

# Project Proposal

Client: Pecan Engineering Pty Ltd

Scope: Panoramic Solid Fuel Slow Combustion Heater and App

PECAN170316 Version 1.0

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## Project Summary

QUAK DESIGN proposes to research, design and refine the production of a *Panoramic Solid Fuel Slow Combustion Heater and App* for PECAN ENGINEERING PTY. LTD. To design a new product that can successfully emerge onto the marketplace it is paramount to conduct thorough research in all relevant areas to build a knowledge base for clever, coherent design. In the development of the *Panoramic Solid Fuel Slow Combustion Heater and App*, QUAK DESIGN will implement and explore a variety of research methods, concept generation techniques and product development processes - with the aim to deliver a resolved *Panoramic Solid Fuel Slow Combustion Heater and App* for PECAN ENGINEERING PTY. LTD.

## Client Requirements Summary

### Heater

- Generate designs for a prototype heater that can both stand alone and be installed in-wall
- Generate advanced prototype and production drawings

### Application

- Generate a list of features that add value to the panoramic heater
- Generate basic logic for how the heater will interact with the app
- Generate basic mock-ups of interface

### Design should:

- Be enjoyable to use
- Have modern and minimalistic styling
- Push boundaries of existing market forms and uses of materials
- Where possible utilize cost effective fabrication methods
- Be easy to assemble

### Specifications

- External geometry to be 500mm(h) x 1000mm(w) x 500mm(d), +/- 50mm
- Upwards opening door

### Competitors:

- Riva by Stovak (UK) stand alone model
- Montrose by Regency (USA) in wall model
- Heta by La Nordica (Italy) in wall model

## Product Description and Design Considerations

### Product Function, Features and Intended Use

As defined by the client PECAN ENGINEERING PTY. LTD. the *Panoramic Solid Fuel Slow Combustion Heater and App* will include:

- Stand alone and in-wall installation options for consumers
- Fill a large room with warmth
- Clean and efficient burning
- Upwards opening door
- Sensors indicating relevant data to an application
- Modern, minimalistic styling features
- Over 60% burning efficiency
- Variable fan speed
- Firebrick lining
- Warranty
- Meets the requirements of the 2019, AS/NZS4013 for emissions
- Shielding

### Materials

Materials with characteristics of being lightweight, durable and having a high melting point are paramount for the *Panoramic Solid Fuel Slow Combustion Heater*. The focus will be on different grades of steel, however, other metals and organic Materials will be explored in order to not limit innovative or creative solutions.

QUAK DESIGN will aim to select and use materials in the most cost efficient way for PECAN ENGINEERING PTY. LTD. without compromising on function or product reliability.

### Manufacturing Processes

The manufacturing processes available to QUAK DESIGN have been defined by PECAN ENGINEERING PTY. LTD. with the recommendation to focus on sheet metal and casting techniques. A range of other processes will also be explored to not limit design outcomes.

Manufacturing decisions will also be centered around the Australian Manufacturing market's strengths and capabilities.

## **Environmental Considerations and Product Life Cycle (LCA Analysis)**

An LCA (Life Cycle Analysis) Study will be conducted through Sustainable Minds software. This allows us to investigate the products environmental footprint. LCA allows a better understanding of which components, usage or disposal practices hold the largest/ smallest contribution towards negative environmental. This will lead to recommendations for better Design for the Environment and illuminate strategies that help define the parameters of the products specifications.

Sustainable Minds allows QUAK DESIGN to make informed decisions between performance, cost and other criteria before the product is manufactured. This software allows real time results about the impact a single component has on the environment and illuminates alternative processes or materials that could positively alter the outcome.

## **Ergonomic Considerations**

The *Panoramic Solid Fuel Slow Combustion Heater and App* must be easy and fun to use. Sufficient shielding from potential hazards such as heat or burning will be considered. Also, assumed affordances such as handles or the opening and closing of the heater must be simple and safe for the user.

## **Standards and Patents**

Australian Standards relevant to a *Panoramic Solid Fuel Slow Combustion Heater and App* will be explored through online database SAI Global. Furthermore, a patent search with IP Australia will be conducted with the aim to seek out design patents for competitors to ensure future concepts are legally sound. The aim of research into appropriate standards is to ensure safety, reliability and consistency in a product to perform the way it is supposed to.

The IP Rating of *Panoramic Solid Fuel Slow Combustion Heater and App* will also be considered. The heater designed will meet or exceed AS/NZS 4012:2014 and AS/NZS 4013:2014 Standards.

## **Packaging and Transport**

The development of the *Panoramic Solid Fuel Slow Combustion Heater and App* will have ongoing consideration for durable packaging and efficient transport methods. QUAK DESIGN will aim for the allowance of product units to be stacked on top of one another without crushing or damaging of products.

