A Dormitory Could Be More Joyful: Student Housing

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ABSTRACT

With the globalization of the education industry, more students go abroad to expand their horizons and obtain higher level of education. Increasing numbers of international students bring intense pressure on existing accommodation on educational campuses. Meanwhile, the requirement for proper living conditions for students is also increasing with the improving quality of life. Hence, the problem of student housing on campus is gradually being re-evaluated by both students and school authorities. Student housing is not only apartment living, but also embraces cross-cultural communication, human interaction and self-growth. Scientists and psychologists say that our physical surroundings influence our thoughts and feeling. Certain colours, shapes, and textures bring us joy. Light, sound and temperature also influence our emotions. Architecture is all around us, as regards both practical functions and experiences. A good physical environment cannot of itself make us happy. But one thing is certain: architecture can affect us and our efforts to achieve a good life and feel joyful. Surrounding have a huge role to play in altering our mood, likewise, architecture can affect how we feel. A joyful architecture can bring more than just accommodation space. Driven by the great demand for high quality student housing, re-designing the student dormitory on campus is the objective of this project. The project creates a joyful, liveable student dormitory to provide students with a better living condition. Compared with the current condition of student housing, this project aims to achieve a place to live, to communicate, to laugh, to experience a happy joyful atmosphere.

Joyful

“It follows that the balance we approve of in architecture, and which we anoint with the word ‘beautiful,’ alludes to a state that, on a psychological level, we can describe as mental health or happiness.”

- Alain de Botton, The architecture of Happiness (page no. 10-11)
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INTRODUCTION
Background of the project

The Number of international students

Currently, the education industry is increasingly globalized and the number of international students is growing fast. The “International Education Snapshot Report” released in January 2015 shows that the New Zealand international education industry grew strongly throughout 2014 and is now valued at $2.85 billion. Export education, one of the most important sectors, has made great a contribution to the economic development of New Zealand by means of international education. In fact, the top five destinations for overseas study include New Zealand, the United States, United Kingdom, Canada and Australia. With the returns of $2.85 billion in 2014 from 100,000 international students and services, international education has become the fifth largest section.

1New Zealand provides a good education system, a high level of education, relatively reasonable tuition fees and other costs, a moderate exchange rate of currency, many cultures, and a welcoming attitude to skilled immigration. These characteristics attract large number of overseas students.

Tertiary Education, Skills and Employment Minister Steven Joyce says International education continues to be a star performer in New Zealand’s export-led growth according to the latest data.2

“Furthermore, it has successfully created 30,000 jobs for the people in New Zealand,” says Mr. Joyce.3

1 Benje Patterson, “International education is a key part of burgeoning service exports.” (last updated July 19, 2015) http://www.infometrics.co.nz/Forecasting/10292/901/International-education-is-a-key-part-of-burgeoning-service-exports
3 Ibid,
As one of the strong driving force for the economic development of New Zealand, international education enables the students to boost the connection of international trade, enriching the communities they live in and study.
Cultural diversity and interaction

It is known well that Auckland, home to various cultures, is the largest city with the most population in New Zealand including the majority of European inhabitants followed by Māori, Pacific Island and Asia which makes Auckland the most cosmopolitan city in New Zealand.\(^4\)

54.4 percent of people in Auckland City belong to the European ethnic group, compared with 67.6 percent for New Zealand as a whole. 7.8 percent of people in Auckland City belong to the Māori ethnic group, compared with 14.6 percent for all of New Zealand.\(^5\)

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Student housing shortage

The number of students at The University of Auckland was 41,363 in 2013. This figure included 5,597 international students needing temporary homes. However, the University Hall can only house 442 students in single bedrooms on 13 levels. So, there are still more than 5,000 students needing to look for somewhere else to live. Ignoring those who voluntarily choose other accommodation, there would still be a number of students willing to live in University Hall. Unitec Institute of Technology is the largest institute in Auckland. The main campus, Mt Albert campus covers 53.5 hectares and offers a wide range of programmes to over 14,000 students. The figure of International students is 3,314. The student accommodation village can only provide 304 beds for students, which is entirely insufficient. So, the expected size of an accommodation complex would become medium to large.

The current situation is not satisfactory. Local students are not willing to live in a student dormitory because of the unsatisfactory condition, while overseas students cannot live in student dormitory due to the shortage of rooms. The current accommodation tends to be glum and joyless. This is surprising because young students are full of energy, seen in the educational environment. School is a place which should be full of laughter, creativeness, communication and a collision of ideas. The student village should not be a serious place containing a group of silent, unsmiling young people. The dormitory/village life occupies about half of a full time students' life every day. Students, especially overseas students, spend almost all their leisure time in the dormitory. They sleep, read, take exercise, make friends, chat with friends, and do many other kinds of activities there. Therefore, students need a lively, joyful living environment.

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7: Mt Albert Campus, http://www.unitec.ac.nz/about-us/our-place/mt-albert-campus
Project Outline

With the rapid development of education and the raising of people’s expectations of accommodation, student housing has received much more attention recently. There will be changes that will take place in the design and utility of the houses for the students. It will be designed from the point of view that a house is a place to sleep, to reside, to learn and live for the community. This project focuses on providing a higher quality living village for students on campus, which can bring students more enjoyment and laughter.

