“Ludotopia”
Promoting Physical Activity within the Built Environment

Masters Thesis Explanatory Document
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Abstract

Ludo – ‘To play’

Utopia - ‘An ideally perfect place, especially in its social, political, and moral aspects.’

Obesity and sedentary lifestyles are increasing becoming linked as contributing factors to a range of health issues in New Zealand and worldwide. The issue facing society is not only how to combat and address the concerns of preventable chronic disease, but to also find ways to improve health for the individual and the collective. Through architecture, this thesis is intended to design a community physical health and education centre that has a focus on providing increased opportunity and education for physical activity within the urban environment. By evaluating the psychological and functional spaces required both within the site and the wider master planning context, this facility is intended to serve as a catalyst for architectures response to the ever growing issues of obesity, physical inactivity, sedentary lifestyles and chronic disease.

It is time for architects to worry less on the convenience and luxury of self-opening doors and more on the rise of physical inactivity within the built environment. It is estimated some of us spend up to 90% of our days within an architectural context, so its only seems imperative that architecture itself be designed to limit issues relating to chronic disease and preventable burden.
I would like to thank my family and friends for the continuous help, support and patience they have shown me over the time of my study.

Special thank you to my mother, Sandra Cyra, for every little favor she helped me with, from printing to last minute modelling. It was much appreciated.

Another thank you to my supervisors Dushko Bogunovich and David Chaplin for their support, advise and critique during the year.

Without your help I wouldn’t be where I am today. This thesis is dedicated to all of you.
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Outline of the Project

This Project is titled ‘Ludotopia’ and it explores the possibility that architecture can play a part in lessening the increasing risks of chronic disease and physical inactivity for inhabitants of the built environment.

Over time architects have had many influences, such as religion, art and more recently environmental awareness to consider when designing their buildings. More recently, literature on sedentary lifestyles and increased long term health risks has emerged that offers contradictory findings that architectural conveniences such as self-opening doors and machine operated vertical circulation are providing occupants with a better and more comfortable lifestyle. Perhaps it is time that architecture itself, becomes inspired by issues of obesity, physical inactivity and an increasing risk of premature burden directly related to a sedentary lifestyle currently present within the built environment.

Globally, around 31% of adults aged 15 and over were insufficiently active in 2011 (28% of men and 34% of women). Approximately 3.2 million deaths each year are attributable to insufficient physical activity.1

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1.1

Introduction

Physical inactivity is a major health threat to the global population and in recent years, there has been an increasing body of literature about the fact that New Zealanders aren’t getting enough physical activity. The outline of this project is to research these issues and in particular the relationship between physical inactivity and architecture.

1.2

Research Question

Can architecture promote and encourage the physical activity needed to live a healthy and sustainable life?

1.3

Project Aim

It would be a fair description that architecture provides the context in which a user can operate to achieve his or her aims and goals found in day to day life. Modern day architects may even claim their buildings go so far as to enhance the daily experience of its users, but it seems the satisfaction of these goals has achieved levels of active response by the elements of a building that have reduced the active participation of the users.

With the introduction of mechanical and digital technologies into architectural design, there has been set a comfort level for the occupants brought on by the convenience of these modern day innovations. Sensor based doors that open in front of you, the inclusion of escalators and lifts to replace stair climbing for vertical circulation and the partial decline of face to face communications provided by social networking all may provide faster and more efficient working achievements but subsequently play a major role in reducing the physical activity from our daily lives.

This reduction in the physical exertion by the users within the built environment can have a direct link to increasing statistics of obesity and subsequent chronic diseases related to a lack of physical activity in New Zealand adults. It is essential that architectural design be re-thought to increase the physical activity levels within the built environment.

This thesis proposes an alternative approach to design framework that is focused less upon the convenience or rather reduction of activity and more on the increase of physical activity levels.
1.4

Scope and Limitations

This thesis does not propose the removal of technology based inclusions entirely but instead proposes a balance between the “wants” and “needs” for convenience in architecture. It is understood that the scope of this thesis cannot change the worldwide issue of chronic disease and illness due to physical inactivity but instead proposes a range of considerations to increase the requirement of physical behaviours to produce energy expenditure by an individual.

“The idea is that we have a responsibility to society. That gives us a role as architects not just to the client but also to the passer-by and society as a whole.”

- Richard Rogers

This quote from architect Richard Rogers expresses his opinion that architects don’t just design buildings for their client but for a wider audience as well. Perhaps his views on architects responsibility to society could be related to this project.

Everyday health is of concern to all individuals. It may seem generally understood that the desire to stay fit and healthy results from the successful achievement of a physical workday routine. If the routine is broken by illness then, usually, short term medical treatments are used to combat, and somewhat reverse the illness. It is interesting to note the percentage of people, - 89% - who rated their general health as good, or better- that is, good, very good or excellent.3

78% of adults visited a GP in the past 12 months. This rate was lower than in 2006/074.

Fig 2.1: Self rated health status graph

3 Ministry of Health, *The Health of New Zealand Adults 2011/12: Key findings of the New Zealand Health Survey*. (Wellington, New Zealand: Ministry of Health 2012). p15

4 Ibid. p17

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2.0

Defining the Purpose

2.1

Health

Short term health issues such as common flu symptoms are of major importance and concern to us. Our health and well-being impacts economically, socially, and most importantly to each of us physically. It is, however the long term risk factors such as obesity, diabetes, and the onset of cancer, that seem to be overlooked and are of a much more concerning character.

Everyday life consists of routines, mentioned above, and the busy rush of daily tasks that living and working in the 21st Century demands. This stress and success driven way of living results in a prioritization of issues and activities to a “what’s more important” basis and although not everyone’s lifestyle mimics that of an inner city professional, it seems to be true that a large percentage of people rate long term health issues as of insignificant importance when compared to meeting the immediate requirements of everyday life. Long term health priorities are reserved for later consideration, usually once the onset of the problem has already begun.

Fig 2.2: Picture of rushed lifestyle
‘The Health of New Zealand Adults 2011/12, Key Findings of the New Zealand Health Survey’, published in December 2012 by the New Zealand Ministry of Health5 discusses an array of health related issues affecting New Zealand today and describes the long term health risk factors as “a developing trend that is of great concern.”6 Long term health hazards such as obesity, and physical inactivity (alongside the more publicly recognized smoking and alcohol consumption) can increase the risk of poor health and have significant long term effects including heart disease, high blood pressure and cholesterol, and even some forms of cancer -such as breast and colon7

2.2

Long Terms Health Hazards

Obesity

Obesity is one of the categories defined as of growing concern to the health and well-being of New Zealand and is of equal concern to health organisations worldwide8. Worldwide obesity has nearly doubled since 1980, and in 2008 more than 1.4 billion adults, 20 and older, were overweight. Of these over 200 million men and nearly 300 million women were obese.9

Obesity is defined as a body mass index (BMI) of 30 or more -calculated by dividing a person's weight in kilograms by the square of their height in metres-. Overweight and obesity are the fifth leading risk for global deaths. At least 2.8 million adults die each year as a result of being overweight or obese. In addition, 44% of the diabetes burden, 23% of the ischaemic heart disease burden and between 7% and 41% of certain cancer burdens are attributable to overweight and obesity.10

In New Zealand obesity rates have increased since 2006/07. The 2011/12 health statistics reveal three in ten adults (28%) were obese; an estimated one million New Zealand adults are obese.11 The obesity rate was similar for men (28%) and women (29%). A further 35% of New Zealand adults were overweight (but not obese) this means that two in three adults (64%) were either obese or overweight.12 One in three adults had a normal weight which is a serious health issue that New Zealand as a country needs to address.

Fig 2.3: New Zealand obesity graph

The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended.13 Globally, there has been an increased intake of energy-dense foods that are high in calories; fast foods such as McDonald’s, high caffeine intakes of coffee and energy supplements can be directly linked to the urbanized “rush” lifestyle of the 21st Century. An increase in physical inactivity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization also has links to a changing unsustainable method of everyday living.

5 Ministry of Health, The Health of New Zealand Adults, p1
6 Ibid, p4
7 Ibid, p20
9 Ibid
10 Ibid
11 Ministry of Health, The Health of New Zealand Adults, p34
12 Ibid, p35
A high body mass index is a major risk factor for the onset of chronic illness such as cardiovascular diseases (mainly heart disease and stroke), which is a leading cause of premature deaths in New Zealand\(^\text{14}\), diabetes, musculoskeletal disorders (especially osteoarthritis - a highly disabling degenerative disease of the joints), and some cancers (endometrial, breast, and colon).\(^\text{15}\)

Almost 200,000 adults have been diagnosed with diabetes. The prevalence of diabetes has gradually increased over the past 15 years.

One in six adults was taking medication for high blood pressure in 2011/12, which is a higher proportion than in 2006/07.

One in ten adults was taking medication for high cholesterol in 2011/12, which is more than in 2006/07.\(^\text{16}\)


\(^{15}\) Ibid

\(^{16}\) Ministry of Health, *The Health of New Zealand Adults*, p 67
2.3

Sedentary lifestyles

Sedentary lifestyles are defined as “requiring sitting or little activity.” The definition categorises a developing trend that sees the majority of one's day sitting down, whether it be at the workplace or in leisure and/or travel time. A combination of these factors has produced statistics revealing some people sit for an average of sixteen hours a day.

The desire to increase the convenience and lifestyles of our lives has implemented a change in which the norm of routine has developed. The increase in motorways and suburban developments results in us living further and further from work and requires longer periods of our day spent in vehicular modes of transport. The sedentary trend continues with development in the working environment resulting in New Zealand adults sitting for longer and longer periods of the working day. This subsequently increases the chance of developing certain types of chronic disease related to the inactivity of their daily routines.

In a newspaper article from ‘The Dominion Post’ written by journalist Tom Fitzsimons, July 2011, Grant Schofield, director of Auckland University of Technology’s centre for physical activity and nutrition quotes a potential reason for New Zealanders’ excessive sitting.

“You go back 100 years in New Zealand, 50 per cent of the workforce was involved in primary agricultural production, and it was not mechanised. Now it’s 2 per cent of our workforce and it’s all mechanised. The reality is that most of us sit all day. I call it the new normal.” Further research shows that in the 1960’s nearly half of all jobs required physical activity and now in 2013 less than 20% do.

As the accumulative figures of sedentary based employment rise, it is imperative to understand the dangers related to jobs where sitting is the primary action of the day. When one sits down at a computer or desk the electricity activity in their legs shuts off, fat reducing enzymes drop by 90%, and calorie burning slows to nearly 1 calorie per minute. People who sit down all day have twice the rate of cardiovascular disease than those who stand, and again to state it directly, people with sedentary jobs are twice as likely to die from heart disease as people with active jobs.