## Business Objectives

### Corporate ID

Nectre Heaters pride themselves on being designed and manufactured in Australia. The three pillars of their products encompass are tradition, quality and timeless design. The design developed by QUAK DESIGN will aim to adhere to the the brand values of PECAN ENGINEERING PTY. LTD. This will include the exploration and visibility of corporate logos and general product aesthetics to be coherent with the companies other products.

### Target market

The developed product has a very large target market and will be aimed for the 23 – 60+ year old males and females. In particular, middle to high-class homeowners with noteworthy disposable income. The *Panoramic Solid Fuel Slow Combustion Heater and App* will also appeal to higher end homes and the hospitality business.

### Product Costing

QUAK DESIGN aims to deliver a *Panoramic Solid Fuel Slow Combustion Heater and App* with a Recommended Retail Price in the region of \$3,000 to \$8,000 with production costs equating to roughly one third of the final retail price.

## Project Stages and Deliverables

The project has been broken up into seven stages with three additional stages, which are optional for the client PECAN ENGINEERING PTY. LTD. to purchase at a later date. The break down and timeline of the proposed project is available in the form of a Gantt chart visible in Appendix 1.

### Stage 1 - Research

The purpose of the research phase is to investigate and define the parameters required for a *Panoramic Solid Fuel Slow Combustion Heater and App* to enter the marketplace without limiting creative solutions. QUAK DESIGN will conduct a number of thorough research methods with the aim to uncover in valid and coherent product outcomes. Key outcomes from the research will be summarised in report form. The main focus areas of research in the report will include; product history, consumer

needs, patents, standards, design for environment, design for manufacture and competitive benchmarking.

Target specifications and user needs will also be defined at this point. These specifications and needs can be altered for each concept presented in Stage 2, based on its unique and individual requirements. Further exploration and revision of the product specification metrics will occur in the technical modeling and testing stages of development.

**Deliverables:**

- Research Summary Report
- Target Specifications List
- User Needs List
- Client Product Specification Review

**Stage 2 - Concept Development**

The Concept Development stage implements idea generation techniques such as; hand ideation sketching, affinity diagramming, brainstorming, preliminary concept development, 3D modeling, and soft modeling to developing a range of moderately refined concepts. This stage is also an opportunity to deliver concepts with different levels and mixtures of products features as defined in the previous stage. Product features will also developed further and refined.

**Deliverables:**

- Concept Ideation
- 3x Product Concepts
- Basic 3D CAD Models
- Soft Models/ Prototypes
- Concept Direction Selection
- Client Design Review

**Stage 3 - Detail Development**

Once the concept direction has been selected in stage 3, details of chosen concept will be extrapolated. General assemble and different product components/ parts will be defined. This is accompanied with the development of a detailed CAD Model with SolidWorks software.

**Deliverables:**

- Product Assembly and Parts List
- Product Materials and Processes Selection
- Client Design Review

**Stage 4 - Prototyping**

An essential stage of the product development cycle is prototyping or product simulation. QUAK DESIGN have the capabilities to implement 3D Printing, CNC Routing, Laser Cutting and Traditional Wood and Metal Work techniques in the production of these Prototypes where practical. Prototypes will be developed from basic soft prototypes to refined prototypes that will functionally and aesthetically represent the intended final product outcome as accurately as conceivable.

**Deliverables:**

- Client Design Review
- Resolved Prototype

**Stage 5 - Final Detailing**

Once the final prototype has been proven then follows a final stage of detailing. This will include any changes made as a result of the prototype testing and design review.

**Stage 6 - Final Documentation**

The completion phase of any project is the final documentation for hand over to the consumer for manufacture and procurement. In this stage fully detailed 3D CAD files, detailed drawings with tolerances and critical dimensions and material specifications will be handed over to PECAN ENGINEERING PTY. LTD.

**Deliverables:**

- Complete set of CAD Model (SolidWorks) files required for production
- Technical Drawings

**Stage 7 - Production**

QUAK DESIGN is available for assistance with tooling and manufacturing liaison in order to deliver the desired outcome of product production in the most efficient way possible.



## **Additional Stages**

### **Stage 8 - Packaging and Graphics**

Product packaging along with graphical exploration and resolution can be explored as a further service QUAK DESIGN offers.

