Orianna M. Sibada C.

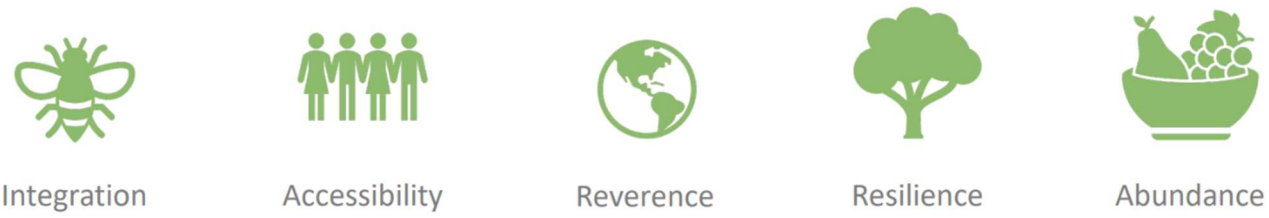
Permaculture Designer & Multidisciplinary Design Engineer

Accredited by the Permaculture Institute of North America at Ecoversity

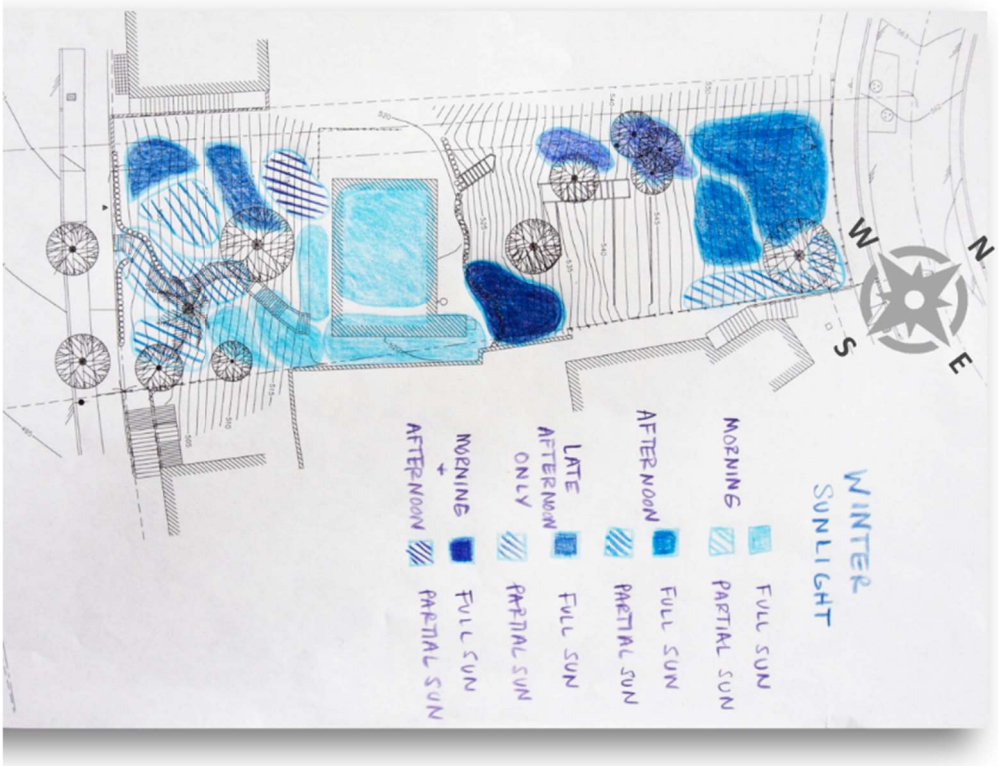
(2020-2023) 1:1/ 98%/ 4 GPA

Applied all the necessary tools to build and maintain a self-sustainable ecosystem with the help of top instructors in the industry. Aided plans and executions of compost process, animal integration, passive adiabatic HVAC for a client´s self-sufficient suburban homestead 3-year plan.

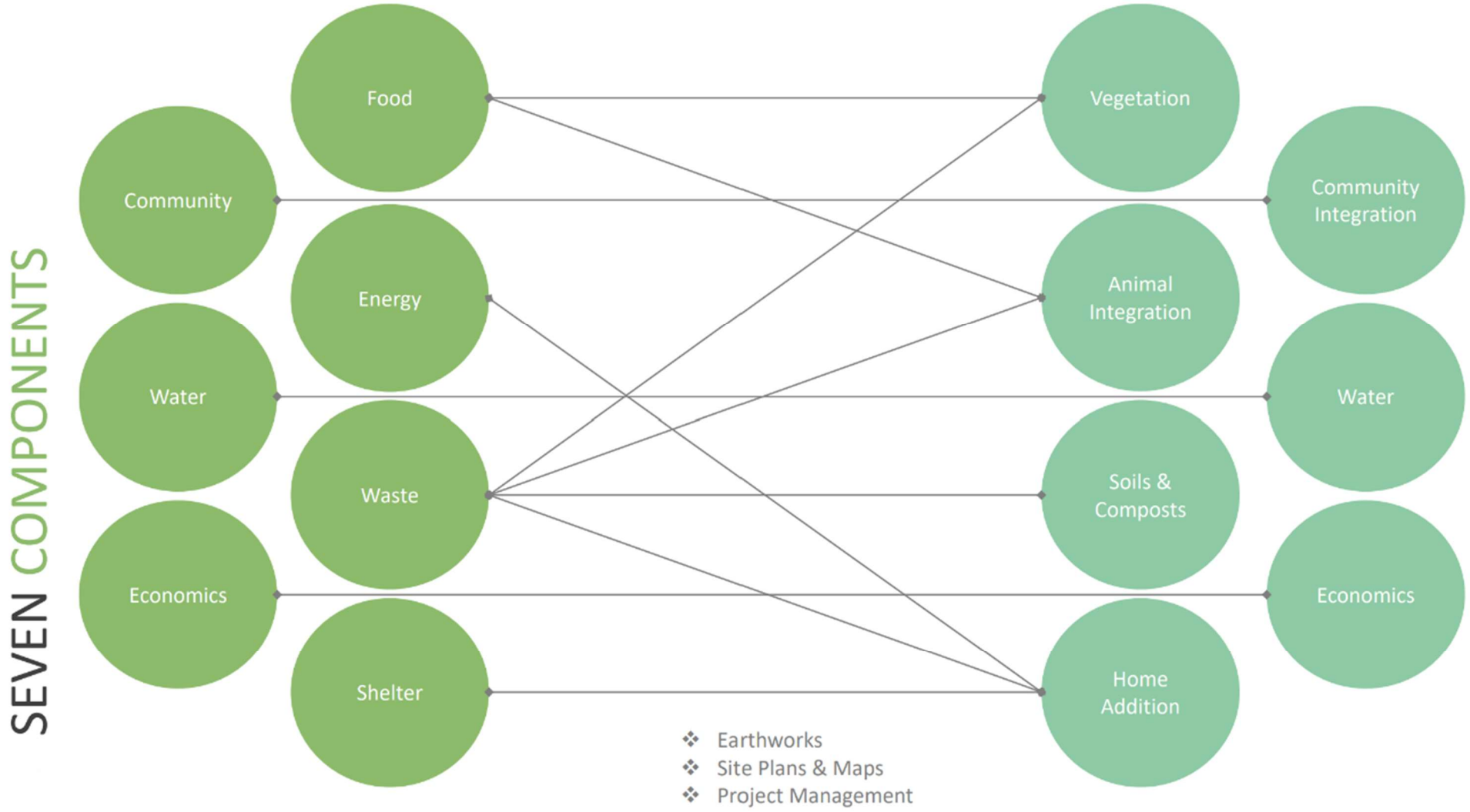
- Carbon sequestration and soil management. ● Supported other engineers for passive designs ‘conception to completion. ●
- Introduction to permaculture patterns and design process. ● Soils, water, plants, aquaculture and bioremediation. ●
- Design for disaster, built structures, animal integration. ● Urban, social structures, mushrooms and design projects. ●
- Supported other engineers for passive designs ‘conception to completion. ● CAD (Solidworks) for final renders, calculations and simulations●
- Drew inspiration from Biomimicry, nature, science and creativity. ● Aided clients worldwide with custom passive design and reverse engineering. ●