Fig 2.5: Image showing a sedentary form of vertical circulation

21 Ibid
Diet - The concept of living a “balanced” lifestyle, where energy intake is matched with energy expended has been seen throughout history and isn’t a concept that is new to us.

There is a common understanding that eating healthier foods that provide the right amount of nutrients that the body needs, and exercising more will help us look and feel better, give us increased energy, keep our brains active and our muscles working.

Dieting and the notion of eating less and/or better has been present right throughout history. The Greeks were one of the first civilizations to devote a great deal of attention to diet and the overall importance of health in society. The word diet is a derivative from the Greek word diaita, which loosely translates to a “way of life.” The knowledge of diet, although thorough, becomes irrelevant considering the current trends of increasing obesity and chronic disease figures worldwide.

A variety of reasons are used to represent why dieting may not be the most effective way to living a healthy lifestyle. Kari Hartel, is a Licensed Dietitian states that “some diets have certain percentages of macro-nutrients (fat, protein and carbohydrate) that you should consume, some assign points to specific foods, some eliminate certain foods, and several drastically limit or eliminate entire food groups altogether. Some diets can be downright dangerous—such as “cleanses” or any diets that are extremely low in calories or essential nutrients.” Each diet seems to have its advantages and drawbacks but overall the main problem with diets, and dieting, seems to be that many simply don’t work long-term. People often find that they can’t stick with a diet for a long period of time. This is likely due to the fact that many diets aren’t realistic, are too restrictive, too costly, too complicated, or too inconvenient to maintain.

Perhaps developing a proper understanding and education of the terms related to dieting may help raise a method of incorporating dieting into sustaining a healthier lifestyle. The progression (mentioned above in this thesis), of a “something they will get onto later” lifestyle may help define the word “diet”. For most, it conjures up thoughts of the measures people take to lose weight. It can be depicted as the removing of certain types of food. But the word “diet” itself simply refers to “what you eat.” It is common to hear people say they’re “going on” diets, but your diet is what you eat day-to-day. A direct link can be made to the origins of this word, as already discussed from Greek translations, “way of life.” It seems only imperative to find a way to incorporate a method of living that includes eating foods that benefit your health as part of the norm, to counteract the failing method of changing what you eat once the onset of chronic disease has already started.

Fig 2.6: Image representing healthy diet options

22 David Haslam, Fiona Haslam, Fat, Gluttony and Sloth: Obesity in Literature, Art and Medicine, (Liverpool, Liverpool University Press, 2009), p 77
25 Ibid
Physical Activity_

Physical Activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure beyond resting expenditure.\textsuperscript{27} The process of becoming physically active is, again, not being promoted for the first time in this research. New Zealand marketing and recreation companies such as ‘Sport New Zealand’ (formally known as SPARC) have released campaigns such as “Push Play” in 2004 and “Feel Greatness” in 2008, aimed to inspire New Zealanders to become more active, and to value sport and recreation as integral to their daily lives.\textsuperscript{28} The campaign was intended to counteract the research “Obstacles to Action”\textsuperscript{29} completed for SPARC in 2004. The campaign’s key audience were three groups of people identified in the ‘Obstacles to Action’ research: “Support Seekers”, “Others Oriented” and “Busy and Stressed”\textsuperscript{30}

These people were typically aged 25-50, were willing to be more active but felt they lacked time and support. They were motivated by being active with others, tended to have children but were busy with work and family commitments. Push Plays’ primary audience were women of all ethnicities (as women are generally less physically active). A secondary focus was men.\textsuperscript{31} The marketing campaign was seen to be somewhat of a success among New Zealanders with television adverts, promotional work and organised events occurring for a number of years. Worrying though, is the latest data released in the ‘Health of New Zealand Adults\textsuperscript{32}’ Key findings of the New Zealand Health Survey’ claiming that only just over half of all adults in New Zealand are physically active. About 54\% of adults were physically active in 2011/12. Men were more likely to meet the physical activity recommendations (57\%) than women (51\%)\textsuperscript{33} and furthermore since 2002/03 there has been no change in the percentage of people who are physically active\textsuperscript{33} somewhat neutralizing the marketing campaigns such as “Push Play” success.

\textsuperscript{27} Alyson C Lolli, _Architecture + Physical Activity: Encouraging movement in the built environment_. (Unpublished masters dissertation), University of Cincinnati (2006), accessed by http://etd.ohiolink.edu, 22/06/2013
\textsuperscript{29} Ibid
\textsuperscript{30} Ibid
\textsuperscript{31} Ibid
\textsuperscript{32} Ministry of Health, _The Health of New Zealand Adults_, p 31
\textsuperscript{33} Ibid, p 32
Before further analysis of the dilemma of physical inactivity, it is important to understand quite what a “physically active” lifestyle might be. The Ministry of Health recommends that adults do at least 30 minutes of moderate-intensity physical activity (such as brisk walking or equivalent vigorous activity) at least five times a week and doing more than this amount of daily activity (or at a higher intensity) can give additional health benefits and help people lose weight.34

To become physically active you have to give one half hour out of 24 hours of your day to doing moderate level physical activity. That’s 2% of your day and only 54% of people are doing it.

The additional health benefits of physical activity far exceed the generalizations of being "thin and looking good". Physical activity has a range of health benefits, including preventing and managing many of the long-term conditions discussed in this thesis, like heart disease, cancer, osteoporosis, diabetes, obesity, high blood pressure and depression.\textsuperscript{35} It is worth mentioning that participation in physical activity has many mental and social benefits also including:

- Improved self-esteem and confidence
- Reduction in stress, anxiety and depression
- Improved mood and sense of wellbeing
- Improved concentration, enhanced memory and learning, and better performance at school
- Reduced feelings of fatigue and depression
- Improved psychological wellbeing and mental awareness.\textsuperscript{36}

Social benefits of participation in physical activity include:

- Increased community cohesion
- Improved social/community networks and social capital
- Improved family and community connectedness
- Safer communities
- Reduction in sense of isolation and loneliness\textsuperscript{37}

\textsuperscript{35} Ministry of Health, \textit{The Health of New Zealand Adults}, p 31
\textsuperscript{36} Government of Western Australia, Department of Sport and Recreation, \textit{Facts and Stats, Benefits of Physical Activity}. Western Australia, Australia. (2005) p 4
\textsuperscript{37}Ibid. p 5
The New Zealand public knows they need physical activity. They even know that they need regular (three or more times per week) physical activity. The media bombardment from government agencies will not let New Zealanders forget that physical activity is important. But why is it important? And if it is so important why are not more New Zealanders getting the recommended levels? It is not enough to know that physical activity is important. There could be an argument forwarded that people are not being educated properly in the benefits and risk factors of leading a physical active and healthy lifestyle. One must understand the direct impact that a lack of physical activity has on quality of life. Fully informed and provided with opportunities, reasonable people should implement the changes necessary in their lifestyle to incorporate physical activity as part of a daily routine.

Physical activity and physical education are two terms that are often mistakenly used interchangeably. While there are inherent similarities and overlapping areas, physical education and physical activity are not synonymous.38

Physical Education is a curriculum taught subject in the New Zealand school system that contains physical activity but develops and sets up children for long-term health of the body, mind, and spirit. According to the 2010 Shape of the Nation report conducted by the National Association for Sport and Physical Education (NASPE) and the American Heart Association, “Physical education is based on a sequence of learning … [which] also includes health, nutrition, social responsibility, and the value of fitness throughout one’s life.”39 The issue arises that physical education isn’t a compulsory school subject and there is no real further education into the long term side effects of physical inactivity and chronic disease once into adult life.

39 Centers for Disease Control and Prevention, The Association between School Based Physical Activity, including Physical Education, and Academic Performance. (Atlanta, GA: U.S. Department of Health and Human Services, 2010), p 6
“I believe that education is all about being excited about something. Seeing passion and enthusiasm helps push an educational message.”

-Steve Irwin⁴⁰

This quote, although not directly related to physical activity, describes the notion that if we become truly passionate about something and truly believe and understand it, then we will feel more positive about further educating ourselves about it, and actively doing something about it also. Perhaps this attitude needs to be adapting to the issues relating to chronic disease and physical inactivity.

2.5

Barriers and Enablers

The global obesity epidemic wouldn’t be anywhere near the scale in which it is today if people were performing the half hour of recommended physical activity (running, walking, biking, playing sport etc) 3-5 times a week. Yet even in relatively flourishing cities like Auckland where there are recreation spaces and facilities for sport and exercise people are failing to achieve the required levels of activity needed to live a healthy and sustainable life (only 41.8% of Auckland residents are getting recommended levels of exercise weekly according to the 2006/2007 New Zealand Health Survey)41

The apparent barriers preventing people from achieving a more physically active lifestyle must be understood before further analysis as to why the issues of chronic disease due to physical inactivity are so concerning, and what we can do to counteract this issues.

Limitations on involvement in physical activity experiences can be broken down into five main categories.42

1. Personal ability (skills and experience, fitness and tactical knowledge)
2. Individual factors (age, gender, body shape and culture)
3. Resources (money and time available to spend pursuing activity)
4. Health considerations (heart conditions, asthma or special needs such as being hearing impaired)
5. Social support (ability of friends, family and significant others to offer encouragement)

In 2005, SPARC (Sport and Recreation New Zealand) and the Cancer Society commissioned a survey, entitled ‘Obstacles to action’, to investigate what factors affect participation (or non-participation) in sport and physical activity.

The barriers and enablers following represent some of the main reasons people gave for their current levels of activity.

Key enablers included:43

- Awareness that physical activity is good for you.
- Desire to maintain a healthy body weight.
- Desire for approval by others.

Key barriers included:44

- Lack of time and/or energy.
- Lack of encouragement or support from others.
- Difficulty in sticking to a routine.

41 Ministry of Health, A Portrait of Health – Key results of the 2006/07 New Zealand Health Survey. Physical Activity. (Wellington, New Zealand: Ministry of Health. 2006/07) p 27
42 SPARC, Obstacles to Action, A Study of New Zealanders' Physical Activity and Nutrition. (Wellington, New Zealand: SPARC 2003), p 13
43 Ibid p 14
44 Ibid p 14
2.5.1

Lack of Time and/or Energy

According to the *Obstacles to action* survey the principal reason people often give for not being able to participate in physical activity is not having enough time or being overburdened with other commitments (family or work commitments).\(^\text{45}\) In today’s technologically advanced society, there is increased competition for people’s leisure time, with sedentary based activity such as television being an example, making it difficult for people to find time to be physically active.

To stop these barriers causing people to avoid doing physical activity some experts and studies are beginning to suggest the inclusion of physical activity into part of our everyday lives. By incorporating physical activity such as short breaks to stand and walk about, we increase the energy levels needed to counteract the food consumption and are acting against negative sedentary actions being forced on the body whilst sitting down. Because the majority of sedentary behaviour happens within the built environment (whether its work, school, or at home) architectural design considerations can play a ceaseless role in minimizing the “lack of time” barrier by integrating various levels of activity/exercise into ones daily routine.