### **Stage 9 - Website Development**

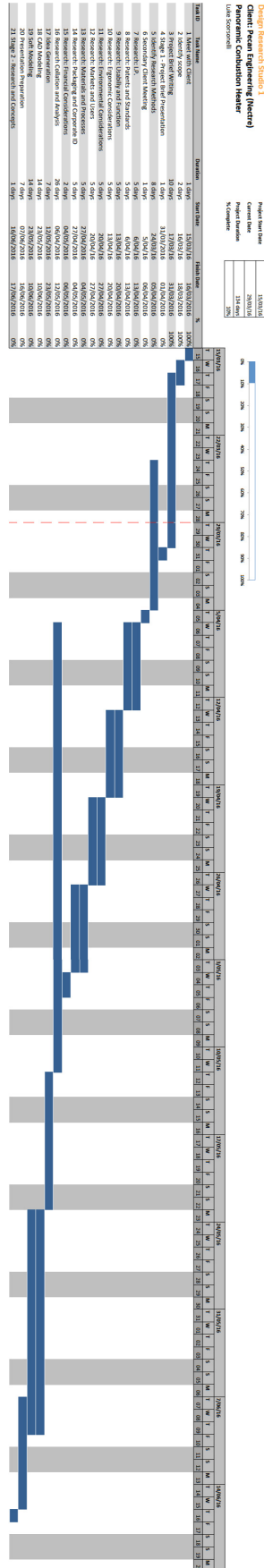
QUAK DESIGN also have capabilities for professional website design and interaction. This can be discussed further at a later point in time, however, does come with additional costs.

## **Method of Remuneration**

Nil.

# Appendices

## Appendix 1.0 – Gantt Chart



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## Terms and Conditions

This document covers Luke Scorsonelli's standard trading terms and conditions. All services and goods are provided by Luke Scorsonelli strictly on the basis of these terms and conditions. These conditions alone constitute the terms of any contract between Luke Scorsonelli and his clients. By requesting or ordering any services or goods from Luke Scorsonelli, you are regarded as having read and accepted his Terms and Conditions as the sole terms of the contract between you, the Client, and Luke Scorsonelli. Luke Scorsonelli provides services only on the basis of these Terms and Conditions. Although it is not possible to reproduce Luke Scorsonelli's standard Terms and Conditions on all of his documents, such as letter heads, invoices, quotations, drawings, renderings etc, nevertheless, these Terms and Conditions have the same binding status between Luke Scorsonelli and his Clients as if they were reproduced in full on each document. Documents produced by Luke Scorsonelli that relate to the provision of services and goods will state (wherever possible) that Luke Scorsonelli's goods and services are provided on the basis of these Terms and Conditions and that they are available on request.

### 1. Acceptance and Commencement

Luke Scorsonelli has accepted your request for services and goods on the understanding that all costs and trading terms covered in this document are accepted. These Terms and Conditions supersede any terms, conditions, waivers or provisions appearing on the Client's purchase order, project instructions or other documentation.

### 2. Quotations & Estimates

Quotations and Estimates are based on the description of the project as detailed in the Project Brief, letter of agreement or Project Instruction written by Luke Scorsonelli. Quotations and estimates provided by Luke Scorsonelli remain current for 30 days from issue. Requesting services and goods from Luke Scorsonelli signifies that the Client accepts that this Project Brief, letter of agreement or Project Instruction represents the Client's instructions, whether written or verbal.

### 3. Variations

Any extra work caused by any variation to the project description in the letter of agreement, Project Brief or Project Instruction will be charged to the client whether it is identified as a variation at the time of change or subsequently identified. Alterations to the project schedule by the Client or any situation outside the control of Luke Scorsonelli that prevents the original schedule being adhered to or that requires overtime or out of normal hours work to meet the schedule will constitute grounds for renegotiation of project fees.

### 4 Terms of Payment

Credit terms are 14 days from the date of invoice. Credit may be stopped and supply of services and goods withheld if any account is overdue. Invoices will be forwarded to the Client each 30 days, or at the conclusion of a project stage. Selection of the appropriate frequency is at the discretion of Luke Scorsonelli. If a project is cancelled or suspended, the Client will be responsible for payment of all recorded work in progress and out of pocket expenses for all authorised project stages regardless of whether the work relates to the stage current at the time of cancellation or suspension. Payment for all work in progress recorded by Luke Scorsonelli shall become due immediately on commencement of any act proceeding concerning the solvency of the client. A 20% handling fee will be charged for any goods or services purchased by Luke Scorsonelli on behalf of the Client for this project. The person or entity requesting supply of goods or services from Luke Scorsonelli shall be liable for payment, even if such a request is made on behalf of another person or entity. Claims for credit for the return or refusal of goods or services for any reason will only be accepted if made within seven days of receipt of goods by the Client or Client's agent.

### 5 Goods, Services & Sales Taxes

The Client will pay Luke Scorsonelli any goods, service or sales taxes applicable to the goods and services provided, or goods purchased for the Client, whether it falls during the course of the project or becomes payable at a later date. The Client shall notify Luke Scorsonelli in writing of their eligibility for tax exemption in the manner required for the specific tax act at the commencement of the project if an exemption is to be claimed on their behalf.