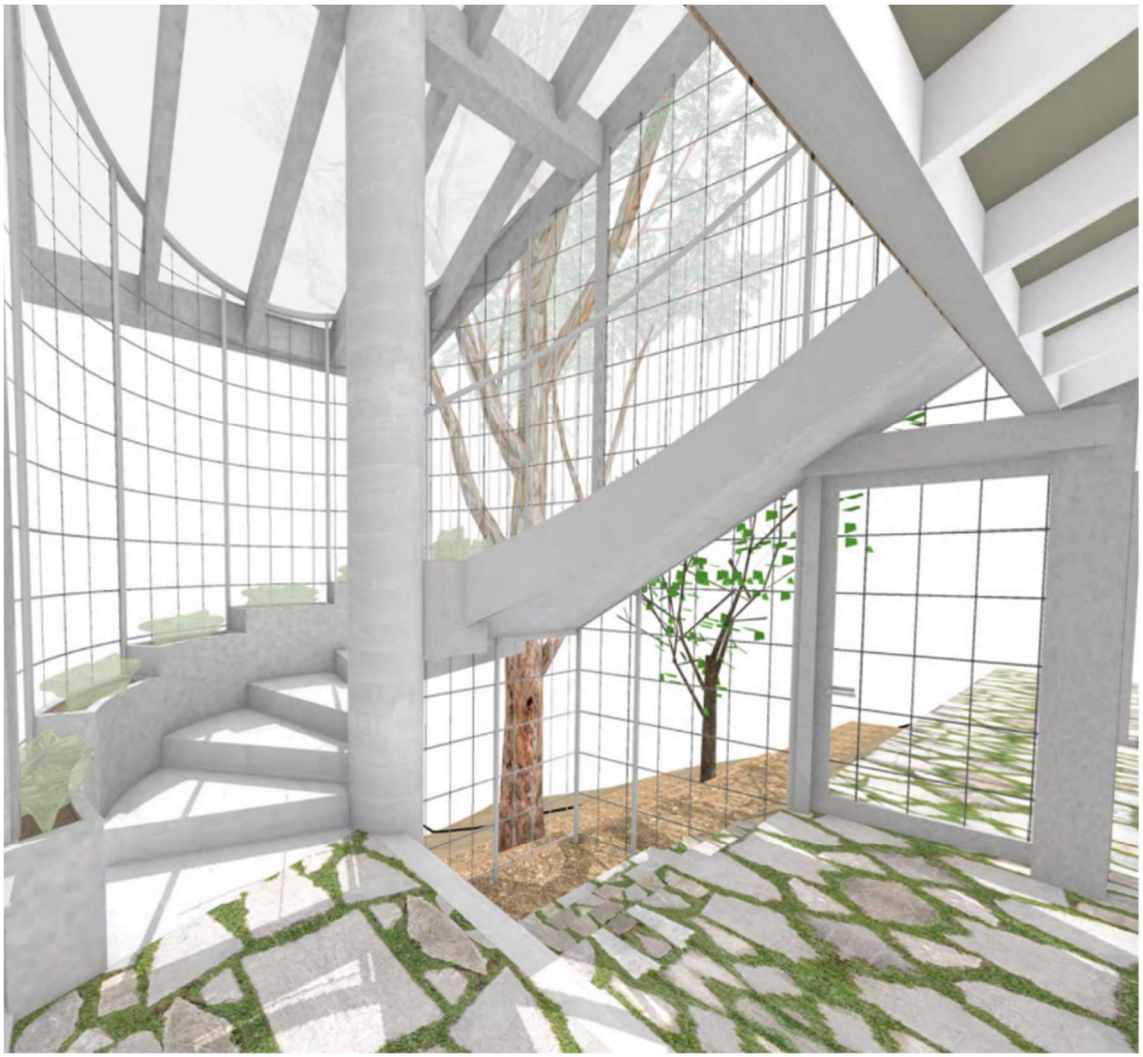


WINTER SUNLIGHT
OBSERVATIONS



SUMMER SUNLIGHT
OBSERVATIONS


SEVEN COMPONENTS
Community
Water
Economics
Food
Energy
Waste
Shelter
Vegetation
Animal Integration
Soils & Composts
Home Addition
Community Integration
Water
Economics
Earthworks
Site Plans & Maps
Project Management



PASSIVE GREENHOUSE DESIGN

Greenhouse & House Connection

- A **2-story greenhouse** connects the first and second floors on the **south-facing** corner with a wide staircase that wraps around the greenhouse and supports **planters along the stairs**.
- The top section of the greenhouse roof (direct summer sun angle) is covered with solar tiles to **collect energy** and to **shade the plants** from the harsh summer sun. The remaining section of greenhouse roof is angled to maximize **winter sun exposure**.