\(^{45}\) *Obstacles to action*, p 12
Active Design Guidelines

The correlation between health related issues and architectural solutions is not a new one. Architecture and urban design has been used for centuries to combat problems of health and the environment. In the 19th and early 20th centuries, architects and urban reformers in New York City and elsewhere helped defeat infectious diseases like cholera and tuberculosis by improving buildings, streets, neighbourhoods, clean water systems, and parks. In 1854, John Snow, the founder of modern epidemiology, traced the source of a cholera outbreak in London to a contaminated water pump. The spread of the epidemic was stopped by removing the handle from the pump. In 1854, John Snow, the founder of modern epidemiology, traced the source of a cholera outbreak in London to a contaminated water pump. The spread of the epidemic was stopped by removing the handle from the pump.

Architecture has proven effective in the removing and/or lessening of infectious disease in the past and effective understanding and design considerations can see it again aid in the decline of self-inflicted chronic diseases that are more of a concern in today’s society. Diseases such as heart disease, diabetes, some cancers and obesity, all of which have roots in the sedentary lifestyles and poor dietary choices that many people have today.

Architecturally there are few examples of active design philosophies being implemented into modern buildings, but it is slowly becoming a developing trend that architects, planners and designers (of the built environment) are becoming increasingly conscious of.

‘Active design’ is a term used by the City of New York (originally conceived during the Fit City Challenge in 2006, a conference organized by the American Institute of Architects New York Chapter and the New York Department of Health and Mental Hygiene) to describe the designing of any part of the built environment which aims to increase the opportunity and encouragement for daily physical exercise and the living of healthier more sustainable lifestyles within cities. Philosophies and methods for getting people to become active and live an improved lifestyle can be traced to architectural features and elements that are common and trademark of almost every building designed.

‘The Active Design Guidelines, Promoting Physical Activity and Health in Design’, written in collaboration by a number of New York City departments partnered with the Major’s Office of Management and Budget and the American Institute of Architect’s New York, outline strategies based on research to “focus on the designer’s role in tackling one of the most urgent health crises of our day: obesity and related diseases including diabetes.”

The document addresses the issues which are tied

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47 Ibid, p 12
48 Ibid, p 13
50 Active Design Guidelines- Promoting Physical Activity and Health in Design. p 17
to the population’s over-consumption of calories and under-expenditure of human energy, which has become a pressing issue across America and worldwide.51 The Guidelines hope to achieve these goals by defining active design as a pressing feature that should be our obligation as designers to consider and incorporate into our building design. Active design is environmental design that encourages stair climbing, walking, bicycling, transit use and healthy eating.52 Thomas Farley of Health and Mental Hygiene, New York, acted as a client of sorts for the guidelines, and was the fifth commissioner who provided the context for the effort, believed that, “In our current urban environments, we have engineered out physical activity.”53 According to him, these guidelines represent the re-engineering of the opportunity for physical activity back into the city.54 A direct relationship can be associated with the convenience factor mentioned above in this thesis brought about by modernization and technology which is now used in architectural design.

The concept of ‘Active Design’ is deliberately in contrast to sedentary forms of transportation and circulation. It questions the aim of most designers, building owners and urban planners that have been designing buildings and cities with the aim to make them as effortless as conveniently possible to get around. Lifts, motorways, fast food drive “throughs”, and large numbers of car parking have encouraged sedentary and car centred lifestyles, while stairs in building design are often relegated to the remoter circulation plan positions, where they are seldom used. Together these elements have encouraged sedentary rather than active lifestyles and contributed to growing trends of obesity and chronic disease.

The design of buildings provides an excellent opportunity to promote regular and important instances of physical activity. Most people spend as much as 90% of their days indoors often engaged in sedentary occupations.55 The integration of the ‘Active Design’ philosophies can be strongly centralised around four key elements of the building’s design.

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51 Active Design Guidelines- Promoting Physical Activity and Health in Design. p 12
52 Active Design Guidelines- Promoting Physical Activity and Health in Design. p 6
54 Ibid
55 Active Design Guidelines- Promoting Physical Activity and Health in Design. p 68
Circulation:

The circulation system provides major opportunity for walking, which is widely considered as the most popular choice of physical activity. Strong consideration of stairs and ramps should be included instead of escalators and lifts. Stair climbing is a daily task in most buildings that can have major health benefits if promoted over escalator or lift use. Stair use has been linked with better cardiovascular health and has been shown to lower cholesterol levels.56

Individual Design Elements:

The inclusion of individual elements such as exercise rooms and/or physical activity spaces, bicycle storage, and shower facilities can have positive benefits on the users of a building by providing opportunity for physical activity through their availability, convenience, desirability, safety, and comfort.57

56 Active Design Guidelines- Promoting Physical Activity and Health in Design, p 70
57 Ibid. p 68
Building Programme/ Planning:

Careful organization of the buildings programme can encourage people to walk around the building to different environments or destinations. Physical exercise could be achieved by walking from one’s work station to the bathroom or cafeteria space.

58 Active Design Guidelines- Promoting Physical Activity and Health in Design. p 68

Urban Design Considerations:

Massing and exterior design coupled with a buildings siting can also have a significant impact on physical activity levels, particularly through the handling of pedestrian paths, street connectivity and outdoor spaces.

It is imperative to use these guidelines provided as a base to achieve more physically active buildings but also as important to challenge and develop new and innovative ways to encourage people more so, thus further increasing the daily physical activity in their lives but also to promote and inspire them to continue to be physically active outside the architectural context.

59 Ibid. p 69
3.2

‘Homo Ludens: A Study of the Play Element in Culture’ - Johan Huizinga

As part of the literature study for this research, a look into Johan Huizinga’s book “Homo Ludens: A Study of the Play Element in Culture” revealed an alternative approach towards promoting and encouraging physical activity within the built environment. Huizinga attempts to elucidate the different elements and qualities of play in civilization and culture. He sees civilization and culture as at once emerging from a kind of play and as being a kind of play. He says: “genuine, pure play is one of the main bases of civilization” and “(civilization) arises in and as play, and never leaves it.”

61 Ibid. p 173
While Huizinga never clearly defines what “play” is he does outline certain characteristics that seem to become essential details of what play involves.

1. Play is described as a voluntary activity; it is a kind of freedom, a sense of expression that perhaps cannot be otherwise revealed. Freedom is described in a dual sense: It is an activity freely engaged in by choice, and something that is an expression of one’s freedom, where one can be who they are without social and employer based pressures with a sense of conformity.

2. Play happens outside of the ordinary life. Its description mimics that of stepping into another world, whereby it has its own rules and boundaries. A specific example of this is Huizinga’s notion of a playground being compared to sacred grounds or place of religion. A space, in all other ways similar to other spaces, marked out for a specific and special purpose.

3. Play has its own space and time. There is a beginning and an end, and more often than not the course of “play” time does not run parallel to “real” time. Take for example the 90min period associated with a game of football.

4. Fourthly, play, through its rules, creates an order. For much play, the rules and order they create are absolute and to break the rules is to break the very sense of order created and thus destroy the sense of play.

Because of the separate and special features of space, time and order characterised with the involvement in play activity, there is a certain paradox created about play itself. Play is, because it is outside of ordinary life, not serious, and there is an interesting relationship to being “in play” and being in the “real world.”

Huizinga states since play has its own internal ends that it is not meant to be engaged in to gain the values that one needs for everyday life, but at the same time he states play is not merely silliness or frivolity. Within the game, the rules and the play are absorbing and near absolute and thus it has to be taken seriously by the player. Outside of the game, these are arbitrary and even meaningless.

It is this paradox that makes the concept of play so fascinating. However it is perhaps possible to challenge Huizinga’s perception that outside matters are not of importance to the player by educating oneself that by participating in play, and activity, then one is benefiting themselves greatly against the long term effects of chronic disease.
Kaspar Astrup Schröder’s film ‘My Playground’ is all about parkour, a sport/discipline that is all about moving through urban environments in creative and efficient ways. The film features interviews with traceurs (people that participate in parkour) and known architect Bjarke Ingels from architecture firm BIG. The film provides insight into what architecture “ought” to do with the urban-scape: “transform it, challenge it, and dismantle our preconceptions of it. That’s the only way we can really make the city playful again, by refusing to interpret our landscape in a rigid way.”

Parkour is an extensive form of physical activity whereby practitioners aim to quickly and efficiently overcome obstacles in their environment, using only their bodies and their surroundings to propel themselves. Parkour involves a range of physical movements like running, climbing, swinging, vaulting, jumping, rolling, quadrupedal movement, and the like, depending on what movement is deemed most suitable for the given situation.

Although it is understood whilst analysing this film that this form of physical activity (although performed in the built environment) isn’t for everyone and requires an excessive level of discipline and skill. The philosophy behind the exercises themselves can be lent to an architectural response that encourages traditional architectural forms and methods into new and exciting modes of promoting physical activity within the built environment.

“What’s fascinating is the way of transforming a city. Because you can’t change it physically, you can’t go and move a light post or the staircase but you can change the way you are looking and the way you use it and make it your own.”

By changing the way people view traditional architectural elements such as stairs and floors architects have a way of making people aware of the physical act of using them. The next step perhaps is to make the interaction fun, interesting and inspiring and people will want to repeat the physical act over and over thus promoting physical activity within an architectural environment.


63 Ibid.
“Architecture is the art of creating the setting for human life.”

64 Kaspar Astrup Schröder. “My Playground: A Film about Movement in Urban Space”
3.4 Gym Architecture Review

One of the current misconceptions about physical health and activity is that one must belong to a gym in order to be physically active.

A serious weakness to this argument however, is the fact that there are many gyms, weight and cardio facilities, and recreational spaces around both urban and suburban contexts but people are still not using them.

This research analyses some of the potential reasons for the lack of participation in gym facilities and critiques some of the existing gyms located in the Auckland area.

Although fitness regimes related to a weights gym or fitness centres are in fact very beneficial to increasing physical activity and improving ones long term health, it seems there is an alarming discrepancy between people’s desire to join a gym on the one hand and actually using a gym membership on the other.

You pay and never go. It seems a viable argument that if all gym members showed up at any one particular time there would be no room for anyone to enter the room because of overcrowding. The fact that the gyms are set up with the confidence that most members will hardly ever enter the door is imperative to the discussion of the failure of gyms to encourage the exercise and physical activity needed to sustain healthy living. There is also a huge psychological component to the process as one won’t call up their gym and cancel a membership as they will feel as if though they are admitting defeat.

