



National Certificate of Educational Achievement
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

Exemplar for Internal Achievement Standard Design and Visual Communication Level 1

This exemplar supports assessment against:

Achievement Standard 92000

Generate product or spatial design ideas using visual communication techniques in response to design influences

An annotated exemplar is a sample of student evidence, with a commentary, to explain key aspects of the standard. It assists teachers to make assessment judgements at the grade.

New Zealand Qualifications Authority

To support internal assessment

Grade: Achieved

For Achieved, the student is required to generate product or spatial design ideas using visual communication techniques in response to the characteristics of design influences. One must be an appropriate te ao Māori design influence. The other can be any other designed source.

A rationale is required for both influences, either as a written description or a collated set of images. This is followed by generating design ideas using visual communication techniques.

There is evidence of a design influence from te ao Māori, including research into carved panels, traditional architecture, the origin myth of the separation of Ranginui and Papatūanuku, and from Belinda George, a noted architect. A rationale is provided for the te ao Māori carvings and the origin myth through collated images, a description and an analysis.

For the second source the student has provided images, a short description and an analysis of the work. Each influence's characteristics are identified through their design elements, which are seen in the generation of shapes and forms and in the design ideas derived from the Belinda George architecture (a Pāua shell and weatherboards).


The student's design ideas are generated and described using visual communication techniques of 2D and 3D sketching, and some use of colour.

For Merit, there should be further generation and exploration of both aesthetic and functional aspects of the design idea.


Achieved
 NZQA Intended for teacher use only

Maori Architecture Research

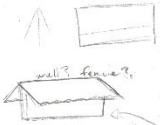
The carved patterns here are really detailed through and through. And the pawa hiko stand out because of the red material.



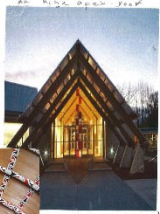
The traditional appeal the art carving has is pleasant using natural wood material.




I believe that the piece of art can withstand for a long time after it being created.



This is an example of Modern Maori architecture because the roof being shaped into an apex and the beams supporting it. Specifically the beam placed in the middle.


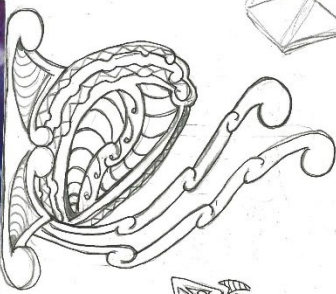

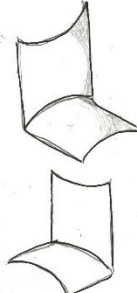

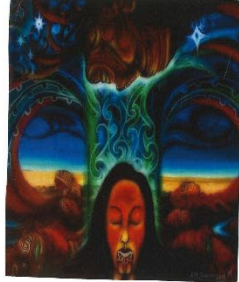


The picture on the right is an example of older day Maori architecture with the exposed support beam, separating the roof from the floor.

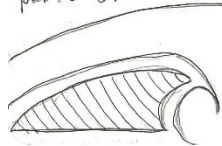


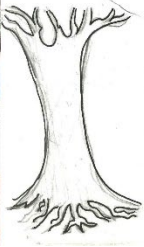

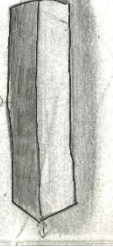


Modern and old Maori architecture both have a connection to each other. Since Modern Maori architecture takes inspiration from the older day Maori architecture. That is why there is such similarity in the old and modern designs.

MAORI CREATION

In the beginning Ranginui and Papatūānuku were joined together. And their children were born between them. The children decided to separate the two to allow life to come into the world. After this the children became gods of various parts of the natural world.

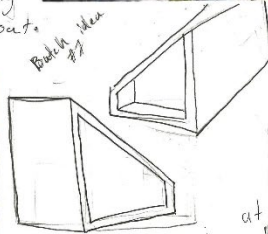
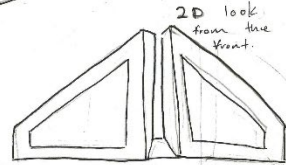
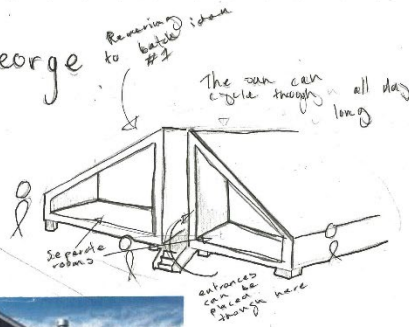









Belinda George Architects

The architect behind this design kept using a series of a square or rectangle like pattern everywhere and even near the house. This may influence my own design by the repetitive appearance of a single shape or pattern. The architect probably took inspiration by the repetitive pattern in Maori architecture.

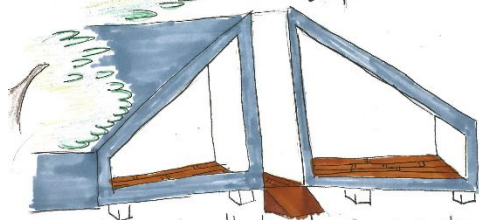
The whole shape of the house looks that of a maarae but cut in half vertically. The inside and outside material looking polar opposite but it stands out.



In this design the architect Belinda thought of using a high apex roof that at the end of both "tails" of the curved house.



Concept Idea #4 Separation



The keyword that lead me to this design was "separation" as the two rooms are separated inbetween.

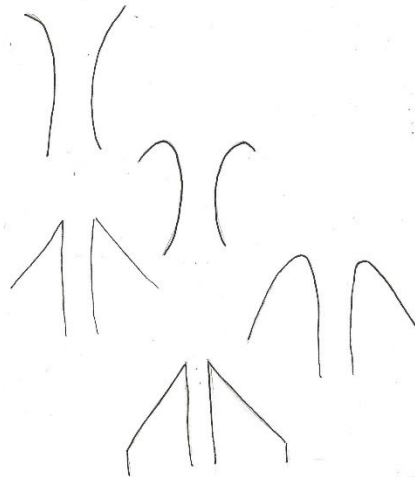
However the whole shape was inspired by a design Belinda, an architect had designed herself.