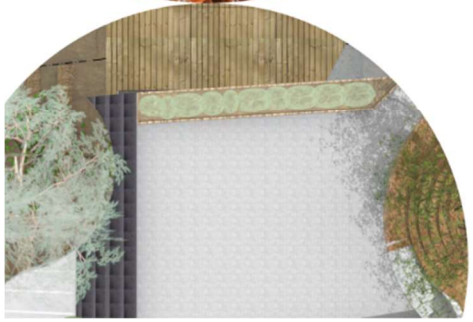
Earthen Greenhouse Ground

- The exposed **earthen ground** acts as a **thermal mass** to store heat and draw it out of the air.
- Keeping the ground **moist** and running air over it via cross-ventilation **cools the air** as is passes.
- Planting directly into the ground helps to hold moisture in the soil.

Greenhouse Environment

- Thick **clay** walls separate the greenhouse from the other interior spaces which naturally regulate **temperature** (thermal mass) and **humidity** inside the greenhouse.
- A **rain barrel** inside the greenhouse also acts as a thermal mass and is used for **irrigation**.
- A small **worm compost** bin produces **CO_2** for the plants to consume.

PASSIVE HOME DESIGN



Cross-Ventilation

- Heat is routed up and out through airflow and cross-ventilation; moving the air in the **greenhouse** moves the air in the **house**.
- Low **transom windows** along the bottom of the greenhouse allow cooler air to enter. **Skylights** open and close automatically to vent excess hot air when necessary.
- There are four doors connected to the greenhouse that can be used to create more airflow; 2 leading outside (E and W) and two going into the house (1st & 2nd story)

Solar (Thermal) Chimney

- Air is heated inside the flue of the chimney which **naturally induces airflow** and pulls the air through the house, releasing hot air out and drawing cooler air in.
- The **chimney inlet** is located in the center of the second floor outside the greenhouse to **move hot air out** of the house in the summer.

Swamp Cooling Clay Wall

- The clay wall between the greenhouse and the interior space of the second floor contains hollow **clay cylinders** that allow the warm air to enter the home interior and **heats the home in winter**.
- In the summer, water is run over the clay cylinders, collected at the bottom and recycled. **The hot dry air** at the top of the greenhouse is drawn through the clay cylinders by the **natural induced air flow** of the solar chimney. **The air is cooled** as it passes through the wet clay cylinders and into the home interior.

Solar Tile Roof

- Using Tesla **solar tiles** enables 150 sqft of solar energy collection, **integrated** into the curvature of the roof line. The tiles **shade the greenhouse** from harsh **summer sun** and taking advantage of the 3' setback requirements for the **roof deck** space.
- The solar tiles will **produce 1.3 kW** and will cost $2,000 to purchase and have installed. This is sufficient for **daytime energy needs** plus excess to feed the grid for **credits**. At night the house will use the city grid, taking advantage of the power credits.

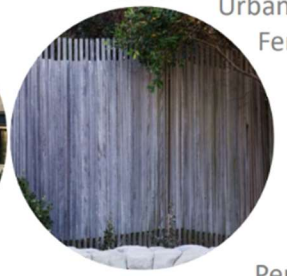
HOME MATERIALS

Glass with Steel Frame

Solar Roof Tiles

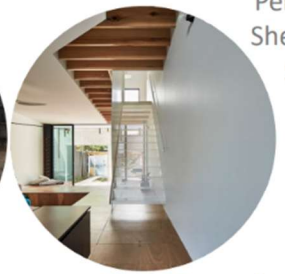
Shou Sugi Ban Siding

Urban Lumber Fencing



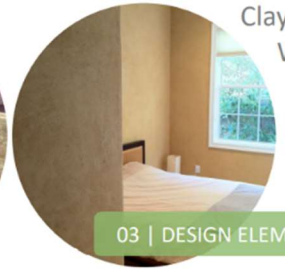
Earthen Interior Floor

Perforated Sheet Steel Stairs

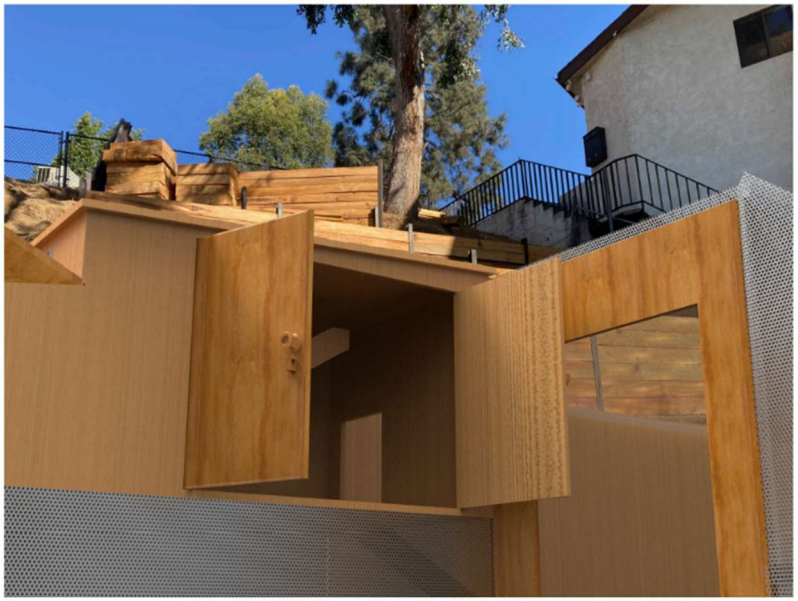


Urban Lumber Furnishings

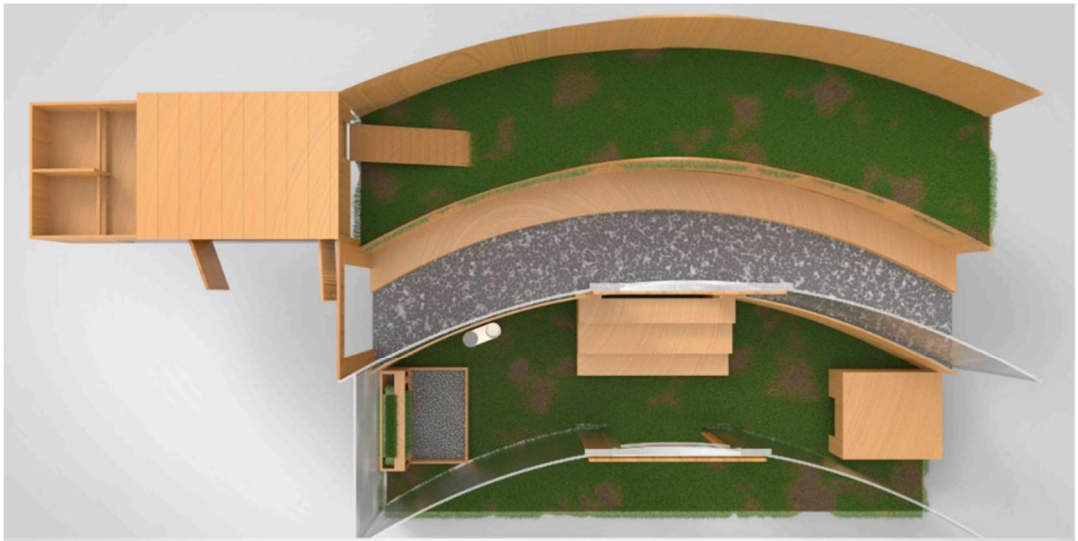
Clay Plaster Walls



CHICKEN COOP & BUNNY RUN



MODELS & DESIGN



Design:

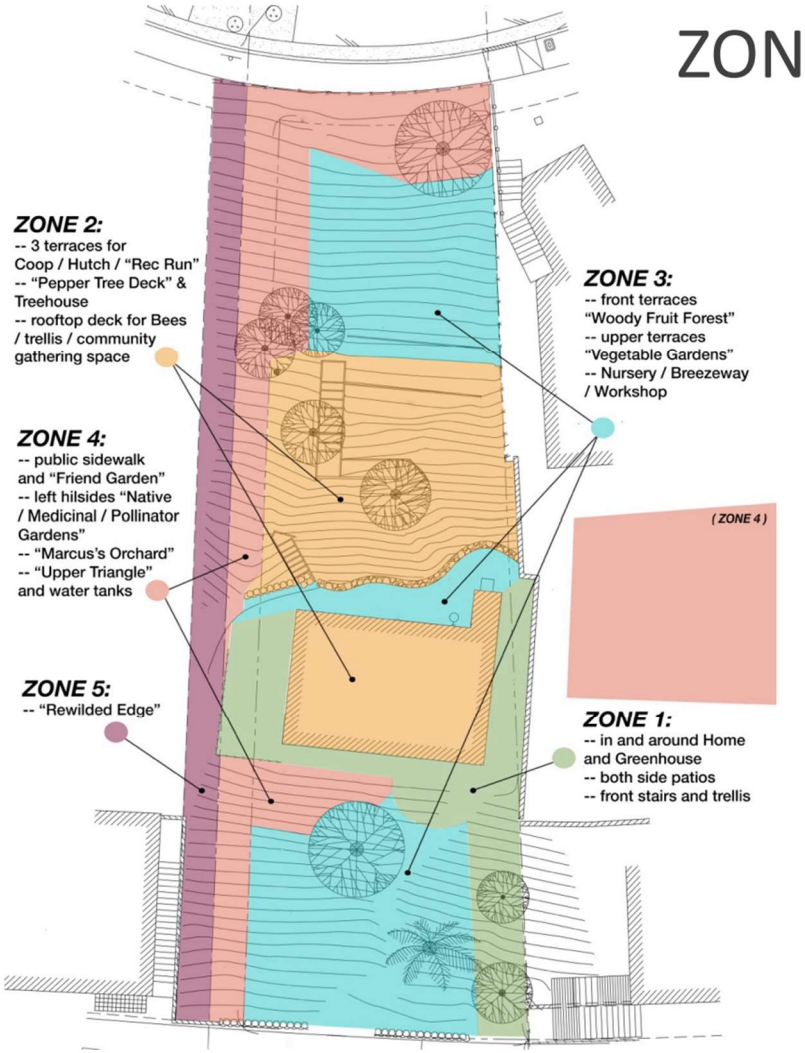
- The run was **designed to allow for growth, change, and integration.** We built-in the option to either keep the bunnies and the chickens **separate or allow them to mingle** in their run spaces, depending on the individual needs of each animal.
- The design of the coop, hutch, and run makes **cleaning and collecting droppings easy**.
- Some U-shaped PVC piping will be built into the terraces to mimic natural burrows and **help keep the bunnies cool on hot days**.
- Nesting boxes are located on the outside of the coop with a rooftop door to allow for **easy access when gathering fresh eggs**.
- Materials will be built from **urban lumber salvaged from Angel City Lumber**.
- The run will be enclosed with a ½ inch hardware cloth on all sides and skirted into the ground to **prevent digging predators from gaining access**.

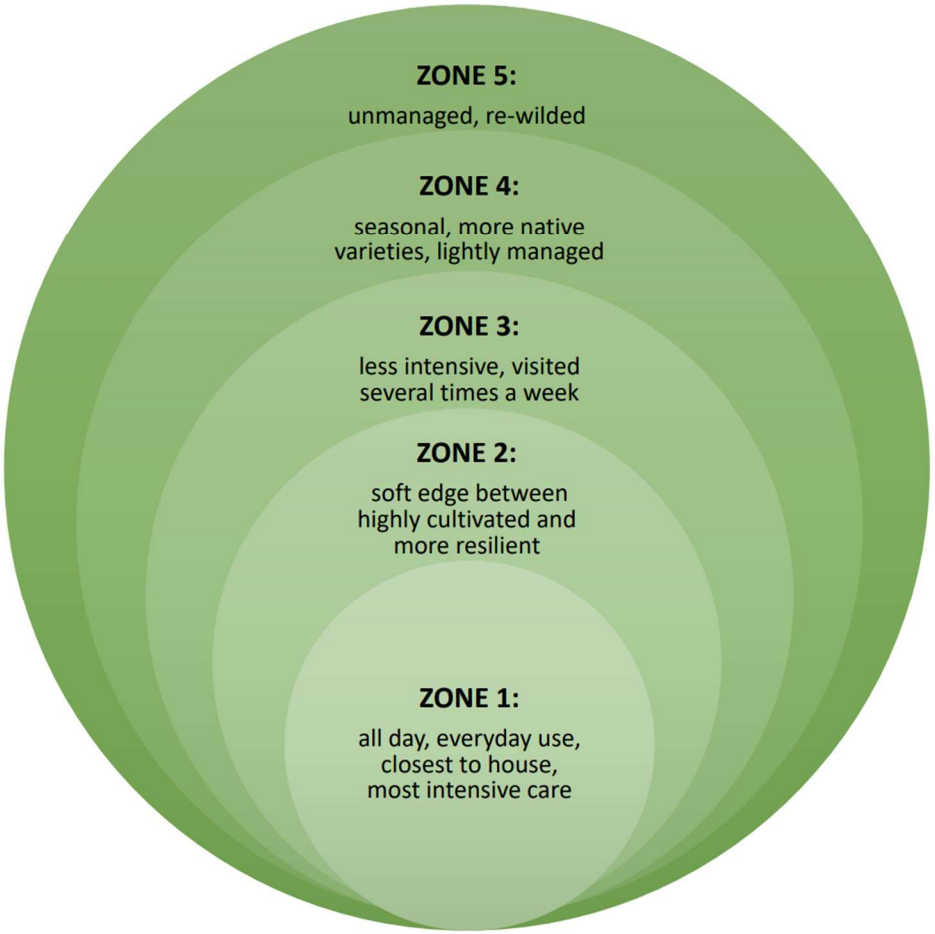
Dimensions:

- Chicken Coop – **8’ long x 3’ wide x 4.5’- 6’ tall**
- Chicken Run – **22’ long x 3’ wide – 3.5’ & 7’ tall**
  - ✓ **132 sq. ft. total**
- Bunny Shelter – **3’ long x 3’ wide x 2’ tall**
- Bunny Run – **22’ long x 4’ wide x 7’ tall**
  - ✓ **88 sq. ft. Total**
- The bunnies and chickens will have **plenty of room to live happy, fulfilling lives** in the space we have designed and provided for them!