As mentioned above in this thesis, there are a series of barriers that explain why people do not use gyms. Personal ability, and knowledge and experience are common factors that impede people who may refrain from maintaining gym memberships. Failure to achieve results may also result from a lack of knowledge/education about gym exercise and thus, a psychological feeling of failure and wasted time may occur.

There is literature founded on the theory of hyperbolic discounting, which is the tendency for people to increasingly choose a smaller/sooner reward over a larger/later reward as the delay occurs sooner rather than later in time. Perhaps this tendency could be related to the method, mentioned above, of people to prioritize matters of immediate importance over long term importance, and it could be suggested that people may see joining a gym and continuing an exercise regime as “something to get on to later.”

The following conclusions that could be drawn from this critique include possible reasons people aren’t using gym facilities to their full potential. Perhaps there is a lack of educational understanding as to why people are going to a gym in the first place?

A person riding an escalator before entering a gym and then using a machine designed to simulate stair climbing indicates to a lack of self-awareness. This suggests education to improve understanding of all physical activity benefits, not only gym exercise to facilitate overall methods of improving physical health. Consequently, direct connections can be linked to education and the need to teach people the value of exercise in all its forms.

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The vision of ‘The Millennium Institute’ is to create a place where a local community and top athletes might access world-class facilities, training and healthcare services.66

The Facility provides high quality spaces for the development of both public and professional level athletes to train and improve their physical fitness to meet their individual needs. During a tour of the building, it seemed that the relationship between circulation and exercise spaces was limited. Spaces were divided by walls that offered limited opportunity (in some cases no opportunity) to see activity behind them. The lack of visual connections to physical activity created a feeling of separation and disconnection and created an environment that seemed quite separated and discouraging.

There is an elitist atmosphere emphasised by the siting of the building away from the everyday context in the industrial North Shore. A more public building may require a more “user friendly” site location to allow for easy pedestrian access at different times of the day.

Gym or fitness architecture could often be described as an introverted typology. The concerns of user privacy are highly relevant issues and often result in screened or private facade treatments as can be seen in Les Mills Auckland (fig 3.11). Although the need to offer privacy for users is important, so too is the issue of encouraging passers-by to enter and improve physical health. It seems architecture could provide more of a role in encouraging or inviting people into the space, and perhaps treatment of facades and/or architectural form could provide such an opportunity.

This research section has thrown up many questions that need further investigation to define the treatment of gym facilities. This also offers an opportunity to re-evaluate the current gym typology and experiment with new ways to encourage the use of, and benefits of exercise architecture respectively.
4.0

Precedents

The study and research of existing and conceptual precedents relating to the thesis is an important process and helps with the understanding of current architectural issues and successes.

Because the project covers an extensive variety of programmes and contextual issues the precedent study is one that covers a broad range of architectural typologies and examples.

The Precedent section of the research is a continuing process that will be mentioned furthermore as additional developments occur.

Fig 4.1: Sketch of ASB head offices, Wynyard Quarter.
4.1

Harlem Children’s Zone, DavisBrody Bond Aedas

The ‘Harlem Children’s Zone Promise Academy Charter School and Community Centre’ is an educational precedent that incorporates a range of activity based design features into an educational programme. An effective example of demonstrating how to encourage physical activity within an architectural realm that isn’t exclusively sports based. A distinctive glass facade allows the community to see directly into the building and witness the dynamic activity within. Passers-by can witness children exercising in the gymnasium and climbing the building’s naturally illuminated staircase. The architecture is therefore emphasizing the importance of physical activity to the general public by showing a prominent, brightly lit space rather than being relegated to a less desirable location within the building. This visual connection can in turn be used to encourage people to either use the building or provoke them into making a physically active decision of their own.

Characteristics from this precedent that are influential to my project include:

- Visual connections from outside the building to areas of physical activity
- Treatment of vertical circulation to prioritize stair use instead of mechanical systems like lifts.
- The inclusion of activity themes within an educational programme.

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67 Active Design Guidelines- Promoting Physical Activity and Health in Design. p 96
4.2

ASB Headquarters_ Designed by BVN in association with Jasmax

The new ASB headquarters located at Wynyard Quarter, Auckland is an innovative and sustainable way of redesigning an office based typology.

The planning of the interior layout is based on an open arrangement of levels overlooking a central atrium allowing natural light into the working areas. The design was based on ASB’s new method of “activity based working” where employee occupants out number desk spaces encouraging employees to walk around and discover new and interactive ways of working.68 This system also has physical benefits to the employee’s health by encouraging people to walk around the building negotiating stairs and through many different areas on a daily basis, a successful method of incorporating physical activity into everyday life. It’s an inventive way of designing a traditional floor plan to encourage movement around it. By challenging the general understanding of office layouts and working environments perhaps the building may achieve an environment that successfully promotes physical activity.

Characteristics from this precedent that are influential to my project include:

- A floor plan designed around movement and different methods of working and interacting.
- The promotion of stair use and interaction between different levels of a building.
- The challenging of traditional sedentary office design, with desks and individual cubicles for each employee.

Fig 4.5: Exterior view of new ASB Headquarters.

Fig 4.6: View of interior atrium during construction phase.
4.3

The New York High Line

The ‘High Line Park’ was designed by James Corner Field Operations and Diller Scofidio + Renfro, in partnership with the City and the non-profit group “Friends of the High Line.”

The project takes the old unused rail lines above sections of New York City and transforms them into pedestrian walking and leisure spaces. This renewal creates a recreational based urban feature that promotes physical activity around New York in a creative and innovative way.

Visitors reach the 30-foot-high park through intermittently located stairs, including a monumental and highly visible “slow stair” that permits users to fully experience the transition from the street through the existing steel structure and up to the new landscape. At the park level, the High Line features a mixture of landscape elements, including plantings, decks, innovative “peel-up” benches, water fountains, and recreational pathways.

Characteristics from this precedent that are influential to my project include:

- The project uses inventive design to encourage stair climbing, walking, and other forms of physical activity.

- An urban space that people actively want to use. The High Line has become the 10th most popular landmark and in 2011 it had 3.7m visitors (a figure that had almost doubled from 2010). It is estimated over 50% of the visitors were living in New York also.

- The precedent is a working example of creating pedestrian walking paths within a city environment that gives the users different views of the city and new experiences.

- The landscaping features within the Highline are aesthetically pleasant and add to the experience.

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69 Active Design Guidelines- Promoting Physical Activity and Health in Design. p 52

Volkswagen ‘Fun Theory’ campaign is an initiative dedicated to the thought that something as simple as fun is the easiest way to change people’s behaviour for the better. The campaign designs and invites creative solutions to make everyday tasks more enjoyable by making people more aware of the impact either for themselves or the environment. Some examples include a video game/arcade established bottle recycling bank that scores your entries and promotes recycling of bottles with music and coloured flashing lights, relating to the excitable youth in all of us.

A creative method of making it more enjoyable to take the stairs instead of the elevator in a train station in Stockholm, Sweden, is a significant precedent that can be adapted into the design of the solution of this thesis. The imaginative method of incorporating musical tiles that produced musical tones/notes whilst people stepped on them directly next to an escalator, encouraged people to walk up and down the stairs because they were making music and having fun at the same time as burning calories and benefiting their health.

The ‘Piano Stairs’ produced 66% more foot traffic than the escalator whilst installed and provides an interesting point for the argument that fun can produce behavioural change for the better.

An insight that could perhaps be developed to assist architecture to promote and encourage physical activity.

Characteristics from this precedent that are influential to my project include:

- Innovative way in which fun can influence our behaviour with the idea that by making exercise fun to do, people will do it more often.


72 Ibid
5.1 Site Investigation

When selecting a site for this project the intention was to choose a location based around key factors that could be linked to the project and the projects programme. The initial programme was based very much on providing opportunity for exercise to battle chronic diseases such as obesity. Over the period of time whilst conducting the research, the development of the projects programme changed and advanced. A stronger purpose started to develop with the goal of educating people of the subjects related to chronic illness, physical inactivity and subsequent health issues as well as just providing opportunity for activity. The project began to require the capability of affecting a wide range of people, and large scale public involvement with the site. This had to be easy and accessible to a larger range of people, with emphasis on pedestrian access.

5.2 Deprivation Study

A conclusion that has come out of the research into physical inactivity has shown that there are major links between deprived areas and health related issues. People living in more deprived areas are less likely to be physically active. Fewer people were physically active in the most deprived areas (47%) than in the least deprived areas (59%).73 This pattern was the same for both men and women.

Physical inactivity isn’t the only concern that can be directly linked to deprivation levels. Chronic diseases such as obesity and subsequent illnesses resulting from poor health choices are also found to be affected by areas with more deprived environments.

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73 Ministry of Health, *The Health of New Zealand Adults*, p 32
Analysis showing the most deprived areas of Auckland will be a major support not only for the selection of site but also the target audience for which the facility will serve.

This figure highlights the deprivation levels of different areas of Auckland and leads to some interesting comparisons between varying areas. This also focuses the site selection to areas with higher deprivation levels to achieve a potential target audience for the building to maximize its effect.

Fig 5.1: (Left top) Graph representing physical activity in deprived areas
Fig 5.2: (Left bottom) Graph representing obesity in deprived areas
Fig 5.3: (Right) Map of Auckland deprivation areas.
5.3
Going Urban

The problem that faced this project's ability to serve and affect a wider population resulted in conducting an analysis of central/urban sites that had the potential pedestrian “foot traffic” and increased exposure to the target population to allow the project to have greater success.

The deprivation figure (Fig 5.3) illustrates the Auckland CBD area (located geographically between St Marys Bay and Grafton) with similar deprivation levels as more expected areas such as Otahuhu. This makes a strong argument for the design of a facility that will actively deal with the issues of chronic disease and physical inactivity in the urban area of Auckland’s CBD.

A quoted definition defines deprivation as:

“A state of observable and demonstrable disadvantage relative to the local community or the wider society or nations to which an individual, family or group belongs.” -Townsend, 1987

Analysis reveals why certain areas within the Auckland CBD are designated as high deprivation areas. The high populations of student housing combined with high levels of office working spaces create two different target audiences for the proposed facility.

The location had to be one in which it could serve a wide range of people from the CBD, providing physical activity into their everyday lives and providing opportunity to contrast the sedentary behaviour that is associated with an inner city “desk job”. This, it is envisaged, may successfully influence and/or educate a wider variety of people about the importance of their physical health and well-being. The location had to have the ability to “pull” people in off the street whether through intentional purpose or accidental curiosity. These characteristics all lend themselves to an urban site selection and further strengthen the argument for an inner city location.

Relationships to other urban facilities and working societies also can be strengthened to create an easy relationship to the project thus ensuring more people have the opportunity to be affected by the building’s programme.