It is important to figure out what kind of space a dormitory needs, what kind of architecture can bring people happiness and joyfulness and what kind of happiness can be introduced to student dormitory design. Many situations need to be considered in relation to environment. Is the organisation of rooms and community space friendly to users? Is the outside space designed well for good social and circulation space? Does the appearance look good? The site chosen is in Unitec, Mt Albert campus, located at the original site of the student accommodation village, surrounded by trees and crossed by Oakley Creek.
Aims of the Project

The consideration of what joyful architecture is will be the top of the list. The second consideration will be the ideal student living environment, as it is the operation of the design. Last but not least, the site and size of this project should be considered thoroughly.

Dormitory design is a kind of residential design which aims to validly accommodate people. However, the audience demands of dormitory design are more specific than for ordinary residential design as. It is only intended for students, most of them not domestic. A well designed dorm can attract more students to live on campus, thus, more benefits can be achieved. Living on campus is good for communication between students. Secondly, living on campus is a time saving choice. Time can be saved, especially travelling time. Last but not least, a good student accommodation environment is good for the culture of the institution.

The aim is to design a complex which can provide students a joyful, livable accommodation space, on the one hand, ensuring that quantities of rooms for students, while on the other hand, improve the quality of students’ living.

Traditional student housing is basically single or multi-storey modular dorms, common areas and lounges, study rooms, restrooms, shower facilities and kitchen areas. Most student housing just arranges these functions on a rational layout without thinking about innovative and personalized design. Taking the consideration of anti-dormitory design, it is intended to use height differences and some built-in furniture to make the space interesting and entertaining. It will contain all the functions of a normal dormitory, but it will be more personalised to fit students’ needs.
The final project will be a student housing complex, providing a joyful living environment for students who are willing to live on campus. Thus, students will be the beneficiaries of this project, and Unitec may become interested in it as well.
Research question

The research question that informed the research project is:

What is an appropriate architecture to provide a joyful, livable space for students who choose to live on campus? What makes an architecture joyful?
Scope and limitations

The targeted subjects of this project are university students who choose to live on campus. This group of students mainly consists of overseas students from many countries with different cultural backgrounds, and a small number of domestic students from out of Auckland. It is not a normal residential project like apartment design; it is more focused on designing an ideal place which can offer a happy boarding life for students, especially for international students. It is a temporary home in a new environment.

The proposed joyful dormitory design will therefore not just reflect a rational solution of student housing living, but will emphasise the quality of the students’ living situation. This project is not about the design of the usual, formal dormitory. Rather, it is a campus complex. It will be a self-contained architecture satisfying the needs of students’ daily life.

The project will focus on research regarding what kind of space can bring people happiness, make people pleased with their surroundings, and produce more smiles and laughter. The solution will then be applied to the student housing complex design. The key point should be what typology of space can make people feel joyful.
Method

This project focuses on the design of a joyful architecture of a student housing with the purpose of accommodating college students from various cultural backgrounds. Knowledge of what can make an architecture of happiness is the first thing that needs to be established. A specific analysis of “joyfulness” and “happiness” can help to form the concept and the keynote of this project. In order to explore the way student housing can provide, ideal living conditions, research on residential housing design and students’ activity is necessary. Furthermore, this project is not just about the housing, it is a campus complex. How to make these functions integrate together will be based on research of urban and campus complexes. A concept will be formed around how to deal with the building given a canyon landform.

The processes used in this project involve designing on the basis of existing knowledge, experience and site conditions, analysing the design solutions generated from research, testing them in both digital and physical models, then applying them to the site and analysing the outcome.

Digital models and drawings will be used to analyse and demonstrate design concepts. At the same time, physical models will be an intuitive way to test the outcomes of each design process.

Basically, it will be an interactive cycle of these processes during this project: analysing the site, identifying the defects, considering solution, testing outcomes in models or drawings, developing alternative solutions, applying them to the site and analysing the final outcome by standards.
Results of the research

The result of this research is to design a joyful living space for students and find a good solution for a New Zealand campus. It aims to bring happiness to student boarding life from an architectural perspective.

The basic features of the student accommodation dormitory are briefly as follows:

1. Living units for 700-800 students broken up into 3 groups
2. Large common space for about 15 students in every block
3. Common kitchens (providing a space where students can cook together)
4. Dining space (Along with the kitchens, providing tables and chairs which students can use casually) can provide a place for 15 students eating together
5. Manager’s Room
6. Reading Room for 700-800 people
7. Exercise Room for 700-800 people
8. Outdoor living space
EXISTING KNOWLEDGE
Literature Review:

On What Aspects Make a Dormitory Successful

A dormitory, is a building primarily providing a place to sleep, and living quarters for a large amount of people. In most cases, universities and colleges offer single or multiple occupancy rooms for their students. Like an apartment building, these buildings consist of many such rooms, the number of rooms varying quite widely from just a few to hundreds.8

As the basic function of the dormitory is living, a successful dormitory must possess the same if not more characteristics as a successful apartment. Successful apartments are not simply providing shelter for people to dwell. As well as the physical aspects of surviving, judging the success of the apartment design is more concerned with mental satisfaction.9

“A New Zealand and international literature review identified over 100 factors in the built environment that may affect liveability in a variety of ways. From these, six basic requirements were identified:
Access to community amenities.
Connections to the outdoors.
Satisfying indoor environments (visually, aurally, thermally and spatially)
Privacy and sanctuary
Well-built buildings
Social inclusion.”10

10. Ibid.
However a good student accommodation is more than just an apartment, student dorms are also places of learning.

