

ARCH&UD 103: INTRODUCTION TO ARCHITECTURAL DESIGN STUDIO
UCLA AUD JumpStart 2023



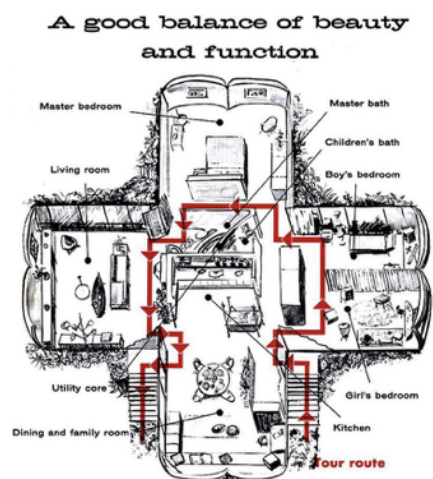
SYLLABUS

The Eames House, Case Study House #8, built in 1949 in the Pacific Palisades, is considered one of the most important postwar residences in the USA. It is the Case Study house Number 8 and a National Historic Landmark.
Photography: Julius Shulman/J. Paul Getty Trust

“Design depends largely on constraints.” – **Charles and Ray Eames**

“The most important thing is that you love what you are doing, and the second that you are not afraid of where your next idea will lead.” – **Charles Eames**

MONSANTO HOUSE OF THE FUTURE



The Monsanto House of the Future, built in 1957 in Anaheim, California is an ultra modern 20th century prefabricated house. During the ten year period while on display in Disneyland's Tomorrowland, more than twenty million visitors toured the house to explore and experience the future of the plastic fantastic living. Photo credit: Yesterland

“Modern life demands, and is waiting for, a new kind of plan, both for the house and the city.” – **Le Corbusier**

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OVERVIEW AND TOPIC:

Designing an ADU to the Monsanto House on a typical LA 100'x50' lot. Students will speculate on architectural form, space, order and material innovation through a study and transformation of a portion of the Monsanto House of the Future comprising three stages:

A1: Examine and Document

A2: Scale, Rotate, Multiply, Array and Transform, Copy, Move, Delete

A3: Isolate and Elaborate

In this introductory studio, students will explore and materialize formations and constituents of architectural thresholds and kit of parts, in three phases, by first analyzing one of Los Angeles most futuristic prototypes, The Monsanto House of the Future of 1957. Following that, students will then: multiply and situate those components within simple geometric arrays as a vehicle for further speculations on architectural space, form, order, and the inter-relationships of objects and fields. Concurrently students will transform a zone within that array (comprising at least two adjacent components,) and rethink construction logics through idea-driven model-making in preparation for the third and final stage of the studio. That last step will entail the isolation of that zone for final documentation. Each design phase will include both digital and analog two-dimensional and three-dimensional representation.

BACKGROUND:

The Monsanto House of the Future was sponsored by Monsanto Company, exhibited by Walt Disney and designed by MIT architecture faculty Marvin Goody and Richard Hamilton to test plastic as an affordable material to mass-produce modular homes. At the time it was a visionary mission to explore the medium, assembly techniques and the form. The house was built completely out of plastic, eight feet above the ground with the utility core in the center and four U shaped cantilevering spaces each measuring two hundred and fifty square feet.

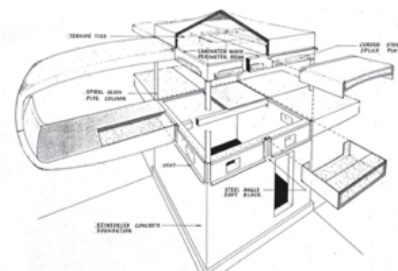
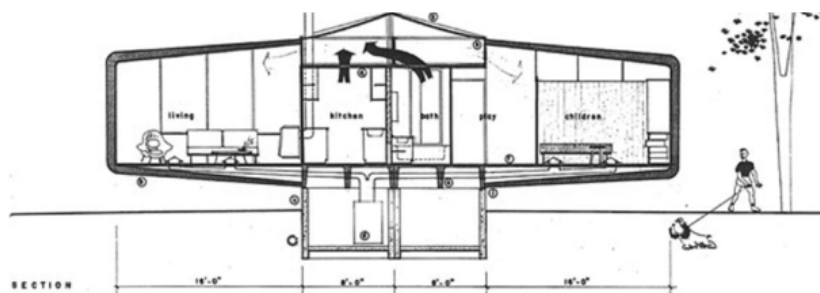
Inspired by such a forward-thinking, experimental approach to the design of dwelling, student's task will be to unfold new spatial and formal arrangements comprising re-imagined parts that stimulate creatively framed passages and transitions within the dwelling landscapes of today.

