DIGITAL FABRICATION

FINAL PROJECT PITCH

THE IDEA.

- 3D PRINTED SHOWER HEAD
- WORKING FIXTURES
- AESTHETICALLY PLEASING

PROTOTYPING STAGES

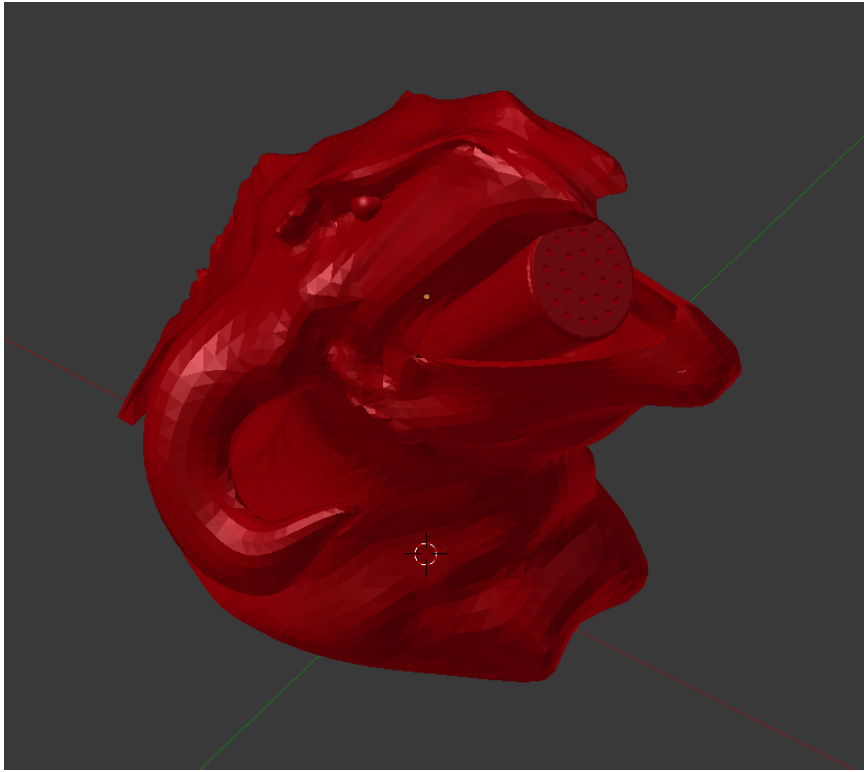
- SOLENOID VALVE: https://vid.me/iMM3
- INTERNALS: https://onedrive.live.com/?cid=99E9D40C7F71D59C&id=99e9d40c7f71d59c%2147358&v=3
- PRESSURE, LED, MIC INPUT, SPEAKER

THE PROJECT GOAL

- TO HAVE EVERYTHING WORKING IN A NEAT 3D PRINTED PACKAGE AND TO ALLOW FOR RAPID REAL PROTOTYPING DESIGNING

- http://postimg.org/image/9hgkpiowz/ *(NEXT PAGE)*

CONCEPT



PROBLEMS WHICH MAY OCCUR.

- WATER LEAKING

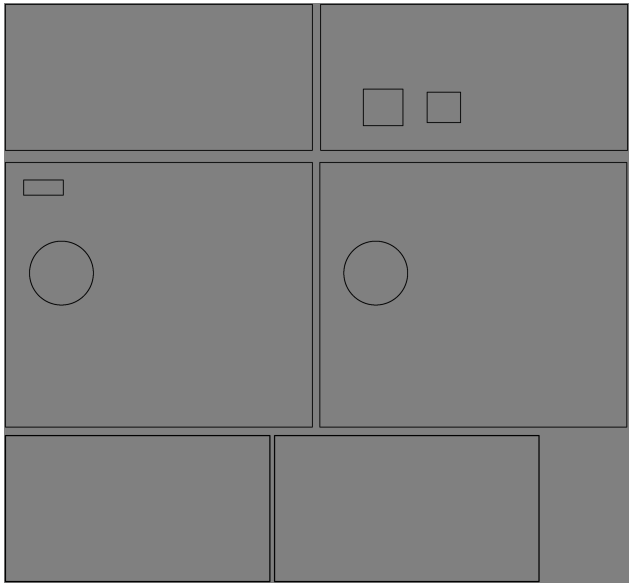
- 3D PRINTING SUPPORT STRUCTURE FAILS

OVERCOMING PROBLEMS/ISSUES

- WATER LEAKING WAS OVERCOME BY USING THE FORMLABS 1 3D PRINTER
    - LESS SPACES BETWEEN LAYERS AND MORE ACCURATE FOR THE NOZZLE THREADS (AND RUBBER TAPE FOR A TIGHTER SEAL HOWEVER WASN'T NEEDED)
- USED MESHMIXER FOR 3D SUPPORTS

