

**THE ROLE OF GRAPHIC DESIGN
IN
SMART BUILT ENVIRONMENTS**

MEAGHAN A. DEE, VIRGINIA TECH

WWW.MEAGHAND.COM





futureHAUSTM

Virginia Tech Center for Design Research

VIRGINIA TECH CASE STUDY

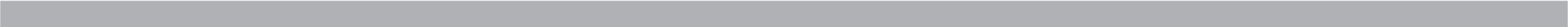
WWW.FUTUREHAUS.TECH

**What does the home
of the future look like?**



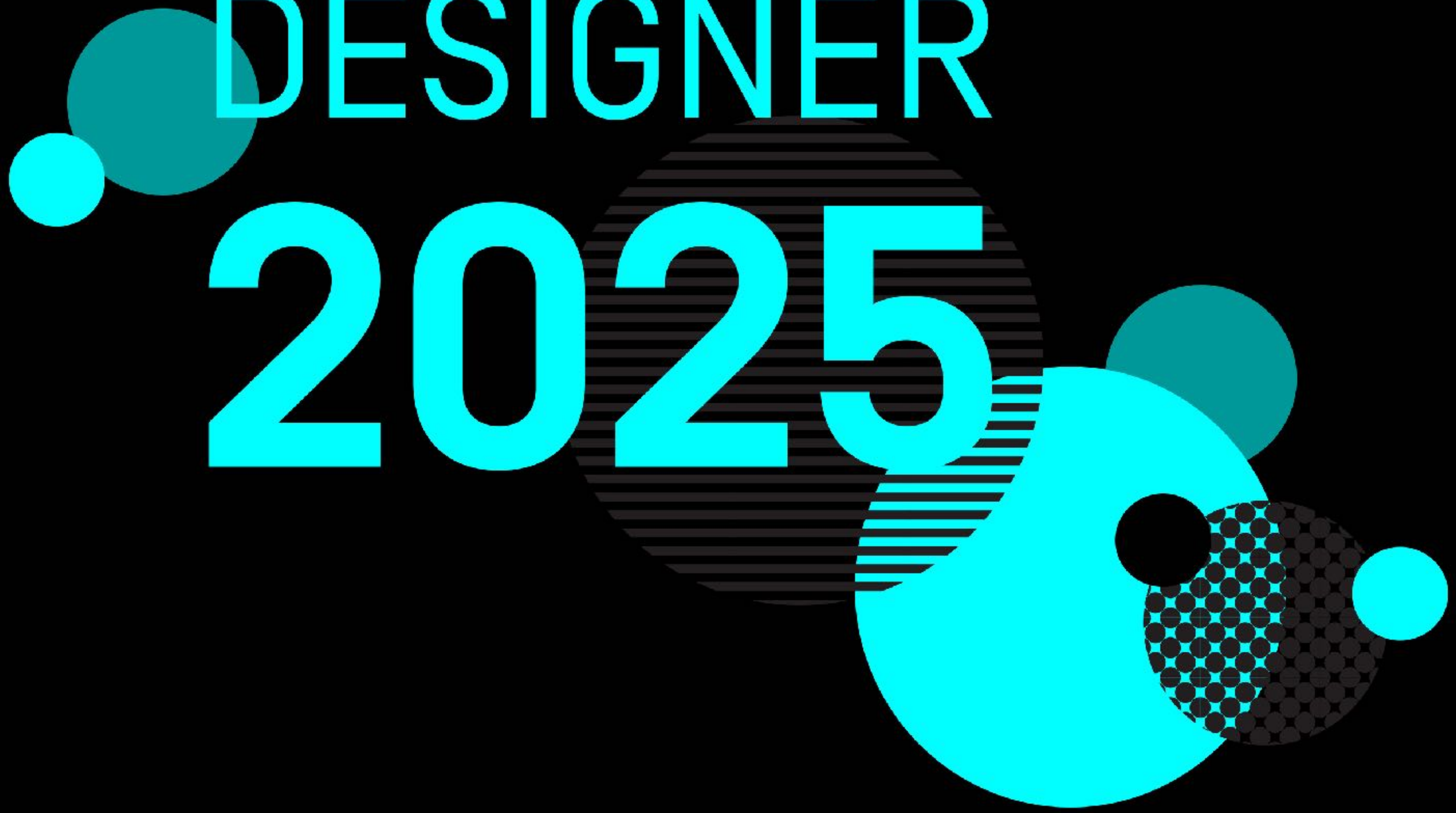
**What does the home
of the future look like?**

**(AND LATER: WHY DOES THIS MATTER
TO A BUNCH OF GRAPHIC DESIGNERS)**



DESIGNER

2025



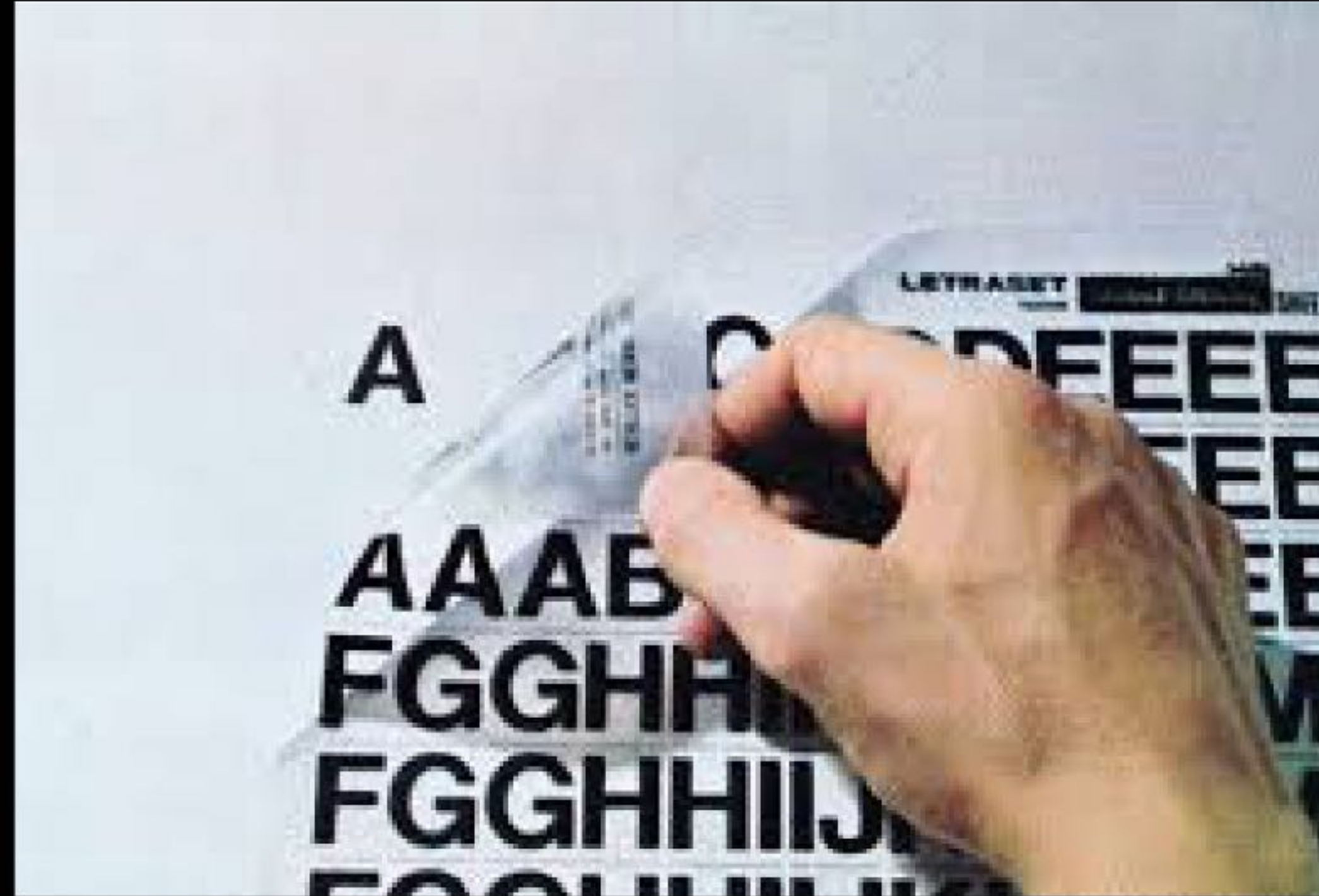
Five things likely to happen in
your design practice in the future -
assign dates to each.

Five things likely to happen in
your design practice in the future -
assign dates to each.

Five things likely to happen in
the field of design in the future -
assign dates to each.

How far into the future did you
make predictions for yourself?





Introduction to Designer 2025

Complex problems

Aggregation and curation

Bridging digital and physical experiences

Resilient organizations

Core values matter

Making sense in the data economy

Accountability for anticipating design outcome

CORE VALUES MATTER

TREND:

Audiences evaluate organizations based on consistency between their messages and values expressed in their products, services, and/or social behavior. People are increasingly drawn to brands that tell stories that are authentic reflections of an organization's values and mission. Loyalty over time when ethical and humanistic values drive all decisions. As models of design practice expand, with some aligning the interests of the individual, the global society and meeting the highest standards of quality, organizations are expected to practice public transparency. And businesses and organizations are expected to practice social equity and inclusion, not only in their internal policies and practices. These are alternative economic strategies.

COMPETENCIES:

- Clarifying organizational values and their social and environmental impact.
- Developing pathways to transform current practices to aspirational future.
- Reflecting design concern for the user, from the identification of people's needs, to the object, abandon the environment, or the user's experience.
- Designing messages that connect values and actions.
- Developing economically viable models of business.
- Promoting strategies of inclusion and social equity in their practices and in work for clients.

RESILIENT ORGANIZATIONS

TREND:

Successful organizations respond flexibly to change and disruption through their ability to innovate. Innovation addresses how organizations use their products and services they offer, the delivery channels they use, and how they themselves in touch points with various stakeholders. Work in organizations is built on agreement rather than deciding, stewardship of ideas, continuous updating rather than editions, and a strategy of "enough for now." New approaches to anticipating change, innovation, innovating business models, and making sense of a complex world are essential toolkit for designers.

COMPETENCIES:

- Reimagining and generating new business models by design to user experiences;
- Using new research tools to identify user experiences;
- Identifying economic forces and leading foresighting activities.



