Name of candidate: Tajvir Singh

This Thesis/Dissertation/Research Project entitled: Regeneration of papatoetoe

is submitted in partial fulfillment for the requirements for the Unitec degree of Master of Architecture (professional)

Principal Supervisor: David Turner

Associate Supervisor(s): Leneen Moore

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- The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies.
- 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: N/A

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Full title of thesis/dissertation/research project ('the work'):
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Practice Pathway: Architecture .............................................

Degree: Master of Architecture (Professional) ......................

Year of presentation: 2017 ...................................................

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