LASER CUT BOX/HOUSING

- SCHEMATICS FOR HOUSING



- **DIMENSIONS:**
- Material thickness 3mm. outer dimension. cm.
- width : 10.1
- height : 4.8
- depth : 8.7
- -valve hole : 2.1 x 2.1
- left margin : 0.8
- top margin : 2.6
- -led hole : 1.3 x 0.5
- left margin : 0.6
- top margin : 0.6
- -cable hole : 1.3 x 1.2
- left margin : 1.4
- bottom margin : 0.8
- -power hole : 1.1 x 1.0
- left margin : 3.5
- bottom margin : 0.9

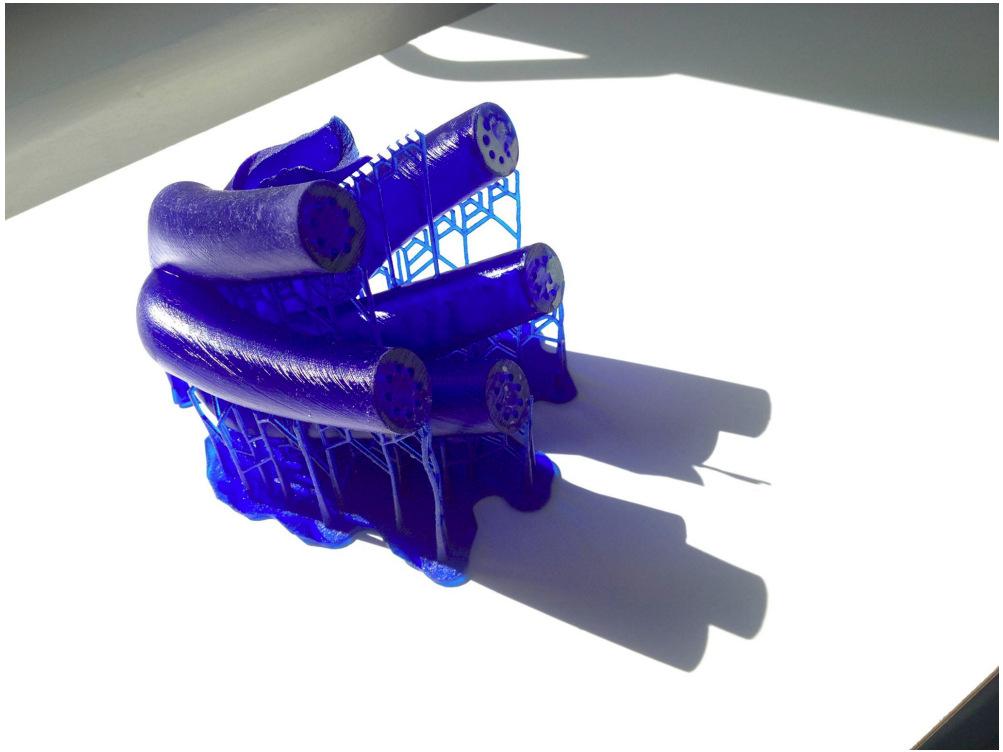
- https://onedrive.live.com/?cid=99E9D40C7F71D59C&id=99e9d40c7f71d59c%2147358&v=3

LASER CUT BOX

CHANGES TO DESIGN

- FINALISED THE CONCEPT MORE AND MADE THE DRAGON HEAD AND SHOWER HEAD SEPARATE.

SHOWER HEAD PRINT



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CURING

- ALCOHOL BATH

- UV LIGHT TO STRENGTHEN AND HARDEN THE PRINT

MACHINE FAILURE

- WHILE 3D PRINTING THE DRAGON HEAD THE MACHINES EXTRUDER BROKE (NOT FROM MY DOING)
- (MOST LIKELY FROM CUSTOM FILAMENT PREVIOUS USER WAS TESTING)

MACHINE FAILURE

- DIMENSIONS WERE EXACT FOR THE FITTINGS AND SCALED FOR THE MAKERBOT

POST PROCESSING

- SMOOTHING PLA

- DREMMEL (X)
- HEAT GUN (Y)
- ACETONE (Y)
- ENAMEL (Y)

POST PROCESSING

- SMOOTHING PROCESS WORKED BUT NOT AS GOOD AS THE INTENDED USE FOR ABS