74 New Zealand Treasury: Mare, Deprivation in New Zealand: Regional Patterns and Changes, (Wellington, New Zealand, Mawson, P & Timmins, J 2009). p 3
Fig 5.5: Auckland Map indicating parks and major city landmarks
5.4

Location – 157 Fanshawe Street. Central Auckland.

The selected site is located in the Auckland CBD, just north of Victoria Park. The site has connections with the relatively new Wynyard Quarter development to the north and the City Centre, Queen Street, Aotea Square and the CBD to the east.

The current site usage is mixed. There is an operating Wilson car park occupying the eastern side of the site and a Caltex petrol station and Subway restaurant occupying the western edge.

Fig 5.6: (Left most) Auckland wide context map.
Fig 5.7: (Left top) Location within Auckland context.
Fig 5.8: (Left bottom) Location map.

5.5

Criteria

- An educational and physical activity facility needs to be located in a central location so as to be easily accessible from a variety of locations around central Auckland.

- The site is able to obtain/invite a large number of pedestrians with the inclusion of retail and/or leisure space.

- The site has a relationship with existing green space in Victoria Park, meeting the requirements for providing outdoor exercise opportunities. This site will seek to enhance the activity of Victoria Park and not compete with it. A stronger link across Fanshawe St must be addressed.

- It has a close relationship to other office/working buildings allowing for education, interaction and opportunities for physical activity before, after and during working hours for informal meetings and recreation breaks.

- The connections as seen below (Fig 5.9) display other beneficial reasoning behind the site selection.
**Proposed Waterfront Cycleway**

A continuous walkway and cycleway that runs from Home Bay in the west to TeAL Park in the east has the potential to be one of Auckland’s most widely used public amenities. This project was ranked by the public as the highest priority for early investment during the consultation phase in 2011.

**Daldy Linear Park**

A generous, high-quality, slow-speed landscaped street, connecting Victoria Park with the future Headland Park. A key connection to the Wynyard Quarter with provision for passenger transport, walking and cycling.

**Wynyard Quarter Development**

The Wynyard Quarter revitalisation, New Zealand’s largest urban revitalisation project, will continue for 20 years and include a 4.5ha new urban park on the headland.

The vision for the area is a mix of residential, retail and commercial development to enable the growth of a strong, diverse, resilient and vibrant residential and business community whilst retaining the existing successful marine and fishing industries.

**Future Headland Park**

Creation of a Headland Park on Wynyard Point, a 4.5ha public open space. To link to Victoria Park.

**Tepid Baths**

The Tepid Baths are historical indoor public pools in Auckland, New Zealand. Built in 1914 on the previous site of a small drydock, it quickly met great public approval, with 39,000 visitors in the first two months. In mid-2012, the baths re-opened following a major rebuild and allow a relationship between physical activity-based buildings in the city.

**Surrounding City context**

Being located in the urban environment allows for lots of foot traffic and people interaction and thus provides more opportunity for people to use the facility. Local businesses around the site include the Vodafone Building, Air New Zealand Building and a vast range of others. It also relates to students that may be staying in student accommodation within the city.
5.6

Master Planning Analysis

Because of the existing site condition and the development that has already begun around the area for this project, the site analysis and description will refer to the future planning for Wynyard Quarter as portrayed in the Waterfront Auckland Plan and the Urban Design Framework put forward by Architectus for the development of Wynyard Quarter.

The site is located at the base or south end of the new Wynyard Quarter development. It shares boundaries with access ways Daldy St (future linear park) and Halsey St to the already opened Jellicoe St development. The area is an exciting and developing section of the city with bright visions of transforming Auckland into the “Worlds most livable city.”

The revitalisation of Wynyard Quarter, (also known as the Tank Farm or the Western Reclamation) led by Waterfront Auckland is New Zealand’s largest urban revitalization project and will continue for 20 more years. The vision for the redevelopment of the area creates the opportunity to establish a working and recreational waterfront linked by a sequence of engaging public spaces which will reinforce Auckland’s ‘turangawaewae’ or ‘sense of place’ and identity as a waterfront city.

The Waterfront Plan proposes greater accessibility for pedestrians and cyclists. An ambitious 70/30 modal split (i.e. 70% of peak trips are by passenger transport, walking and cycling and only 30% by private vehicle) this amongst other sustainable behaviour design considerations relates well to the project and encourages physical activity in design considerations.

76 Ibid p 12
78 The Waterfront Plan. Auckland New Zealand. p 77
5.6.1 

Park Connections

One of the fundamental requirements for site selection was a connection and relationship with open “green space” or exterior spaces in which physical activity could take place. This relationship can be achieved with the existing Victoria park situated across Fanshawe St to the south and to the future planned Headland Park proposed on Wynyard Point to the north. The vital connection will be made through the proposed Daldy St Linear Park that attaches the west boundary of the site which will eventually provide a continuous green link from Victoria Park to the tip of the future Headland Park, planned for Wynyard Point.

The linear park also provides a connection with the grand “Green Link” plan put forward by the Auckland City Council to connect the three main parks in Auckland city. The future Headland Park, Victoria Park and across and up Victoria St to Albert Park will all be linked by pedestrian friendly “green” outdoor space.

5.6.2

Daldy St Linear Park

Daldy Street Linear Park will be a 38m wide pedestrian friendly “green street” established by extending the Daldy Street axis between Fanshawe Street and the Headland Park. The park will provide a strategic route for passenger transport, pedestrians and cyclists through the Wynyard Quarter as well as recreational and social space with the design intention to stop, linger and enjoy being in. The park and street will be activated by adjacent retail and commercial activity within the Wynyard Quarter and provides a pedestrian based highway running right adjacent to the site, a strong relationship that needs to be fully taken advantage of.

Fig 5.12: Proposed Daldy St Linear Park.
Fig 5.13: ‘Green Link’ connections diagram.
A key goal of the Waterfront Plan is creating a connected and accessible waterfront. The land is largely reclaimed and has predominately been used for industrial and fishery based operations. A proposed cycleway running from Herne Bay in the west to Tamaki Drive in the east offers great cycling opportunities for the public to interact with the Auckland waterfront and runs directly through the proposed site on Dalby St.

5.6.4

Building Connections

The site offers architectural relationships to the northern, eastern, and western boundaries. The existing adjacent buildings include the head offices of Vodafone and the Air New Zealand Headquarters to east and west respectively.

The neighbouring architecture and surrounding built context offers a comprehensive range of potential users for the project. The potential for staff using the facility in the lunch breaks, team building exercises, employee education programmes and inter business sport opportunities to list a few possibilities.

The existing buildings/businesses provide a large amount of people (the majority of which are in sedentary forms of employment) already within the area as a potential target audience for the project. A survey of companies within the existing built environment resulted in

- Vodafone - <1000 employees
- Telecom- <1000 employees
- Microsoft- 500 employees
- ASB- <1000 employees
- Air New Zealand- <1000 employees

The future development within the area also supports and increases this number.

- Fonterra Headquarters- <900 employees
- Future Wynyard Quarter development- Approx 7000 Businesses and 35000 employees and a further 20000 employees elsewhere based directly related to the area, with fisheries and marine industries to name a couple.80

Fig 5.18: Image representing potential audience from surrounding context
5.6.5

Future Development

The development of Wynyard Quarter into individual precincts allows the individual history and character of each certain area to be developed and enriched with different architectural designs, forms and functions.

The proposed Waterfront Precincts which establish areas of distinct character are: 81

- **Marine Events Precinct** - The Marine Events Precinct is shaped by the harbour and edges defined by Princes Wharf, the Maritime Museum, Te Wero Island, Viaduct Harbour and the Halsey Street Extension Wharf. These facilities will work together to create an internationally recognised destination for marine activity and events.

- **Wynyard Point** - The vision for the Point is to create a waterfront destination that expresses the precinct’s maritime location and maximises public use through interaction with its coastal edges, views and vistas.

- **Jellicoe Precinct** - This precinct is considered as an extension of the existing CBD waterfront and Viaduct Harbour area with restaurants, bars and cafes. The connection acts as an east west pedestrian access across the waterfront over the new Te Wero Bridge.

- **The Marine Industries Precinct** - This precinct will retain its existing marine functions which service the recreational marine uses of the Wynyard Quarter and Westhaven Marina.

- **Central Precinct** - The Central Precinct is defined by Madden, Beaumont, Fanshawe and Halsey Streets and is the precinct that the project’s site sits in. Central Precinct is seen as an extension of the scale and form of the western CBD. It is proposed to be transformed into a vibrant mixed use neighbourhood with retail, commercial and residential development.

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81 *Wynyard Quarter: Urban Design Framework*, Architectus, p 21
5.6.6

Central Precinct

Central Precinct is the precinct in which the project will be sited. The precinct is divided into three quarters, each given its own treatment whilst still connecting to create an overall environment that acts as a merger between the CBD and further Wynyard developments.

The Innovation precinct will be the north most quarter of the precinct. The Innovation Precinct will be a purpose-built ICT and digital media hub that brings together innovative entrepreneurs and multi-national companies, as well as research and development-intensive organisations from around the world to Auckland’s Waterfront. It will provide the focus, resources, connections and opportunities to launch high-tech business for success on the global stage.82 The Central Precinct will consist mainly of mixed use commercial and residential occupants with building heights ranging from 18 - 52m. A 52m landmark site will define the Daldy Park Axis and locate the Central Park. Central Park will provide the main user amenity for the precinct with retail and entertainment facilities around its perimeter.

82 Wynyard Quarter: Urban Design Framework, Architectus, p 28
5.6.7

Land Analysis

The area known as Wynyard Quarter and some of its surrounding context is built on reclaimed land. These diagrams reveal the original Auckland shoreline in comparison to the current site images of the location and the future planned development for Wynyard Quarter as released by Waterfront Auckland.
Fig 5.24: Photo looking across Fanshawe St to site.

Fig 5.25: Photo of Fanshawe St.

Fig 5.26: Photo of construction on Daldy St.

Fig 5.27: Panoramic photo of existing site from Gaunt St.
5.7

Brief

Programme Requirements.

The project must accommodate a range of programmes that involve a variety of social groups (passive and occupant users) to maximize a physical and educational message to combat chronic disease.

Education Centre.

The building will function as a learning centre for educating people on various issues associated to health and well-being. Education will also include areas to do with physical activity, and more focussed professions within the sport and recreation field. The facility will require a series of learning and lecture spaces that can be provided for a range of different subjects. It is expected that the facility will provide a variety of exercise spaces that the education process can relate to and use. Gym facilities and exterior exercise spaces where students can learn skills that enable them to train, practice, or teach the general public. This will provide an emerging link between education, physical activity, the occupants of the building and the general public. Specific building requirements mentioned below.

Interactive Urban Environment.