OBJECTIVES:

JumpStart is a summer design studio that introduces students to conceptual and technical facilities essential to the study of architecture as a discipline. The course will inspire students to engage in idea-driven design.

Students will:

- Produce architectural representation via both orthographic and parallel projections.
- Develop digital models of existing and original designs.
- Build analog models using manual and digital fabrication tools.
- Learn to use 2-D and 3-D modeling and drawing software: Rhinoceros and Adobe Illustrator
- Communicate architectural ideas effectively across formats.
- Nourish those ideas with broader cultural thematic.



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Section and Exploded Axonometric Drawing: Monsanto House of the Future / Marvin Goody and Richard Hamilton

ORGANIZATION:

Students will be assigned an instructor and technical support instructor and studio space. Studio time will be supported by several weekly lectures given by faculty and guest designers exploring many facets of idea-driven design. Software and fabrication tool tutorials will be provided each week as relevant to assignments.

The course is organized around design studio culture, which comprises a range of activities from desk critiques, to small group discussions, to studio-wide pin-ups, to final reviews with a panel of guest critics. Students' thoughtful production of design work in-between such activities is essential and should respond to the new materials and skills provided by instructors. .

CREDIT HOURS: 6 units of UC credit

POLICIES & PROCEDURES

Attendance

Attendance is mandatory during class time, dialogs, lectures, reviews, pin-ups, tutorials, and workshops. If you do not present your work at reviews, you will not receive credit for the studio. In the scenario of distant learning, some tutorials and lectures will be recorded and offered asynchronously. Students are expected to not miss more than 2 classes in order to receive credit. Three unexcused absences will result in a failing grade.

Work Culture and Absences

Students in the in-person program are required to work in the studio. In the scenario of distant learning, students will work from home. All technical equipment needed for the course such as a laptop, and drawing material will need to be acquired by the participants prior to the start of the course. A document outlining these requirements will be made available prior to the opening of the course registration.

All activities requiring absence from studio meetings i.e. purchasing materials or running project-related errands) should be scheduled outside of studio hours. Leaving in the middle of, or prior to the end of regularly scheduled studio times will result in an absence.

Grading

Course grades will be determined based upon the quality of work produced, improvement over the course, completion of project requirements, participation, attendance, attitude and ethical conduct. Any questions regarding grades or policies should be directed to your instructor or to the program director. A passing grade in the course requires dedicated completion of all projects. Incomplete work will not be evaluated. Grades will not be issued prior to the completion of archiving procedures.

Archiving

At the conclusion of the summer program you will be asked to archive your work. There will be time to do so the morning before your final review. You will not receive your grade until these files are submitted. Save all of your files to the 2022 Student Work folder.

Submit your individual photo or drawing files in 300 DPI JPGs with the following names:
JumpStart_2022_YourInstructorsLastName_YourLastName_01.jpg

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Student Privacy

This program uses video recording or other personal information capture for the purpose of facilitating the course and/or test environment. Pursuant to the terms of the agreement with UCLA, the data is used solely for this purpose and any vendor is prohibited from disclosing this information. UCLA also does not use the data for any other purpose. Students may not distribute recordings or other instructional materials provided as part of remote learning by faculty, teaching assistants, or invited guests.



Interior views of The House of the Future living room and children's spaces. Photo credit: Yesterland

UCLA Summer Institutes

1332 Murphy Hall, Los Angeles, CA 90095
phone: 310-825-4101 email: institutes@summer.ucla.edu

UCLA Architecture and Urban Design, 1317 Perloff Hall, Los Angeles, CA 90095
email: summer@aud.ucla.edu

Faculty

Julia Koerner, Summer Programs Director, Assistant Adjunct Professor, juliakoerner@ucla.edu
Morgane Copp, Summer Programs Assistant Director, Lecturer, morganecopp@ucla.edu
TBC

Films and Interviews:

Monsanto's Plastic "Home of the Future" at Disneyland (1957)
Reyner Banham Loves Los Angeles (1972)
Buster Keaton One Week (1920)
Déambulateur no.7
David Umemoto's Sculptures are Studies on Brutalism

Readings and Articles:

F30: What the house of tomorrow can teach us today by Jean Thilmany
Monsanto Plastics. "House of the Future." *Eistics*, vol. 5, no. 28, 1958, pp. 14-17. JSTOR
Plastics: Monsanto House of the Future (MHFO), 1987 by Stephen Philips
Architectural Evolution and Engineering Analysis of a Plastics House of the Future by Hamilton, Goody, Dietz, Heger, McGarry, MIT, Whittier, Gigliotti, and Monsanto Chemical Company, 1957.
Banham, Reyner "Los Angeles: The Architecture of Four Ecologies", 1973.
Banham, Reyner "A Home is Not a House", *Art in America*. 1965, volume 2, NY:70-79.