I just happen to mirror the structure and combine the result was this.



Still wondering what material to use on the roof but im leaning towards a clean metal sheet, rigid look.

On how the roof line is made can allow sun to cycle through all day long if positioned towards the east.



Ohiwa Harbour Inspiration

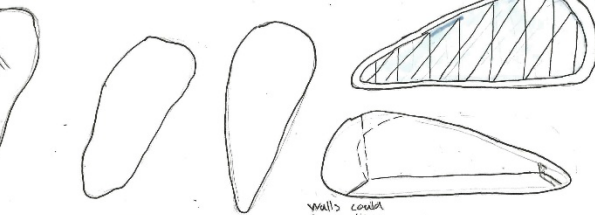
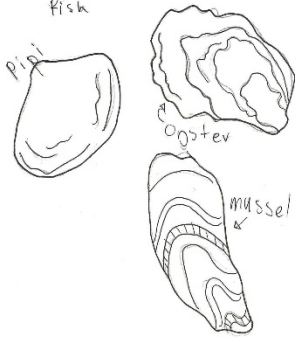
Ohiwa harbour has another name it goes by, "Basket of the people".

Basket or kete was probably used to carry seafood.

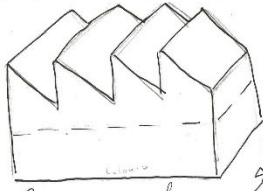
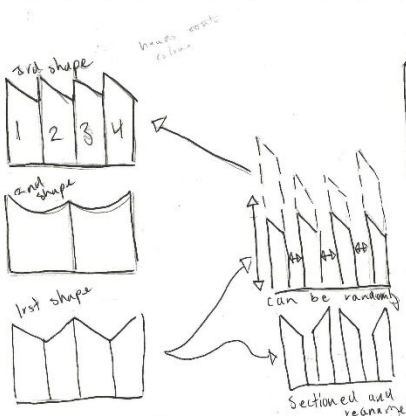
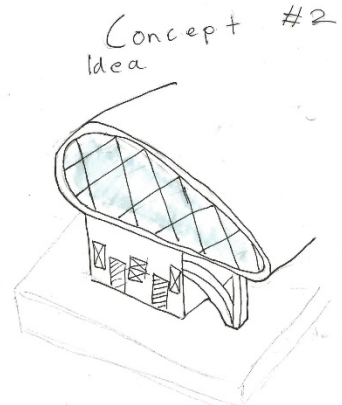
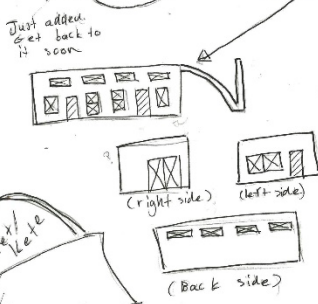
The seafood they picked could be:

Pawa, Oyster, Pipi, Crayfish, mussel and fish

Kete are made of flax that the maori picked themselves. They have a over and under pattern.



This design was taken from one of Balima design. Just tweaked.

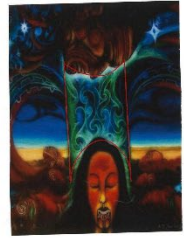
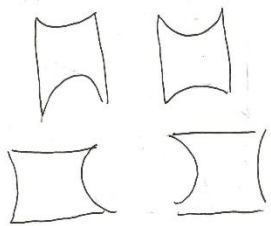


Reminds me of weather boards used on houses.

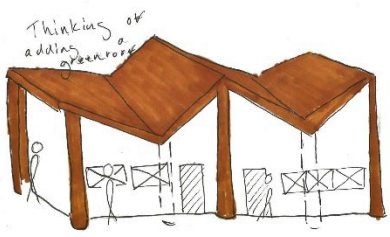
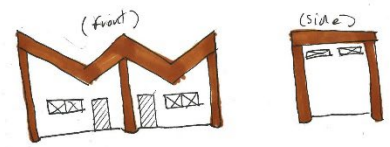
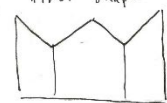
could use these weather boards as a material on my concept. Just flip and you can see the resemblance.



Concept Idea #3 Object displacement



refering to the first shape



Grade: Merit

For Merit, the student is required to develop product or spatial design ideas using visual communication techniques in response to design influences. This involves using visual communication techniques to draw on the characteristics of source materials to explore the function and aesthetics of the student's own design ideas.

One of the sources must be an appropriate te ao Māori design influence. The other can be any other designed source. A rationale is required for both influences, either as a written description or a collated set of images. This is followed by generating design ideas that relate to the characteristics of the source materials.

There is evidence of a design influence from te ao Māori, with examples of traditional and modern Māori architecture, the origin myth of the separation of Ranginui and Papatūanuku, and from Kerr Ritchie (a noted NZ architectural practice). A rationale is provided for both influences, through collated images and a description of the origin myth, and images and annotations on the work of Kerr Ritchie.

Design elements are identified for each influence, and are drawn on in the generation of shapes and forms. A triangular element from both te ao Māori and Kerr Ritchie is explored and progressed in the subsequent design ideas. Function and aesthetics are explored in the development. Design ideas are generated and explored using visual communication techniques of 2D and 3D sketching, and some use of tone.

To meet the 'extend' criteria for Excellence, evidence is required of the use of visual communication techniques to draw on the characteristics of source materials, and of applying divergent thinking to regenerate new design ideas. This could be shown by not refining the design idea, and moving beyond the pitched roof and re-generating new forms to create different rooflines and spaces within the building.

Merit
 NZQA Intended for teacher use only

Māori Architecture

1. This image displays the use of Māori architecture. It's shown by incorporating Māori patterns and shapes into the design.

2. Picture two shares the same aspects picture 1 does. The use of patterns and similar shapes potentially makes this Māori architecture. This piece of art has the use of scaling by making some boards larger than others creating visual movement to the larger Jores.