LUMENHAUS

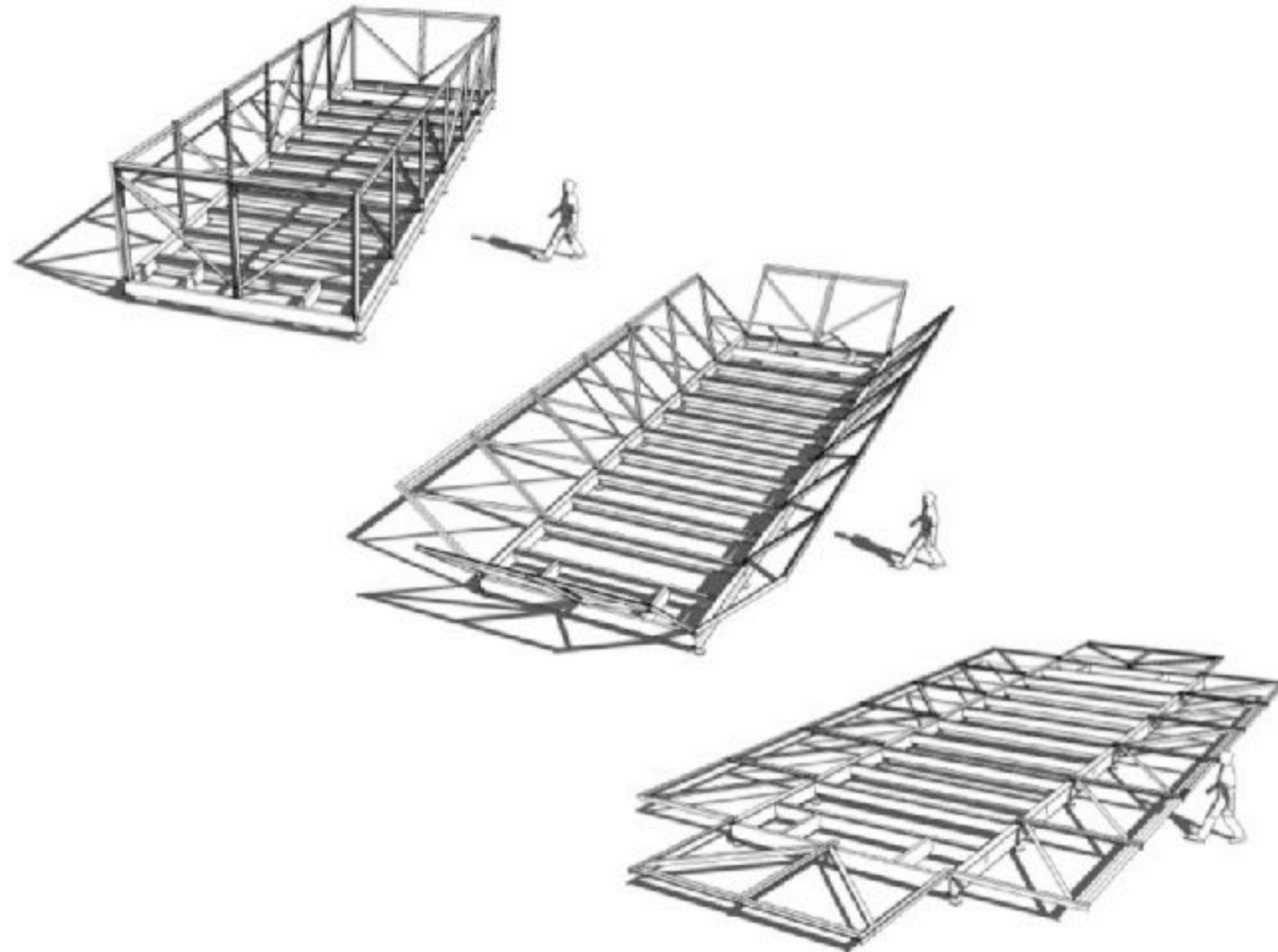
VIRGINIA TECH LUMENHAUS



LUMENHAUS



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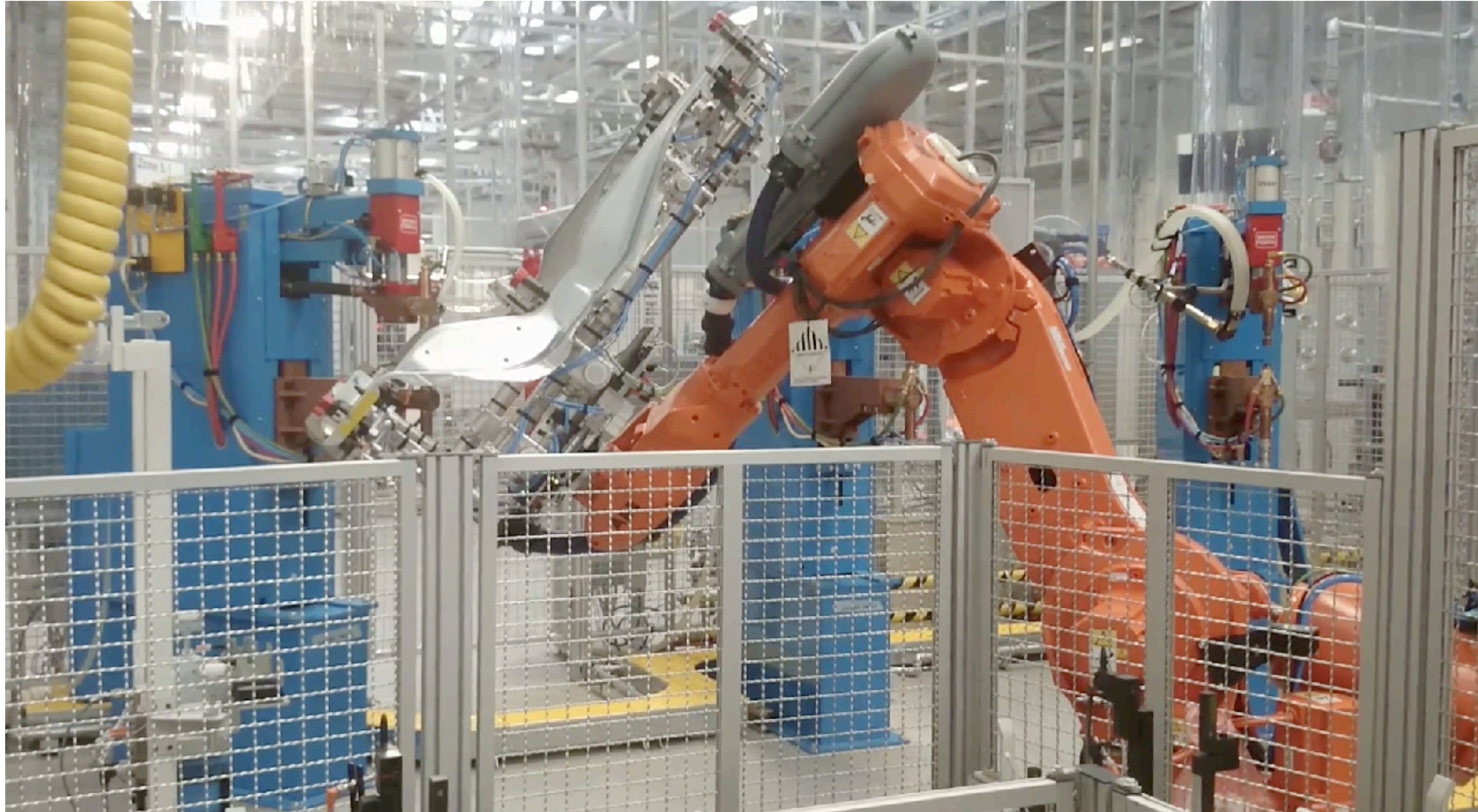


LUMENHAUS

VIRGINIA TECH LUMENHAUS



MANUFACTURING



MANUFACTURING



FUTUREHAUS

FutureHAUS KITCHEN

ALL APPLIANCES ARE INTEGRATED WITHIN A HOUSE INFORMATION SYSTEM
TO PROVIDE SUSTAINABLE AND USER FRIENDLY KITCHEN ENVIRONMENT

KITCHEN





KITCHEN DESIGN

VIRTUAL WINDOW

- Interactive display for kitchen and house activities
(Must consider placement with stove)



KITCHEN DESIGN

COUNTERTOP SURFACES

- Durable and anti-microbial glass



KITCHEN DESIGN

SOCIAL TABLE

- Multi-media interactive display for kitchen and house activities



KITCHEN DESIGN

OVEN

- Video monitoring of cooking
- Wireless probes for food temperature and moisture measurements
- Alerts created when food is ready



KITCHEN DESIGN

MICROWAVE

- UPC reader for automatic settings
- Audio sensor for the perfect popcorn
- Food temperature monitoring
- "Boil" button



KITCHEN DESIGN

PANTRY

- Sensor and UPC reader for inventory
- Connected to recipe app and grocery monitoring system



KITCHEN DESIGN

REFRIGERATOR

- Sensors for inventory of basic ingredients (milk, etc.)
- Auto open / close doors
- Ethylene detection in produce drawers for freshness monitoring



BATHROOM

SMART DESIGN

- **Smart Living:** An easy-to-use integrated interface allows multi-generational users to perform a multitude of bathroom operations, such as monitoring and controlling water, energy, and resources like toilet paper and soap.
- **Smart Technology:** Integrated cutting-edge fixtures, adjustable cabinetry, smart accessories, and tunable lighting provide a comfortable, user-friendly bathroom experience.
- **Smart Surfaces:** Innovative new bathroom materials, surfaces, and finishes provide a beautiful, easy-to-clean, sanitary, safe environment.



BATHROOM

AGE-IN-PLACE

- Integrated scale – which can both help with health, but can also identify individual users for a customized experience and preference settings
- Ground monitor to check for user falls and can notify emergency contacts if necessary



LIVING ROOM

CONNECTED TECHNOLOGY

- Keyless entry system
- Multimedia integration
- Multi-adaptable LED lighting and furnishings
- Energy-efficient environmental controls (e.g. Nest controller)
- Connectivity to the rest of the home



At this point you might be asking:

**Why the heck did they ask
a graphic designer to
be a part of this project?**

Short answer:

They needed a website.

WEBSITE



Longer answer:

Virginia Tech truly does strive to connect people across disciplines, and a project of this scale requires a diverse team



THE M RESORT





THE M RESORT

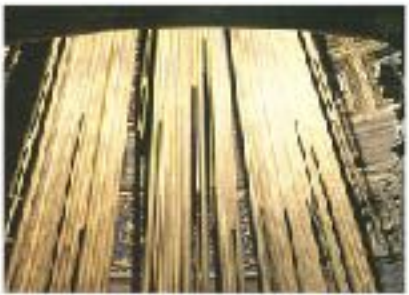
ITALIAN MATERIALS CONCEPT

Warm.
Authentic.
Generous.
Luxurious.

DESIGN APPROACH:
A modern Italian place known for its comfortable atmosphere, quality service & authentic Mediterranean food. The concept of "M" and its 4 regions of "Tuscan", the basic 4 food groups (meat, dairy, grains, & fruits/vegetables) the 4 seasons and the seasonality of the menu, and the Italian philosophy "il cibo è la vita" (food is life) for everything... local wine and the people it's from, warm and old world history in an ultra contemporary space... "It's the Italian slow down in a 500 year old building" A sense of time with authenticity & grace to give the palate a taste for all to enjoy. A luxurious casual dining experience where everyone is welcome...
Even for our guests (with foodies and...)



Beautiful.
Classic.
Modular.