To create a comprehensive synthesis of physical activity in everyday life the project must be designed as an environment that encourages users – both purposefully and accidentally - to be physically active. The education centre will attempt to harness their interest by inviting people to learn further. The ability to attract the general public off the street to investigate the campus will require a range of inviting urban retail and food – healthy eating-opportunities and free leisure and recreation spaces.
Fig 5.28: Sketch of footballers.
Education Centre.

- Entrance lobbies and reception areas
- 5x Administration offices
- Head of School office
- 3x Private offices
- 4x Lecture spaces
- Classroom spaces for a variety of subjects.
- Library
- 6x Private study office
- 4x Quiet Study room
- Private storage lockers.
- Food hall –shared space with urban environment-
- Kitchen and food preparation facilities
- Physical activity/exercise spaces
- Community swimming pool, 4x 25m lap lanes and leisure space.

- Rock-climbing wall –shared with urban environment-
- Private testing areas, weights, cardio gym for personal training and exercise learning.
- Communal space for leisure time
- Series of Lecturer/staff offices
- Communal staff/lounge room
- Storage facilities for equipment.
- 4x Toilet/ and ablutions facilities

Series of spaces will be shared with public facilities to encourage interaction from public to the building.
Urban Interaction Environment

- 5x retail outlets
- Food hall –shared space with Education Centre-
- 3x Café
- Restaurant and Sports Bar
- Fresh Vegetable Market
- Free public fitness centre, with weights, cardio, yoga, and movement classes taught by members of the Education Centre as part of their course and education or other outside members of the community.
- 3x indoor recreation halls. Multipurpose spaces for indoor football, basketball, gymnastics, and leisure activities including dance, table tennis and darts.
- Squash court
- Interactive digital Media room
- Rock-climbing wall
- Abseiling centre and wall
- Community swimming pool.
- Dive tank. 10m depth
- Interactive exterior public space with urban furniture and activity
- High ropes and challenge course operated by members of the education centre as part of their course and education or other outside members of the community.
- Elevated pedestrian bridge across to Victoria Park
- On site health facilities including physiotherapist and podiatry service, nutritionist and dietitian, chiropractic practitioner, general practitioner, 2x massage rooms, personal trainer conference rooms.
- Public education space: 1x lecture 50 people –shared with Education Centre
- Public group meeting spaces for mental health and counselling classes.
- Exterior recreation space- Tennis court, children’s playground, smaller park spaces for resting and outside exercise
- 40m sprint track
- Bicycle Hub- An all needs bicycle hub. Storing bicycles, hiring, fixing and buying bicycles, and information about Auckland Waterfront Cycleway.
Fig 6.1: Conceptual sketch.
6.0
Design Process

6.1
Design Solution

The design process was divided into three parts as it was felt this would best answer the research question.

- Planning / Programme
- Urban design / Master planning
- Architecture

Fig 6.2: Conceptual section sketch.
6.1.1
Planning / Programme

EDUCATION SPACES
People interested in learning the field of sports physical education and health

COMMUNITY SPACES
People interacting with recreation spaces from surrounding context

RETAIL SPACES
People interacting with site in a passive manner perhaps not interested in building programme

This diagram describes programme layout and provides potential for interaction between different social groups using different parts of the building. It is assumed that there will be a range of people using the site.

- Retail Spaces- Passive users may include people perhaps not interested with the buildings function. Walking through the site or perhaps retail shopping or buying a coffee. These people will predominantly be located on ground level and interact with the site more than the buildings themselves. Urban design features in the public areas located between buildings will serve to create an environment that even passive occupants can become physically active in.

- Community Spaces- Community spaces (Urban Interactive Environment) refer to spaces designed with the intention of public interaction with physical activity. These spaces include exercise rooms and recreation spaces. The community spaces are open to members of the general public to use and also offer opportunities for physical activity and a break from the sedentary positions for the employees from the surrounding context.

- Education Spaces- Education spaces involve facilities for a range of people specifically interested in learning about topics related to physical activity and health, physical education or sport specific education. The education spaces will provide the largest potential for interaction between the different programmes as the people learning about the specifics within the schooling environment can go on to teach and/or interact with the general public using the facilities for recreational or health purposes.

Fig 6.3: (Left) Diagram of spaces

The Programme is an ‘Institute of Physical Education and Activity’ where teaching of topics related to physical activity and health, physical education and sport specific education takes place. These will include physiotherapy and injury rehabilitation education, sports leadership / coaching education, and physical health and well-being education. This provides a solid base for the complex for administration and ownership reasoning and allows for the design to include facilities that can be utilized by the wider community, and employees from the surrounding context.
Fig 6.4: Footballer in motion sketch.
6.1.2

Urban Design / Master Planning

The urban design/master planning section of the design process focuses on issues associated to the wider area of Wynyard Quarter and surrounding context around the site. This process will relate to and reference certain design philosophies and concepts discussed in the ‘Waterfront Plan’ and ‘Urban Design Framework’ mentioned above. The Urban design will also include indicative building footprints for the whole southern quarter of the Central Precinct.
This series of sketches explores the ways in which the buildings could be orientated to become more of a physical environment where wholeness is achieved between figure and ground. The idea was to fill the spaces not occupied by buildings with sports fields or other activity spaces.

They explore the possibilities of the negative spaces between buildings and how these could become integrated within the theme of physical activity.

The sketches further develop the design from site considerations. They explore the possibility of making a connection to Daldy St Linear Park on the western boundary of the site. They consider activating the Fanshawe St edge as a pedestrian boulevard with urban retail possibilities, as per the Waterfront Plan suggests.
This perspective explores ways in which the design of retail spaces can be connected with the theme of creating a physical environment for activity and exercise. Investigating the relationship between spaces for exercise activities and everyday activities such as shopping creates an interesting comparison between two different types of activity. This explores the possibility of involving passive users of the site into physical activity whilst they perform daily routines.

Fig 6.7: Urban shops activity sketch.
Critique and analysis

There is a vast amount of exterior space formed by the inclusion of an exterior football field located centrally within the site. Architectural forms frame the site with the intention of activating as much street frontage as possible but it is understood that more of the site will need to be developed to fully utilize the site.

Considerations were made about the size and scale of buildings on site. It was understood that the value of the site meant that more of the land had to be built upon. It was thought that the open space of a football field could be better utilized, and that Victoria Park could provide the open park space needed for exterior sporting activities. The figures (right) show figure to ground relationships of the initial urban design.

The following sketches were initial master planning concepts that would be further developed to better utilize the site.
Fig 6.9: Sketch of outside football field.
Fig 6.10: Perspective sketch of whole activity environment.
Fig 6.11: Future Wynyard Quarter master plan by 'WaterFront Auckland'

Fig 6.12: Diagram of existing accessways through the area. Red indicates vehicle routes.

Fig 6.13: Diagram of proposed accessways through the area. Red indicates vehicle routes and blue are pedestrian laneways
After further research into the future development of Wynyard Quarter, these diagrams demonstrate the proposed layout whilst exploring the north south lane way connections through the site and possible public spaces that could be further developed.

The aim is to transform the small streets in ways that establish pedestrian priority and facilitate their use as local public space. It would also create additional streets, lanes and through-site links to break down the grain of the large blocks, providing for greater exploration.

By encouraging people to explore lane ways and different routes through buildings you are encouraging physical activity within the built environment. This also helps to promote the 70/30 split of pedestrian over vehicle transport modes around the development.

Investigating the east and west edges resulted in dividing the site into two possible interaction zones. The western zone has more potential to be activated as a public space with its connection to the Daldy St Linear Park and Waterfront Cycleway.

Fig 6.14: Dividing the site into public and private zones.
This series of sketches explores a developed method of master planning on the site. The division of the site into six sections was established by research into the proposed grid system of the Waterfront Plan and Urban Design Framework of Wynyard Quarter. As mentioned above, by dividing the site into six sections the buildings create north-south and an east-west lane way(s) providing easier pedestrian access through the site and encouraging exploration through the buildings into possible public spaces.

The shaping of possible building footprints was further explored with the intention of opening up and enhancing spaces between buildings to create potential destinations for pedestrian movement between buildings. The idea of opening up the north-west corner of the site for a possible extension of Daldy Linear park into the site and create an exterior space for activity to merge the site with the park was considered, although later decided against as Central Park (portrayed in Central Precinct section) was seen to provide more of a balanced break of the linear park between Victoria and Headland Park.

Further development of potential building footprints resulted in modifying the rectilinear grid shapes. This breaks up the traditional rectilinear grid structure of the site and creates a sense of direction for pedestrian access between Fanshawe St and Daldy St. The lane ways create passages through the site but also set up visual connections into central parts of the site where north-south and east-west lane ways intersect. This intersection and visual connection supports the design of public spaces or activity hubs at these points.

Fig 6.15: Series of master planning sketches.
The final study reveals the division of the site into six sections creating three public spaces or activity hubs. The development supports design requirements set out by the Waterfront Plan and creates pedestrian lane ways promoting physical activity in the form of pedestrian movement through the site. It also answers questions of appropriate scale/size of building footprints for land value.

This is the site master plan that has been continued for the architectural section on the project.
Through the master planning process, investigations into public spaces were considered with reference to Waterfront requirements of providing pedestrian based destinations to stop and activate spaces between buildings. Two public spaces or “Activity Hubs” have been designed with relation to the idea of providing opportunity for physical activity to happen within the built environment, both as a passive user of the site or those interested in incorporating exercise into their daily routine.

Hub 1 Precedent-Belleville Park, Terrassol & Luc Mas

Belleville Park, created in 1988 in the north-east of Paris is located on the hill of Belleville, its 108 metres making it the highest park in the capital. In 2008 a new playground was opened to the public with a surprising form of a wooden cliff which crushes itself into the ground in a pleat of concrete. It presents over 12m in height and a strong gradient of 30 degrees, a climbing course on several surfaces with different inclines, entangled on the flank of a hill and corresponding to different levels of difficulty.83

This playground setting challenges the user into an adventure environment, inspired by mountaineering and navigation. Multiple sides, climbs, decks, skids and secret passages welcome intrepid users to the park.

The alternative playground design that focuses more of specific requirements without traditional playground facilities is further supported in the 'Active Design Guidelines' recommendations for children's outdoor play areas. The preservation or creation of natural terrain in play areas resulted in children physically acclimating to the demands of play and additionally have produced better scores on physical fitness tests than children using traditional playgrounds.84

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83 Sophie Barbaux, *Urban Furniture. A New City Life.* (Design Media Publishing Ltd 2010), p 250
84 Active Design Guidelines- Promoting Physical Activity and Health in Design. p 32

Fig 6.17: Series of images of Belleville Park playground.
The first hub, located on the western section of the site, focuses on the passive pedestrian movement, by challenging a typical walking lane way connecting Fanshawe to Daldy St. The idea took its influence from parkour. An inspired lane way challenges the views of traditional flat walkways by altering the gradients of the ground creating a pedestrian path that ramps and slopes encouraging the user to adjust and interact in a different, challenging, and fun way. The ramps will have ropes and grids on steeper sections for assistance and to further heighten the experience of this activity hub.

