Parametric Wall

Architecture Design

2014

This project looked at creating a installation on the grounds of the Architecture and Design campus where the built form would aim to have contact with humans. Local New Zealand timber species were researched and from the selected species the materiality of the intervention would drive the output. The form was generated through early sketches and then transferred to Grasshopper software for iterations and final design. The final intervention is one that acts as a bike park on the north face of the building. The form allows for bikes to be parked and locked to the structure at a safe and convenient location, replacing the old and tired rack previously used. In addition to a park, the modules within the structure also move and react to the sun, closing themselves when brightness peaks to filter in the light that is know to overheat the main foyer behind it.

Block House

Architecture Design

2015

Learning to extract ideas from recyclable components in our surroundings and building on rural land is what this project was based on. Coupled with this, we were required to design a house with specific requirements that we would have lived to live. Shipping containers were chosen and composed in a stacked form to create a small house housing up to four people. Working with the structure of the elements and the orientation, a three storey, modular orthogonal house nestled within a forest was designed that focused on cost, construction and site conditions.

Community centre

Craft

2015

This two-part project creatively explores the essential partnership between architecture and the people who inhabit its spaces and surroundings – bringing design to life.

These two projects investigated the architectural implications of site and context. Project work included studies of the elements and principles of site analysis – researching & measuring the environmental, physical, urban, cultural, historical, social and legal context of the design.

The central theme of this design series is an exploration of the human perception and understanding of architecture through the senses. Principles of visual, acoustic and thermal sensory inputs investigates how the form generated can be used in creating architecture, especially environmentally friendly and sustainable architecture that is based on a particular clientele.

In part two of this project, a community centre was designed that was based in the diverse suburb of Newtown in Wellington. This community centre has been designed with respect to its surroundings, both physical and cultural. The design reflects the representation of different cultures that call Newtown home, and this can be seen in the split of levels that not only create interesting interior qualities but also portray the various view point of the different people.

The design mainly consists of thin concrete pillars and slabs that act as the structure of the design. This exposed feature is intentionally generated to represent the many individuals that come together to form and foster a healthy society. The physical model created portrays the craft and thought-process of what has been designed, giving also a visual understanding of a final outcome. This model made from MDF and acrylic represents the intended soft and ‘homely’ qualities of the spaces, with the variation of areas for different uses.

Infill Housing

Architecture Integration

2015

This two-part project creatively explores the essential partnership between architecture and the people who inhabit its spaces and surroundings – bringing design to life.

These two projects investigated the architectural implications of site and context. Project work included studies of the elements and principles of site analysis – researching & measuring the environmental, physical, urban, cultural, historical, social and legal context of the design.

The central theme of this design series is an exploration of the human perception and understanding of architecture through the senses. Principles of visual, acoustic and thermal sensory inputs investigates how the form generated can be used in creating architecture, especially environmentally friendly and sustainable architecture that is based on a particular clientele.

In part one of this project, an infill housing scheme was designed to help house part of the refugee intake in Wellington, New Zealand. A compact modular design was generated to enable assembly in small sites and to keep production and construction costs low. This design was to respect both the cultural expectations of the users and also the physical requirements they may have.

The final design consists of prefabricated, structurally insulated panels that join to create a solid and functioning house. Spaces are carefully planned and elements of compact and flexible design are considered to provide a thoughtful piece or architecture that in universal in its approach.

Elemental Design

Architecture Design

2015

How do we create architecture that evolves itself from a fictional narrative? This project is based on creating an narrative and generating a form that has more meaning than just walls. “The life cycle” – a story about the reversal of life, a journey from death to birth. The journey starts from the ground, moving through the fire, cleansing in the water and rising to the skies. The voyage from start to finish is one that is reflective in nature; using elements such as form and material to provoke feelings within the user.

S9 Studio

Architecture Design

2015

S9 is a project that includes a self-reflective activity, synthesising interconnected contextual factors and a range of influences from conceptual to pragmatic concerns. A process of a fast, free and explorative design approach was taken to encourage an emphasis on experimentation and lateral thinking. Through thorough analysis of site and iterations, skills crucial to the design process were learnt and led towards an awareness of method and outcome. Strategies of architectural composition; ordering, forming and massing are expressed both on the inside and outside of the form, with the flexible program and composition of the external façade. The threshold between private and public space changes through the design with mixed used spaces that encourage a variance of contact. The façade reflects the famous location it sits in, incorporating the chaos and vibrance of Cuba Street and its surroundings.