3. The designer has brought a triangular aspect into the back. There is a use of shape and aesthetic in this building. Wood can also be a key aspect for Māori architecture, meaning the designer brought materials into the design.

4. I would use all of these aspects together to create a strong idea of Māori architecture.

Māori Creation Story

In the beginning Ranginui the sky father and Papatūānuku the earth mother were joined together with their children stuck in between, living in darkness. Their son Tānemahuta was sick of living in darkness so he came up with a plan. Tāne asked his brothers to help him but Tāwhirimātea refused and was angry. Tāne wanted to separate his parents. Tāne's brothers and himself pushed against their parents and sent Ranginui to the sky and Papatūānuku stayed where she layed. Each son became a god of various parts of the natural world.

NZ ARCHITECTS

5. Picture 5 is different from the rest of the picture examples because you can see the inside of what Kerr-Ritchie architects would look like and it's hard to see which kind of resemblance this picture has to the rest of them. From what can be seen in this photo it's clear to see the use of large windows and wood to continue the same piece the architects use with every house. The contrast of the wood creates visual movement as well as the peculiar shapes and beams that run through the house.

4. Picture 4 has a more calm look to it unlike the examples before, they share the same frame structures. This makes this building different from the others because of the shape but the pictures still have the same recurring aspects, for example the use of wood, the light and dark contrast, and the large windows that would bring large amounts of natural light into the house.

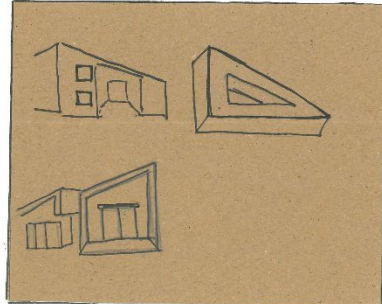
3. Picture 3 holds the same similarities picture 1 and 2 do. With the use of duct, and light tones together to create a modern feeling within the building itself. Picture 3 also can relate to the main creation story work separation. Separation is shown with the main structures and the building in the middle that brings them together but also keeps them distant from each other.

2. Picture 2 shows the same triangular roof with the following pattern of the wood. In this picture you can see that Kerr-Ritchie uses a light finish inside the building. This brings the effect of a clean aesthetic and natural light. Certain aspects of this building could be considered maori architecture, the weaving and use of patterns and wood.

1. This design shows the contrast between wood and the black finishing. It brings in natural light from the large windows. This design would connect to maori architecture because the triangular shape in the roof and the wood finish.

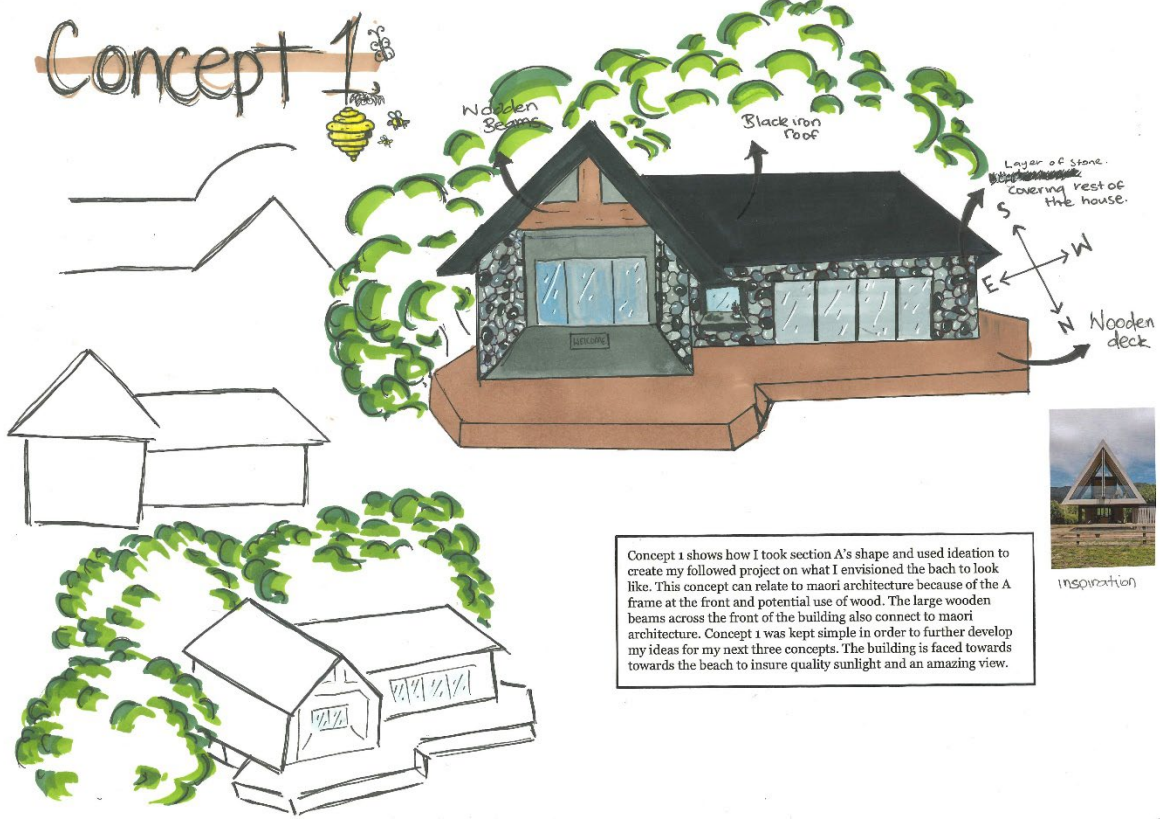


Kerr-Ritchie



Kerr-Ritchie

Concept 1



Concept 1 shows how I took section A's shape and used ideation to create my followed project on what I envisioned the bach to look like. This concept can relate to maori architecture because of the A frame at the front and potential use of wood. The large wooden beams across the front of the building also connect to maori architecture. Concept 1 was kept simple in order to further develop my ideas for my next three concepts. The building is faced towards towards the beach to insure quality sunlight and an amazing view.