Human beings are social creatures, and the action of learning is social activity. Learning occurs in many places not only traditional classrooms. The campus should continue to carry this function.\textsuperscript{11}

As we know, learning is a type of social activity as well, it is essential for students to study and live in a place that can offer various ways for learning and socializing. However, the refreshing time for students alone is necessary. So the requirement for privacy still exists. For student housing, it is a requirement for the choices of both privacy and community. Freedom and independence is also a crucial part for the maturing college students in their college life. Besides, students are a shifting group of occupants. At the same time, a student dormitory must provide adequate structure to assist freshmen or overseas students make a smooth transition to their new college life.\textsuperscript{12}

\begin{thebibliography}{99}
\bibitem{11} "Room and Board Redefined: Trends in Residence Halls," Herman Miller, 2007
\bibitem{12} Ibid,
\end{thebibliography}
In accordance with this, it is aimed to determine the basic features of a dorm room by finding answers to the following questions:

What are student’s opinions relation to location/ organisation of dormitory rooms in which they stay?
What is a study environment in a dormitory like? In which parts of dormitories can students conduct their study activities?

What can make students feel joyful

For the international students, they would experience the excitement of living in the new environment, making new friends and enjoying new dishes; however, they would also experience homesickness. There can be many worries or issues relating to boarding students mental care such as housing arrangements, the quietness within the dorms, and transportation means, for which frequent orientation sessions are required. There should be classes in terms of academic, social intercultural aspects and information, which seem so powerful that students barely have time for adjustment."

Culture barrier and adjustment is central to journey of living and learning abroad. Overseas students definitely share their recognition and experiences of cultural adjustments and transitioning during their study life."

So dormitories could be an important place to enhance sociability and community.

14. Ibid.
Figure 6 (above): Campus life about activities

Figure 7 (below): Campus life about eating together
Martin Heilweil, who is a social psychologist contends that “the dissatisfaction with dormitory life, insofar as it relates to architectural design rather than administrative style or regulation, can be divided into three general behavioural areas and one nonbehavioral area. Those are: privacy and isolation versus enforced social interaction; proximity and social relation; study activities and, finally, individualisation.”

Figure 8: The activities in dormitory

In the book *Building of Happiness*, David Halpern has similar opinions “for most people, the greatest source of satisfaction in life and irritation is other people.” He illustrates this theory with neighbours. He thinks the most crucial determinant of a dwelling’s satisfaction turns out to be how you feel about neighbours.\(^\text{16}\)

Halpern tells of studies into student accommodation on the effect of the built environment on how people interact. He compares the behaviours of students living in a classic ‘double-loaded corridor’ design with those living in a ‘suite design’. One of the bad aspects of ‘double-loaded corridor’ is that the students are forced into unwanted social situations. And another one is that the corridor space is long and narrow, and generally without windows or views out. There is no function for the corridor apart from travel.\(^\text{17}\)

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\(^{16}\) Jane Wernick, *Building Happiness* (Black Dog Publish Limited, 2008), 73

\(^{17}\) Ibid, 74
It is concluded that rather than the long, blank corridors where the layout allows for a cluster of rooms around the shared facilities the students have much more predictable and controllable interactions, and are much happier.
How can we use design and architecture to express happiness

Grant Hildebrand, an American architect and architectural historian, explored the identification of “pleasure” itself in his book *The origins of Architecture Pleasure*. Pleasure, could be called joyfulness, happiness and contentment. Hildebrand also uses as synonyms of pleasure-happiness, like, excitement, repose, contentment, satisfaction, gratification, delight, affinity, and speculations and reveries.

Under most circumstances, we can distinguish what kind of architecture we like, or have liked. And sometimes, we may think of a few we dislike. Furthermore, there probably exists some we really love or hate. Hildebrand thinks “those for which we have the strongest feelings are often homes, our own or those of others, places in which we dwell in the usual meaning of the word.”

Alan de Botton has written a book about *The Architecture of Happiness* and he says that compared with the architectural features, such as the space, size and design, more attention has been paid to the emotional aspects, as inspired by the architecture in terms of the use of the buildings.

He also says once our emotion can be affected by a room, or simply the shape and colour of the walls, then how will we feel about the places we are compelled to look at and live in? Faced with the windows like prison ones, dirty carpets and the plastic curtain, what then is our feeling?

Paul Goldberger also quotes Botton’s saying in his book *Why Architecture Matters* that the word “comfort” is closer to contentment which a worthy thing for architecture to inspire.” And the way to achieve the “contentment” is to “seek aesthetic challenge and physical comfort at the same time.”

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18: Grant Hildebrand, *Origins of Architectural Pleasure*, University of California Press, xvi-xvii
19: Alain de Botton, *The Architecture of Happiness*,
20: Ibid,
Goldberger’s explanation about comfort architecture is “greater connections to nature; a greater sense of choice; pleasant visual and aural environment; logical and comprehensible building layouts; and an avoidance of unpleasant harsh noise, glaring light, or smells.”

Figure 11: Key domains that mediate between the built environment and mental wellbeings

Figure 11: Key domains that mediate between the built environment and mental wellbeings

22 Ibid, 56
Besides these factors, building proportion influences emotions as well. People can feel an unpleasing proportion when they get involved. “If they were more precise, they would say, “this building is twice as big as it should be,” or “the ceiling is three times the height of a person when it should be just twice as high,” or “the door is 4 feet higher and 1 foot wider than most doors,” or “this room is so big I feel like an ant,” or “It’s so small I feel like a giant.” Instead, they say, “it is inhuman in scale,” or “it is out of scale.” When the architecture being designed, it needs to avoid being to large or too small. Finding a suitable scale for a building is necessary.