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Environmental Infrastructures: From Bubbles to Territories by Lola Sheppard, 297-300.

The figure-ground diagram

Concrete poetry: the architectural sculptures of David Umemoto by Harriet Lloyd- Smith

David Umemoto's Architecture Sculptures

Building an ADU, Guidebook to Accessory Dwelling Units in the City of Los Angeles by City Lab UCLA, 2017.

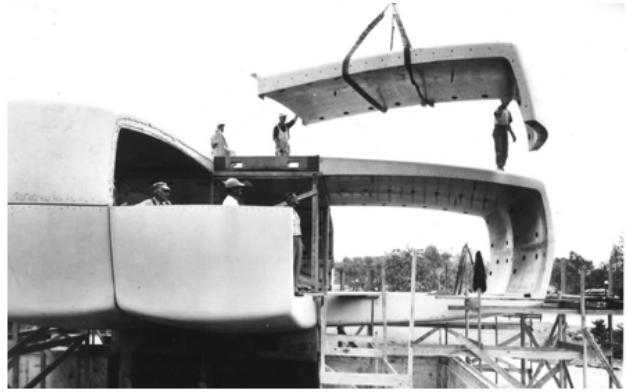
Los Angeles's Standard Plan Program for ADUs Takes Aim at the Housing Crisis by Jessica Ritz, 2021.

SO-IL Proposes Prefabricated "Pebble House" For The Los Angeles Accessory Dwelling Units Scheme by Palak Shah, 2021.

Approved ADU Standard Plans by LADBS

Low-Rise: Housing Ideas for Los Angeles

<https://www.shariflynch.com/6-plex>



Construction images of The Monsanto House of the Future under construction in 1957 in Disneyland, California

EXERCISES:

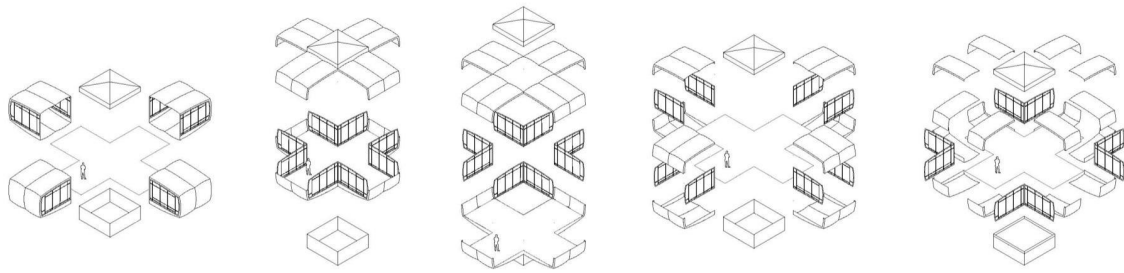
In **Exercise A1**, each student will analyze the whole building by drawing 2D: one floor plan, one section and one elevation. A series of online films and virtual tours through the house will help familiarize students with the house in its totality and to confirm (through measured drawings) details and dimensions. In the next step students will pull apart Monsanto House to define prefabricated elements by creating an exploded isometric. After analyzing and dissecting Monsanto House, students will then preselect one zone in plan or in section to manipulate in exercise A2.

In **Exercise A2**, each student will first double their respective zones of study in a digital model by copying that zone and then applying one or more 3-dimensional transformations (i.e. bend, overlap/ move, scale/ rotate, multiply, stretch, mirror, array, delete and so on in conversation with instructors.) to parts of the segments. This initial multiplication will be further compounded with a geometrically driven, plan-based exercise wherein students will situate clones of the zone in an array bounded by 50' x 50' x 25' the invisible box hovering over the building footprint of Monsanto House.

Students may choose from one of the following three arrays:

- Circle
- Line
- Cartesian Grid

In **Exercise A3**, each student will further elaborate on their final massing/array in the typical 55' x 110' Los Angeles lot through additional drawings, atmospheric perspectives, and physical models. These representations will form a suite of artifacts describing a conceptually charged place at once both derivative of the Monsanto House and altogether new. Students will assign a specific program to their segment while speculating on ADU future living, materiality and methods of assembly.