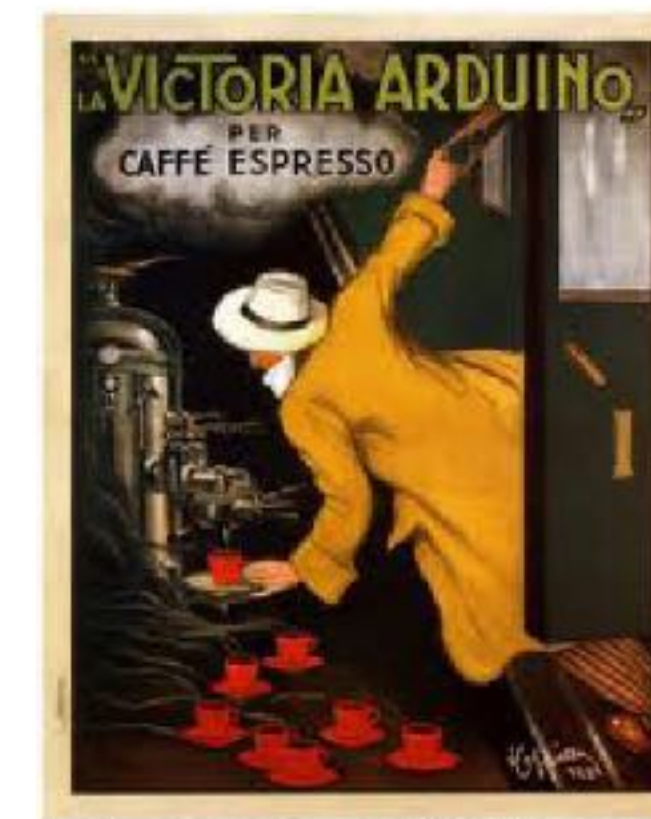




THE RED CUP CAFE

128' GRAPHIC MURAL

- Illustrated a graphic mural based on "La Victoria Arduino" poster by Leonetto Cappiello and other famous posters





THE M RESORT





APP DESIGN

CONTROLLER FOR HOME

- System that could grow over time
- Initial focus on the Kitchen

APP DESIGN

ICON SYSTEM

- Easily identifiable in App
- Can be applied to home gadgets





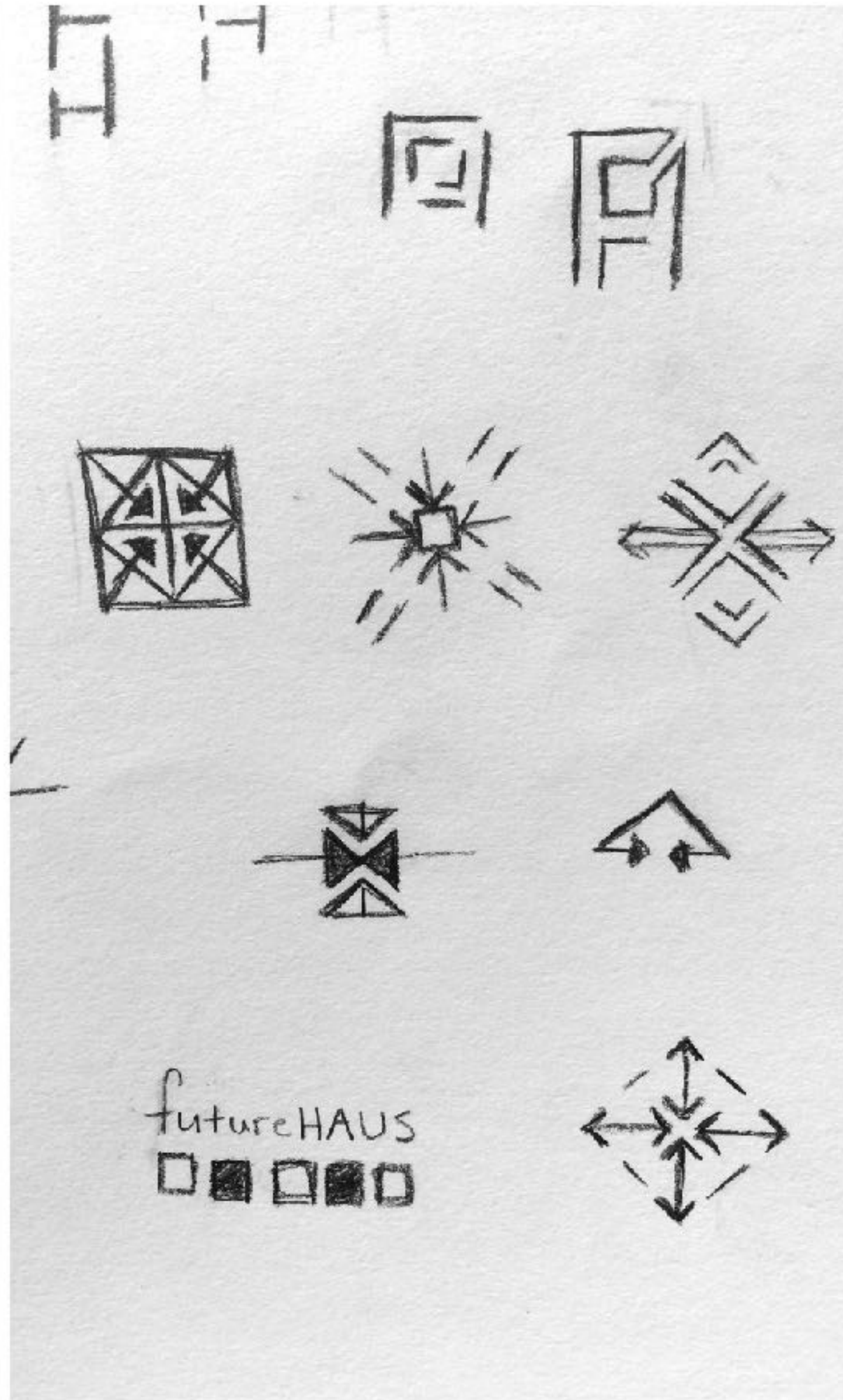
WEBSITE



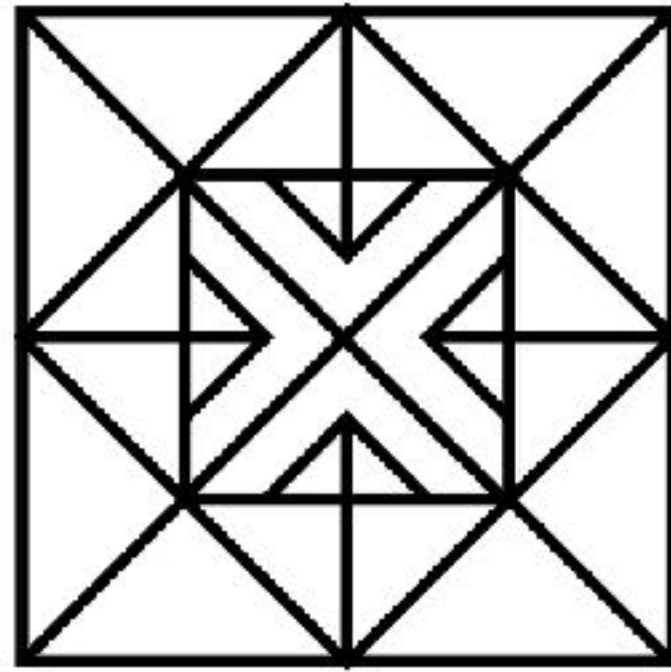
LOGO DEVELOPMENT



LOGO DEVELOPMENT



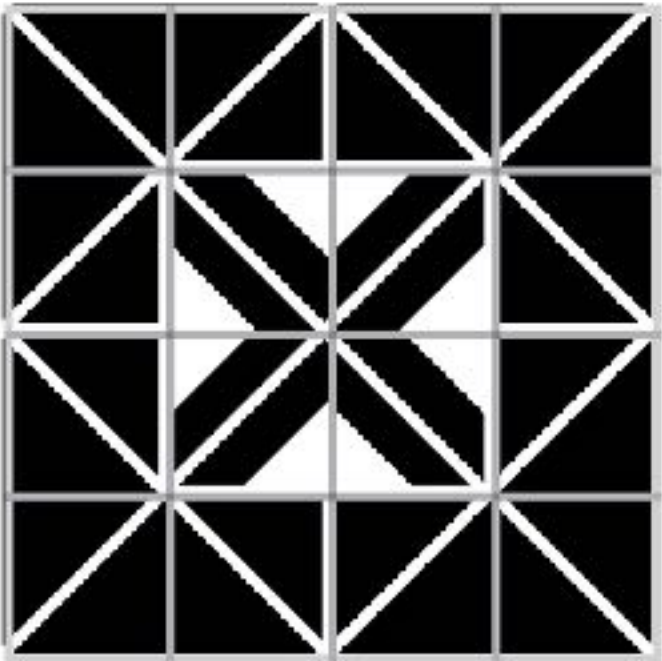
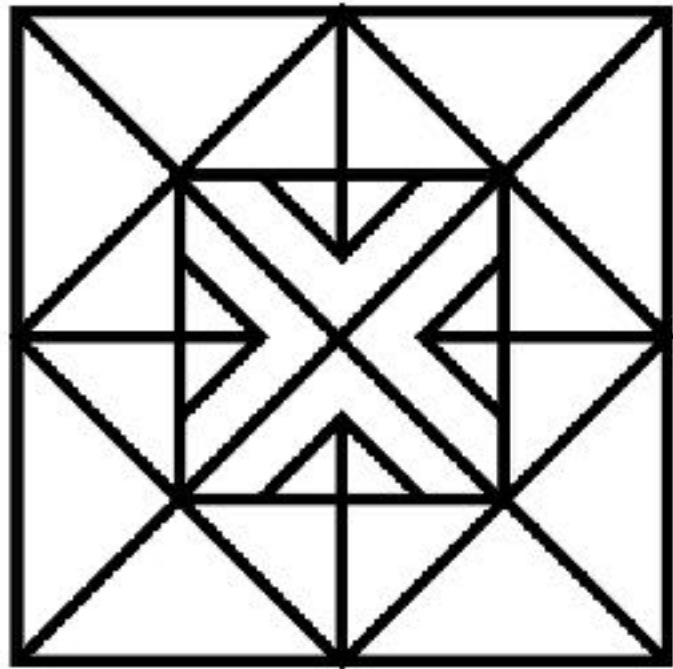
LOGO DEVELOPMENT



FLEXIBLE MARK

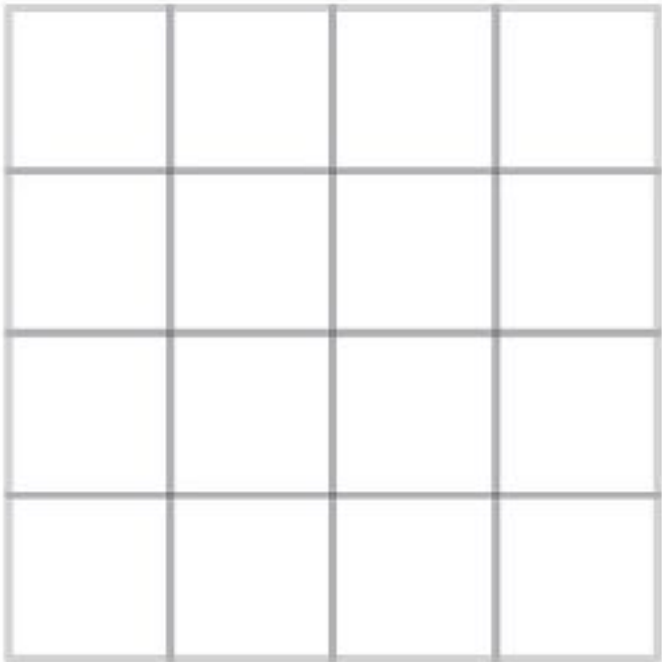
- Can work as inverse
- Easily adapted in patterns

LOGO DEVELOPMENT




SYMBOLY (4X4 GRID)