Materials: $1,642

ZONE MAPPING





Design Engineering accredited by IMechE.

(2015-2019) 1:1 / 75% / 4 GPA

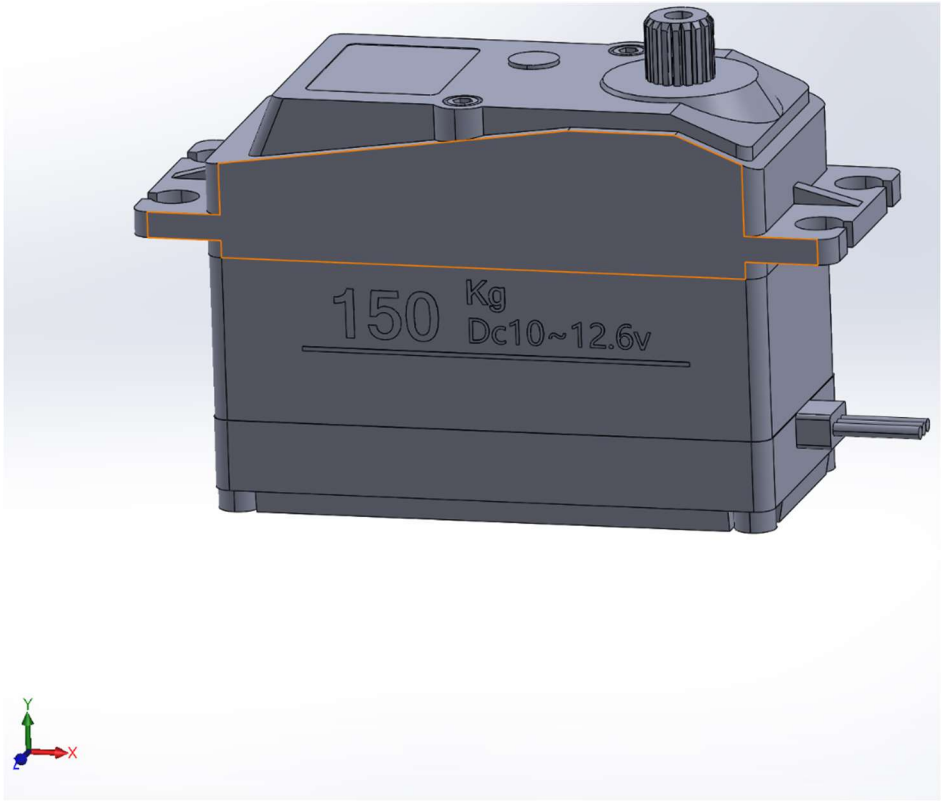
Strong 1:1 merit consistently achieved, enrolled in every engineering challenge, worked effectively with teammates in different projects, and was part of the 3% of faculty to receive 78% in different individual VIVAs. Completed a successful internship year in manufacturing and production with composites.

- Design media and visualization tools. ● Design methods and projects. ● Materials and processing.● Statics and dynamics. ● Research based electronics. ● Engineering simulation. ● Management commercialization for technical projects. ● Business development. ● Advanced mechanics and simulation. ● Design engineering projects. ●