Documenting a House and Timber Frame Housing

Construction

2015

This project focused on materials used in the construction process in New Zealand, along with their history and examples of them being used in modern construction processes / situations.

Selection and specification of building materials and construction methods were documented in accordance with NZ standard 3604. The construction documents of the designed building informed the physical model which was constructed from balsa wood to exact scaled dimensions of a timber constructed house in New Zealand. The completion of this project provided knowledge about construction of small-scale buildings in the New Zealand context.

Crystallization

Physical Modelling

2016

The project was based on creating interesting forms using physical material. In collaboration with Brittany Irvine and Hettie Bull, borax solution was used to create physical forms through an iterative and experimental process. The data derived from the outcomes were then extracted and input into the second phase of this course; digital form generation.

Digital form Generation

Computer Modelling

2016

This second phase of digital modelling processes included raw data from physical studies of materials being translated into a digital realm. Through the use of software such as Maya and grasshopped, forms were tested in response of the data fed and from this a process of architecture had started form. After a simple response was reached, the formal qualities were taken into Autodesk Maya to produce an over response to the “aerial pandemic” narrative. The final design is one that is formed by massive crystal shapes that collate to form a barrier against the threat from above. The architecture acts as shield that actively opens and closes around a large island in order to protect its refugees from danger.

Residential Home 1

Architecture Design

2016

A quick and simple house design generated for a large scale development project. This design, along with ones from collaborating members were to form a large scale development in Kilbernie, Wellington. Basic quality drove the design, with a budget to work to and full costing of every element having to be provided. Market research at the beginning of the project set out the scope for design and analysis of the output revealed that this model was sellable in the local housing market.

Residential Home 2

Architecture Design

2016

A residential home that was designed around a very strict budget and client. The needs of the client included a two storey open-plan house that needed to contrast with the context of Island Bay, Wellington. Materials such as scorched wood and aluminium were used to give the design a modern look while features such as the pool were required to blend in with the house while still having a component of separation.

Waterloo Redevelopment

Urban Design

2016

The Waterloo redevelopment project was in collaboration with Riley Adams-Winch. This project looked at revitalizing and rejuvenating the suburb of Waterloo, Wellington. The proposal aimed to foster connection between the eastern and western wards of Waterloo, to beautify and increase inhabitation of public spaces, to optimise and increase volume of residential space and to use the socio-economic stability of Waterloo to relive pressure of deprivation in surrounding suburbs.

The final architectural outcome is one that redesigns and redefines the main Waterloo transport hub and creates housing that intensifies the area in order to address the various issues researched. Architectural features both on a small scale with layout of dwellings and on the larger scale with rejuvenation of roads complete this urban design proposal.

Documenting a Building

Construction Drawings

2016

This project, based on a large scale building, consisted of detailing and documenting of a core, the services and the façade of an office building located in Wellington, New Zealand.

The knowledge gained in this project included the principles of designing and building larger buildings, specific construction systems suitable for high rise offices and use of technologies that are suitable and mandatory on larger projects. This process also informed that buildings are constructed as a result of a multitude of intersecting factors: regulatory conditions, building performance criteria, climate, cost, materials, design objectives – all these, among others, needed to be resolved in order to get a building built.

Researching through an array of materials and techniques, this project documents the specifications to New Zealand standards that are to a quality of submission to local authorities and building contractors.

New Zealand Earthquake Museum

Architecture Design

2016

This project looks at the development and design of the New Zealand earthquake museum located in Evans Bay Parade, Wellington. This design looks to incorporate the seven major earthquakes recorded in NZ and transform that into a form that helps narrate a story to the people that visit it. Architectural form is coupled with structure to enhance the meeting of these two systems – like two tectonic plates colliding with each other, only different being that this one will work with the other rather than oppose it. This museum largely made up of reinforced concrete, will be used for exhibitions, learning and also reflecting on the past while building into the future. The design outcome holds two narratives as well as two different levels that even though seem to clash, end up working in harmony to complete the journey.

