CSU SUSTAINABLE TINY HOUSE

MARIA DELGADO, PH.D.
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• Course credits: 3
• Course: IDEA 450  Design Thinking Collaborative
• Course description: Culminating interdisciplinary experience that offers an opportunity to partner with industry or community partners to propose solutions to vexing real-world problems. Content and activities include a semester-long project to create a problem brief, develop and test prototypes, and deliver professional presentations to diverse audiences.
BACKGROUND: DESIGN THINKING (IDEA) COURSE

Class project: Tiny House on Wheels (THOW)

Class timeline:
Spring 2020: COVID-19
Spring 2021: Design + Built the THOW
Spring 2022: Design the second THOW
Spring 2023: Build the second THOW
SPRING 2022 DESIGN
DESIGN

Design drivers:

1. Sustainable
2. Accessible
3. Affordable
USER-CENTERED DESIGN

Collected feedback from older adults
CURRENT DESIGN: EXTERIOR ELEVATIONS
CURRENT DESIGN: EXTERIOR ELEVATIONS
CURRENT DESIGN: FLOOR PLAN
CURRENT DESIGN: LONGITUDINAL SECTION
SUSTAINABLE FEATURES
SUSTAINABLE FEATURES: WATER

• Main goal:
  1. Focus on energy efficient water design/usage
SUSTAINABLE FEATURES: SMART WATER ECOSYSTEM

- Water
  - Smart System
  - Smart Faucet
  - Smart Shower
  - Washer/Dryer
  - Toilet
  - Integrate water holding tank
SUSTAINABLE FEATURES: SMART WATER ECOSYSTEM

• Water
  – Smart System
    • Brand: MOEN
    • Model #: 900-001
    • Product: Flo Smart Water Monitor & Shutoff - 0.75"
    • Price: $767.70
    • Product Specification Sheet
    • Sustainable feature:
      – Installed on the main home water supply
      – “Security system that monitors and protects your home from leaks and water damage with a single smart water valve”
SUSTAINABLE FEATURES: SMART WATER ECOSYSTEM

• Water
  – Smart Faucet
    • Brand: MOEN
    • Model #: 7565EVBL
    • Product: Align Smart Kitchen Faucet Matte Black One-Handle High Arc Pulldown
    • Price: $615.72
    • Product Specification Sheet
    • Sustainable feature:
      – Pour exact water measurements to eliminate water waste
        » Voice control: digital voice assistant
        » Wave sensor: wave hand over sensor
        » Smartphone App: push buttons remotely
        » Handle: manually operate
SUSTAINABLE FEATURES: SMART WATER ECOSYSTEM

- Water
  - Smart Shower
    - Brand: MOEN
    - Model #: TS3302BL
    - Product: Moen Smart Shower 2-Outlet Shower Controller in Matte Black
    - Price: $1,473.15
      - Includes: Trim, battery backup kit, shower valve
    - Product Specification Sheet
  - Sustainable feature:
    - Preheats water to eliminate water waste (running water to obtain desired temperature)
      » Control temperature (do not need to run water to warm up shower)
      » Notifies you when your shower is ready
      » Set shower length
      » Start and pause from app (avoids wasting water)
SUSTAINABLE FEATURES: SMART WATER ECOSYSTEM

- Water
  - Laundry
    - Brand: GE Appliance
    - Product: All-in-one washer dryer
    - Price: $1,399
    - Product Specification Sheet
    - Sustainable feature:
      - High efficiency
      - Less total cleaning loads

Moen Smart Water Leak Detector
SUSTAINABLE FEATURES: SMART WATER ECOSYSTEM

- Water
  - Toilet
    - Brand: KOHLER
    - Item #: 1170452
    - Product: ADA compliant toilet
    - Price: $561.75
    - Product Specification Sheet
      - Sustainable feature: Dual flush

Moen Smart Water Leak Detector
VIRTUAL REALITY
VIRTUAL REALITY TINY HOUSE TOUR

- **Sustainable On-Campus Walking Tour**
  - April 14th from 10 – 11am, starting at the Spoke (Northwest of the Pavilion).
  - End of tour: tour the tiny house
  - Nancy Richardson Design Center room 120

Please sign up here if you would like to join the tour: Sustainable On-Campus Walking Tour — Signup Sheet | SignUp.com
VIRTUAL REALITY TINY HOUSE TOUR

Sign-up for tour below
https://green.colostate.edu/earth-month/

Additionally:
Student final presentation to older adults is:
• May 7th
• 10:00 a.m.
• RDC room 120
SPRING 2023 GOAL
Spring 2023

1. Construct the THOW
2. Document the THOW

Tags will highlight all sustainable materials, products, and design features in the THOW.

Tour the CSU 2021 THOW here:
https://my.matterport.com/show/?m=TXa9TKg2897