- 16 streets, representative of original town of Blacksburg
- Very versatile grid structure, adaptable, can be used across a variety of platforms
- Grid could be used to develop icon set



a sense of place and time



Alexander Black House 1897



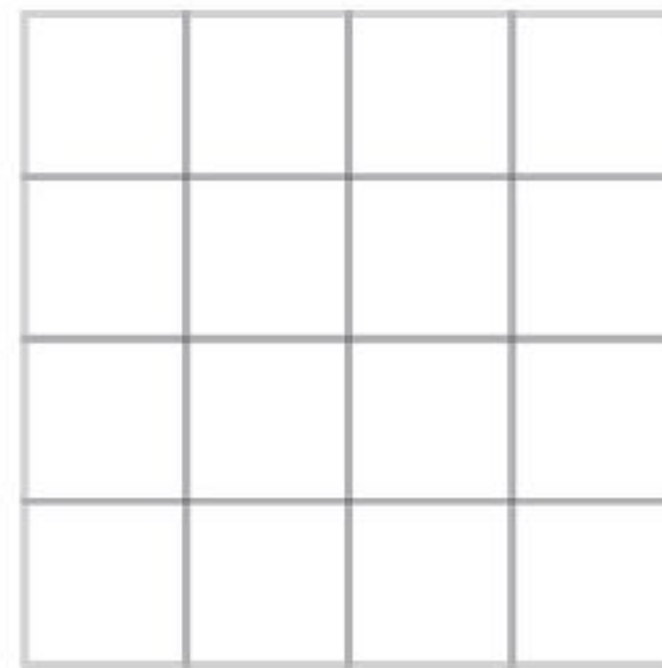
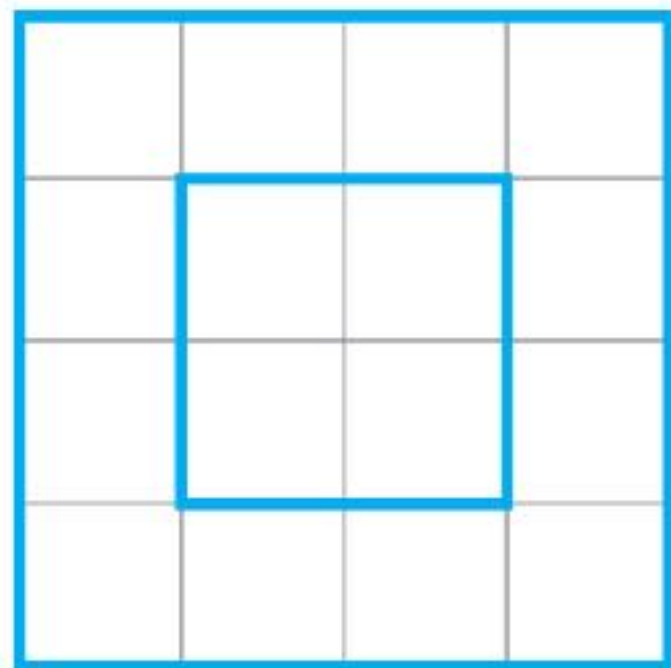
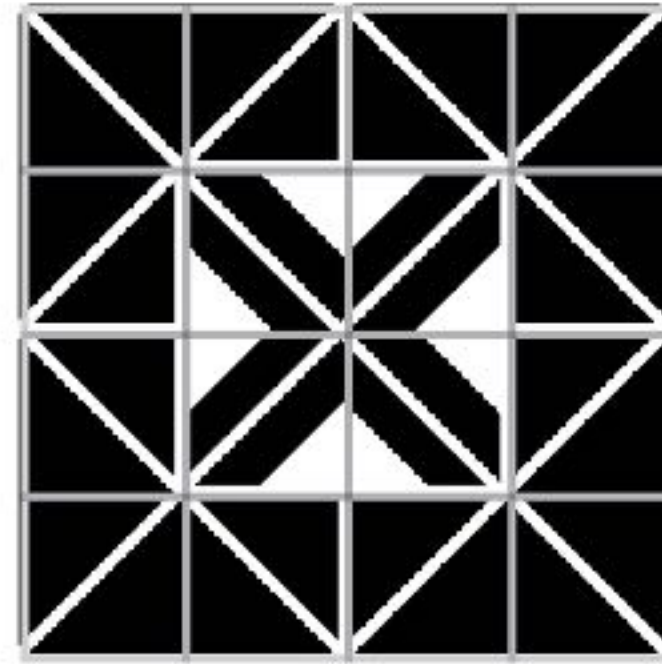
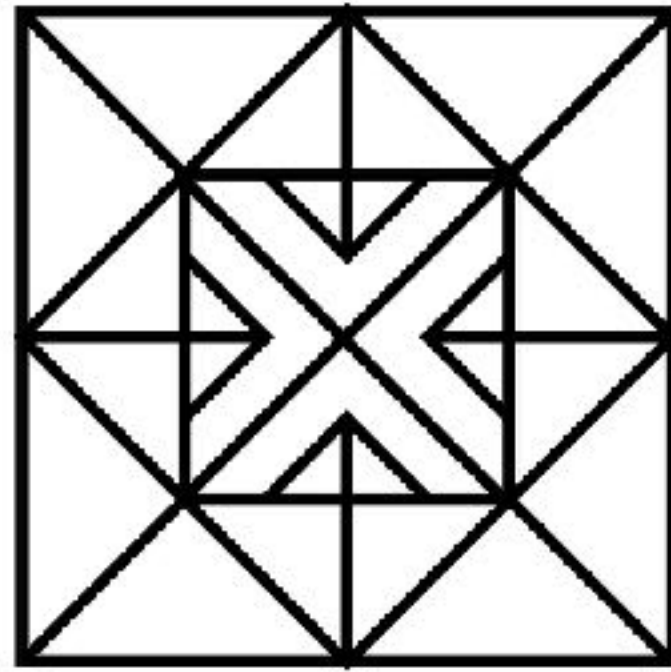
Visit www.townofblacksburg.com for more information.

Alexander Black was born in 1827 and was the third child of Dr. Harvey Black, a celebrated Civil War surgeon, and Mary Irby Kent. He was a prominent businessman in Blacksburg, owning both a dry goods store and a hardware store on Main Street. He founded the National Bank of Blacksburg in 1891 and served as its president until his death in 1935.

Alexander Black built his elaborate, Queen Anne Victorian home in 1897. Following his death, the house was used as a funeral home. In 2002 the Town of Blacksburg purchased the building and moved it from its original location on South Main Street (the current site of Kent Square) to its new location on Draper Road to create a town museum.

Town of Blacksburg

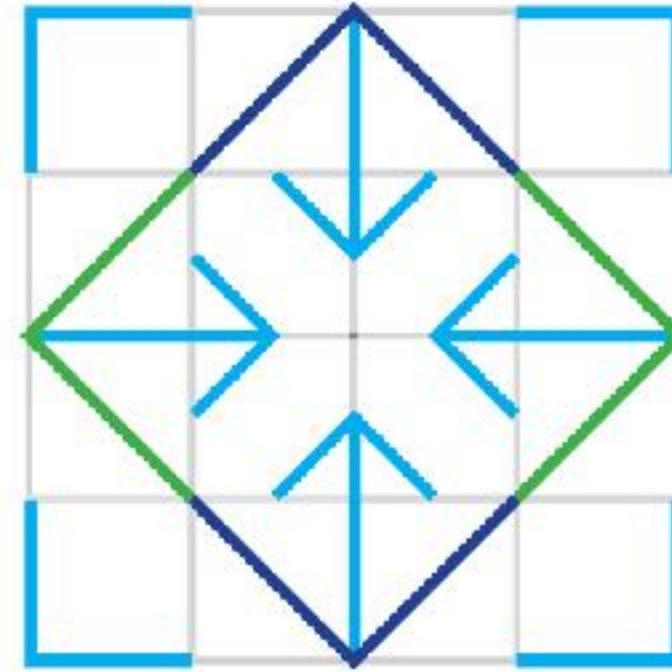
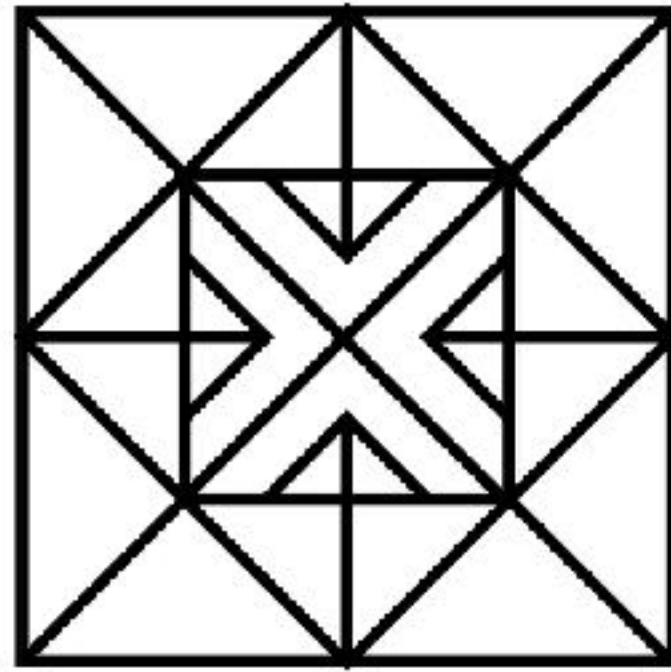
LOGO DEVELOPMENT



SYMBOLOLOGY

- Grid structure alludes to "square donut" of floor plan
- Outer circle and inner circle create layout of floor plan
- Pattern application, middle eastern commonality

LOGO DEVELOPMENT



SYMBOLOLOGY

- Arrows iconic of potential tag line, [Outward thinking, Inward Focus] inward/outward
- Tana-gram aspect for different geometric imagery

