MA Final Project

Design Brief

Fuel Poverty and Decarbonisation

Project Overview and Background

This project will attempt to answer the following questions:

1. What prevents people from optimising the energy efficiency of their home?
2. How can these obstacles be overcome?

Fuel poverty is a situation in which a household has insufficient income to keep the temperature of their home sufficiently warm for comfort and health (NEA 2022). Households in fuel poverty often need to choose between heating their home, paying rent, or buying food.

Debarbonisation refers to a reduction or elimination of carbon gases such as CO_2 that are produced by man-made processes like burning fossil fuels. The UK has committed to eliminating carbon emissions by 2050 (Climate Change Committee 2021). Heating homes draws on coal, oil, and natural gas for heating, emitting significant amounts of carbon gases that contribute to climate change (UN 2022).

Combining efforts to eliminate fuel poverty with efforts to eliminate carbon emissions is a logical course of action, and the benefits of doing so have been formally noted by the UK's Climate Change Committee (2019).

ISLE OF MAN CONTEXT

Although the Isle of Man (IoM) is an independent jurisdiction from the UK, many of its decarbonisation goals and strategies are shared. The IoM aims to reach carbon neutral status by 2050 and has begun several initiatives toward this goal (see Net Zero Isle of Man 2022). Equally, following global increases in fossil fuel prices, the IoM is experiencing an increase in households in fuel poverty (Manx Radio November 2021). Official IoM Government statistics (July 2020) put the number of households in fuel poverty between 9.9% and 15.8% using 10% and LIHC measures respectively. Most of those households are comprised of more than one individual and the occupants are under the age of 65 (i.e., not pensioners).

DESIGN SOLUTION

The best design solution will in some way alleviate fuel poverty for real individuals and move the Isle of Man closer to meeting its decarbonisation commitments. The specific format is yet to be decided, however, an online interactive solution is envisaged. The solution should in some way assist those in

fuel poverty by sharing knowledge of how to access resources that could improve their situation.

A total of six phases has been allocated for completion of the project:

- **Phase 1:** Research into fuel poverty and decarbonisation and discovery of a specific issue to be addressed.
- **Phase 2:** Refinement of understanding of the issue leading to a clear definition of the problem to be solved.
- **Phase 3:** Development of design concepts for testing and feedback.
- **Phase 4:** Delivery of a refined, single design.

The project is scheduled to be completed by 5th December 2022. No budget has been allocated to this project since it, at present, is envisaged as an entirely digital product. However, there may be some scope for physical production which would require a review of costs.

Category Review

Although a brief and broad review has been initiated, this will depend heavily on the specific direction taken. At this stage, a few relevant interactives have been discovered.

APPLIANCE ENERGY USE CALCULATORS

These calculators allow individuals to become more aware of their energy usage and as a result to improve their planning around energy use. Of those found, none have UI design as their primary concern, each being more functional than styled.

ENERGY EFFICIENCY GAMES

At this early stage, one game has been discovered aimed at teaching players how to operate an energy efficient home (Serious Game Society 2018). Developed by researchers at Utrecht University (Fijnheer, van Oostendorp, & Veltkamp 2016), the design again appears more functional than styled or engaging. Additionally, interactive technology has advanced somewhat since the game's initial production.

Target Audience Review

During a conversation with Dr. Robert Marchand (a researcher in the area of fuel poverty) of Sheffield University it transpired that in the UK the majority of people living in fuel poverty are not pensioners as is often supposed, but single parents. The IoM Government data (2020) appears to reflect the same in the IoM.

Interests, Experiences, and Inspirations

This project has capacity to make a real difference to people in need. This is a motivating factor in its own right. I have undertaken projects previously – as a psychologist – focused on bettering the situation for particular demographics. I am also politically active, especially where this has a positive social impact.

This section will be expanded as the project research goes forward.

Objectives and Design Strategy

Project Objective	Design Strategy
Create an interactive graphic/set of graphics that help alleviate fuel poverty and progress decarbonisation.	Ensure that final output is engaging for the target audience. This means being aesthetically pleasing and enjoyable to interact with.
	Any interface should be simple and intuitive so that learning is maximised.
	A sleek, modern look should be used in typeface and other design elements to ensure appeal to a modern audience and to communicate professionalism.
Create an appropriate UI specific to the target audience and IoM context.	Research the types of UIs more frequently used/appreciated by the target audience.
	Ensure the UI is unique and stands-out sufficiently to get the attention of the target audience.

	Ensure the UI is deployed where the target audience can find it.
	Create imagery and animations that convey the intended information.

Project Scope, Timeline, and Budget

The time allocated to this project includes 19 whole weeks of approximate 20 hours working time per week. This equates to a minimum total working time of approximately 380 hours; however, more time will be dedicated to the project where possible. The project will be undertaken in four phases:

- **Phase 1: Research fuel poverty and decarbonisation.** This phase will include reading around fuel poverty and decarbonisation, where they intersect, and who is most affected. Although a lot of research will be undertaken at this stage, it will not be limited to this phase and will continue across other phases as the design concepts are refined.
  The total time allocated to research is 60 hours in Phase 1 in addition to continued research across other phases.

- **Phase 2: Develop five design concepts to explore fuel poverty, energy efficient, and interactive graphics.** Five design concepts will be developed to explore various design treatments for the interactive. The mood boards will take into consideration further research of the topic and further consideration of development and production.
  The total time allocated to Phase 2 is 60 hours.

- **Phase 3: Concept feedback from target audience.** Where exactly to find representatives of the target audience for testing and feedback will become apparent once I have identified a specific issue to address.
  Following feedback, one design treatment will be selected and posted taken forward for development.
  The total time allocated to testing and feedback at this stage is 100 hours. A further 40 hours are dedicated to promotion and exhibition towards the end of this phase, making the complete phase approximately 140 hours in total.

- **Phase 4: Develop and deliver one design concepts to alleviate fuel poverty while addressing decarbonisation.** This phase will be informed by the feedback gained from Phase 3 and will involve the development of a single design concept that will be refined prior to final deployment.

The total time allocated to developing the final concept is 120 hours.

Appendix

Any additional relevant material will be placed here as the project develops.

REFERENCES

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