School of Music

Architecture Design

2016

The school of music was a project for Victoria University of Wellington, located in the heart of Wellington city. This building was designed to house the new school of music; which needed to include a multitude of different activities. Site analysis determined what could be achieved in the compact site and a heavy range on program analysis determined the internal and spatial qualities of the spaces. The final design generated looked to house two large auditoriums, a large number of studio spaces and individual offices for management and staff. Qualities such as acoustics and privacy were to be considered, which also helped determine the division of spaces. Structure was an important aspect of the design, and the decision to expose it allowed for interesting shapes and formations evident on the different street fronts.

Athens Intervention

Architecture Design

2017

This project completed at the Technical University of Munich was a studio project based in the suburb of Victoria in Athens, Greece. In this studio we travelled to Athens to get an understanding pf what and who we were developing for, taking in the knowledge and culture of the Greeks. This design proposal is in collaboration with Din Sterain from the University of Tel Aviv, and focuses on the rejuvenation of an old Polykatoikia – a traditional Greek apartment building. In this design we explore the possibility to transform this unoccupied building into a large community hub, where a different range of programs serve a variance of age groups in the neighbourhood.

Athens Urban

Urban Design

2017

This project completed at the Technical University of Munich was a studio project based in the suburb of Victoria in Athens, Greece. In this studio we travelled to Athens to get an understanding pf what and who we were developing for, taking in the knowledge and culture of the Greeks. This urban design proposal is in collaboration with Din Sterain from the University of Tel Aviv.

Commercial Design

Architecture Design

2017

This project consists of an office and retail development in the heart of Porirua city in Wellington. The main objective of this project was to strike a balance between developers, investors and cost. This design that has been generated is a reflection of the typology that Porirua exhibits, both in terms of forms and shapes but also in terms of the local identity of pacific cultures. Location is made the most of in this design and the circulation of people both within and through it were given full consideration. Attention was also given to the many different aspects of designing a large scale commercial development and the many challenges and opportunities that come from it. The structure of the building is designed to work well with the design to allow for maximum usage of space and minimum obstructions within the floor area. A balance between work and leisure amenities in the design ensure that different types of people can interact with the site at any given time, allowing for the collaboration and contact of various situations. This office and retail complex caters to all sizes of businesses and with this allows for the city of Porirua to maintain their community spirit while striving to increase its economic growth in the region.

Commercial Construction

Construction Drawings

2017

This project consists of the documentation of an office and retail development in the heart of Porirua city in Wellington. The main objective of this project was to strike a balance between developers, investors and cost. This design that has been generated is a reflection of the typology that Porirua exhibits, both in terms of forms and shapes but also in terms of the local identity of pacific cultures. Location is made the most of in this design and the circulation of people both within and through it were given full consideration. Attention was also given to the many different aspects of designing a large scale commercial development and the many challenges and opportunities that come from it. The structure of the building is designed to work well with the design to allow for maximum usage of space and minimum obstructions within the floor area. A balance between work and leisure amenities in the design ensure that different types of people can interact with the site at any given time, allowing for the collaboration and contact of various situations. This office and retail complex caters to all sizes of businesses and with this allows for the city of Porirua to maintain their community spirit while striving to increase its economic growth in the region. A main concrete beam and column structure is used along with moment frames in the x and y axis for horizontal loads.

Vertical Gardens

Robotics

2017

This project was based on robotics and completed for the chair of Robotics and Realization at the Technical University of Munich. This intervention is based around a scenario where a robot is developed to grow and harvest basic fresh produce for people living in a central city apartment or location. This robot is designed so that it can be adapted to the exterior of any existing small-sized building with easy set-up and running features. As we progress as a society, the use of robots are increasingly prominent in everyday life and by adapting this technology to an existing structure, we are enabling ourselves to enjoy these basic luxuries while solving a global problem with the help of construction and automated technology.

Symbols and Craft

Architecture Research

2017

This project looks at the importance of craft in Architecture. From doing we learn a lot, so how can we marry the process of making to the process of understanding what we design? Symbols play a big part in buildings, and using these symbols to produce architecture results in structures that turn into icons that live forever.