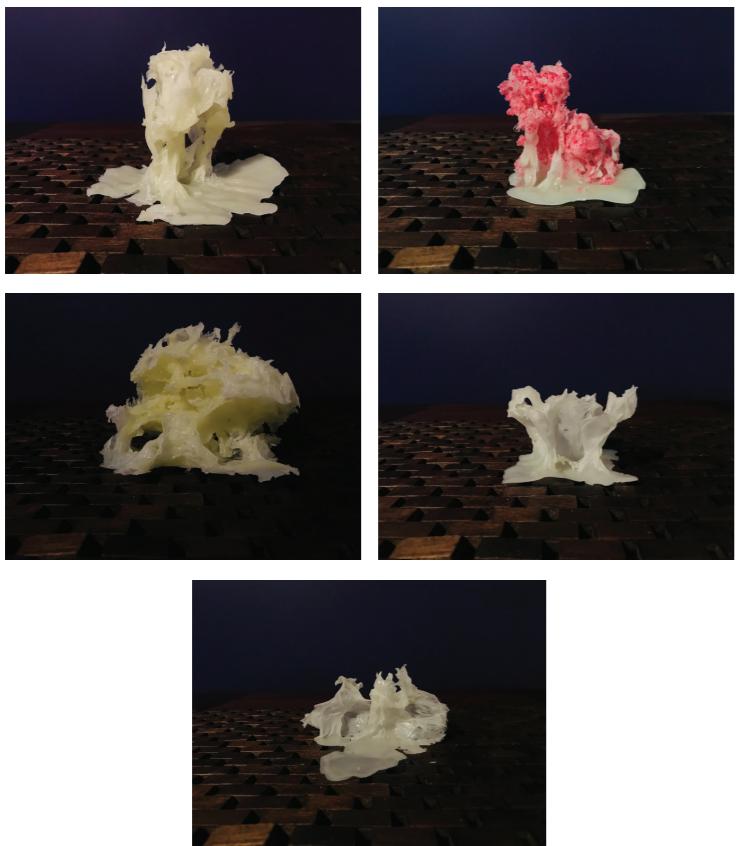




Design Portfolio
11221 Architectural Design: Strategy
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Material Fragment



Fragment Analysis 2 -

The larger created sets allow for the capability of spatial forms to appear through careful control methods. The utilisation of four times more wax further allows for the appearance of structural columns that support the structures from differing points, whilst allowing for internal space to be partitioned as a result. The manipulation of wax under experimental method controls had been realised, resulting in the necessity for fragment layering to be introduced. This resulted in the necessity to introduce gelatin at a larger scale.

Ingredients: - 500g Pillar Candle 68mm x 150mm
- 3L Mixing Bowl (Water 18°C 2.5L Filled)
- 3 - 250ml Cups (Filled evenly)
- 700ml Stove Pot
- 400ml (Water 18°C)
Mold: - 1.5L Mixing Bowl
Method: - High, 60cm Free-Hand Pour Triangulation, converging
Steps: - Melt 500g of wax into stove pot on low heat
- Once immediately melted at 40°C pour immediately into 3 250ml cups to even fill
- Fill 2.5L into 3L mixing bowl with 18°C chilled water
- Individually pour each cup at a 60cm height, free hand into the mixing bowl. each in a triangulated, converging to centre pattern
- Shake the bowl continually, whilst slowly adding 400ml of 18°C water to settle the wax

Fragment Analysis 1 -

The initial fragment pours involved small scale experimentation into the form capability of paraffin wax. The experimentation illustrated the controlled results of early material binding through gelatin and wax, with further conclusions of structural potential through ceramic plate and bowl dips. The results of these experiments allowed for an insight into the necessity to control form through specific techniques of method manipulation, illustrating the requirement to create a dynamic process of creation, being the constant change of ingredients, molds, methods and steps of application. The further essential element of design is thought within the importance of scale as well as the operation of wax when utilised on a larger scale. Therefore by doing so, all elements of design will need to be scaled up in order to accommodate for the new experimentation models.

