**Meeting Notes**

**Agenda Improvements**

- Write details of the agenda so every party member can pre-read and have a good understanding of the tasks at hand

**Need Statement Review**

- 1. A simple customisable new manufacturing technique for wall panels

- Our current goal is to make a simple manufacturing method to make a point/ or line.

- Minimize cost and create a technique that can manufacture a point/line

2. A simple (minimal cost) new thermoforming technique for wall panels for interior walls

3. A minimum cost and minimum environmental impact thermoforming technique for interior wall panels around 4’x4’ in dimension. (final)

**Objectives**

- Product should be better than what the customer already has. This could be through performance, environmental impact or cost. There are multiple ways to make the process better

- Want to make as specific as possible, include objectives and constraints

Examples of things we want to avoid in future (not very specific/or specific to one thing not in the spectrum

- Minimize tooling/ heat transfer

- Maximize strength and stiffness

- Maximize UV resistance

Optimization

- Minimize cost

- Can be made on sight

- Minimum environmental impact (life cycle analysis)

- Economic impact (cost model) includes material, shipping, labour, etc.

Constraints

- Thermoplastic

- Size (ex. 4ft by 4ft)

Things to keep in mind

- Maximum Grade – Narrow project down at beginning be as explicit as possible. Ex. Interior, exterior? Most likely trim down to just interior

- Don’t fixate on application like heat transfer. Can be one aspect later but right now this is not our main objective

- UV radiation is just outdoor will most likely drop it, unless we move onto exterior

- Keep to points and lines, or just take one as a starting point.

**Next Meeting**

- Sit down as group and brainstorm. Look at the details and make them as specific and simple as possible. Break them down.

- Come up with as many constraints as possible, can always remove constraints.

- What is the background to this problem? Blair’s project, how his technology has garnished interest and is in the next phase where we come in to try and help improve the process.

**For Presentation**

- Do not have everyone present

- Everyone should be able to answer any question about the project

- Do not have people know specific part of the project. Everything should be written up and shared amongst the group.

- Be able to answer questions from the architectural view. Why this project is needed, why is there interest in it?

- Use technical references, journals, companies operating. Not blogs or media.

- **Make good progress on properties, thermo properties, and mechanical, what are limitations on thermoforming.**

**- Have summary on the literature review.**

**- Be able to answer any of Chad’s questions**

**Ideas**

Thermal Drawing (wont use due to other group)

- We want to keep it down to making either a point or a line (no face drawings)

- Later on can move onto more complex things.

-Why is this better than Blair’s? Or why not?

- No mold

- Need someone to manually oversee the whole process

Thermoplastic Mold

- Need two thermoplastics with quite different temperature regimes

- Need to look into the temperature window between the two

- Would this process work by using a thin sheet and a thick sheet?

- May be able to chemically etch out weaker points as well

Tool kit Method

Could you weaken the material at a certain point so that it will manipulate better in certain areas?

Conductive tape to create heating zones (good for lines)

Look into how things are going to fail

- Thinning out

- Necking

- Rupture

- Material hardening not keeping up with softening causing necking and eventually rupture

**Summary**

Putting something on top of the sheet and/or below the sheet to create our shapes.

Material manipulation will be a lower degree of success but if there is a temperature window it would be a great idea to pursue.

Make our report stand out

**Presentation Prep**

- Contact Daan to confirm a midterm report or not

- Find out what exactly it is we need to have for the presentation

- Can do a mock presentation for Chad to help improve upon

- Chad will be away the week of the presentation

- 7 weeks to finish

Plan of Action

- Test the grooves if the weakened area will sag properly

- Also check acetone

- Need to look into material selection for the thermoplastic mold idea

- Have to find out what tools we need ahead of time