Architectural happiness not only exist in buildings, but are also expressed in the building surroundings. Ian Athfield thinks that there was no one way to design a building and that the space between the buildings was as important as the buildings themselves.

Figure 12: Wellington Harbour’s Somes Island, transformed from a sterile quarantine rock into a city playground

Courtyard, a space enclosed by surrounding buildings, plays a significant role in architectural design. It is open to sky, close to nature. It provides a good semi-public space for social activities and bring the users happiness.
Precedents Study

Relevant case studies are now presented, to highlight worthy attributes of program and design that informed the project development.

Kresge College

A significant precedent for this project is Kresge College. Kresge College is located at the heavily wooded UC Santa Cruz campus looking down at Monterey Bay, designed by Charles Moore and William Turnbull and built in 1971.

It is a residential college which can accommodate 650 students, half of whom live in. It was built with a limited budget and its buildings try to deliver a ‘non-institutional’ alternative type of campus.24 The buildings are all 2-storeys and situated along a pedestrian street route with an L shaped layout. (Figure 11: Kresge College Layout) The buildings winds through a redwood forest. The layout twists along the ‘street,’ sometimes widening and sometimes narrowing. Responding to the sloped landform and inspired by Italian hill towns, the architects’ design generated a sense of community.


Figure 14: Kresge College Layout
William Turnbull and Charles Moore designed a village street, defined by irregular false fronts of an almost cardboard cut-out feeling and with a freestanding appearance. The stucco has primary colours. The spaces are oriented to a sequence of gardens and plazas, lit up by social facilities. All the threads seem to be incongruous in the redwood forest setting. The facades with a view to the trees are in a muted of dull brown. The hierarchy of spaces and architectures in the traditional campus is shaped predictably and sequentially, and related axially. Here, this is rejected (the quality of details and execution and the conventional sense of permanence have been surrendered as well) in favour of a 1,000 foot winding street 45 feet up the site to a space towards a fountain at the ridge and an octagonal dining area.\(^\text{25}\)

Visually, the whole appears as a random flow of space with shifting glimpses of views via the facade design of planes and planes to woods. The divergence is parallel to the convergence. The notion of students as a temporary social population, the patterns of human association and sensitivity to sight as a form with its own features and the architects’ philosophy are intended to shape the building to solve conventional issues at the campus. The maturity of Cambridge and Oxford with their lined-up courtyards is replaced by Kresge’s playful shapes with cruder and crooked mixes. It is a school that attempts to make a highly involving and personal sense of place through views and associations.\textsuperscript{26}

\textsuperscript{26}Ibid.
The assemblage of architectures was modelled after an Italian-style of hilltop village. It implies that students want to live in close proximity to one another, enhancing a sense of unity. The positioning of the dormitory enables residents to see the street, permitting relations with the society there. As residents go through the streets and enter the permitted zones of Kresge College, one can deduce how the architects comprehended the usage of sunlight to handle social interaction.\textsuperscript{27}

Turnbull and Moore seem to understand that warm zones can designate areas to inhabit and will enhance the flow of students. Conversely the gathering fields are ignored at the times when students cannot afford social interaction and tend to be busy.\textsuperscript{28}

\textsuperscript{27} Matthew Pinsker, The Annals of Urban Design: Kresge College, Many 15, 2014 http://santacruzarchitect.wordpress.com/2014/05/15/kresge-college-the-annals-of-urban-design/  
\textsuperscript{28} Ibid,
The colour scheme Kresge College adopted is a combination of white with primary colours. White walls with yellow ceiling, red corner, and blue doorframes. Those kind of details make the college layered. The college is surrounded by redwood forest. The surrounding tone is dark and heavy, architects utilize white as the dominant colour to get the high contrast with the environment. The use of small pieces of primary colour is not overwhelming but looks delightful and vivid. The redwood surroundings are very similar to the chosen site Oakley Creek area. Santa Cruz has mild climate with cool, wet winters and warm, mostly dry summers which is similar to Auckland. So that Kresge College is a good reference for this project.
The Tietgen Students' Residence

This project is an international dormitory format. The architect design it as a student village. A village means a clustered human settlement and community. So it is also a model of accommodation in a village format. Its architectural idea made the realization of the “dormitory of the future”.

The idea of this building students living in a circle comes from architect, Peter Thorsen, who is a partner of Lundgaard & Tranberg. The project derived from the inspiration of traditional Tulou houses, a typical building type in South-eastern China. The feature of Tulou is the village community. Individual dwellings enclose the communal facilities in the middle as a circle.

The Tietgen Student Hall is located in Orestad, which is a newer district in Copenhagen, Denmark. The complex was built in 2006. It is a seven storey structure and houses approximately 400 students, occupying a total area of 26,800 square metres.

“The principle inspiration for the project is the meeting of the collective and the individual, a characteristic inherent to the dormitory building type.”


31. Ibid.
There are altogether 360 rooms, divided into two types; one is a 1-bedroom unit which takes 26-33 square metres. And 30 2-bedroom units of 45 square metres suitable for students who need extra space or couples. All the rooms face the outer side of the circular structure and possess a large window section, which can be opened by sliding. The window gives access to either a proper balcony or a French window.\textsuperscript{32} It is a medium size dormitory, that can accommodate about 400 students.

