

Task Analysis

Introduction

A key element to understanding and completing a major project with a high amount of success, is to identify and understand what the design brief is asking the candidate to do. I am going to analyse the design brief so it enables me to research and develop my knowledge on key aspects of the design brief that will be key to designing a successful and well suited product. The design brief states;

"Nature is a designers source book, full of shapes and colours that have inspired visual invention..." Alan Powers-Nature in Design

Utilise this philosophy to design and make an architectural dwelling, based on natural forms. Your solution should include a detailed business plan, client visuals and a detailed model to an appropriate scale.



Task Analysis

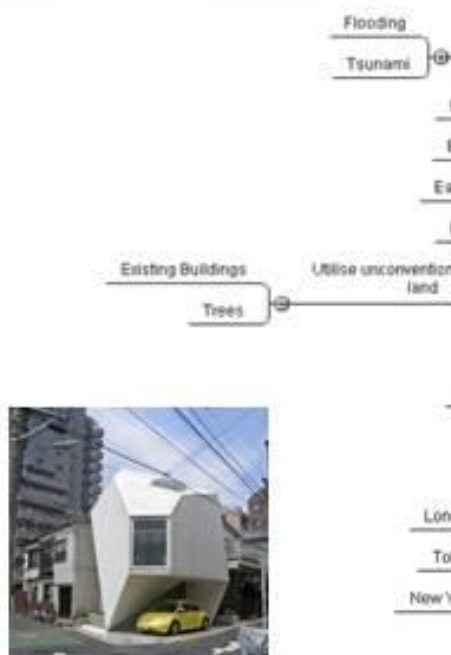
I have highlighted the key elements of the design brief in green, I have identified these to be the main aspects I will need to focus on and research further to design a successful product. I need to heavily research the theme of natural forms, and explore all the different possibilities of the theme. Allowing me to design a product with relevant aesthetics, and features based on natural forms. As well as exploring all the aspects of the term, architectural dwelling, which will enable me to design the most suitable type of dwelling. I am also going to research possible geographical locations where my architectural dwelling would be built, this is very important as the design of a dwelling will be different based on its culture and country it is proposed to be built in, for example, a house designed for the streets of India where there is little space, would be designed differently to a home in the countryside, where lots of space would be available. The design brief very specifically states a detailed business plan should be included, therefore I am going to have research what a good business plan consists of, so I understand this aspect of the brief.

The results of the aspects I have identified to explore, will be presented within a mind map as this method is a good visual representation of all the different possibilities of a specific topic. From there I will be about to narrow down my options and progress with the development of the design.



Personal Information

I am a 17 year old student studying 3 A levels at Hawarden High School; Design Technology, Maths and Physics. I aim to study Mechanical Engineering at university. Studying technology has developed a lot of the skills required for this degree. Technology has allowed me to manage projects, identify market needs and design products that meet all aspects of design specifications. These skills align to the Design and Manufacture modules in the Mechanical Engineering degree course. I feel like my passion for design technology will give me a head start for these modules in my degree. Outside of school I enjoy participating in sport and being outdoors.



Initial Thoughts / Interests

When I first read the architecture project design brief, I thought about the concept of a dwelling that interacted with water, through floating on the surface or being submerged. To find out more about this concept, I will conduct research on the concept and identify how this idea could be achieved. This idea is very flexible for situation both in the UK and abroad. I believe this concept is fairly new and exciting idea in the world of architecture, I believe it has lots of scope

Architectural Dwellings Research Analysis

Above is the mind map of the research I have conducted on the topic of Architectural Dwellings. When researching I discovered there were many aspects to proposing to make a architectural dwelling that I would have to consider and explore when designing and manufacturing my product. One of the main pieces of research was what my building would be used for, as the dwelling use could range widely. I have also considered many environmental factors, such as the cradle to grave concept, which involves considering the whole process of designing and manufacturing. Another topic of research being the environmental features I could include within my design, such as green roofs and passive solar heating. I have identified limitations of the design of my dwelling, such as health and safety as I would consider my design to be unsuitable if it proposed major health and safety risks to its inhabitants and occupants. I am also going to have to consider the site of the design, the location of the site presents many variables, such as wind and sun direction, I will need to consider these factors when designing to ensure the success and efficiency of the design. Now I have analysed architectural dwellings, going to narrow down the options I have identifying what I would like to research further.

Design Process Method

The design process is design to detail all the different stages when trying to design product to meet the requirements of a design brief. I have experienced the design process throughout my experience of studying Design Technology in higher education, and have adapted it into an order that suits myself as a designer. Following this process will ensure I do miss out any of the key steps to designing a successful product. The Process is as follows;

- Analyse the chosen task, identify the key elements, and research all relevant aspects, exploring all the possibilities.
- Develop knowledge and further research aspects of interest identified from exploring all possibilities, then proceeded to narrow down on all the options I have acquired through research.
- Narrow down to a design specification and produce a updated design brief, including target market, aesthetic theme focus, purpose and location.
- Sketch initial ideas, then conduct analyse and development, repeating until you have a final design ready for modelling.
- Test the proposed design using modelling materials and techniques, record findings, improve / change design if required.
- Produce the final product to scale with high quality
- Conduct an evaluation of the final product and suggest improvements.



Questions To Ask Myself

I am going to record a series of questions that need to be answered within my project, this task will help focus my research. The questions will use What, Where, Who, When, Why and How.

What is the building going to be utilised for? It is important to focus what the use of the building will be as there are a variety of building types, each will alter the design of the dwelling drastically.

What aspects of nature will be used to inspired the design of the building and achieve the Biomimicry theme? Achieving the theme described in the aesthetic is very important as if the aesthetics fail to incorporate the Biomimicry theme it will not meet the design brief's requirements.

What purpose will be dwelling have? The design needs to have a purpose other wise nobody will want or use the dwelling, limiting success.

Where will the location of the dwelling be situated? Choosing the location is very important as the demands and requirements will be different for different locations around the world.

Who will the design of the dwelling be aimed at? Deciding on a target market for the product is essential as the requirements of the proposed market will need to be met for the product to be a success.

When will the product be manufactured? A realistic time scale will need to be estimated for the design and project.

Why

How will the architectural dwelling be produced / manufactured, in both model scale and proposed full size? I will need to consider the construction techniques involved with the design and plan a time scale and method.

How will the creation and manufacture of my dwelling impact the environment and how can this impact be reduced ?

Conclusion - I am now going to come up with solutions that will answer these questions within the mind maps exploring the topics of natural forms and architectural dwellings.



Natural Forms Research Analysis

Within the mind map displayed above, I have explored all aspects of the specified theme of natural forms. To explore the theme I used a combination of the Internet and books. I have split the many aspects of Natural Forms theme into eight different categories; Animals, Desert, Natural Phenomena, Landscape, Habitats, Water, Vegetation and Shapes in nature. Within these sub categories, I recorded the aspects of nature of that topic. Analysing the many species of animals filled me with many potential ideas based on things such as their habitats, natural structures involved with their existence such as shells, and their overall aesthetics and body shapes and how its adapted to its environment and for survival. There are a wide variety of shapes in nature that occur naturally, I researched circles and spirals mainly involved in shells, and others like the hexagon in the bee hive. (analysis the research you have conducted.) Now I have explored all the aspects of the Nature Forms theme, I am now going to narrow down upon the possibilities I have within the brief, eventually leading me writing a design specification.