Ingredients:

- 100g Pillar Candle 68mm x 150mm
- 120mm Diameter Ceramic Cup
- 175mm Diameter, 150mm Deep Bowl (Water 18°C Filled)
- 700ml Stove Pot
- Safety Gloves

Mold: - 175mm Diameter, 150mm Deep Bowl
Method: - Quick drop into deep bowl

Steps: - Melt 100g of wax into stove pot on low heat
- Once immediately melted pour immediately into the 70mm Diameter Ceramic Cup to fill
- Wearing the safety gloves, quickly drop the 70mm Diameter Ceramic Cup into the 175mm Diameter, 150mm Deep Bowl (Water 18°C Filled)
- Wait 4 - 5 minutes for the wax to cool and settle
- Remove the mold

Fragment Analysis 3 -

The introduction of gelatin doesn't completely mix within the wax, reprimanding any form of material solubility, resulting in a series of quick mix pours. The resulting structures become considerably stronger and more dense, whilst retaining more internal water. The structures however lack the internal structural necessities to be considered habitual space as well as having a specific control method that can efficiently and effectively pour the wax. This insight brought about the necessity for armature research and development.

Ingredients: - 500g Pillar Candle 68mm x 150mm - 3L Mixing Bowl (Water 18°C 2.5L Filled) -

700ml Stove Pot - 400ml (Water 18°C) - 170g A. Jelly (Gelatin) (2 packs Red) - 600ml Plastic Vertical Container - 200g Pillar Candle 68mm x 150mm - Mixing Spoon

Mold: - 3L Mixing Bowl (Water 18°C 2.5L Filled)

Method: - High to Low pour from 600ml Container into Mixing Bowl

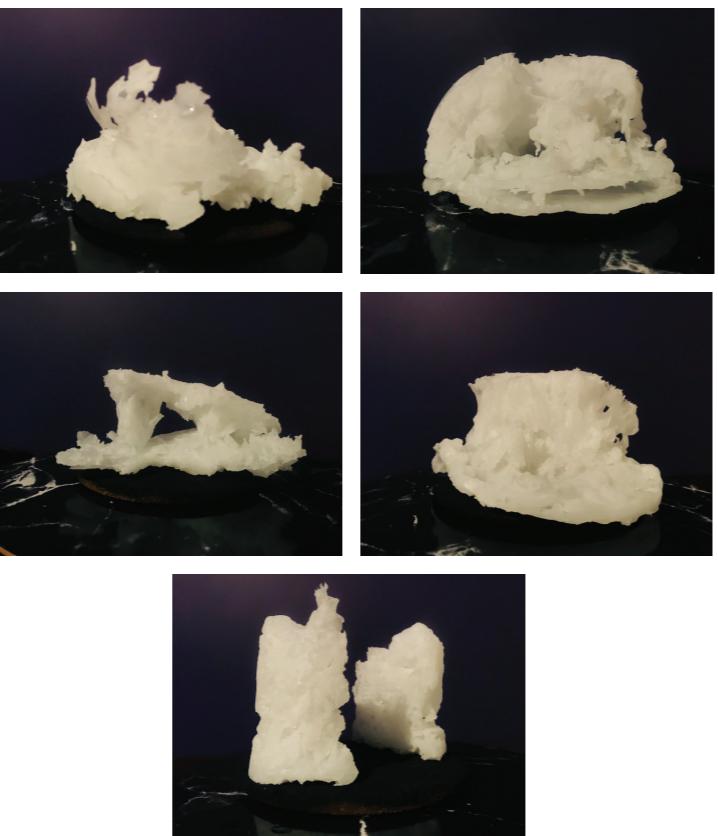
Steps: - Melt 700g of wax into stove pot on low heat, only use 400g - Once melted, free pour 400g wax into 3L mixing bowl (Water 18°C) - Use the remaining 300g of wax to pour into 600ml Plastic Vertical Container - Once melted wax is contained, add 170g of Gelatin (2 packs) to the wax mixture and mix vigorously
- Whilst mixing, begin to pour the mixture into the 3L mixing bowl which contains semi-settled 400g of wax. Pour the mixture from a higher point and begin to lower.
- Pour 400ml (Water 18°C) slowly into the mixture whilst shaking to allow residual hot wax to settle before taking from the mold.