Concept 2

White box profile iron used for cladding

Black corrugated roofing iron

Corrugated iron

Concept 2 shows the incorporation of Kerr-Ritchies design. Concept 2 doesn't show Maori architecture but it was an idea to try use the architect throughout the concept. Concept 2 has large windows allowing natural light, concept 2 has a more modern look compared to the rest of the concepts.

Concept 3

Windows

Exposed rafters

Bifold Doors

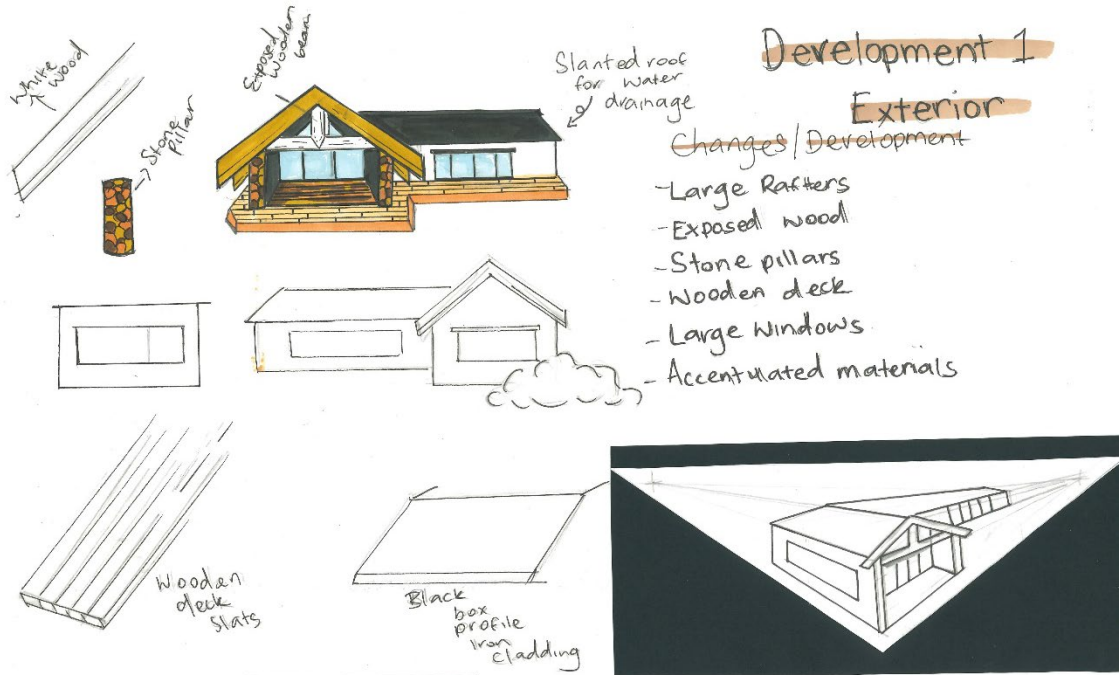
Covered deck area

Main Bathroom

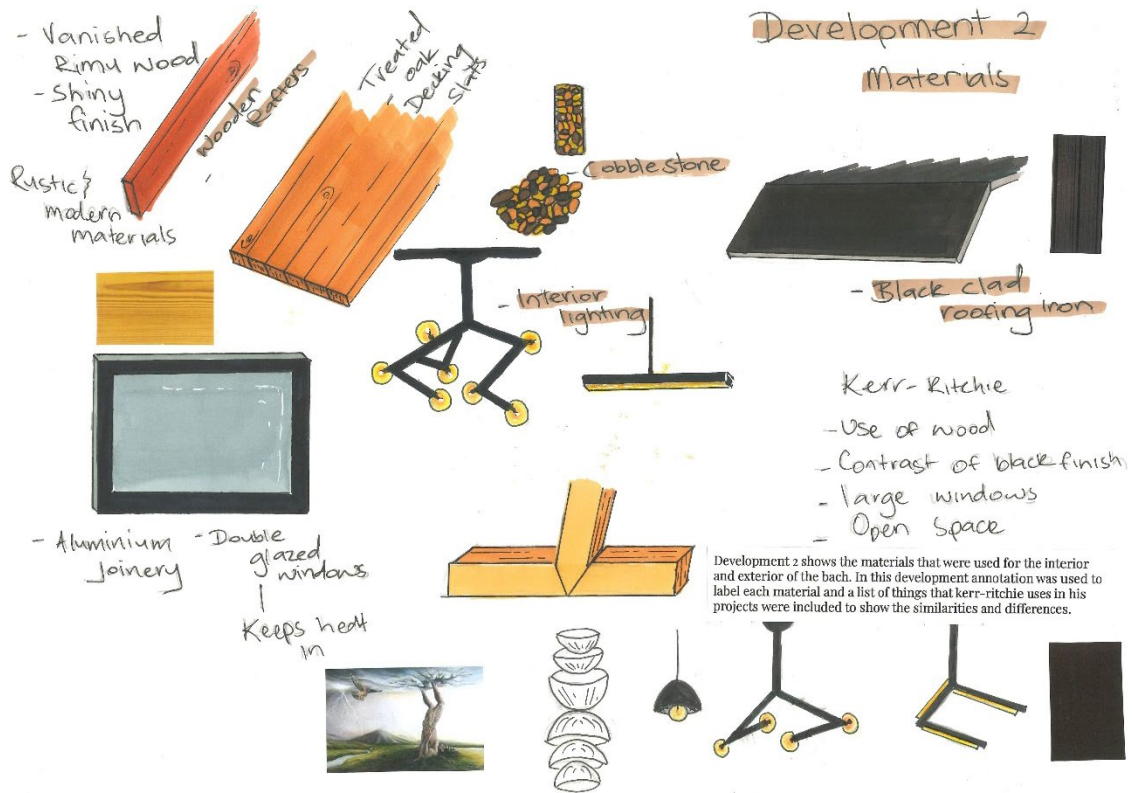
Kitchen

Lounge

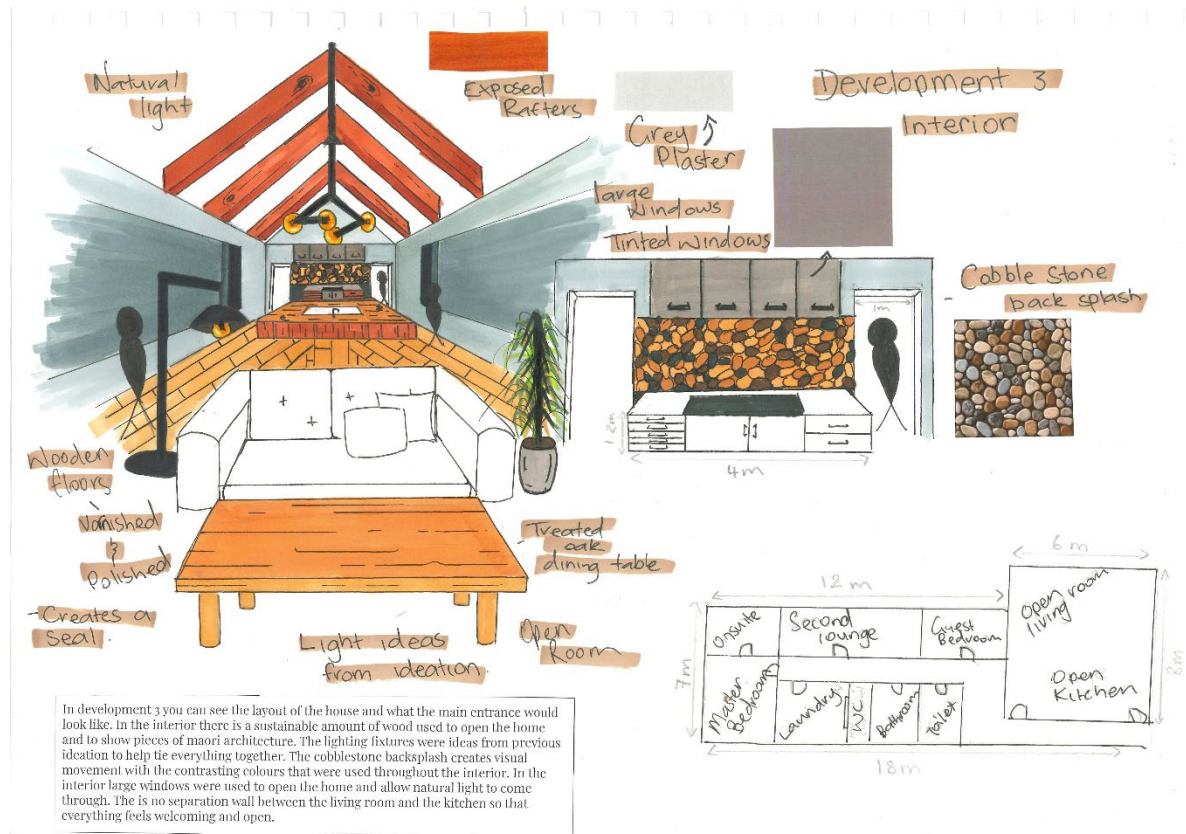
Concept 3 was inspired by incorporating Maori architecture with the gabled triangle shape and the use of wood in the design and the pathway wood creates visual movement. The wood used in the design and the pathway building is modern but has rustic features amongst it. Concept 3 includes large windows and a covered deck area. Inspiration for this building was one of Kerr-Ritchies projects but with a twist.



Development 1 shows the changes that were made to the exterior, with this development bits of all three concepts were incorporated in to one. On this page you can see different views and aspects of the building and the exterior materials. Development 1 can connect to maori architecture with the wooden rafters, the a frame structure and the consistent use of natural wood.



Development 2 shows the materials that were used for the interior and exterior of the bach. In this development annotation was used to label each material and a list of things that Kerr-Ritchie uses in his projects were included to show the similarities and differences.



Grade: Excellence