omscde.com

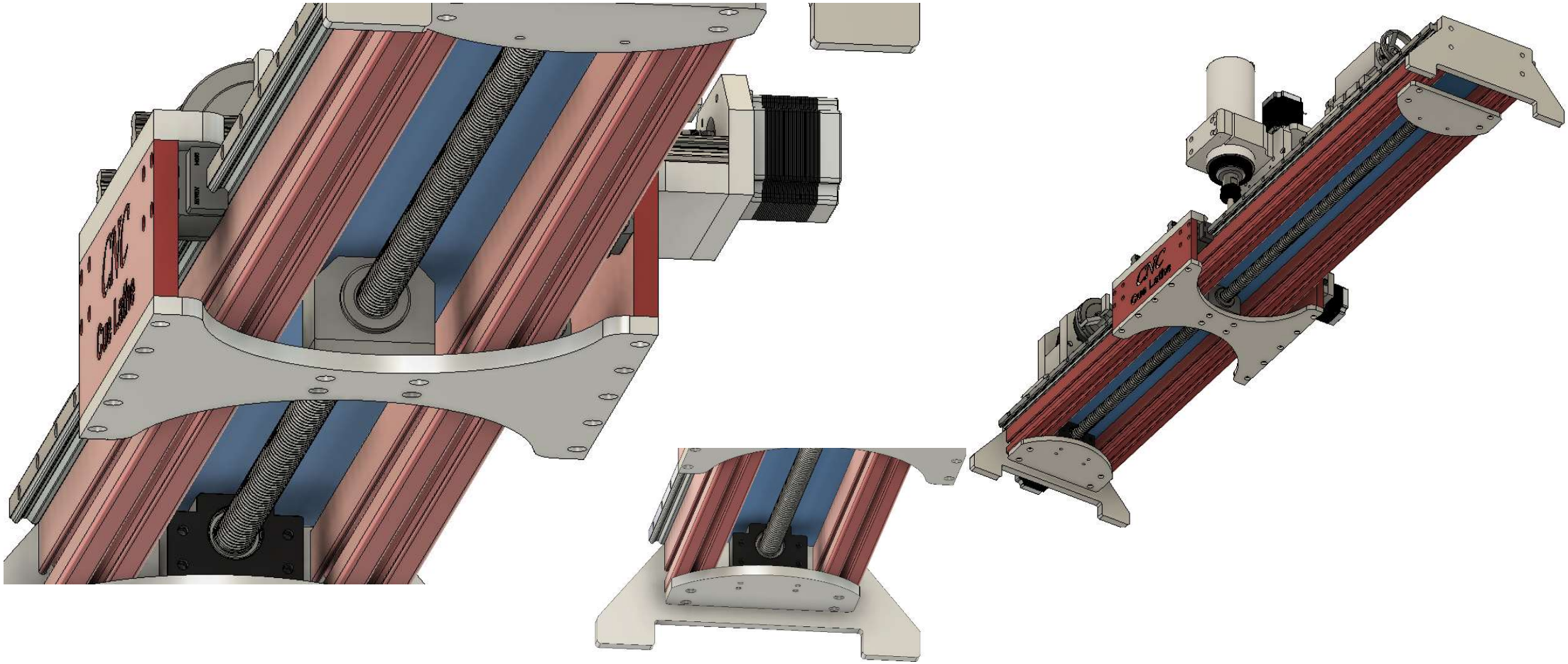
UPWORK SAMPLES

AMAROK TRIPLE CLAMP DESIGN, 548g, 2022

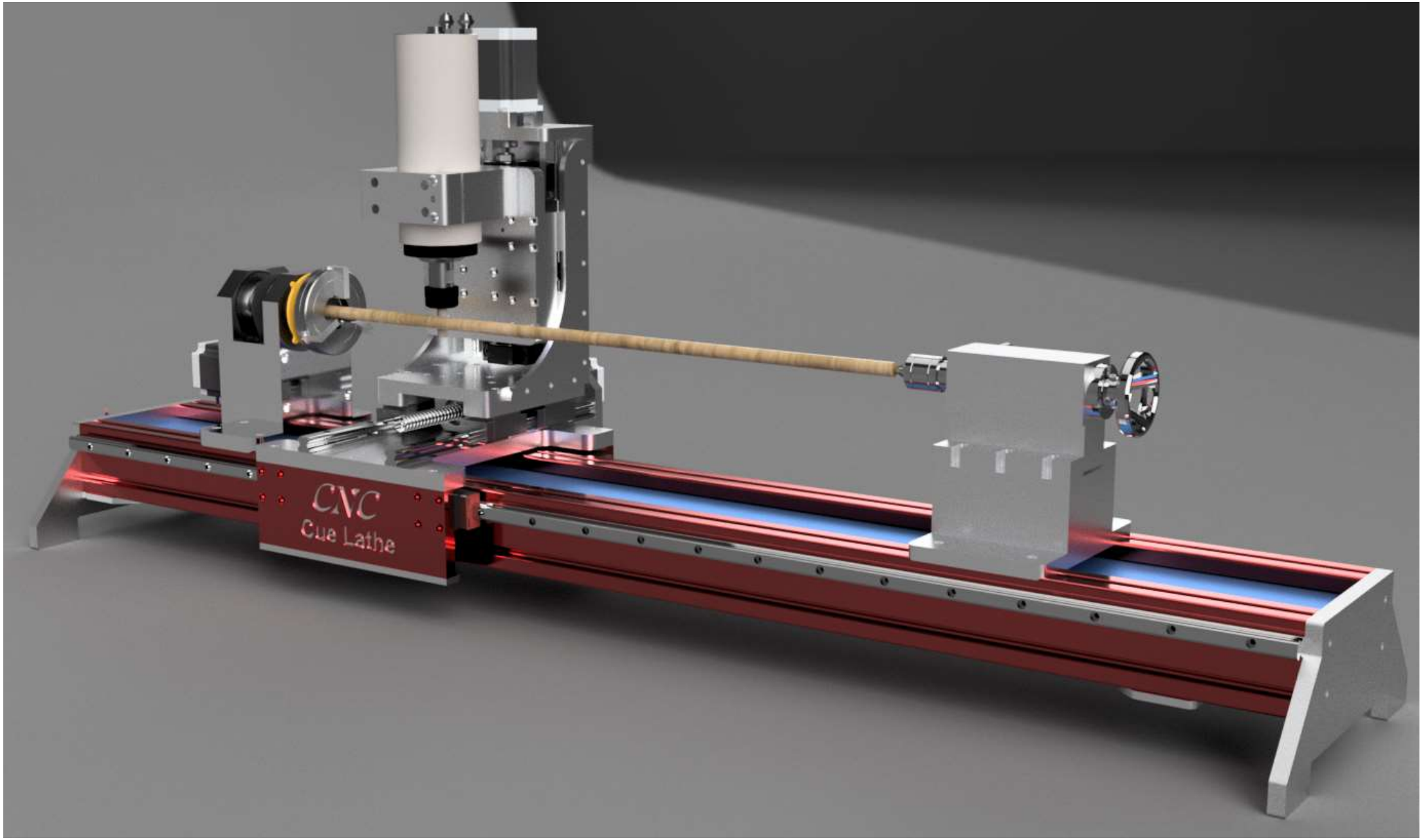


SERVO MOTOR DS51 150kg - 80kg - 60 kg, 2023


CNC
Cue Lathe



CNC CUE LATHE, 2021


CNC
Cue Lathe

Helped the entire MSA team in order to make the client´s (©Sunseeker) life easier, provided them with an improved experience and attended site visits.

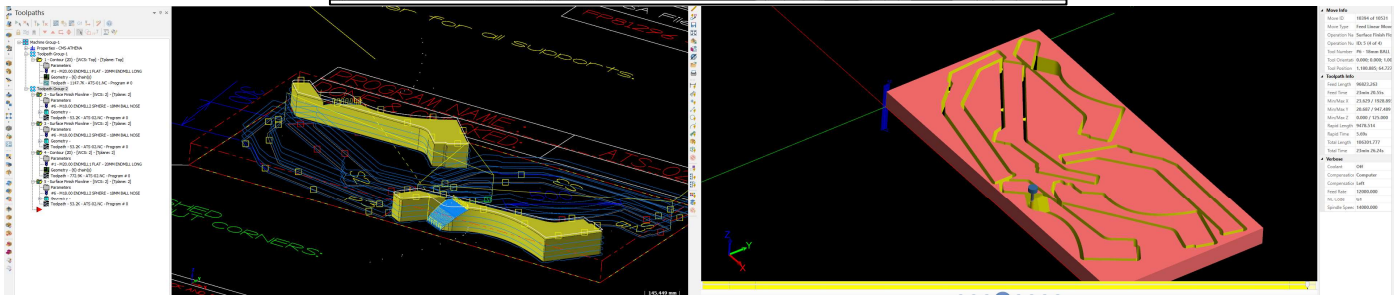
● Interfaced with sales, design and production teams. ● Offline programming (in ISO and G-Code) done using Mastercam. ●

● Produced drawings base on briefs, generated work instructions and documentation. ● 2D digitising. ● Programmed simple 2D CNC applications. ●

● Produced accurate job instructions, drawing packs + programs for 3 and 5 axis milling machines, waterjet cutter, wire cutter, and knife cutter. ●