## **6 Ownership of Goods**

Luke Scorsonelli retains the title to any goods, designs, materials or results (the items) from projects or other activities until payment has been made in accordance with these Terms and Conditions. Where payment for any items is overdue, the Client irrevocably authorises Luke Scorsonelli to enter the Client's premises (or any premises under control of the Client) and use reasonable force to recover such items without liability to Luke Scorsonelli for the loss and the Client will be liable for any costs associated with recovery.

## **7 Schedules**

Luke Scorsonelli will use his best endeavours to meet development schedules. Luke Scorsonelli will not be liable for any losses, damages or expenses incurred by the Client, Client's agents or other parties as a result of any delays.

## **8 Sub-Contracting**

Luke Scorsonelli reserves the right to assign other designers or subcontractors to fulfil all or part of this project.

## **9 Information**

The Client assumes full responsibility for the accuracy of all information provided to Luke Scorsonelli as detailed in the Project Brief, letter of agreement or Project Instruction, and as supplied during the project.

## **10 Confidentiality**

Luke Scorsonelli will endeavour to keep confidential all data, reports, recommendations, conclusions or other materials developed as a result of its services on the project, except where such information is required to communicate with other businesses or individuals necessary for the continuance of the project, until the project or products resulting from the project have been made public by the Client. Luke Scorsonelli reserves the right to publish images and information of all work he has been involved in for promotional purposes.

## **11 Copyright**

As provided for in Australian Law, Luke Scorsonelli retains the ownership of and copyright in all designs, intellectual property and original documentation created by Luke Scorsonelli, whether held by the client or any third party. Such designs may not be used for any purpose other than that for which Luke Scorsonelli was contracted without the permission of Luke Scorsonelli. Luke Scorsonelli may assign copyright to the Client on mutually agreed terms. Designs, inventions and materials resulting from work performed by Luke Scorsonelli which do not constitute part of the project solution accepted by the Client remain the property of Luke Scorsonelli. Transfer of copyright, ownership or payment for use of photographs, illustrations and other materials where the copyright or legal title is held by others must be negotiated by the Client with the respective owner or supplier directly. It is the Client's responsibility to ensure that all such fees and matters have been negotiated for current and future uses.

## **12 Originality**

Luke Scorsonelli will not knowingly provide designs that infringe the commercial or intellectual rights and properties of others. However, it is the responsibility of the Client to ensure all designs and goods provided by Luke Scorsonelli do not infringe any existing rights or protection. The Client will indemnify and hold blameless Luke Scorsonelli from any damages, costs or losses arising from commercial or intellectual infringement regardless of how it is held to have arisen.

## **13 Protection**

The Client will assume responsibility for registering and protecting at its expense any patents, designs, trademarks or other commercial or intellectual property that may result from services provided by Luke Scorsonelli. Luke Scorsonelli will provide any reasonable information necessary to assist in this procedure. Additional services required to fulfil such requests for information will be charged to the Client.

**14 Client's Property**

All Client's property supplied to Luke Scorsonelli by or on behalf of the Client (including good in transit and materials originating at Luke Scorsonelli's studio) will be held at the Client's risk. Luke Scorsonelli accepts no liability for loss or damage to such property. The Client will indemnify and hold Luke Scorsonelli blameless for any damages, costs or losses by others to the Client's property or to property, materials and goods obtained temporarily or permanently for the Client or the execution of the Client's project.

**15 Indemnity**

The Client will indemnify and hold blameless Luke Scorsonelli from any damages, costs or losses that may be suffered as a result of any claim arising directly or indirectly out of the services performed or goods supplied by Luke Scorsonelli in connection with this project. The Client will assume full responsibility for testing and certification of any or all designs to ensure product safety, reliability and fitness for purpose.

**16 Records**

Luke Scorsonelli maintains job records, drawing and artwork archives and electronic document libraries. Luke Scorsonelli will not be held responsible for the degradation, destruction or disposal of such items. Luke Scorsonelli reserves the right to discard electronic or physical job records, artworks, drawings and documents with no requirement to notify the Client.

**17 Disputes**

Any dispute shall be determined according to the laws of the State of South Australia and all proceedings arising there from shall be heard and determined in the Courts of South Australia.

**18 Cancellation**

This project or agreement may be cancelled by the Client or Luke Scorsonelli with 14 days written notice. The Client will remain liable after cancellation for payment of the full debt incurred during the life of this agreement and for legal, accounting and collection fees associated with the collection of outstanding amounts as provided for in this agreement until all amount are paid.

**19 Death of Client**

The death of the Client does not end this agreement. The rights and obligations of the Client shall be considered to have passed onto the Client's personal representatives.

**20 Validity**

If any of these terms and conditions is or becomes wholly or partly invalid that term or condition shall to the extent of the invalidity be removed without the prejudice to the continuing validity of the remaining terms and conditions.