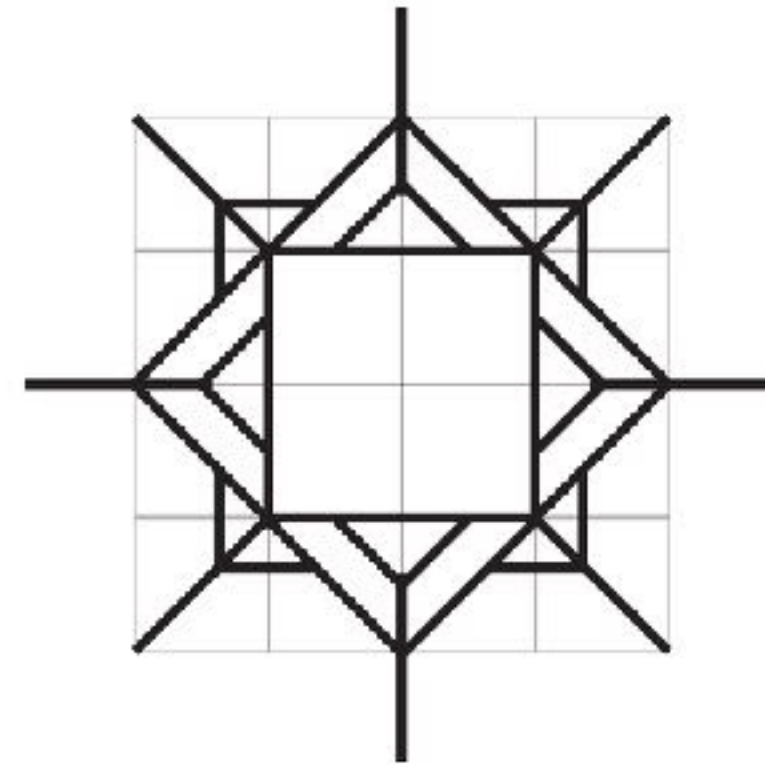
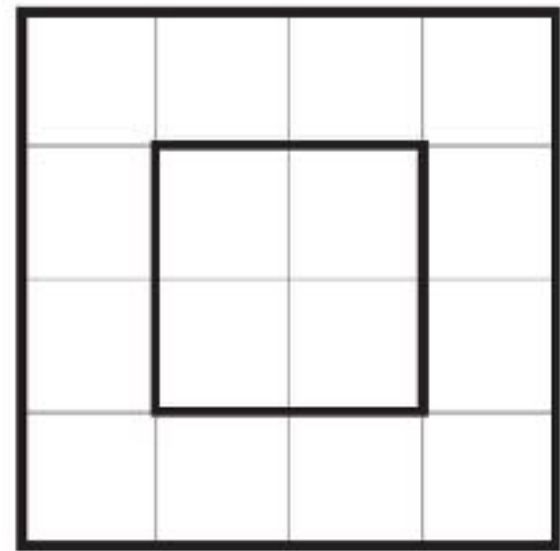
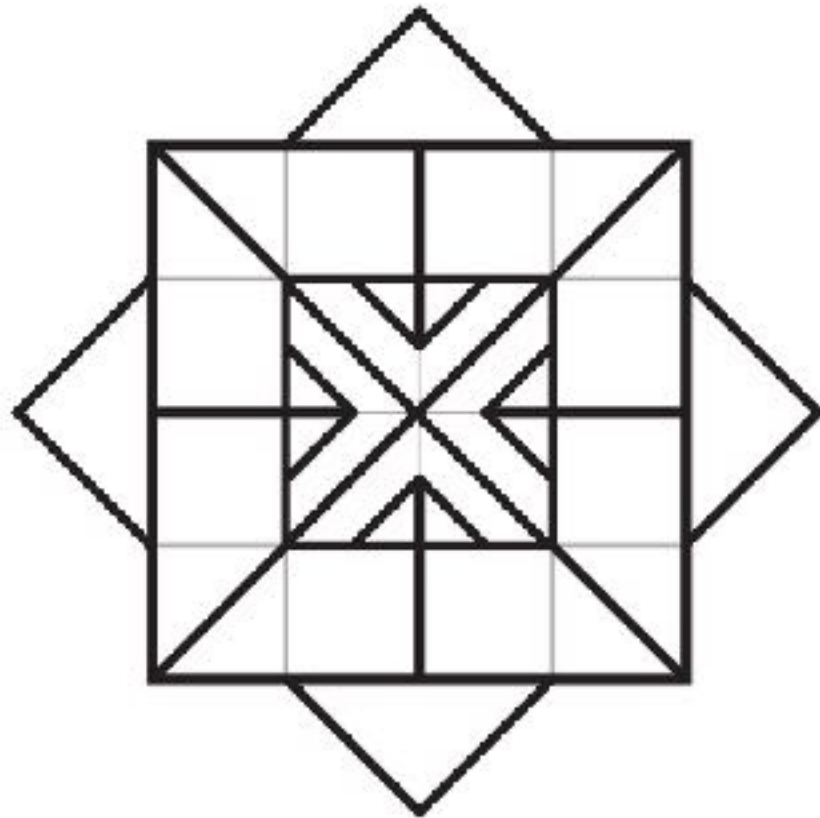
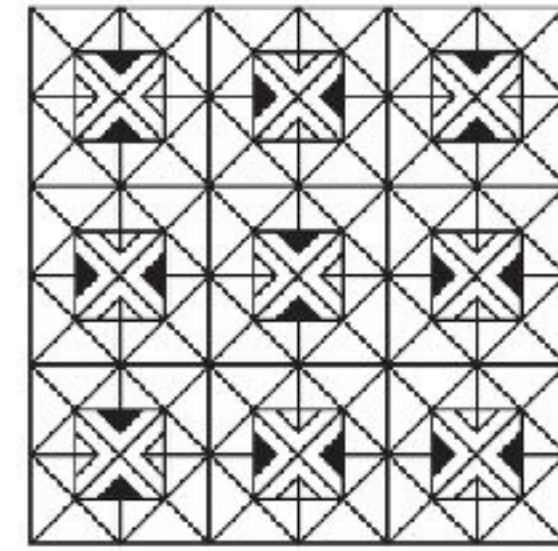
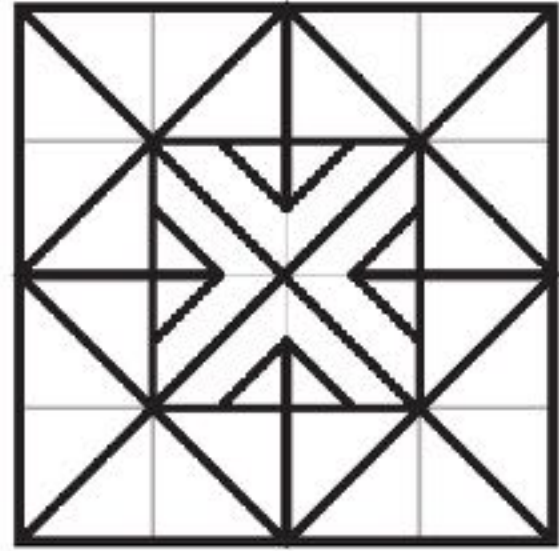
**Outward thinking,
Inward focus.**



future**HAUS**™

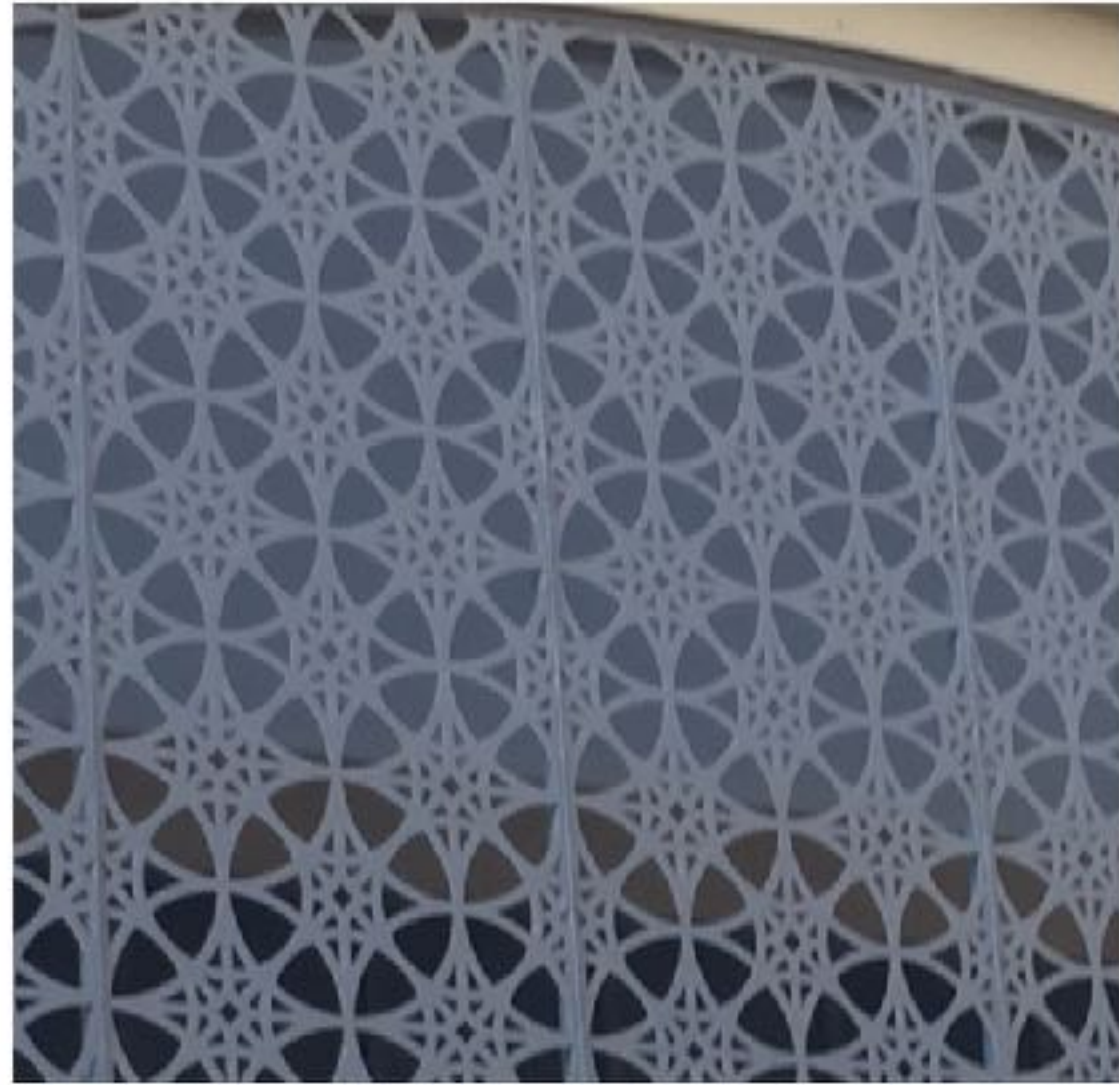
Virginia Tech Center for Design Research

LOGO DEVELOPMENT



PATTERNING

- Flexible design makes it easily adaptable in motion / modularity and for patterns (which can be applied to various textiles, uniforms, and architectural elements)



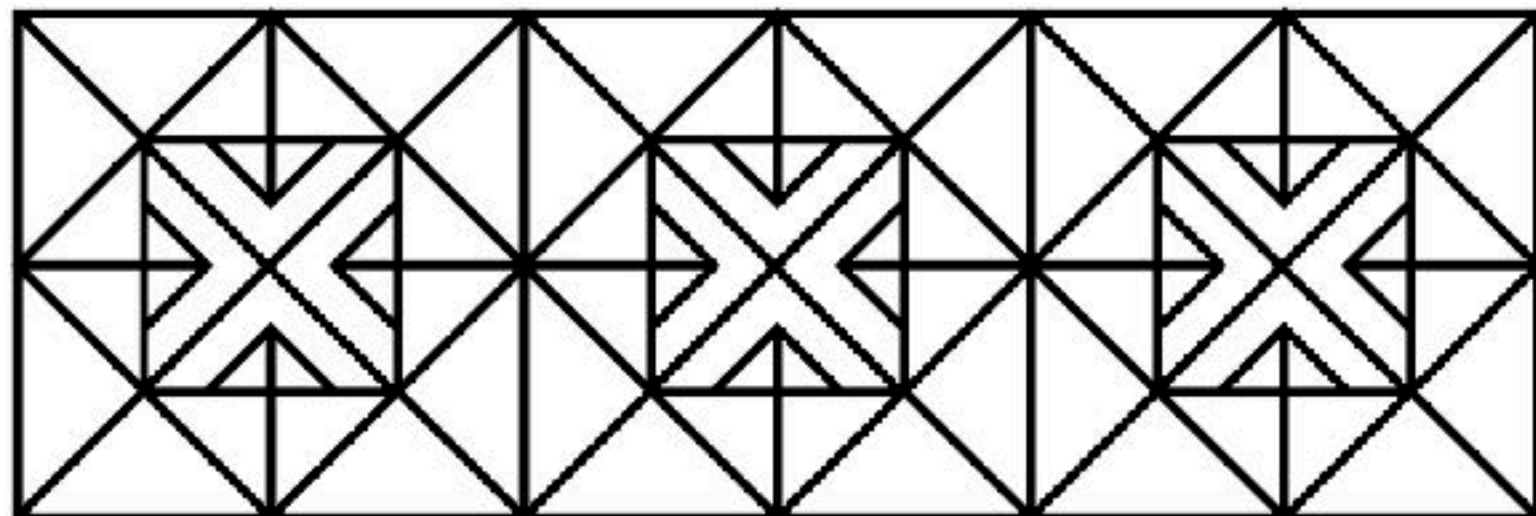
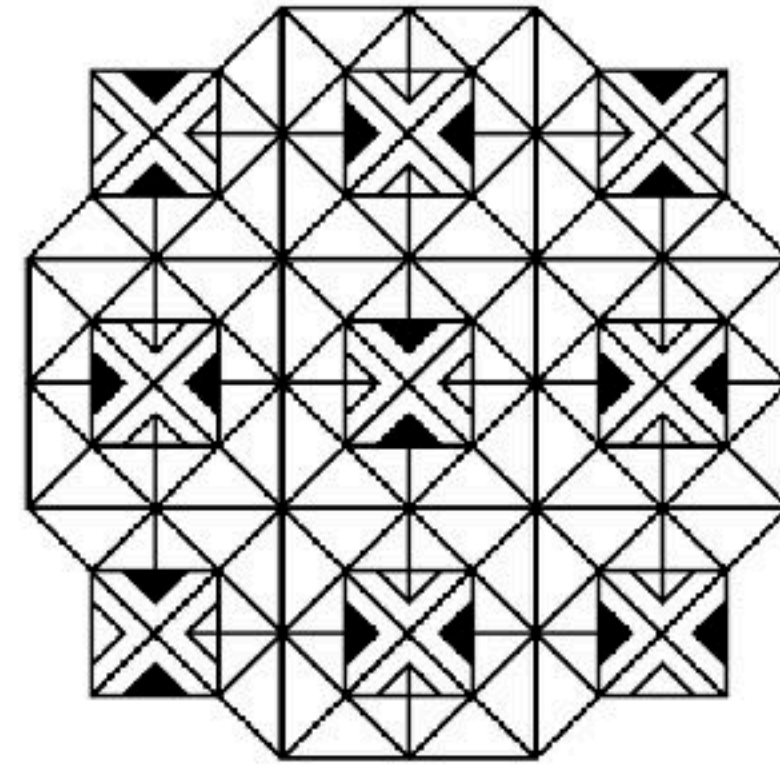
UAE PATTERNS