“Walking is one of the first things an infant wants to do, and one of the last things any of us wants to give up”

By challenging the concept of walking it may be possible to create an environment that makes ordinary movement fun. With reference back to Johan Huizinga's book, ‘Homo Ludens, A Study of the Play Element in Culture’, the notion of creating an environment that escapes the shackles or normal society’s views on adult behaviour and restores the freedom and enjoyment of physical activity. The journey becomes an enjoyable experience from A to B and an experience the user will want to repeat over and over.

Links to physical activity

- Walking- most common and easy form of physical activity
- Climbing –strength and strategy

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85 “Walking importance”, www.irishheart.ie/.../6_planning_a_programme_to_motivate_employees. (accessed July 25 2013)
Fig 6.20: Level changing ground sketch.
Further development into the concept of generating public spaces that encourage physical activity resulted in a sequence of research related designs into making walking and pedestrian movement fun. The concept of interaction with buildings where change and response could be connected with the physical movement alongside the building is an interesting concept.

A kinetic energy system where pedestrian footfall could be used to power a digital screen so the building can interact with the physical act of walking past was explored here. It could create a fun and innovative environment that encourages people to enter a space. With potential uses being passive walker past or even urban street dance competitions or events.

Pavegen Tiling Systems is a tile based urban design feature that captures the kinetic energy from a pedestrian's footfall and harvests and/or reuses it to power certain off the grid electrical devices. They will be used throughout the design but mainly with relation to this interactive wall. The kinetic energy from footfall is stored and used to power the LED lights in the wall to create an interactive relationship between the architecture and the physical activity powering it.

The following drawings show the blue area as being covered in pavegen tiles and the kinetic energy being transformed by the people jumping is used to produce colours and images on the interactive wall of the building.
Fig 6.22: Diagram showing kinetic energy from foot fall is then used to power LED interactive screen.

Fig 6.23: Drawing of people interacting with architecture
Fig 6.24: Hub 1 drawing showing level changing and interactive wall.
'Mountmitte Urban Playground' is an architectural design that inspires physical activity within the town centre of the Mitte neighbourhood, Berlin. The design is a modern adaption on a high ropes challenge course situating itself in an urban setting, thus further identifying itself as a target destination for sedentary based occupants. Its parkour inspired design challenges the user to attempt certain forms of activity not usually associated with an urban setting producing a sense of excitement, daring, and accomplishment.

MountMitte provides a compelling demonstration of designs underutilized potential to motivate exercise and healthy lifestyles. If the same thinking that brought this urban playground to life could be injected into more of the built environment, then there might be a fighting chance against obesity and other inactivity-related health problems.

Hub 2 is located more centrally on the site and explores the notion of vertical activity in the form of climbing, high ropes and adventure based exercise. An assessment of different types of physical activity within the city environment leads to the majority of exercise done on ground level. Providing an opportunity for public to perform tasks that uses their bodies in ways they wouldn’t usually within the surrounding context creates an exciting destination that people may want to visit.

The Hub takes advantage of the southern facades of the building to use for rock climbing/abseiling facilities and explores the concept of a high ropes challenge course design to encounter emotions of fear, adrenalin, excitement and achievement.

The hub offers a range of uses from outdoor education, adventure exercises, work bonding days, but mainly offers the public an opportunity to escape the normal modes of vertical sedentary circulation within the built environment, things like elevators etc and provides a space for vertical activity to happen on a series of levels.

Links to physical activity
- Climbing wall-strength, strategy, confidence, achievement
- Swings- motion, freedom (link to Homo Ludens precedent), weightless movement in space, fun
Fig 6.26: Hub 2 (Vertical Hub) drawing.
Pedestrian Connections

Investigations into increasing pedestrian walking and cycle routes and connections throughout the development is a crucial element in designing an area that encourages physical activity within it. These diagrams describe different lane ways and connections that become possible throughout the master plan. It is understood people are comfortable walking a distance of 800-1000m without possible thought of driving, so creating an environment within this radius and further developing areas further around it supports a pedestrian and physically active method of transport for people inhabiting this area.

Fig 6.27: (Left) Pedestrian routes diagram.
Fig 6.28 (Right) East west connections diagram.
Fig 6.29: Walking distance diagram.
These diagrams portray potential level uses for the buildings within the Wynyard Quarter development as proposed in the 'Urban Design Framework.' It reveals potential destinations throughout the development on multiple levels with potential for the mixed space shown in pink to become display or interaction spaces from the Innovation Precinct to the public on an elevated pedestrian walkway.
These diagrams explore the design potential of a pedestrian connection at an elevated level to ground level that can connect directly to potential occupants/employees of surrounding buildings such as the innovation precinct and potential retail services located at upper levels of building, as shown in fig 6.30 from the Urban Framework Plan.

A pedestrian bridge also allows an alternative north-south access throughout Wynyard Quarter and further connections from Victoria Park across Fanshawe Street and across intersecting east-west roads.

By providing multiple pedestrian routes throughout the master plan you engage the publics explorative qualities further. Offering varying routes of movement encourages people by providing them different options, thus lessening the possibility of the activity becoming repetitive and boring.

This connection has potential to engage with other pedestrian access ways north/south and east/west in future development mentioned above.
This drawing shows connections made with the elevated pedestrian walkway and potential interaction with some of Wynyard Quarters main attractions including: the future Innovation Precinct, Central Park, the Jelicoe St development restaurant and bar scene and Silo park and waterfront access, and the future Headland Park environment.

This elevated walkway provides a different route for pedestrians to explore at an elevated level with the possibilities of experiences with the buildings that may not be able to be achieved at ground level.
Fig 6.33: Drawing showing potential walkway running between buildings on site.
Master Planning Conclusion

It is of major importance when designing architecture that encourages physical rather than sedentary types of behaviour that the wider master plan is considered. The master planning section of the design process was about discovering and creating an environment which encourages physical activity through pedestrian based movement through laneways and connections on a wider scale. The development of public areas/activity hubs generates destinations for public movement where passive users of the site have the opportunity to interact with the architecture and different types of activity.
Fig 6.34: Conceptual sketch of spaces between buildings.
6.1.4

Architecture

These images show how the process is focusing on the western half of the overall site, also identified earlier as the more public section of the overall site for the architectural design process. The reason to concentrate the response to half the site was to avoid the project over developing and becoming too demanding. This also allows a more defined, detailed design outcome.

Spatial Planning

This series (right) shows an earlier conceptual process but is still important to understand the individuality that each floor has and the different function and atmosphere that the environment creates.
Fig 6.36: Conceptual planning sketches.
The spatial arrangement of the buildings was largely influenced by master planning and site responsive decisions. The separation into four sections triggered a design that meant the specific pods could concentrate on different elements within the overall theme. This sketch shows potential building functions and pedestrian movement throughout site.
These sketches show the developed spatial planning process and how possible spatial relationships could work with each other on ground level. Connection and treatment of different spaces to their functional requirements and site conditions was another important decision that had to be carefully considered. An example comes when locating more private spaces such as physiotherapy or other health related spaces near more public areas of the site such as Daldy St. It seemed a more appropriate decision to locate public focused spaces to more public areas like Daldy St and Fanshawe St and perhaps use the more private lesser streets to deal with the spaces that require more private treatment. Food and retail spaces have the ability to pull passive people in off the streets and further activate the lane ways and hubs designed in the master plan.

Fig 6.38: Spatial planning sketches.
This drawing continues the development of understanding spatial planning considerations. It shows in green public spaces that can feed off the public attention on Daldy St Linear Park. Spaces will open up to merge with the walkway so people can walk in and interact with the architecture. This works to enhance the presence that the park is a place as well as a connection or street between two destinations.

Yellow defines the retail spaces that will utilize the passive users of the site. This was important so to be able to pull people off the street and into the site. This also activates the level changing ground that was mentioned in the master planning section.

Red defines the more private areas associated with the health facilities on site. The idea was to locate them off Gaunt St so to reduce the public interaction with more private spaces.

Blue spaces reveal the activity spaces off ground level and are designed as to be adaptable to different needs. Adjustable sliding walls can create smaller rooms for activities such as yoga or pilates or can be left open for sprint tracks and basketball. The floor planning of the buildings was considered as an area in which it was imperative to challenge and resolve the issues creating sedentary lifestyles within architectural environments. Inspired by ASB’s activity based working environment (refer to precedent) the design of open plan spaces that encouraged people to move around the building and weren’t dependent on a fixed day to day location meant that the architecture was encouraging people to move around and thus encouraging physical activity whilst occupied.
Fig 6.40: Planning sketches for education spaces.
The Education Zone.

The education spaces are positioned throughout the design and are incorporated with other activity spaces so as to create an incorporated theme into the whole building and not to have a segregated outcome. Interaction between different programmes allows for people learning in the education centre to come down, interact and even teach their knowledge to the general public. The centre includes the fundamental learning, study and library spaces but is designed in a manner that promotes an active way of learning instead of a sedentary one. Access to exercise spaces and recreational activities allows the physical and educational settings to be integrated together as part of the learning process.
This perspective shows the visual connection and potential for interaction between the education spaces and the activity spaces below.
Fig 6.44: Stairs.

Fig 6.45: Figures walking
As mentioned earlier with reference to the “Active Design Guidelines”, a building’s circulation is a major design element in achieving a building that promotes physical activity. These diagrams show the different public circulation paths around the building on ground and level 1.
It was important to design the circulation with a dual purpose so that the user was free to move from space to space without a long “corridor” effect but also to design circulation so that the experience of moving around the building was an activity in itself with chances for visual connections to exercise spaces. This resulted in careful considerations as where to locate vertical circulation services as to make it easy for the user to move from space to space.

The exploration of circulation lead to an understanding of vertical circulation features like staircases. Traditionally vertical circulation is located in one corner of the building, often hid and sectioned off. These sketches (right) show the process of designing for vertical circulation to become a main feature and treating the stairs as an architectural element.

It was understood as part of a fire exit strategy there would need to be a fire proofing structure enclosing the vertical circulation. As this would eliminate the distinct architectural element the design required a separate fire exit strategy. This was formulated requiring further external staircases and exits options.
Fig 6.48: Drawing showing visual connections of vertical circulation
Visual connections

Another imperative design consideration was the occupant’s ability for visual connection to physical exercise, activity or education. This connection creates the primary action of engaging the user to participating in activity by appealing to their curious and attractable instincts. Visually witnessing others participate in exercise can be noted as a sedentary behaviour when associated with watching sports on television but research into different exercise psychologies shows it can have dual responses with the ability to actively watch people within a live scenario sparking one’s own motivation to become involved in the same or a related form of activity. The attraction may be to achieve the same levels of happiness as the person they are watching perform the activity (usually resulting from watching more free forms of “play”) or a physical admiration connection in which the sight of “ideal” or “beautiful” bodies sparks motivation to match the level of fitness to the person they are watching. It is worth noting here that desire to match an idolized level of fitness is the highest motivational reason people take up exercise.