The Monsanto House of the Future Exploded Isometric Drawings

EXERCISE A1: Examine and Document

“As an architect you design for the present, with an awareness of the past, for a future which is essentially unknown.” – **Norman Foster**

Case Study: Monsanto House of the Future

Architect: Marvin Goody and Richard Hamilton

Year: 1957 - 1967

Location: Anaheim, California

Size: 1280 SF

Material: Plastic

Layout: One living Room, one family room, one kitchen, three bedrooms, one and a half bathrooms.

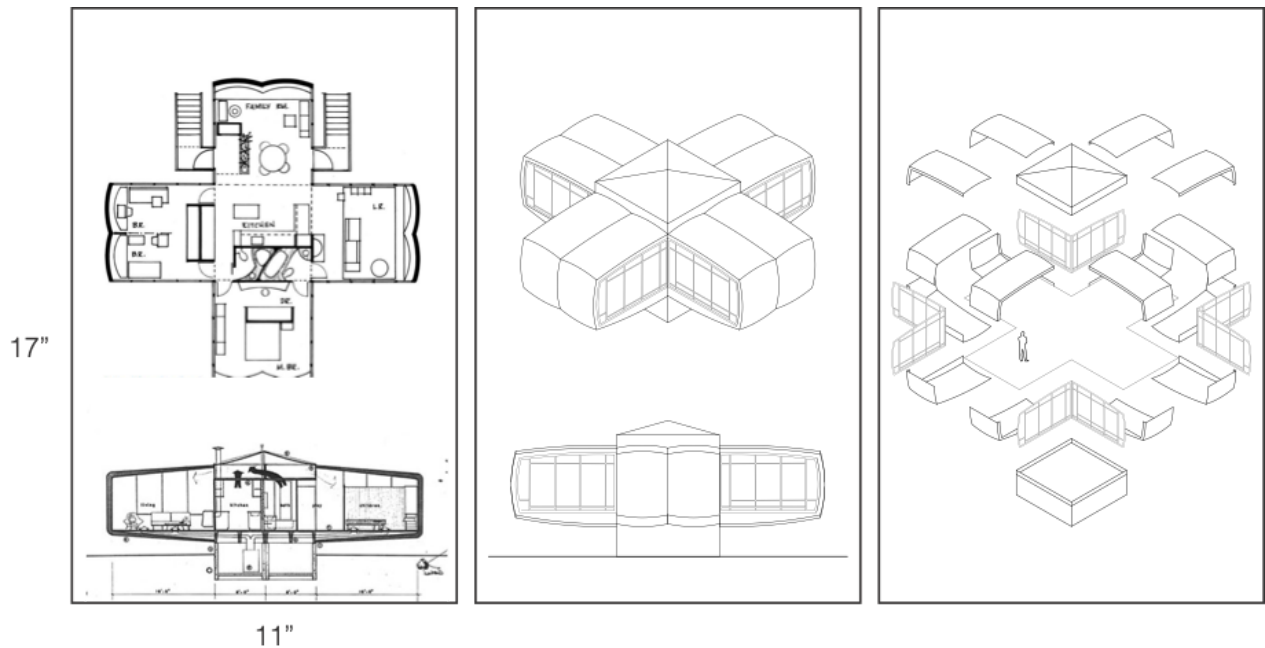
Description: The Monsanto House of the Future was sponsored by Monsanto Company, exhibited by Walt Disney and designed by MIT architecture faculty Marvin Goody and Richard Hamilton to test plastic as an affordable material to mass-produce modular homes. At the time it was a visionary mission to explore the medium, assembly techniques and the form. The house was built completely out of plastic, eight feet above the ground with the utility core in the center and four U shaped cantilevering spaces each measuring two hundred and fifty square feet.

Exercise: In Exercise A1, each student will analyze the whole building by drawing 2D: one floor plan, one section, one elevation and one isometric drawing. A series of online films and virtual tours through the house will help familiarize students with the house in its totality and to confirm (through measured drawings) details and dimensions. In the next step students will pull apart Monsanto House to define prefabricated elements by creating an exploded isometric. After analyzing and dissecting Monsanto House, students will then preselect one zone in plan or in section to manipulate in exercise A2.

Output for this exercise will comprise (5) drawings at $3/16" = 1'-0"$: one plan, one elevation, one section, one isometric, one exploded isometric at $1/8" = 1'-0"$ and one physical model + photographs.

Attention should be paid to both envelope and its components, dimensions and character-defining features – prefabricated walls, transparent materials, ceiling heights, topography- relationship to the ground, etc.