\textsuperscript{32}Ibid,
In addition to the distinctive circular shape, the choice of materials is the most distinctive element in the architectural design of Tietgenkollegiet. From the outside, the front of the residence hall is covered with the oak and a copper-based alloy. The indoor areas are featured by the unpainted and smooth concrete walls with floors of magnesite and birch ply. The surface looks simple and organic, makes people feel involved in the whole environment.

Figure 21: View of the inner space of The Tietgen Students’ Residence

Figure 22: Facade

Figure 23: Facade and decks

“The kitchen is important to residence hall living and it is crucial that the room should be a place that contains many human activities and possibilities. 12 residences at Tietgenkollegiet share one of the 30 spacious kitchens which are equipped with kitchen utensils, tableware, 1 cooker hood, 2 cookers and 4 fridges. The kitchens have colourful chairs and big dining tables, which can also be seen in other places of the residence hall. Residents have made contributions to infusing every kitchen with its own characteristic style. The utility room, which connects with every kitchen, has a sink where people can hang laundry to dry. There is an additional room for every housing group. After moving in, residents can decide to name additional rooms if they wish. Although the 30 common rooms are associated with a residence group, the rooms are available for all the residents and, therefore, they encourage people to move around into other places instead of just their own kitchen. Since every room has its own function and theme, the opportunity is offered for access to a more changeable selection of facilities.”

Figure 24: Photo of the kitchen and dinning room

Around the inner courtyard, the cylindrical volume completes and orients itself. The upper levels are built along the perimeter of the residence with views to the surrounding environment, whereas the communal functions are oriented towards the inner courtyard. The communal spaces are dramatic with projecting forms pointing in towards the courtyard.35

The courtyard at ground level can be accessed through open passages which have vertical access to 5 structural sections. Every floor within each of the 5 sections is made up of 12 residences around a kitchen and communal area. Facilities for the whole dormitory are located at ground level.36

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35. Tietgen Dormitory / Lundgaard & Tranberg Architects, February 7, 2014
36. Ibid.
Roger Walker's houses

For many people, Disneyland stands for the happiest place in the world. It is full of laughter and happiness. New Zealand has one architect whose houses have been regarded as Disneyland of living quarters.

"This precedent illustrate happy, joyful design in New Zealand. Roger Walker has made a significant contribution to the architecture of New Zealand. He insists that buildings can bring people happiness and that a successful building adds to what nature has provided. Walker balanced the relationship between his strong rejection of the cube house and the requirements of the clients, the motivation of his architectural design begins with human needs. Walker found a design solution through using modern materials and juxtaposition of art. The most outstanding characteristic of his houses is their unique, unexpected forms, the various materials and textures and the use of high-contrast colour. Porthole windows, glass pyramid roof, crisscross bracing, finials, porthole windows and cantilevered, glazed nooks are the details he uses to express the emotions he wants to deliver."\(^{37}\)

"Walker's architecture maintained the continuity of the built environment as well as strengthened the sense of a specific place. Walker’s style is complex and vital and its elements are derived from both New Zealand’s history and vernacular. Walker’s buildings show that it is still possible to express by means of a poetic form the inherent order of things in relation to the realities of the contemporary architecture."\(^{38}\)

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37 Abdel-moniem El-Shorbagy, “Roger Walker: A Disneyland Architect”
https://architecture.knoji.com/roger-walker-a-disneyland-architect/

38 Ibid.
Park Mews, Haitaitai, Welling (1974): is Roger Walker’s most significant contribution to community housing based on both design and theory. Park Mews has been described as “Disneyland Gothic.” It is a 30-apartment complex, noted for its characteristic design with round windows made from concrete pipe, strong colour, pointed roof and quirky nooks and crannies.  

39: Ibid.
Ropata Village, Lower Hutt, 1988: is a medical centre and retirement village. This design is Walker’s aim to break the dreariness of surrounding atmosphere of commercial buildings. “It was an opportunity for Walker to create a modern landmark building and exhibit an exciting and dynamic example of late twentieth-century architecture.”

Figure 29: View from the street corner of Ropata Village

40Ibid.
Walker’s houses have a distinct style and unique shape. They derived from Walker’s individuality, sensibility and his concept. His concept is mainly about how to put architectural elements “together” in a harmonious way. Walker applied many different elements to emphasise the external facade of his house. Firstly, he regarded materials and textures as being important in his design, because they can transform the feeling of nature into environment. In Walker’s design process, hierarchies are also an essential factor. Scale and proportion are considerations in his designs. Light is another major element of his projects which show a striking contrast in lighting design. He uses light to express and represent the building’s characteristics such as materials, textures, windows, walls and colours.41

Colour is another crucial component of his architecture. When Walker was designing his project, he developed colour as a building language and regarded it as a substantial element. Walker liked to use strong colours and the strong colours might be applied in any architectural design. He digs into the inherent power of colours, in order to evoke a significant response in the spectators, as well as influencing their consciousness of the space and form of the architecture. Colour is also used to highlight and enrich the building shape, creating a powerful architectural statement.42

Another important aspect is that Walker broke up the monolithic architecture of his time. He made the individual room an architectural element with various facade and colour selections. The space between every element is interesting as well. Breaking up brings playfulness to architecture.