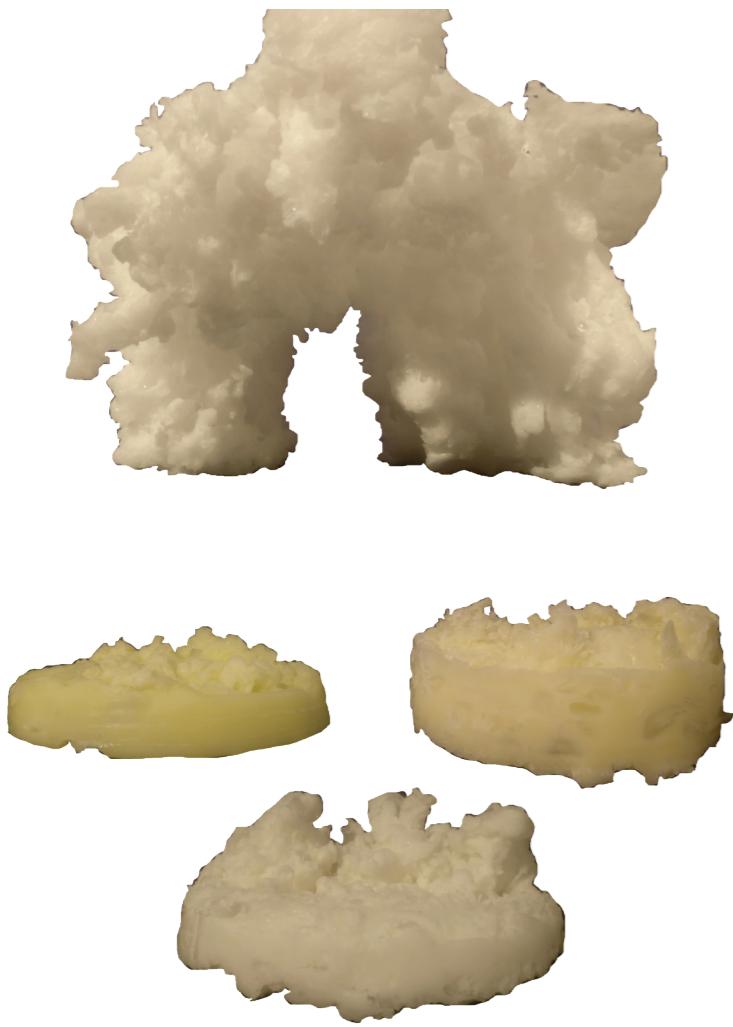
Fragment Analysis 4 -

The final experimentation designs utilised severly different methods of creation in order to achieve and internal, column space. The previous models had been essential in understanding the materiality, however vary considerably in success depending on the methods used which were constantly changing. These designs introduced the drastic change in mold, tempreture and specific pouring methods, this was utilised in order to confirm any final material speculations before intiating use of the armiture to create the final spectrum of models. These experiments confirmed certain control methods in order to achieve a stable spatial construct, as well as the primary amount of wax necessary to achieve the perfect structural scale. The final implementation of gelatin would be added within the final models in order to confirm effect of gelatin on the structural form.

Ingredients: - 500g House Hold Singular Candles 190mm - 4L Crumpled, Molded Aluminium Oven Tray (Water 18°C) -
- 700ml Stove Pot - 300ml (Water 18°C)
Mold: - 4L Crumpled, Molded Aluminium Oven Tray (Water 18°C)
Method: - High, 60cm Singular Free Hand Pour
Steps: - Melt 500g of wax into stove pot on low heat
- Once melted, allow for 1 minute to pass with wax still burning
- Begin the high, 60cm singular free hand pour into the Aluminium Oven Tray
- Allow the melted wax to settle for 2 minutes
- Once semi-settled, begin to slowly add the 300ml (Water 18°C) to the top of the tray whilst shaking.
- Allow to completely settle before removing the wax from the mold.



Material Fragment



Fragment Analysis 5 - Final Designs

The utilisation of the armature allowed for a consistent control over the creation of all further models. The aspect of the variability was within the decision to change the specific methods or ingredients, as well as positioning of the nozzles in order to achieve the desired space. The initial three pours resulted in the creation of flat structures without columns or internal habitable space. However the final pour, with decision to change the varied height of positioned pour, created columns and space.