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Instructors will provide students a template for presentations. (Link)

Films and Videos:

Monsanto's Plastic "Home of the Future" at Disneyland (1957)

Reyner Banham Loves Los Angeles (1972)

Readings and Articles:

F30: What the house of tomorrow can teach us today by Jean Thilmany

Monsanto Plastics. "House of the Future." *Ekistics*, vol. 5, no. 28, 1958, pp. 14-17. JSTOR

Architectural Evolution and Engineering Analysis of a Plastics House of the Future by Hamilton, Goody, Dietz, Heger, McGarry, MIT, Whittier, Gigliotti, and Monsanto Chemical Company, 1957.

Banham, Reyner "A Home is Not a House", *Art in America*. 1965, volume 2, NY:70-79.

Environmental Infrastructures: From Bubbles to Territories by Lola Sheppard, 297-300.

Plastics & Post Modernity 1961-1990 by Roland Barthes, 110-111.

Monsanto House Worksheet (Student folder)

Monsanto House of the Future (Miro Board Link)

A1 DELIVERABLES: 11" x 17" PDF's and JPG 300 DPI individual files:

- (1) FLOOR PLAN, SCALE :3/16" = 1'-0"
- (1) SECTION, SCALE: 3/16 = 1'-0"
- (1) ISOMETRIC PROJECTION, SCALE: 3/16 = 1'-0"
- (1) ELEVATION, SCALE: 3/16" = 1'-0"
- (1) EXPLODED ISOMETRIC PROJECTION, SCALE: 1/8" = 1'-0"
- (1) PHYSICAL MODEL + PHOTOGRAPHS

ALL TO BE FORMATTED AS PDF's or JPG's AND SAVED AS:

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DUE DATES + REVIEW DATE:

Progress submittal: Plan + Section+ Worksheet. See your instructor for details.

Monday, July 10, 2023 Pin up. Exercise A1 due.

Upload all PDF's or JPG's to the Studio Miro Platform

Save all of your files to the 2023 Student Work folder .



David Umemoto, Cloister 2021 & Untitled

EXERCISE A2: MULTIPLY, ARRAY AND TRANSFORM

“My whole process is very iterative. If you could put all the pieces I’ve produced in the last couple years, one after the other in a chronological order, you would see a very slow evolution. It’s like a sketching process, where instead of erasing a line when I’m not satisfied, I just make another piece with a slight modification. Over and over again.”

- David Umemoto

Exercise: In Exercise A2, each student will select a segment of Monsanto House in plan or in section and then will double their respective zones of study in a digital model by copying that zone and then applying one or more 3-dimensional transformations (i.e. bend, overlap/ move, scale/ rotate, multiply, stretch, mirror, delete and so on in conversation with instructors.) to parts of the segments.

This initial multiplication will be further compounded with a geometrically driven, plan-based exercise wherein students will situate clones of the zone in an array bounded by 50' x 50' x 25' the invisible box hovering over the building footprint of Monsanto House.

Students may choose from one of the following three arrays:

- Circle
- Line
- Cartesian Grid

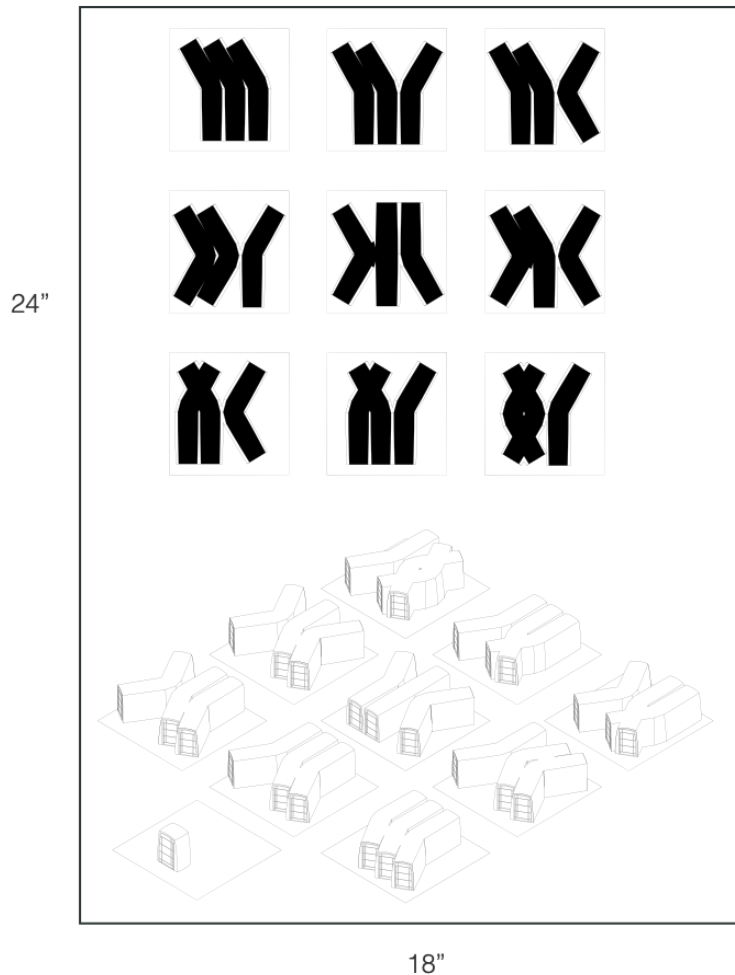
Inevitably the new array will result in a congested landscape, further heightening the notion of threshold.