For Excellence, the student is required to extend product or spatial ideas using visual communication techniques in response to design influences. This involves using visual communication techniques to draw on the characteristics of source materials to regenerate new design ideas.

One of the sources must be an appropriate te ao Māori design influence. The other can be from any other design influence. A rationale is required for both influences, either as a written description or a collated set of images.

There is evidence of design influences from te ao Māori and Santiago Calatrava (a noted Spanish architect). A rationale is provided for both influences, expressed through the research and acknowledgement of te ao Māori heritage through images and annotations describing Māori origin stories of Ranginui and Papatūanuku, Tane Mahuta and Tawhirimatea, Tangaroa and Tūmataunga, and a biopic and images of Santiago Calatrava's work. The characteristics and design elements are identified for each influence, and are drawn on in the generation of shapes and forms.

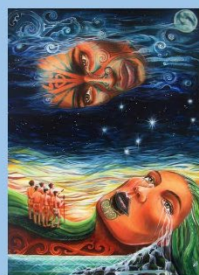
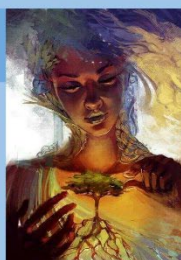
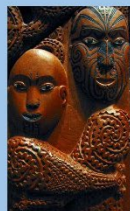
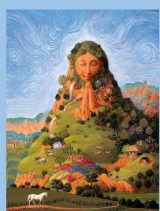
In the initial exploration of the characteristic shapes and forms, there is continued reference to both design influences, including the helical shapes and symbolism from te ao Māori and the skeletal curves from Calatrava. Function and aesthetics are explored and progressed in the development of the emerging seat design idea.

Design ideas are generated and explored using visual communication techniques of 2D and 3D sketching, and digital and physical modelling. The design ideas are extended, with divergent thinking used to regenerate a new version of the seat design, meeting the Excellence criteria.