41 Ibid.
42 Ibid,
DESIGN PROCESS
Figure 30: Project location
Site selection

The key intention of the study is to find a solution for a contemporary dormitory design, and to deal with joyfulness in student housing. Crucial to the criteria for a site location is campus space.

Due to the floating population and the number of students enrolled every year, Auckland is the preferred location for the project. Personal experience of the Unitec Student Village has shown that there are many problems with the accommodation village there. Former Unitec Students’ Association president Greg Powell said that “It was accommodation close to slum conditions as the buildings were not being maintained.” Powell said it had been a long time to hear and deal with the students’ complaints, however the situation had been worse and worse, making the boarding life in there a “health hazard.” It is compulsory for overseas students to pay the fees for whole semester ahead of time. And for domestic students, they also need to sign the contract for usually a year in advance and pay fortnightly. Powell also said that “students hated living in the Unitec accommodation and most of them wanted to move out but couldn’t for fearing of losing thousands of dollars.”

Moreover, Unitec has cooperative relationship and partnerships with many international institutions over the world via exchange or study overseas programmes. Therefore, international students can come to Auckland and study at Unitec. Unitec is planning to create itself as home to students from more than 80 different countries.

44 Ibid.
Based on the current conditions and personal experience of living in Unitec’s accommodation village, and comparing that with personal boarding experience in China, many problems exist in the current dormitory design in both two countries.

A Chinese dormitory is typical "double-loaded corridor" in large building. Each building contains 500-1000 students due to the limited site area and large amount of students. In such large building, all rooms connected by an extremely long corridor. The corridor is always dark even at daytime. Students cannot do any activities in this corridor. They even cannot see the face clearly when some one is walking past.
There are varieties of room types, normally are 4 people shared room, 6 people shared room and 8 people shared room. They are all equipped with bunk beds and desks for each student. Most of rooms takes up to 20 square metres include one large living space, one toilet and one washroom for 4-8 students. It is nearly no privacy in such crowded room. This kind of space can build up great friendship and also can make the people not get along well feel embarrassed.
The Unitec site is excellent, but the accommodation is not.

Unitec, has sufficient land area and good conditions to provide a liveable space for students. Firstly, the dramatic increase in the number of international students will result in a shortage of rooms for students who want to live on campus. The living conditions of the student accommodation village are not satisfactory for most students.

Some aspects of the dormitory design do not take into consideration normal student behaviour, such as? not to mention the lack of a joyful and enjoyable space for students the walls are too thin for insulation, the corridors are too narrow for meeting friends, and there is no space for social interaction. Designing a better dormitory, or improvement the current student living conditions, can increase the institution’s competitiveness and income.
Site

Figure 35: Site Location
Unitec is within a residential catchment area, taking in Point Chevalier, Mt Albert and Avondale. It is also close to St Lukes Mall, Lyn Mall and public transport nodes. The site chosen is where the Unitec Students Accommodation Village is currently located. It is at the South-East corner of the Unitec campus, close to Great North Road which has heavy traffic. Oakley Creek passes through the whole accommodation area, with surroundings of dense trees. The whole site is along the two sides of the canyon above Oakley Creek.

Unitec has submitted a new master plan to Auckland Council which summarizes a new, long-term scheme for the Mt Albert campus. The new master plan was submitted as part of the Unitary Plan process. In order to meet the changing needs of Unitec students and the city, the new scheme will focus the academic functions on the southern end of the campus. At the same time, the campus will become denser and intensively used. The mixed function of educational, commercial and housing redevelopment are shown on the aerial view photo.


Figure 36: Unitec proposed master plan
Current situation of Unitec Accommodation Village

Unitec provides a range of dorm units from studios to five-bedroom apartments. Both studios and apartments are all self-catered. Each apartment has separate bedrooms, a common living room, bathroom (one or two), dinning space and a well-equipped kitchen. Each well-appointed bedroom has a bed, some storage space, and a desk to study. The accommodation village mainly consists of two parts: Building 1510, and building 310. Building 310 can accommodate 134 people and offer a variety of living options, which include 5 bedroom/2 bathroom apartment, 4 bedroom/1 bathroom apartment, 3 bedroom/1 bathroom apartment, 2 bedroom/2 bathroom apartment, 2 bedroom/1 bathroom apartment, 1 bedroom/1 bathroom apartment and the charge for these is more expensive than for Building 1510. Building 1510 complex possesses 34 self-contained, fully furnished apartments. These apartments are all 5 bedroom with 1 bathroom apartments. Unitec provides 304 beds in the current accommodation village. From the Unitec Annual Report, it can be seen that there are 10,504 equivalent full-time students, the number of international student being 1,547. The number of the beds village provided 304 is far from the number of full-time students and international students.\(^47\)

The student village is a space where a student will spend a great part of their life just like home. The rooms should be spacious, comfortable with sufficient natural light. In addition, it should offer some furnitures, a comfortable sofa, a soft bed, a desk, a well-equipped kitchen and a big dinning table.

Not only do the quantities not meet the need of students, but also the quality is less than satisfactory. There is no common room for students for social interaction. The corridors are too narrow. There is no consideration for students with special needs. For instance there is insufficient space for architecture students to use a standard size drawing table and no room for a dancing student to practice.