Students will iterate to create a catalog of arrays in exercise A2.

Output for this exercise will comprise the following (2) catalogs at 1/16" = 1'-0": one catalog which contains 9 figure-ground plan drawings of the massing/ array strategies and one which contains 9 isometric views of the massing/ array strategies.

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With the guidance from your instructor, student will then select one final massing/array strategy from A2 and will place it into a typical 110' by 55' Los Angeles lot in exercise A3.



Instructors will provide students a template for presentations. ([Link](#))

Films and Videos:

Déambulateur no.7

David Umemoto's Sculptures are Studies on Brutalism

Readings and Articles:

The figure-ground diagram

Concrete poetry: the architectural sculptures of David Umemoto by Harriet Lloyd- Smith

David Umemoto's Architecture Sculptures

A2 DELIVERABLES: 18" x 24" PDF or JPG 300 DPI individual file.

(9) FIGURE GROUND PLANS, SCALE :1/16" = 1'-0"

(9) MASSING/ ARRAY ISOMETRIC VIEWS , SCALE: 1/16" = 1'-0"

ALL TO BE FORMATTED AS PDF's or JPG's AND ARCHIVED AS:

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Progress submittal. See your instructor for details.

Monday, July 17, 2023 Review. Exercise A2 due.

Upload all PDF's or JPG's to the Studio Miro Platform

Save all of your files to the 2022 Student Work folder . "Exercise A2 " Upload



SO-IL, LA-ADU scheme, Pebble House, Somewhere in Los Angeles. Image courtesy of SO-IL

"Modern life demands, and is waiting for, a new kind of plan, both for the house and the city."

— **Le Corbusier**

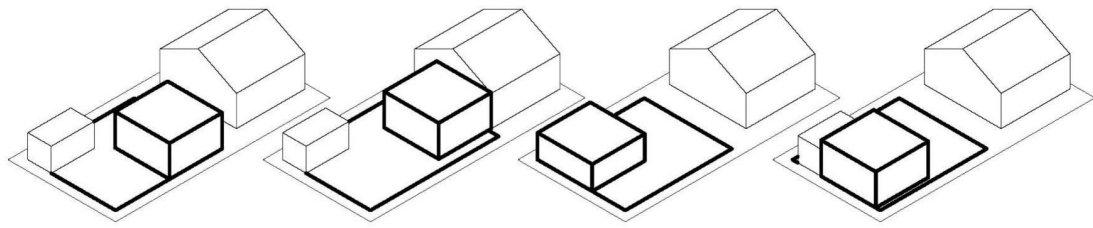
EXERCISE A3: ISOLATE AND ELABORATE

Exercise: In Exercise A3, each student will further elaborate on their final massing/array in the typical 55' x 110' Los Angeles lot through additional drawings, atmospheric perspectives, and physical models. These representations will form a suite of artifacts describing a conceptually charged place at once both derivative of the Monsanto House and altogether new. Students will assign a specific program to their segment while speculating on ADU future living, materiality and methods of assembly. The Accessory Dwelling Unit has to be less than 16 feet tall or if there is an existing building on the lot it can be the same height, but not taller. ADU should be under 750 square feet.

Output for this exercise will comprise the following minimum (6) drawings/images: one plan and one section in the typical LA lot, one unfolded exterior or interior elevation at 1/4" = 1'-0" scale, one exploded isometric of final ADU massing at 1/8" = 1'-0", one catalog diagram of the base module at 3/16" = 1'-0", one digital interior or exterior image/rendering, and photographs of a physical model. Students are encouraged to add additional drawings/ diagrams that describe unique moments of their project.

ACCESSORY DWELLING UNIT TYPOLOGIES: Detached Unit with Existing Garage, Attached Unit as Addition To House, Backyard Garage Conversion, Backyard Garage Attached Unit. Students will select one typology for their final ADU proposal.