Excellence
 NZQA Intended for teacher use only

Ranginui and Papatūānuku

In the beginning there was nothing, that nothing soon became darkness then suddenly two gods appeared Ranginui, the sky father and Papatūānuku, the earth mother. They loved each other very much and became inseparable. Papatūānuku had eight children born in the darkness between them. Tāne- Mahuta, Tāwhirimātea, Rongomātane, Haumia-Tiketike, Tangaroa, Tūmataenga, Rūaumoko and Rehua.



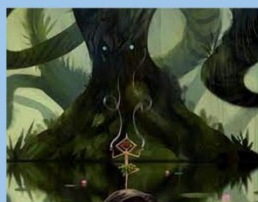
Tāne Mahuta

One day, Tāne (god of the forest), tired of living in darkness with no room to run and play, decided to ask his brothers to help him separate his parents.

Tāwhirimātea

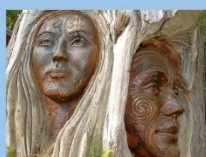
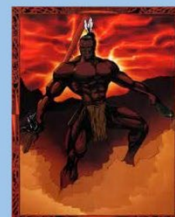
All of the brothers agreed to help push ranginui up, away from papatūānuku except Tāwhirimātea (god of the wind and sea). Each of the brothers pushed with all their might, one by one, but everytime they were unsuccessful.

That was until Tāne came up with one final plan. He turned himself into a small plant and waited. He waited so long take he had grow into a giant Kauri tree. He has so tall and so strong that he pushed his parents apart from each other, taking Tāwhirimātea up with Ranginui.



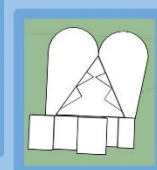
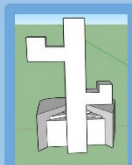
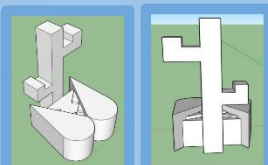
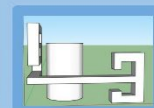
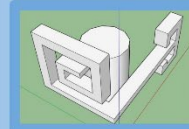
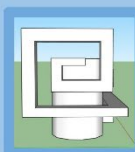
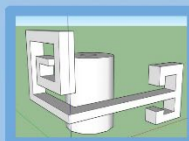
Tangaroa (god of the sea)

Tūmatauenga (God of war)

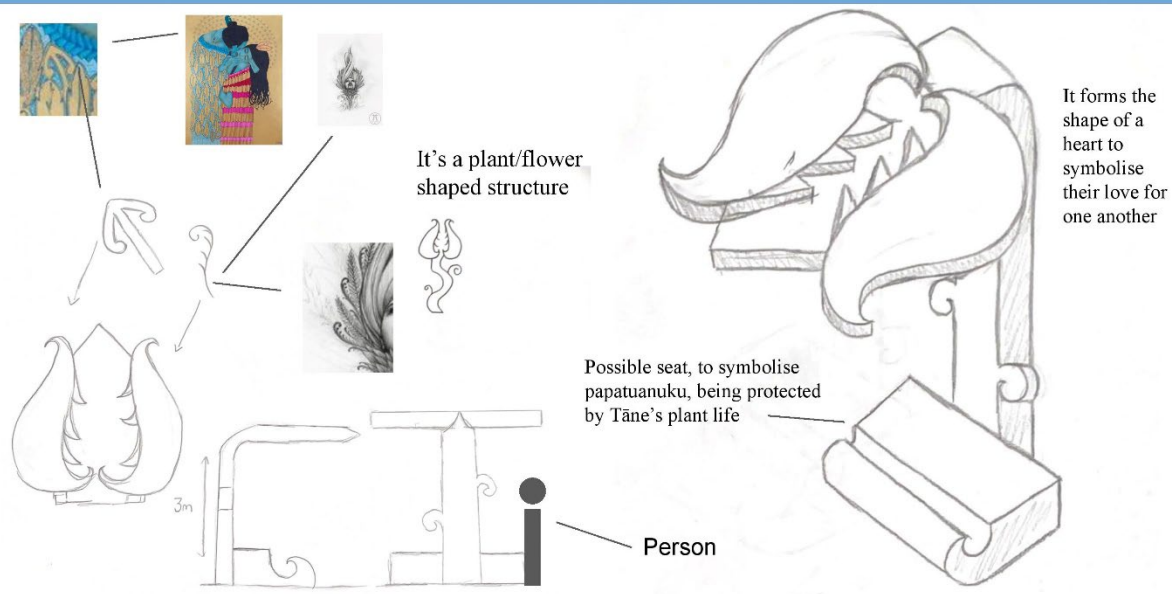


After ranginui and papatūānuku were split Tāne-Mahuta was tasked with clothing his mother with his forests and bushes. While ranginui was covering her with lakes and rivers with his tears that rained down. In his fury Tāwhirimātea created heavy wind and storms.

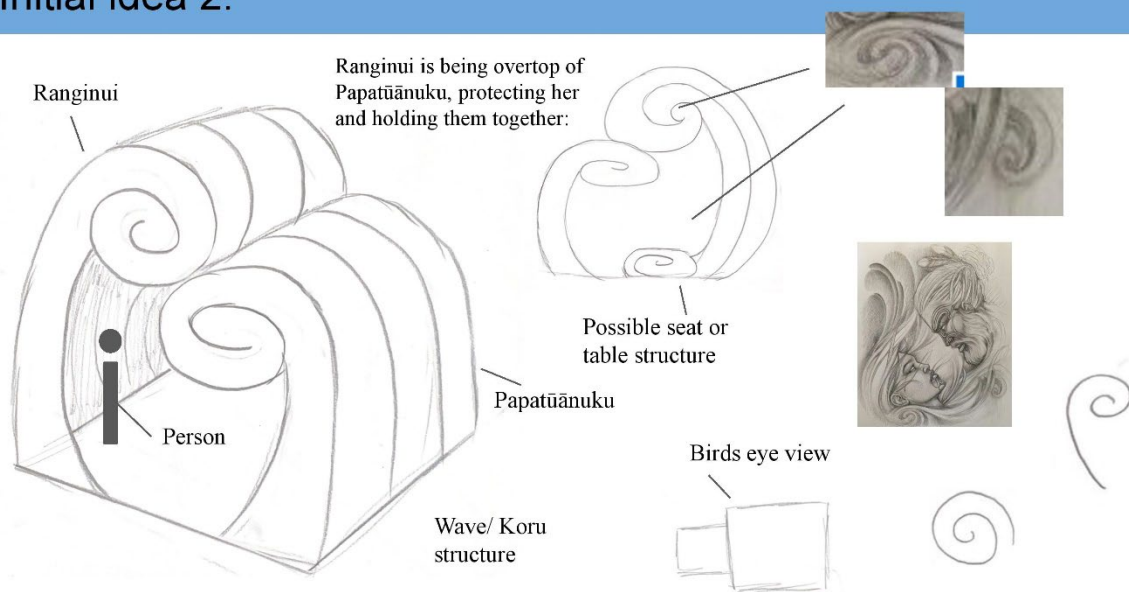
Ideation sketches:



Initial idea 1:



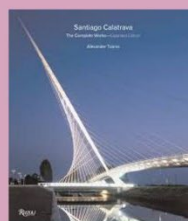
Initial idea 2:



Architect research:

Santiago Calatrava Valls:

- He's from Valencia, Spain
- Born 28th of July, 1951, he is currently 71
- Some of his recent major works include, the palace of congresses, the Margaret hunt hill bridge, peace bridge, I.S.T building of the Florida polytechnic university, museum of tomorrow, the world trade centre transportation hub, and the oculus
- "Architecture is a code. It's a pure code, derived from the dimensions of nature."
- Fazlur Khan International Fellowship, Médaille d'Argent de la Recherche et de la Technique, Gold Medal of the Institution of Structural Engineers, the Gold Medal from the American Institute of Architects (AIA), the Eugene McDermott Award, the Golden Plate Award of the American Academy of Achievement, James Parks Morton Interfaith Award
- Curved over structures, lots of spikes, like whale bones or the ribcage of an animal, looks like feathers, reminds me of the designs from the movie aliens, domed, like an alien spacecraft.



Santiago Calatrava's significant works



Museum of tomorrow:
Rio De Janeiro



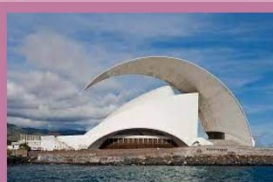
city of arts and sciences:
Valencia, Spain



AV Mediapadana: Reggio
Emilia, Italy



UAE pavilion: Dubai



Auditorio de Tenerife: Canary
islands, Spain



World trade centre transportation
hub (The Oculus): New York City



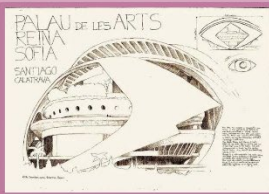
Milwaukee Art Museum:
Wisconsin, USA



Palau de les Arts Reina
Sofia: Valencia, Spain

Key Characteristics

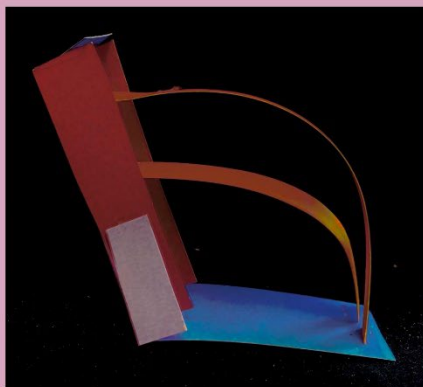
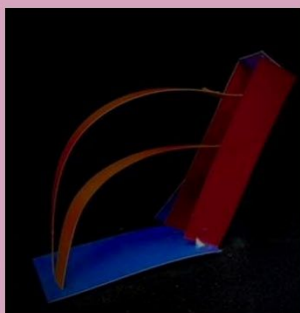
- Symmetrical
- Curved
- Reflective / reflected on water
- Lots of the buildings are built over water
- white/ pristine
- Futuristic
- flowy/ wavy
- Ripples
- Lots of curved lines
- spiderweb



Preliminary sketches



3d preliminary forms



Initial idea 1: 2d views



The poles differentiate in height and distance

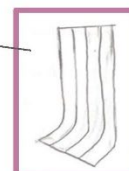
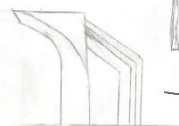
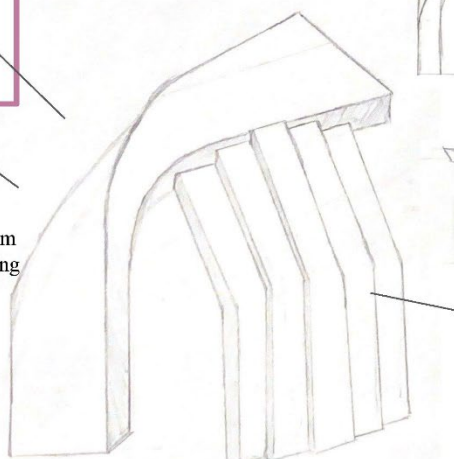