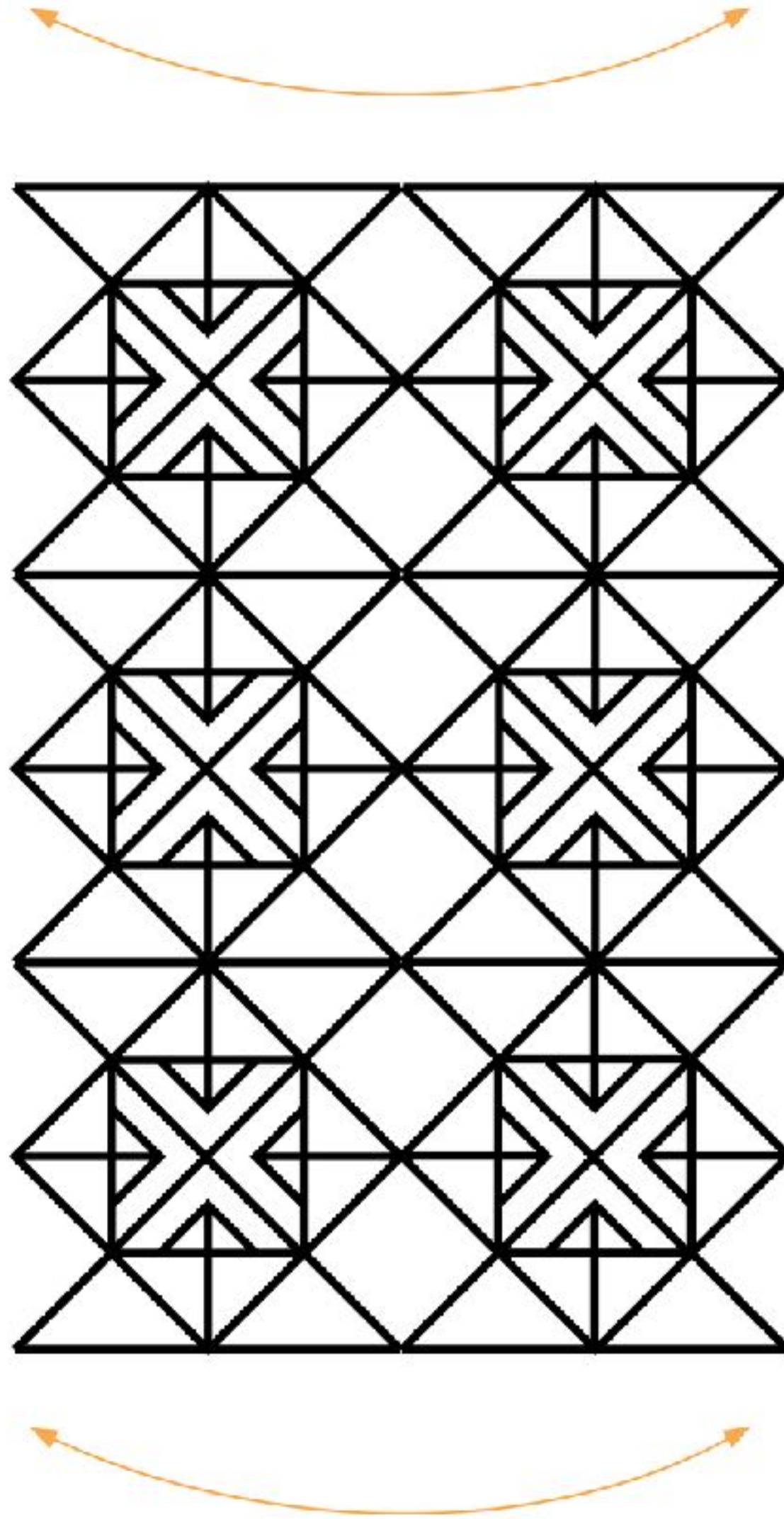
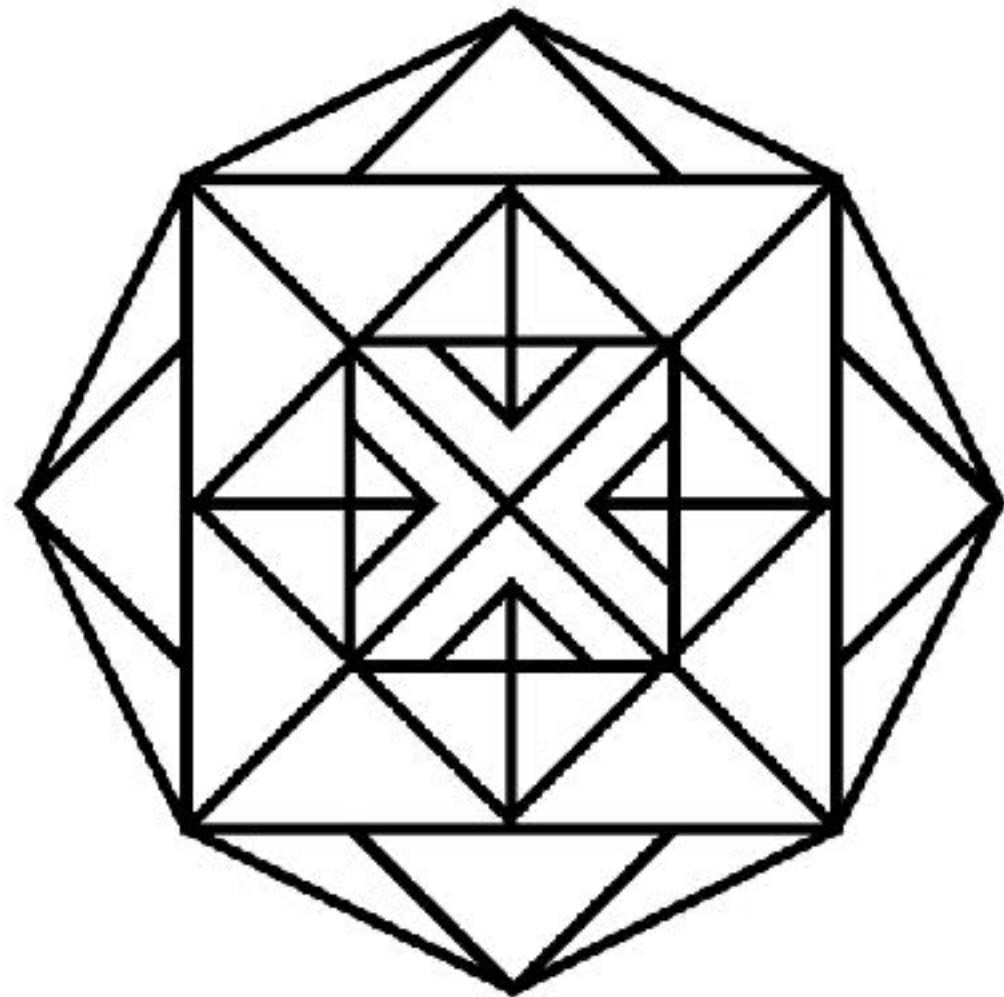
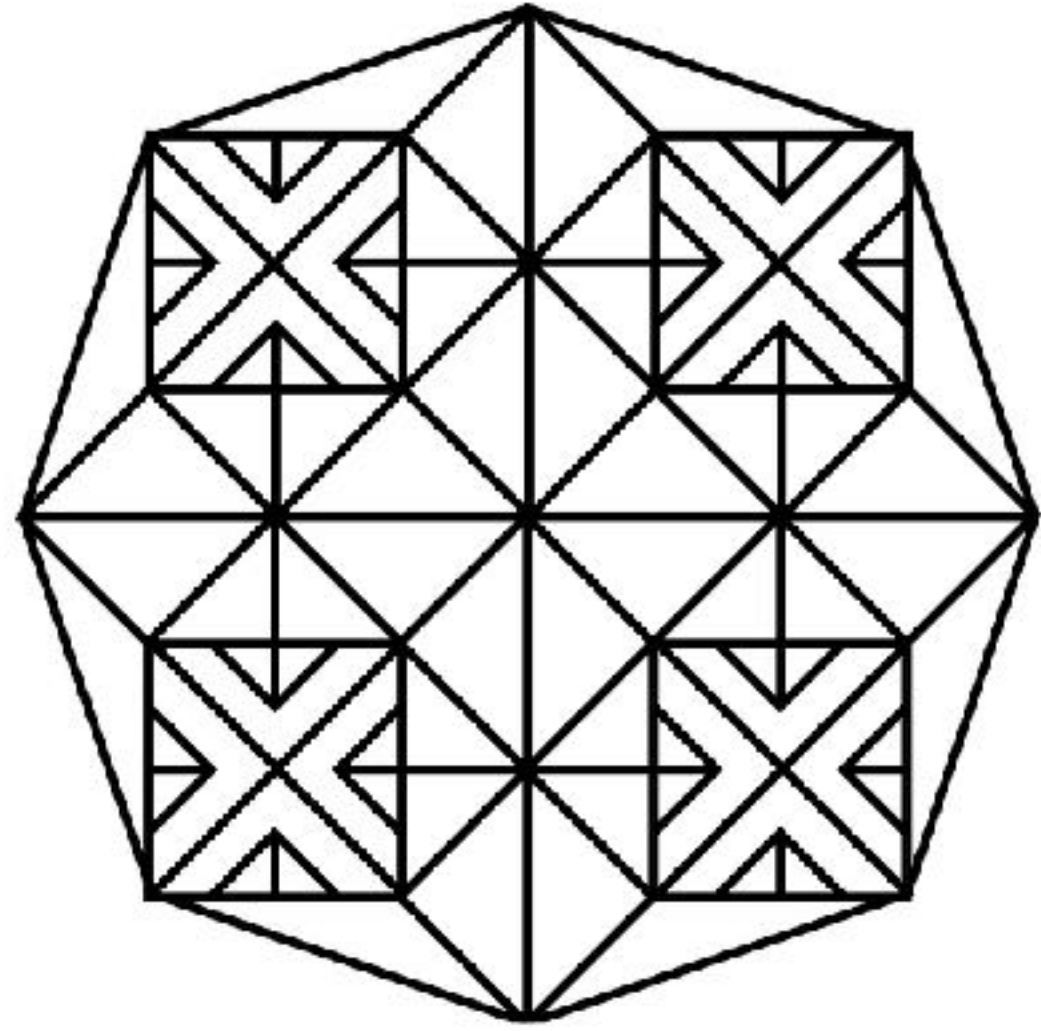