Visual connection works both ways with another noted exercise psychology coming in the form of an increased sense of achievement and motivation when people are watching you perform certain forms of exercise. The feeling of admiration sparks a sense of self-esteem and “playful arrogance” that is a positive attribute to one continuing the activity further.
An open floor plan was another method of creating an environment and atmosphere where a range of different activities can happen within one space. An overall energy can be created with users feeding off each other’s energy and activity, a notion of total interaction is achieved.

A sense of openness also allows visual connections between a range of activities and allows the users to interact more so.

Fig 6.49: (Far Left) Visual connection sketch from walkway
Fig 6.50: (Left) Sketches of chances for visual connections through different rooms in building.
Fig 6.51: (Right) Connections created through open floor planning showing interaction between workers and recreation activity.
These diagrams describe a design process of developing different methods of creating apertures to different forms of activity within the building. Experimenting with views to specific parts of the body that are performing the activity (for example the lower section of a particular running exercise) reveals the overall sense of activity whilst still maintaining the users privacy.
Fig 6.52: (Left) Sketch showing sections of the body for aperture possibilities.
Fig 6.53: (Above) Image showing different types of the body in activity.
These images explore the idea that perhaps the need for visual connections were at the strongest in the more “routine” areas of the design. Food and retail spaces that invite the passive user into the site, then act as the initial encouragement for physical activity by promoting views and/or interactions with activities from different levels and spaces within the building.
Fig 6.55: Drawing showing visual connections from retail/food spaces to swimming pool above.
Physical Connections

Physical connections throughout the building design relate back to the design considerations made within the research into the ‘Active Design Principals’ individual design elements section. Investigation into what spaces could relate well to each other and work functionally provided the opportunity to develop mixed use spaces within the design, especially within the community areas. These sketches explore the idea of incorporating different functional typologies inside the building with each other to encourage the constant idea of interaction. This challenges the typical sedentary problem seen in so many architectural designs.

Fig 6.56: Plan sketches showing areas for activity in building.
Fig 6.57: (Right) Drawing of informal meeting spaces within recreational activity spaces.
This render explores the inclusion of informal meeting rooms where potential users of the recreation space from the surrounding office context could bring clients, or other employees from within the company to break the sedentary routine of their day. Active “walking meetings” where staff will discuss their business over a brief 10min walk is an encouraged behavioural adaption to the typical sedentary lifestyle and developing rooms within recreation spaces for retreat could offer destinations that further support the informal meeting typology.
Developing the idea further resulted in designing physical opportunities for activity within the functional spaces of the building. These drawings reveal experiments with including activity spaces within the education spaces. Where appropriate the occupants could break the traditional methods of building use, and replace them with fun interactive activities that in turn expend energy. Designs like trampolines, swings, nets and ladders were included to create a fun environment that promotes physical activity. This explores the sense of using childhood freedom to enjoy activity again, as endorsed in the “Fun Theory” precedent study.
Fig 6.60: Drawing of activity net above library.
Connections and Contributions

Because of the importance of forming networks and relationships with the surrounding context (buildings, employees, and urban design features) it was essential that the design was based around considerations that not only corresponded to the surroundings but contributed to the overall vision, appearance and character of the future development. Spatial, environmental and aesthetic qualities were considered.

These sketches explore the possible connections that could be made to Daldy St Linear Park. It was envisioned that the Daldy St edge would be the most publicly active boundary with the pedestrian green link and the design had to reflect and take advantage of that.
Fig 6.61: (Far Left) Daldy St Linear Park render
Fig 6.62: (Left) Sketch showing connection to Daldy St Linear Park
Fig 6.63: (Right) Section sketch showing relationship to Daldy St Linear Park.
The proposed waterfront cycleway passes this edge and it was decided that this point could become a cycle hub that catered to all things bicycle related: storage, hiring, mechanical, right through to information about the waterfront cycle route and possible tourist sites along the way. The design would take advantage of the larger scale physical activity based projects already underway, creating a strong base of people using the building on a grander scale.
Fig 6.69: Existing Daldy St

Fig 6.70: Potential Daldy St Linear Park render
One of the significant requirements that was set upon deciding on the site was increasing the connection with Victoria Park. Fanshawe Street is a major traffic inlet into Auckland’s CBD and a direct link to major motorway connections. This street creates a direct separation of the park from the Wynyard development and thus discourages pedestrians to cross over and use the park for recreation and/or leisure.

As mentioned earlier with regards to the pedestrian walkway design, a pedestrian friendly bridge that safely crosses Fanshawe St will increase the pedestrian access to the park, further activating it as a functioning green location for activity within Auckland City.

This image shows the possibility of creating a more pedestrian friendly Fanshawe street that will increase the likelihood of everyday activity around the site and act as a gateway to exploring the Wynyard development further.
Fig 6.73: Drawing of increased pedestrian activity on Fanshawe St
7.0

Conclusion.

The role of this project is to promote and encourage the importance of physical activity within everyday routines in order to combat the onset of chronic disease.

A stronger argument can now be put forward for architects, urban planners, and designers that they can play a major role in encouraging physical instead of sedentary forms of activity within the built environment. This design shows that it is possible to create a setting in which people are encouraged to be physically active, and thus benefit their long term health and well-being.

The process of this project was divided into three sections: planning/programme, master planning/urban design, and architectural solution.

The planning of the location and the programming of the building provided the basis for an active alternative to today’s sedentary culture of building occupation in an urban environment. This was an initial key discovery, which led to a method of designing shared and mixed use spaces within an open floor plan that encouraged visual and physical connections to different forms of, and opportunities for, activity throughout the buildings layout. An intentional interactive relationship has been developed between education, social and recreation spaces, to contrast the idea of segregation and individually functioning spaces. These spatial considerations challenge typical architectural typologies and create a “hybrid” type of architecture that combines educational, recreational and social aspects into one unified environment. This is a critical strategy to entice interest and engagement from the passive majority and get them to increase their physical activity.
The importance of understanding the wider context became clear in the design process as well. The project promotes physical activity far outside its legal and physical boundary: in the form of lane ways and other additional walking alternatives. The master planning section reveals important decisions about connections and circulation on wider scale that provides people with a beneficial method of physical mobility.

The architectural solution is an attempt at creating a unity for the project. It brings together the different elements and understandings from the design process into a coherent final design which answers the research question. Functional requirements discussed in the programme and master planning sections are dealt with to provide an environment in which the occupant has not only opportunity for activity, but is gently encouraged into physical exercise in the form of circulation and spatial planning. Although a sense of ordinary may be judged of the outside form, with traditional “cube” shapes mimicking that of the surrounding city buildings, the true essence of the architectural concept is captured within the central hubs of the complex. The ordinary and mundane method of walking is challenged and replaced with parkour inspired platforms changing angles and gradients on ground level. The internal spaces suggest a paradox world, where every day rules and orders can be temporarily removed and we can be re-introduced with the element of “play” and activity within the city environment. People traverse high rope bridges and swings above our heads, and pedestrian exploration can lead to alternative walking routes and connections with different parts of the Wynyard development. Relationships between what is viewed as traditional building elements, and how we are supposed to use them is confronted as people use external walls for rock climbing and abseiling. The conventional methods of vertical circulation are replaced with ladders and climbing nets and a total sense of physical enjoyment and activity is occurring on multiple levels around us. An architecture that promotes exercise that is fun and alternative to the sedentary traditions in the surrounding context is achieved and encourages the users to involve the building as part of their daily routine.

The architectural section of the project is also useful for negotiating with possible occupants that aren’t excited by the opportunity to exercise. It deals with this form of laziness by incorporating exercise into the considered “everyday” tasks, a primary example being circulation and walking created with the elevated walkway and increased pedestrian connections. Unlike a conventional exercise facility, the architectural response is developed primarily from traditional exercise psychologies and made to look attractive with increased visual connections and physical interactions between physical activity, educational and social spaces. The architectural response challenges the “needs” and “wants” of contemporary architecture and enhances the physical activity within with stairs and inter-level connections.

As a lead to further research, I could suggest more study of exterior form and motivational responses developed within the exterior of a piece of architecture as this project evolved from the interior out. Perhaps the success of this project could be assessed by the ability to relocate the building.
anywhere within downtown Auckland whilst still retaining the ability to connect and enhance the environment it is situated in. The process demonstrates how an understanding of a variety of design elements can result in a building that promotes and encourages the physical activity needed to live a healthy and sustainable life.

The adage “you can take a horse to water but you cannot make him drink” probably still describes the lack of interest and will in some people in bettering their long term health through activity. Nevertheless, this design and document show that through detailed understanding and design of the wider context, careful architectural programme and planning, and the architecture itself, we can win the hearts of many who are presently inner. This is of great assistance in the society’s efforts to tackle effectively the growing worldwide problem of physical inactivity and chronic disease.
Fig 7.1: Change ahead image
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- Reproduced from https://maps.google.co.nz/maps/ (accessed September 21 2013)

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- Reproduced from http://www.idealogue.co.nz/blog (accessed September 6 2013)

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- Reproduced from http://architecturenow.co.nz/articles/Pride-of-Place-Awards-gallery/ (accessed October 3 2013)

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*Unless otherwise stated all drawings, photographs, and digital collage by Michael Cyra, 2013
Obesity and sedentary lifestyles are increasing becoming linked as contributing factors to a range of health issues in New Zealand and worldwide. The issue facing society is not only how to combat and address the concerns of preventable chronic disease, but to also find ways to improve health for the individual and the collective. Through architecture, this thesis is intended to design a community physical health and education centre that has a focus on providing increased opportunity and education for physical activity within the urban environment. By evaluating the psychological and functional spaces required both within the site and the wider master planning context, this facility is intended to serve as a catalyst for architectures response to the ever growing issues of obesity, physical inactivity, sedentary lifestyles and chronic disease.

It is time for architects to worry less on the convenience and luxury of self-opening doors and more on the rise of physical inactivity within the built environment. It is estimated some of us spend up to 90% of our days within an architectural context, so its only seems imperative that architecture itself be designed to limit issues relating to chronic disease and preventable burden.

MICHAEL CYRA

Context Plan Showing Future Development
Perspective of Daldy St Entrance

Interior Perspective of Social Activity Space
Interior Perspective of Pool

Interior Perspective of Activity Learning Area
Physical Model
“Ludotopia”