Facade

The existing facades are boring, windows are in a row, colours are dull. It is mundane. Student accommodation is typically designed to cater for specific groups of students. They are young people, enthusiastic and youthful. Rich variations of shape and bright colour with strong visual impact can be adopted. The existing windows can only be used for light and ventilation. Interaction could be boosted by changing the shape and depth of the windows.
Circulation

The accommodation village has access to both Great North Road and the campus. The two dormitory areas are linked by a simple and crude bridge above Oakley Creek. Because it is a wooded area, it is always dark and wet, people passing over the bridge at night can feel unsafe. At 30 March, 2016. An Asian student was robbed and attacked at this walkway. In this project, the bridging area is redesigned as a more enclosed, but brighter, connection to make students feel more secure.

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Contours

Figures below shows the layout of the contours on this site. The site is on a canyon at Oakley Creek area and the landform is a valley. There is a 18 metre drop from the Eastern top to the bottom of the site and 24 metre drop from the Western top to the bottom of the site which means the both two sides of site is on a slope.

This feature makes the design need to fit in the slope. Thus, making the building insert the site is the way to deal with the relationship with the landform. Stairs need to be applied between each individual building. The access will be at the second level of the building and people can go upstairs up to fourth level and can go downstairs to the bottom level.

Figure 40: Contours of the site

Figure 41: Section of the site
Design

The re-design starts with the student living unit modules. The dormitory is where most students' leisure time activities will take place. Individual and group activities all happen in the dormitory.

The bedroom is for individual or group activities depending on the room type.

The number of people in the dorm room was considered. Different people hold different opinions about how many people they would like to live with. This will depend on many factors, like family structure, their financial situation, their relationships within a social environment and their personal preferences, all of which have a significant impact on their preference.

For most of students, they think that there is a feeling of loneliness in a single room, while if they live in a quad room, a feeling of being crowded arises effectively.

From personal experience, for some people it is more difficult to get on well with others in a crowded area. In other words, while some may be friendly, you may run foul of others. In our dormitory, there was a quad room. The same problem can be seen, even in these rooms. Personally, a single room would make me feel lonely. We used to spend one hour socialising, even when in bed. We certainly used to find something to talk about. The relationship between roommates is unique. You chat with your roommate in the same way as you speak with your mother at home. The time spent in the dormitory for roommates can build bonds of deep friendship.

When considering the arrangement of the beds for students, two main types of living style are provided. One is a grouping in bedrooms, which means more than one student sharing one room in their leisure time. The other is a grouping of bedrooms, a solution closer to family life. It is an arrangement of small group living areas, with access to the outside.
In this project, both types are provided for a more flexible choice. Type one consists of a one, three or four people shared dormitory, rather than a two person shared dormitory. Two people sharing a limited space can be embarrassing for those who are not in a relationship. Thus, in this project, the traditional practice of two students sharing a dormitory was not included. Type two is apartment mode. Each person possesses their own bedroom and shares public facilities, like sofa, bathroom and WC.

When considering the opinions students have regarding leisure activity spaces in the dormitories where I have stayed, it is concluded that the number of such spaces is insufficient.

Common spaces for students are the most important part of the whole project. Socialisation is essential for young people and affects the quality of their boarding life. For the international students who occupy large parts of the dormitory, socialisation starts their new life in an unfamiliar environment. Students require spaces in which they can come together, socialise, watch TV, etc. Two kinds of common space are included in this project. One type is the circulation space, the other one is a large communal space specialized for social activities, like common kitchen and dining room, exercise room, lounge, etc.
Design challenges

1. Breaking up the shape

Architecture often consists of monolithic shapes that suggests an institutional seriousness. Breaking up the shape suggests playfulness, fun and youthfulness as seen in the design of Roger Walker’s.

Figure 42: Break up the form
2. Opening

One’s focus will be greatly enhanced by the views of urban or natural scenes. Openings can also enrich the facade and make the architecture lively.

3. Texture

People’s emotions might be affected by texture. It might not be as distinctive as pattern and colour, but the influence can be magical.

We can also learn from the sense of touch. Our emotions are changed by the sense of touch and our judgements are established on touch. The feeling and touch of texture all interact with us silently, subconsciously and powerfully.
4. Colour

People tend to be affected by colour in lots of ways depending on gender, age, climate and ethnic background.

There are many reasons why our feelings can be affected by colours. According to Leslie Harrington, director of The Colour Association, there are cultural or social degrees and personal relationships with specific colours. It is usual to have an inherent reaction to colour. For instance, looking at red, a stimulating colour, people’s heart rate tends to be increased.49

"Conventionally, blue tends to make people feel calm and peaceful. Yellow tends to make people happy by lightening our mood and reducing our tension and worry. Red symbolizes passion, evoking feelings, such as hate and love. As a good colour for increasing appetite or social gatherings, orange brings a feeling of enthusiasm. Green makes people feel going outdoor and enjoying the natural environment and thus can help people reduce tension. Purple is a colour of passion. The darker it is, the more passionate we feel. As a powerful and overwhelming colour, black should be applied in moderation. Grey is a colour of elegance. White tends to make people feel calm and clean."50

William Wayne says “Colour evokes emotional and physical response. People are getting bored with ‘grey on grey’ and ‘white on white.’” Use of bright primary colours in architecture can suggest joy and playfulness as in the work of Charles Moore.