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PROGRAM: Total 750 SF

Area to sleep 150 SF

Area to prepare food 150 SF

Multipurpose space 200 SF

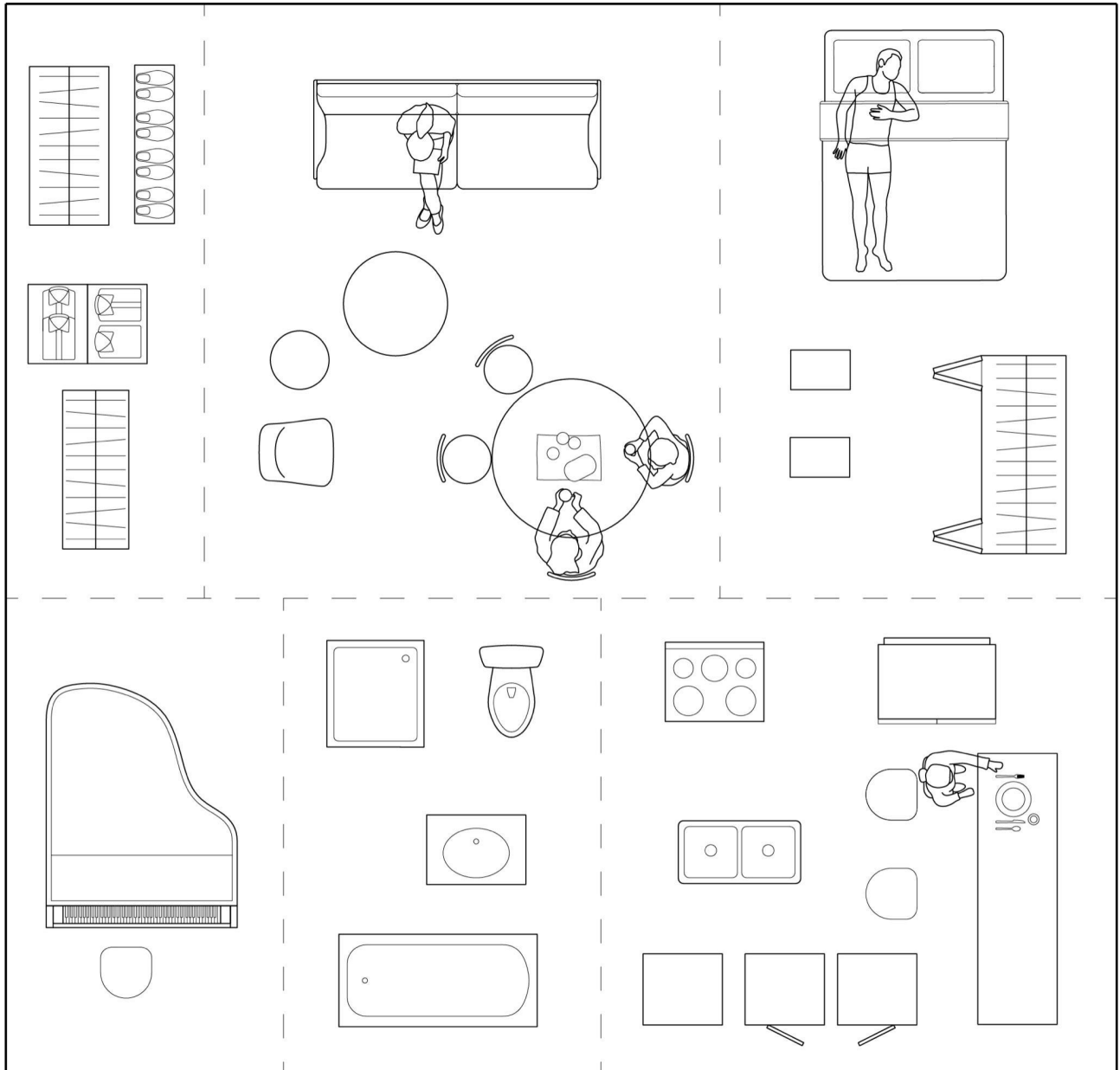
Area to bathe 100 SF

Storage 50 SF

Additional Program of your choice 100 SF

Outdoor Space Area 100 SF

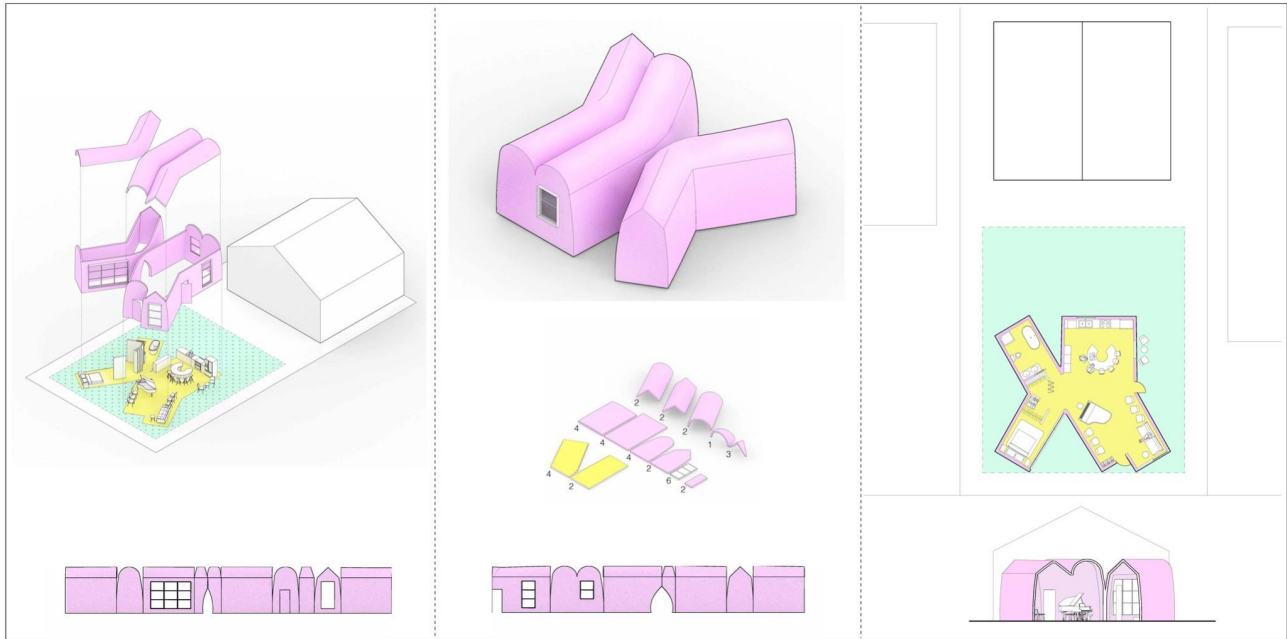
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Furniture Catalog $\frac{1}{4}" = 1'-00"$

Students will be provided with the basic furniture catalog that includes: storage cabinets, sofa, coffee table, side table, dining table, chairs, full size bed, nightstands, piano, shower, toilet, sink, tub, stove, refrigerator, double sink, dishwasher, counter, washer and dryer to create various floor plan layouts for a specific user (musician, artist, architect, dancer, poet, athlete, reporter, doctor, model, chef, etc.)

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Instructors will provide students a template for presentations. ([Link](#))

Films and Videos:

Buster Keaton One Week (1920)

Readings and Articles:

Building an ADU, Guidebook to Accessory Dwelling Units in the City of Los Angeles by City Lab UCLA, 2017.

Los Angeles's Standard Plan Program for ADUs Takes Aim at the Housing Crisis by Jessica Ritz, 2021.