LOGO APPLICATION

PATTERNS ON CLOTHING

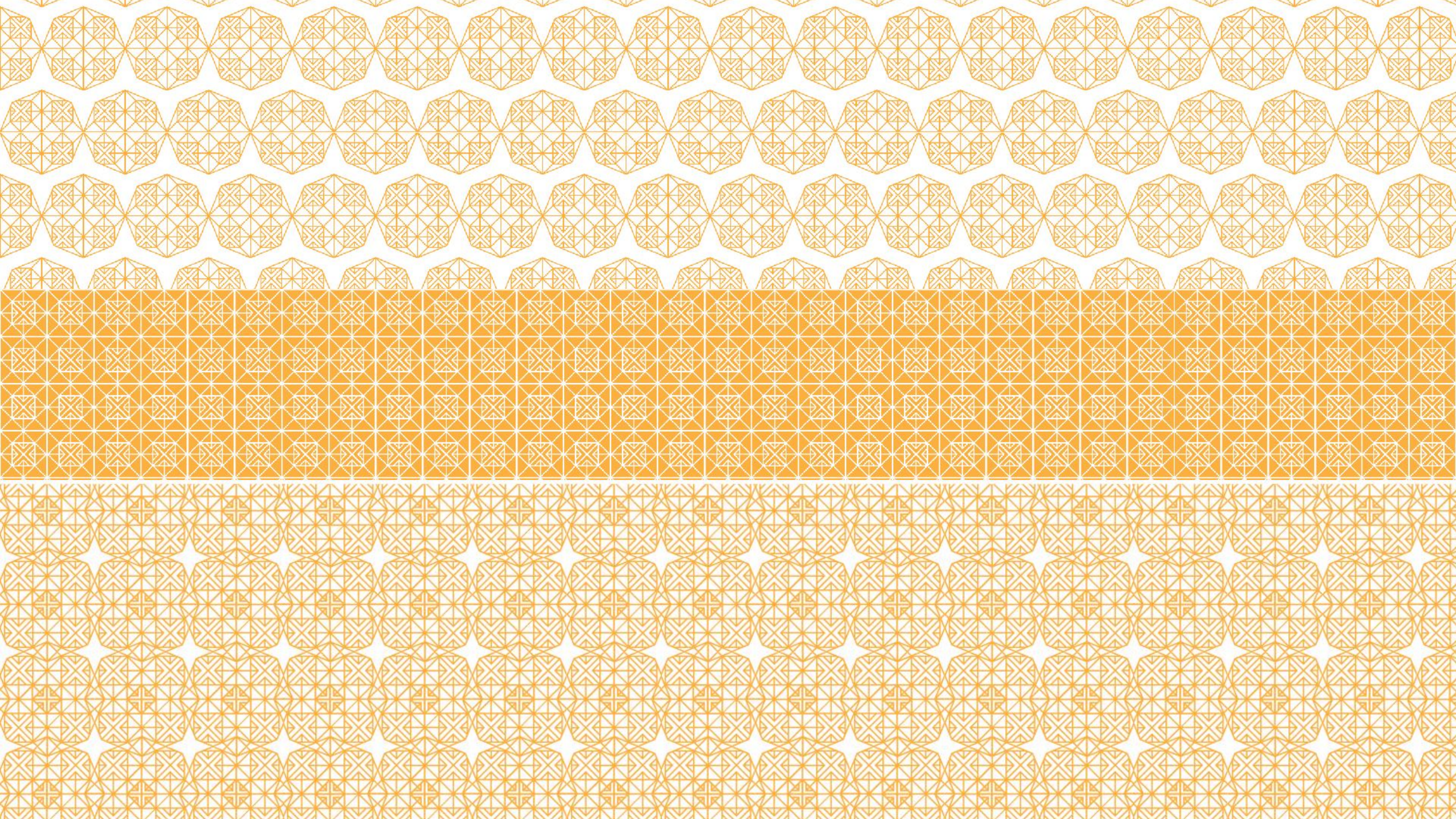
- The FutureHAUS team nee

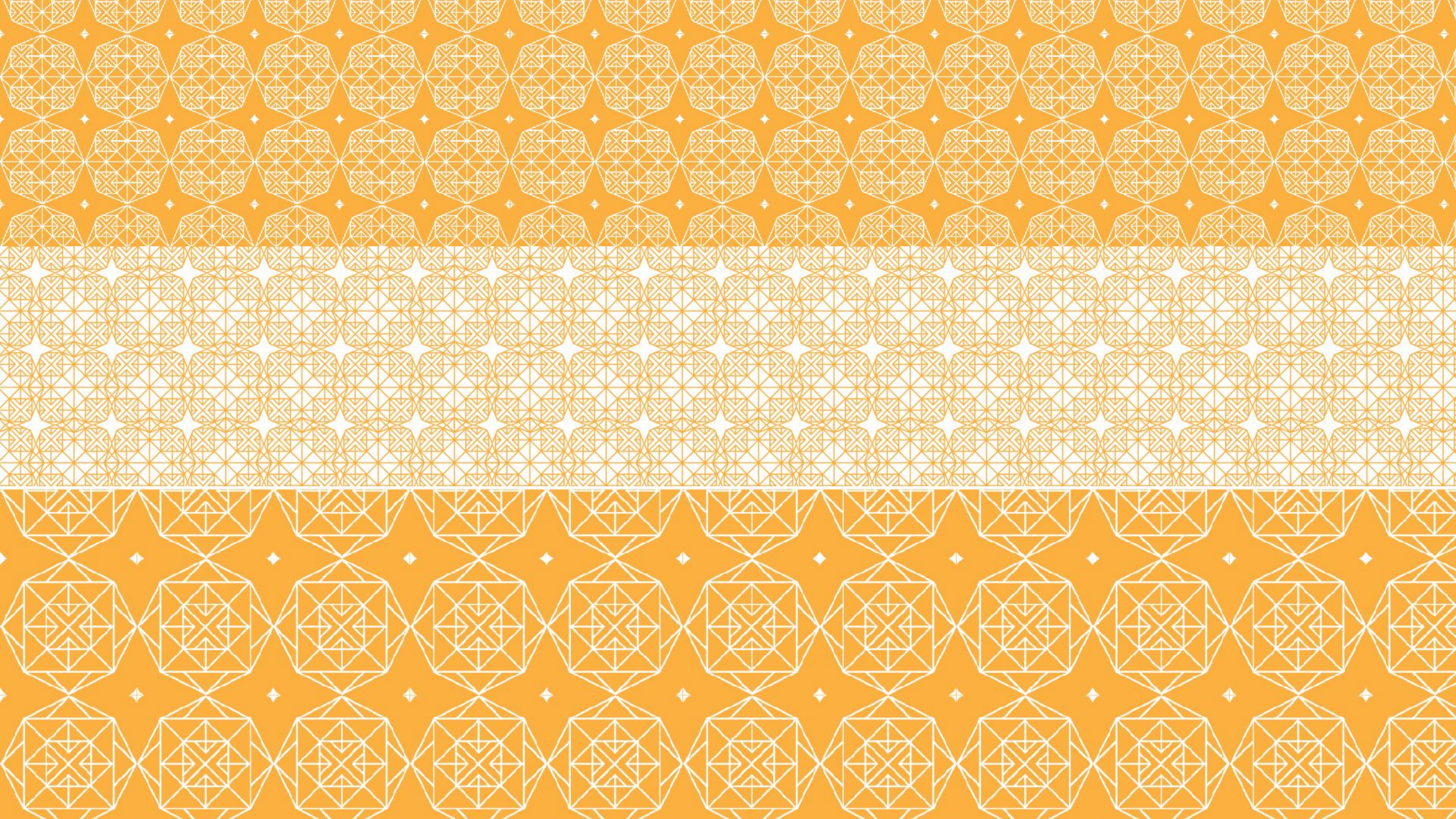


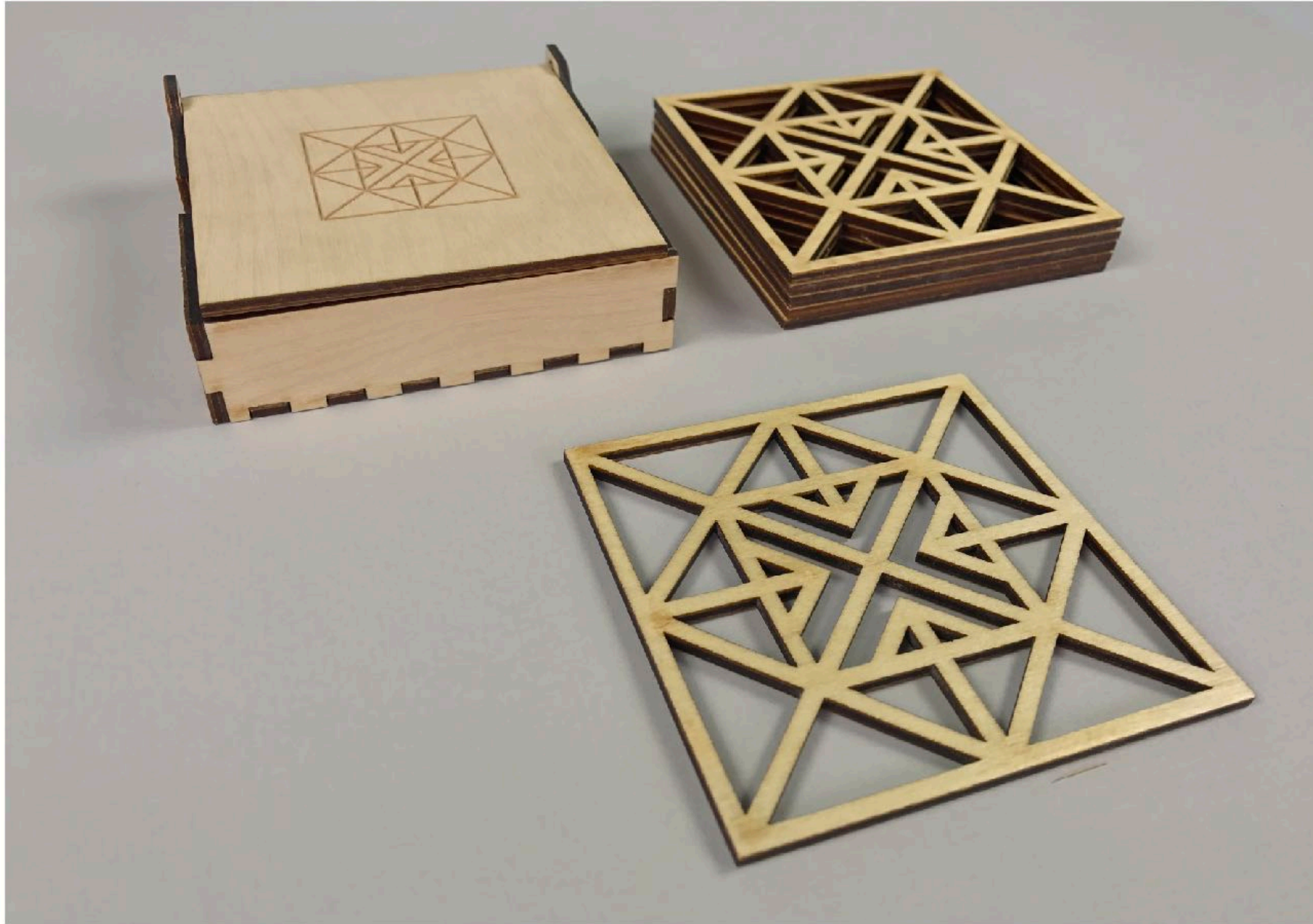


PATTERNS

ADDITIONAL APPLICATION







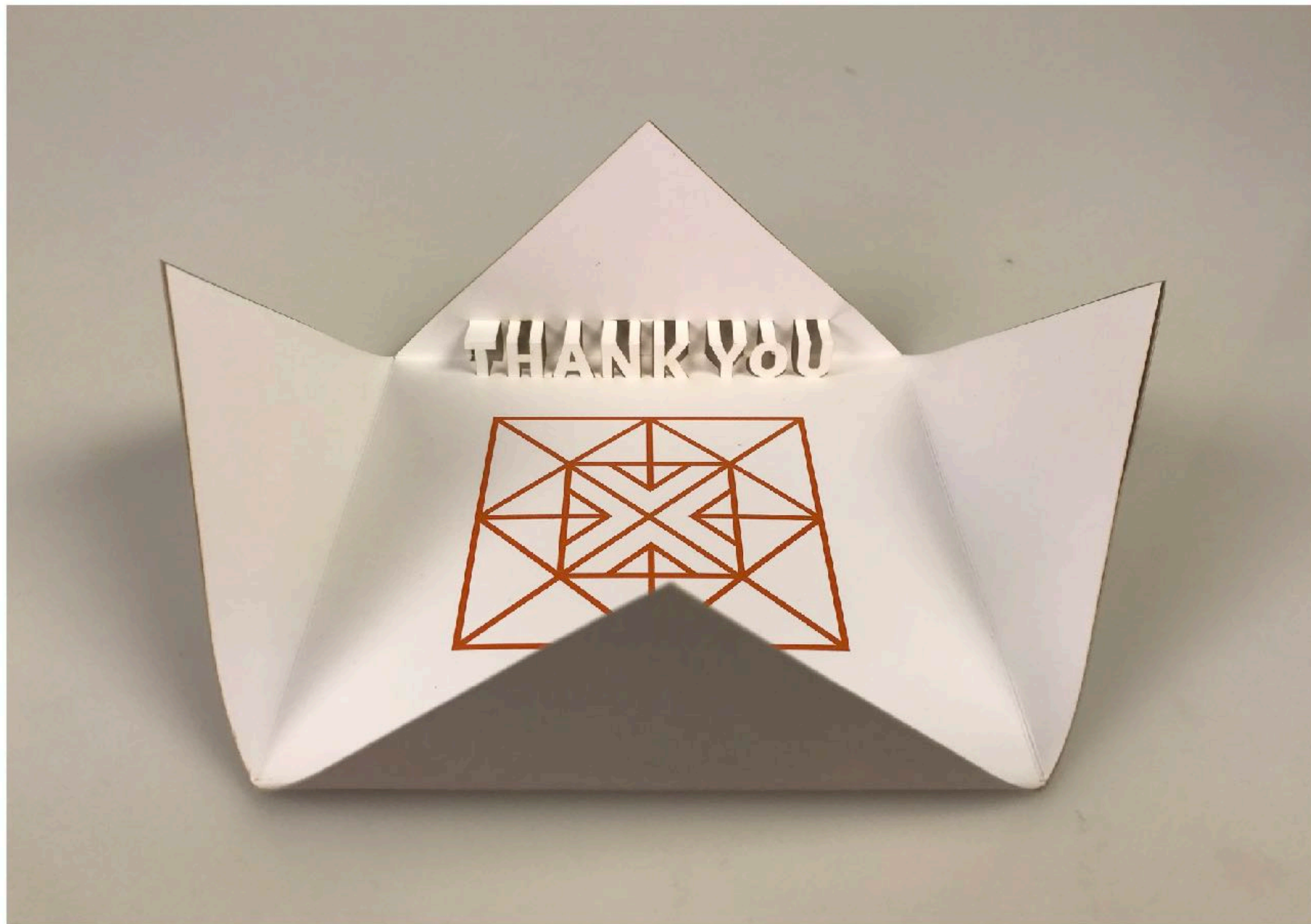
PROMOTION

COASTERS

DESIGN BY MARY-LOUISE WANG + GIGI VERA

PROMOTION

THANK YOU CARDS



DESIGN BY MARY-LOUISE WANG + GIGI VERA



Global Mega Trends



Urbanization –
City as a
Customer



Bricks and Clicks



Future
Infrastructure
Development



Smart is the New
Green



Innovating to Zero



Health, Wellness
and Well Being



Social Trends: Gen Y,
Middle Bulge, She-
economy,
Geosocialization



Future of Energy



Future of Mobility



Connectivity and
Convergence