Bird's eye view

Person

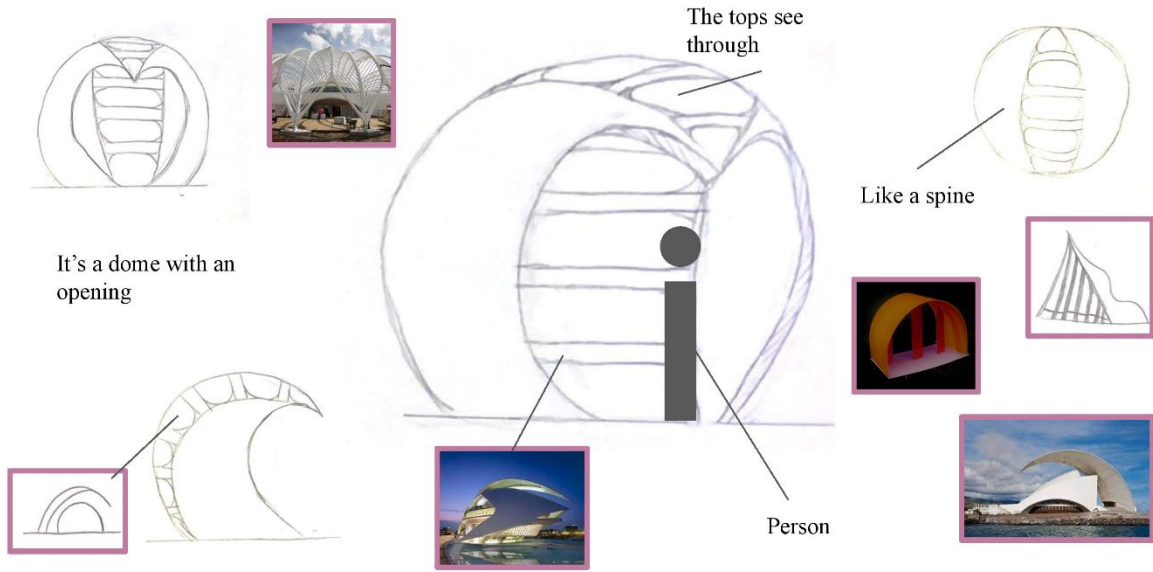


The shelter is inspired from Santiago's twisting building design

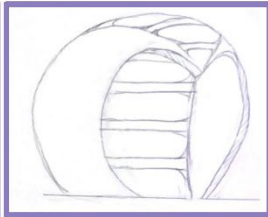
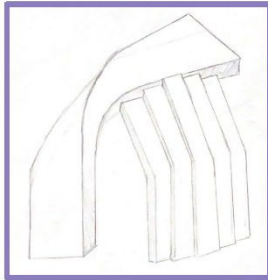


Use of repeating lines

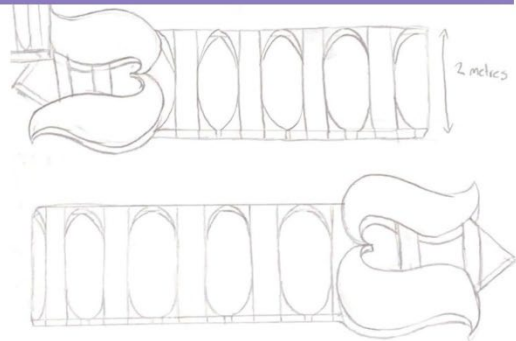
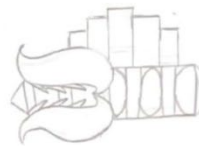
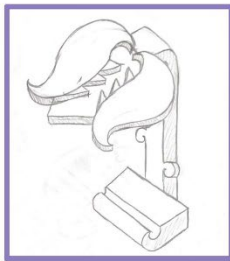
Initial idea 2:



Extending ideas



From three of my initial ideas, I took a lot of my inspiration from the my flower design from my creation story initial ideas. I also used the see through pattern in my dome structure inspired by Santiago Calatrava so that the structure lets in natural sunlight during the day. I then considered using the tilted part of my other Santiago Calatrava initial idea. I improved it by simplifying the heart shape, and made sure to elongated the size of the structure to add more space and give more shade to people using it. I also have decided to repeat the chosen design 4 times so I can use as much space as what has been given to me.



Extended idea's design



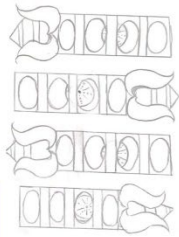
Seat design

The seats inspired by kina shells, I was inspired by both starting points, with Papatūānuku's connection to wildlife, and Santiago Calatrava's use of natural elements in his work

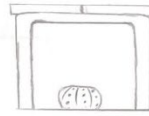
The seats aren't set in place so there wouldn't be a set amount in each structure



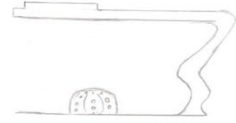
Bird's eye view



3m

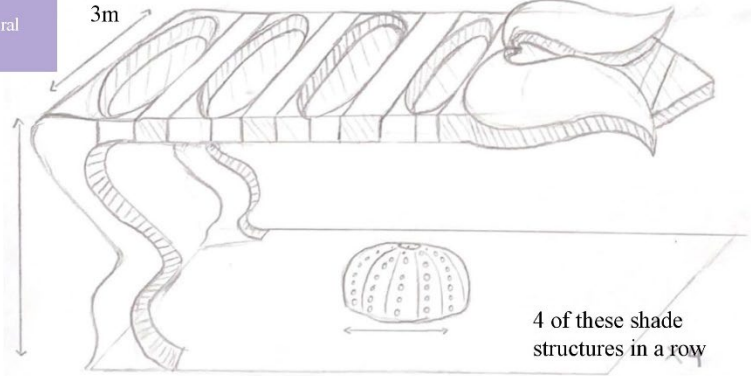


Front and side view



6m

3m



4 of these shade structures in a row

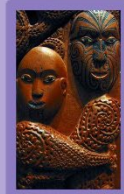
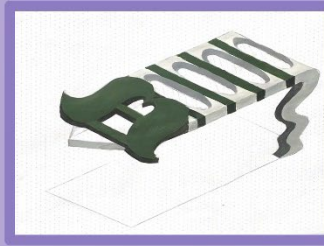
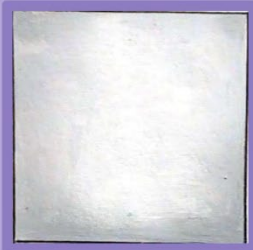
Materials

Most depictions of Papatūānuku and Ranginui are traditional wood carvings, so I'm going to incorporate wood into my design.

But practically wood isn't the strongest material to use as support in my structure so I'm going to use steel as my main material.

The openings in the top of the structure is going to be thick planes of glass, to let natural light in.

For colour, The main supporting material will be painted white because it's the main colour that Santiago Calatrava uses in his works, while the wood pieces would be painted green to symbolize Papatūānuku's plant life, along with the seat, that will also be made of wood.



Final Design