SO-IL Proposes Prefabricated "Pebble House" For The Los Angeles Accessory Dwelling Units Scheme by Palak Shah, 2021.

Approved ADU Standard Plans by LADBS

Low-Rise: Housing Ideas for Los Angeles

<https://www.shariflynnch.com/6-plex>

A3 DELIVERABLES: 36" x 24" PDF's) and JPG 300 DPI individual files.

(1) PLAN, SCALE :1/4" = 1'-0"

(1) SECTION, SCALE :1/4" = 1'-0"

(1) UNFOLDED ELEVATION OF EXTERIOR OR INTERIOR, SCALE: 3/16" = 1'-0"

(1) EXPLODED ISOMETRIC OF FINAL ADU MASSING, SCALE : 3/16"= 1'-0"

(1) CATALOG DIAGRAM OF THE BASE MODULE, SCALE : 3/16"= 1'-0"

(1) DIGITAL RENDERING (INTERIOR OR EXTERIOR) NTS

(1) PHYSICAL MODEL + PHOTOGRAPHS, SCALE :1/4" = 1'-0"

ALL TO BE FORMATTED AS PDF's or JPG's AND SAVED AS:

[JumpStart_2023_YourInstructorsLastName_YourLastName_01.jpg](#)

DUE DATES + REVIEW DATE:

Wednesday, July 17, 2023

Progress submittal. See your instructor for details.

Friday, July 19, 2023

Progress submittal. See your instructor for details.

Monday, July 23, 2023

A3 Pin Up

Wednesday, July 25, 2023

Progress submittal. See your instructor for details.

Friday, July 28, 2023

Final Review

Upload all PDF's or JPG's to the Studio Miro Platform

Save all of your files to the 2022 Student Work folder . "Exercise A3 " Upload