50: How Design Affect Your Mood, Jennifer Kelly, Updated by Dec, 15, 2010 http://www.via-architecture.com/how-design-can-affect-your-mood/
Figure 45: Colour of the building
5. Trees

Some things are widely understood to offer pleasure in our common sense as flowers, lawn and trees. Greenery in the environment can decrease or increase our tension, which in turn affects our physical bodies. More positive results can be achieved by human activities in a natural setting than activities in a non-natural environment.
Design outcomes

Master Planning

• Terraced houses (scheme 1)
  Terraced house along two riversides provide a large decks. While the lack of outdoor living space is a disadvantage. There are not many possibilities and variations to express joyfulness.

Figure 47: Master plan scheme 1
• "L" shape layout (scheme 2)

"L" shape layout makes more vertical areas which can absorb natural light. The connections of building wings can be common space.

• Row houses with 45 degrees to North (scheme 3)

Break up the L shape buildings into pieces of small houses. Separate the large number of residents into small buildings which will build group of communities.

Figure 51: Master plan scheme 2

Figure 52: Master plan scheme 3
• "Checkerboard pattern" layout (scheme 4 & 5)
  The building layout breaks up further. "Checkerboard pattern" creates small courtyards between the houses. The courtyards provide students with a place to increase social interaction. And another one is that change the orientation of "checkerboard pattern" to 45 degrees to North to get more sunlight.

Figure 53: Master plan scheme 4

Figure 54: Master plan scheme 5
• Hexagon Layout (scheme 6)

Inspired by the Checkerboard pattern, change the basic elemental shape from quadrangle to hexagon. Hexagon has more sidelines, thus in the architectural form, these will bring more possibilities for habitant to contact neighbour and get more interactions. It is good for ventilation, lighting and connecting to nature due to that the hexagon courtyards expose more walls to the outside.

Figure 55: Master plan scheme 6
Dorm Units Types

There are mainly two types of dormitory, one is the traditional dormitory style, which contains several students who share one room and owned their own bed and desk. The other is the apartment style, where each person has a separate bedroom. In this project, both types are provided for a more flexible choice.

1. Type A, Studio

Type A consists of a one, three or four people shared and dormitory, rather than a two person shared dormitory. Two people sharing a limited space can be embarrassing for those who are not in a relationship. Thus, in this project, the traditional practice of two students sharing a dormitory was not included.

Figure 56: Room type A Studio
2. Type A, four or five students shared room

Figure 57: Room type A: Four people shared one room

Figure 58: Room type A: Five people shared one room
3. Type B, four students apartment

Type B is apartment mode. Each person possesses their own bedroom and shares public facilities, like sofa, bathroom and WC.

Figure 59: Room type B: four students apartment
Concept

The concept of this project is using the common space to connect living units so that the traffic space is reduced as far as possible. The dormitory will have rare circulation space. Common rooms and courtyards take profound role in this project.

Figure 60: Concept diagram
Figure 61: Initial concept design
Initial master planning

The initial master plan is based on the hexagon grid. Hexagon grid is also the beehive pattern. The beehive’s internal structure is a densely packed group of hexagonal cells. Darwin considered the hexagonal structure of the storage cells in a beehive to be a striking example of perfect design, because it appears to be mathematically impossible to find a better solution to the problem of maximizing storage space while minimizing building materials. In this project, the feature of hexagon performing better than rectangle is that the six sidelines bring more possibilities for space to cater the different needs.

Figure 62: Site plan

Figure 63: Beehive structure

Figure 64: Initial Master Plan
Circulation

Shown in figure 65, each block of the living zone has 3 entrances from back of them. Students can go into building via the courtyard. Each block posses 4-5 living quarters and each quarter uses their own stairs. There is one bridge connecting two side of the stream.

Figure 65: Circulation diagram
Plan

The plan is made up by the hexagon grid and mainly consists of three parts, accommodation units, common space and outdoor living space. Each living quarter as Figure 66 can accommodate about 15 students. So the central equipped common room is shared by around 15 students. Large space can carry all the needs for social, relaxing and even dancing. It is also easy to get the access to the outdoor courtyard to get refreshing.

Figure 66: Plan of one living quarter
The central common space provide many possibilities for students to do activities in that space. Cooking, eating, relaxing, and even dancing all can occur in this space.

Figure 67: Students dancing
Figure 68: Students cooking together
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Figure 71: Common space
It is also easy to get the access to outdoor living space. Courtyard is a kind of semi-public space. It is good for students to have a sunbath, chat with each other or just lying on the lawn. Having a close relationship to natural elements has crucial benefits for human.
Figure 75: Perspective for accommodation village
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CONCLUSION

This research project is a student dormitory with an attempt to apply joyfulness into the design. The target of the project is to determine not only the qualities which dormitory rooms should possess in order to meet students' physical needs, but also to make the boarding students feel happy.

An issue with current dormitory design is the lack of happiness. This project aims to affect people's mood by means of architecture. Breaking up the forms, colours, textures, court yard and trees, to change people's feelings mentally, and make the accommodation complex joyful. Another key point of this project is the way it deals with the valley landform and the height difference of the site. The complex is inserted into the land and oriented towards 45 degrees to the North, in order to absorb more sunlight. In accordance with the research, natural light has great influence on people's mood. As the site is a forested area, sunlight access is very important.

This project will enhance the quality of student living, increase the happiness of their campus life, and change the existing negative impressions of student housing. It changes the student accommodation village and would make people more willing to live on campus. The accommodation village would attract more students and allow them to enjoy their college life. It could become an attractive space where students can live, study and socialise.
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Final Presentation

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