Ingredients:

- 3 x Pillar Candle 68mm x 150mm (Unscented)
- 25L Industrial Plastic Vertical Bucket Mold (5L Filled, Water 8°C)
- 2L Stove Pot
- 1L (Water 18°C)
- Plastic 1L Container (Water 18°C)
- 3 x 2L Plastic Bowls

Mold:

- 25L Industrial Plastic Vertical Bucket Mold (5L Filled, Water 8°C)

Method:

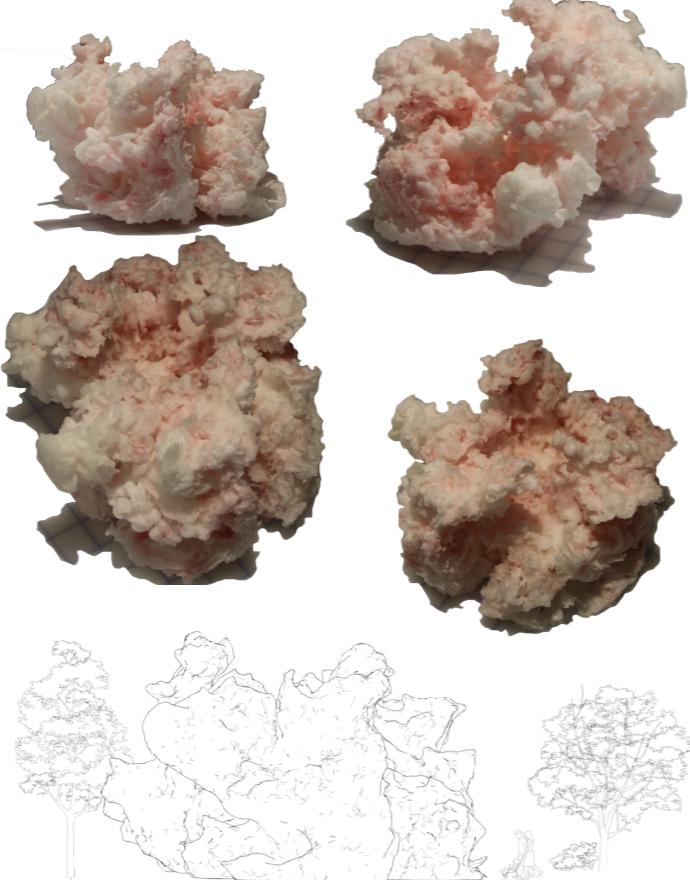
- Armature Funnel Pour, Three Locations with Extended Nozzle into 50L Industrial Metal Bucket Mold (Water 18°C)

Steps:

- Melt 3 x Pillar Candle 68mm x 150mm (Unscented) of wax into stove pot on low heat
- Once melted, allow for 1 minute to pass with wax still burning
- Fill 25L Industrial Plastic Vertical Bucket Mold with 5L, 8°C Water and place into Armature
- Once wax is melted, pour evenly into 3 of the 2L Plastic Bowls
- Pour one 3 wax filled 2L Plastic Bowls into each of the funnels
- Begin to slowly add the water from the Plastic 1L Container (Water 18°C) into the bucket to help wax settle
- Allow wax to completely settle before removing the mold

Fragment Analysis 6 - Pre-Final Fragment

The creation of this model provided a significantly intriguing internal dynamic with column-wall structures surrounding the construct. The addition of gelatin through the pouring method allowed for internal structural rigidity as well as contribution towards material layering. However instances of uncontrolled issue did occur, significantly within the capability for adequate roofing as well as complexity of entering and exiting the internal space, which itself presents problems of difficulty regarding the small size and depth of the internal cavity. Therefore the necessity to disregard the capability of gelatin became apparent with capacity to fully realise the potential of previous models, specifically the three column creation which included all aspects of essential structure. The price of constant experimentation had resulted in the capability to accurately predict the result of created structure when made through the armature. The necessity for columns provided a structurally logical comparison to modern pavilions that require support from three different locations, in order to hold up the load within the roofing.



Fragment Analysis 7 - Final

The final structure contains three main pillars with the main hind pillar beginning to split into two. The additional frontal pillars, specifically the right position has become a structural necessity in order to support the constructed design. The slanted left pillar provides minimal support, however provides access for the capability of a slanted roof which both protects from rainfall as well as provides adequate shading which will become necessity within the contextual confines of Centennial Park. The overall materiality and texture is rough and inconsistent, reminiscent of the pours of concrete onto structural meshing. The methodology of creation was similar to that of the final designs, proving the capability to replicate the structure where necessary based off previous controls. The structure has three entrances and exits, being the main frontal entrance as well as two adjacent smaller pathways. The roofing provides consistent cover and shade whilst the internal space being large enough to contain limited amounts of people within one specific time. The analysis into the materiality shows the true capability of wax when testing the boundaries of its material limits. The capability to create a unique structural pavilion was a result of many failed and successful experiments that ultimately resulting in the creation of a purposefully designed armature as well as specific methods of creation that ensure similar results.