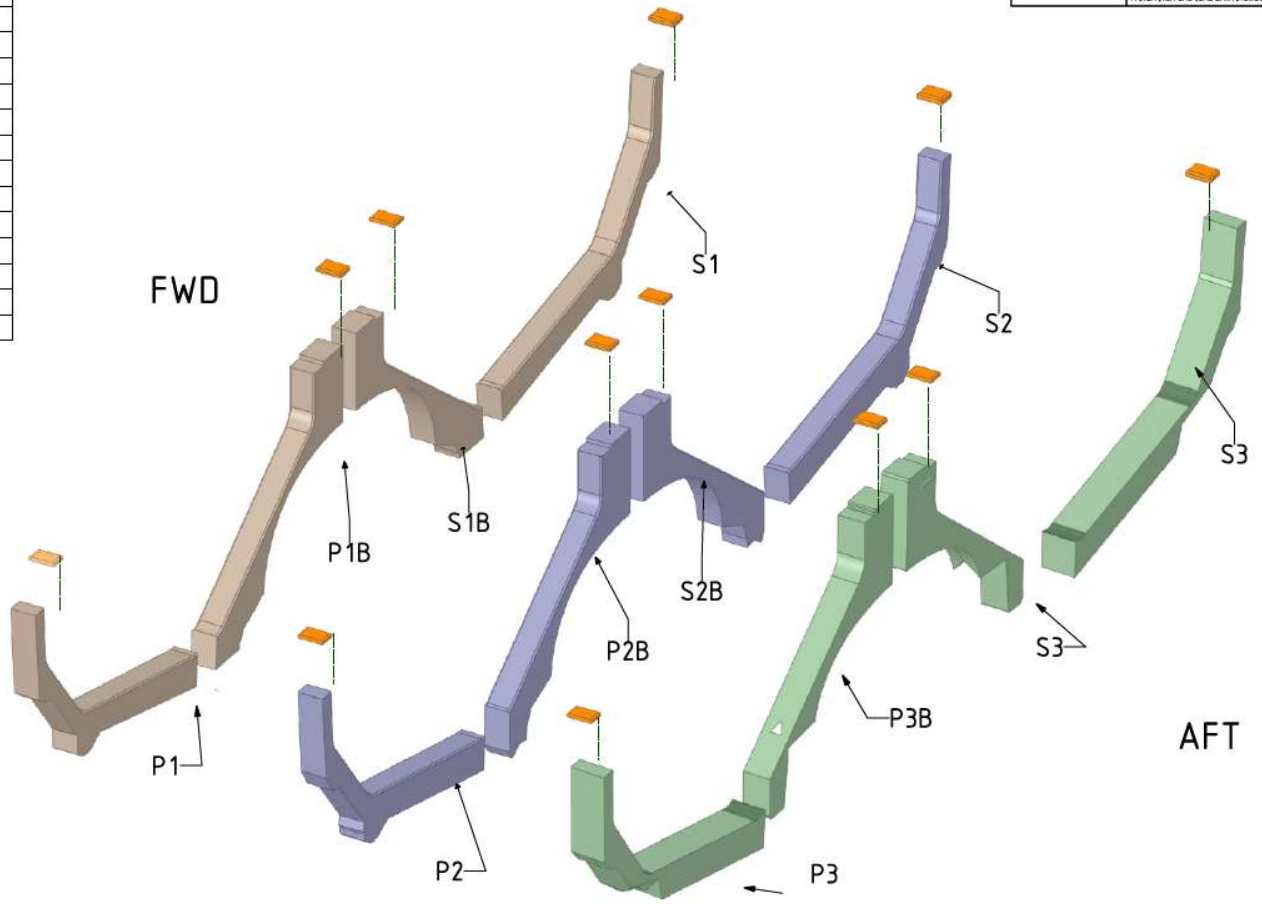
● Supported engineering team to work projects from conception to completion. ● Participated in engineering discussions and improvements. ●

● Applied and implemented SOP´s and work in accordance with company rules. ● Operated by living the MSA values ●



PART	MATERIAL
P1	FOAM HI30
P1B	FOAM HI30
S1	FOAM HI30
S1B	FOAM HI30
P2	FOAM HI30
P2B	FOAM HI30
S2	FOAM HI30
S2B	FOAM HI30
P3	FOAM HI30
P3B	FOAM HI30
S3	FOAM HI30
S3B	FOAM HI30
PLATES	MILD STEEL

MSA FILE NAME | FP81296 -TANK SUPPORT AND PLATES DRAWING - ISSOD
F:\MSA\MSA CAD\CAD DATA\MORCO\Atlas P1\11m Atlas\FP81296 - ATLAS 11M - FUEL TANK SUPPORT



ADDITIONAL INSTRUCTIONS

5MM RAD ON PLATES; 3 EDGES.
5MM HAND-RAD ON TANK SUPPORT; ALL TOP EDGES.

ISSUE	MODIFICATION	DATE	DRAWN	CHECKED
E		24.04.18	OS	

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DORSET BH21 7SE
TEL: 01202 882440
www.meemfg.co.uk
ALL DIMENSIONS IN MM

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PART No. FP81296
CUSTOMER OR ROAD NUMBER: ATLAS ELECTRONIC UK
TITLE: 11M ATLAS TANK SUPPORT AND PLATES
MODEL: --
SCALE: NTS
DWG. No.: REFERENCE
SHEET: 1 OF 4

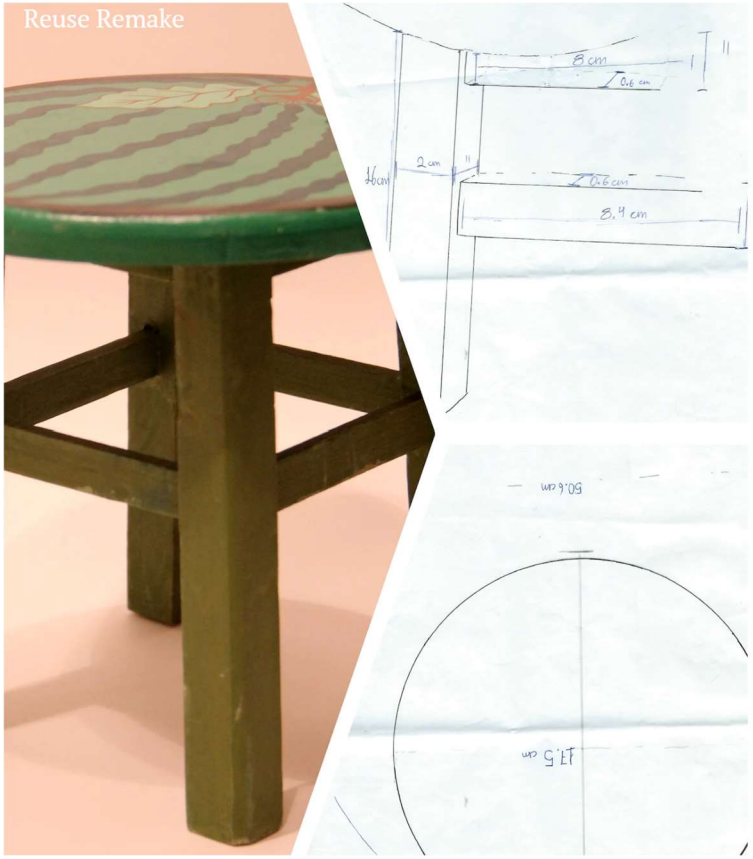
Foundation Art and Design at University of the Arts London

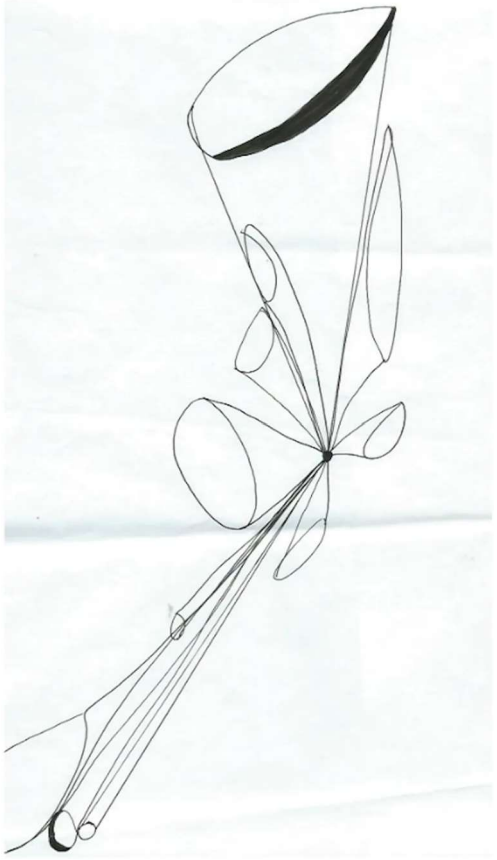
(2014-2015) Level 4/ 2:1/3.7 GPA

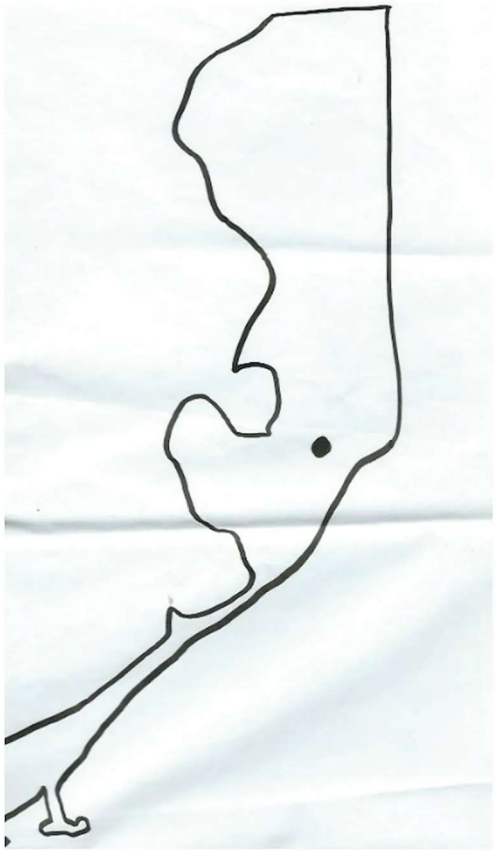
Explored different areas in 3D spatial design, graphic design and gained hands-on workshop experience. Stood out in final project with airliner fuselage redesign, which led to an interest in technical design and in-depth engineering.

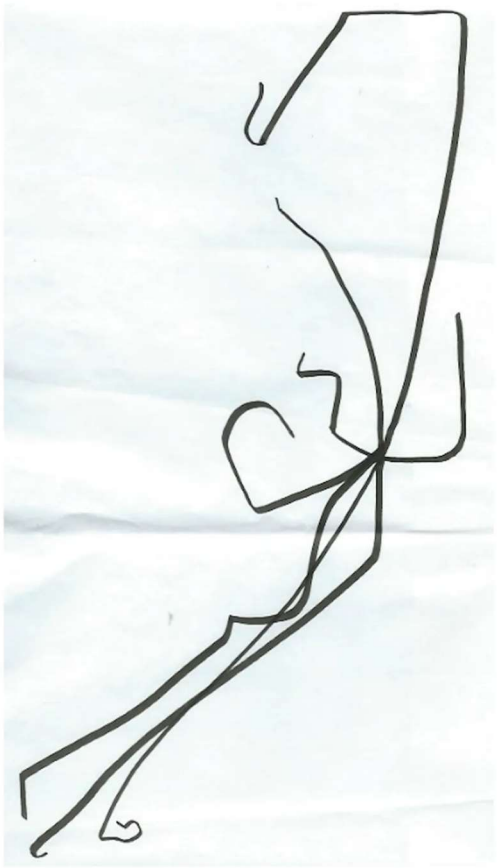
● 3D spatial design and graphic design. ●

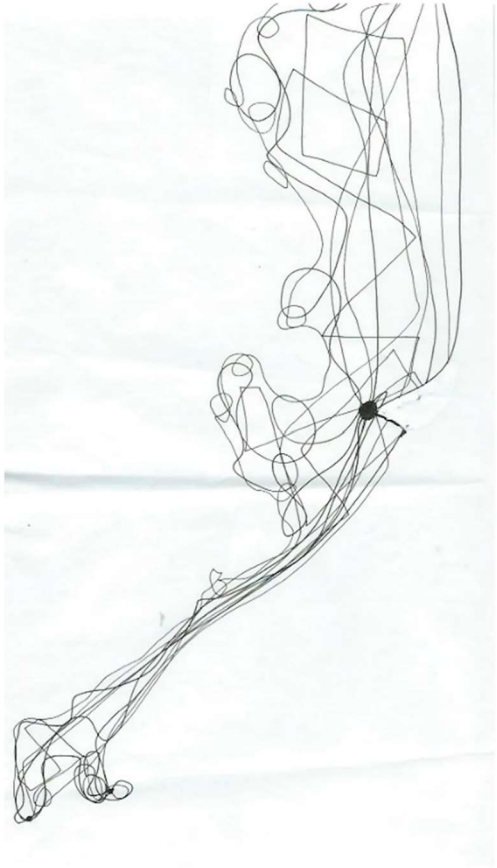
● Experimentation, exploration, manipulation and refinement of a variety of visual arts activities ●


Reuse Remake
8 cm
0.6 cm
2 cm
0.6 cm
8.4 cm
17.5 cm









"Things don't have to change the world to be important"

Steve Jobs