Economy: Beyond
BRIC: The Next
Game Changers



New Business
Models: Value for
Many

PRISM RESEARCH

MEGA TRENDS

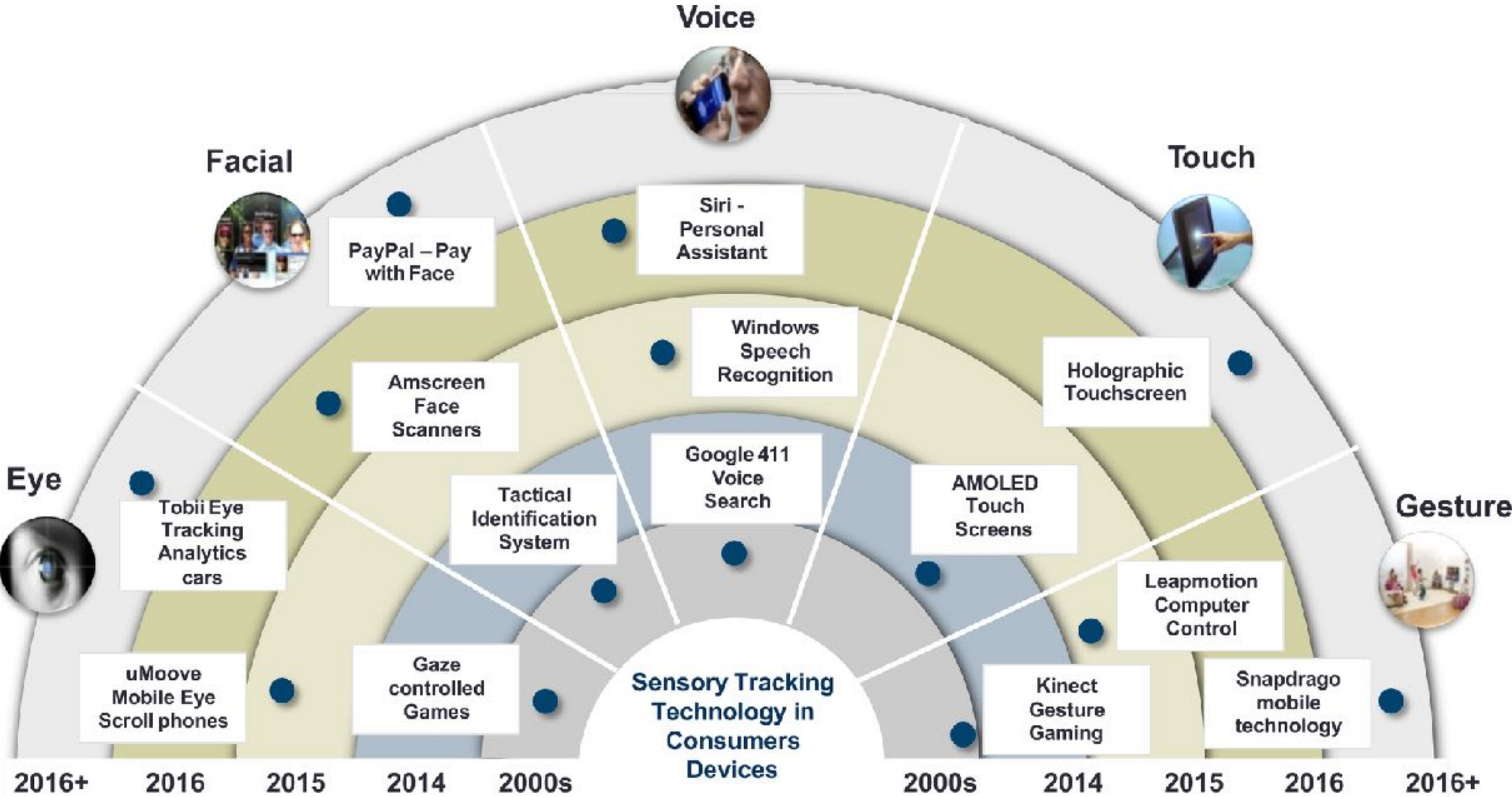
- Mega Trends are transformative, global forces that define the future world with their far reaching impacts on businesses, societies, economies, cultures, and personal lives

PRISM RESEARCH

SENSORIZATION OF THINGS

- Multi-Factor sensory based trackers revolutionize the field of devices

The radial timeline depicts which products are impacted in the next decade by sensory tracking technology in consumer electronics



Aa San Francisco

TITLE More of the future.

Welcome to the future.

BODY Lorem ipsum dolor sit amet, putent voluptaria.

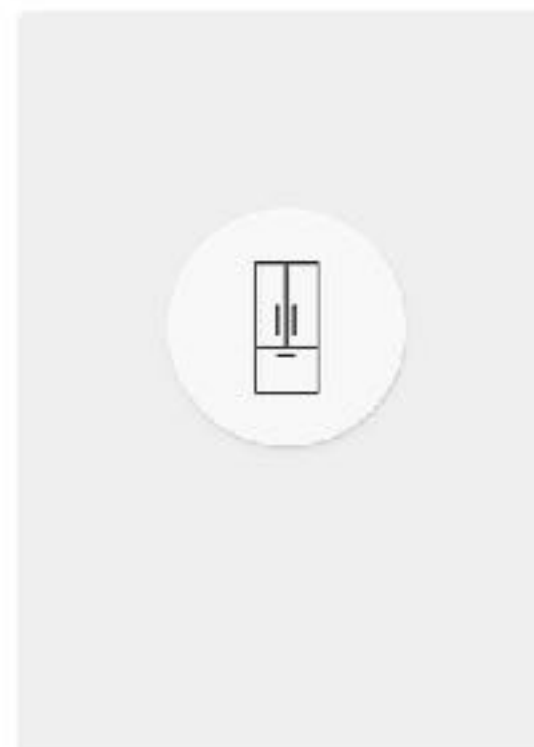
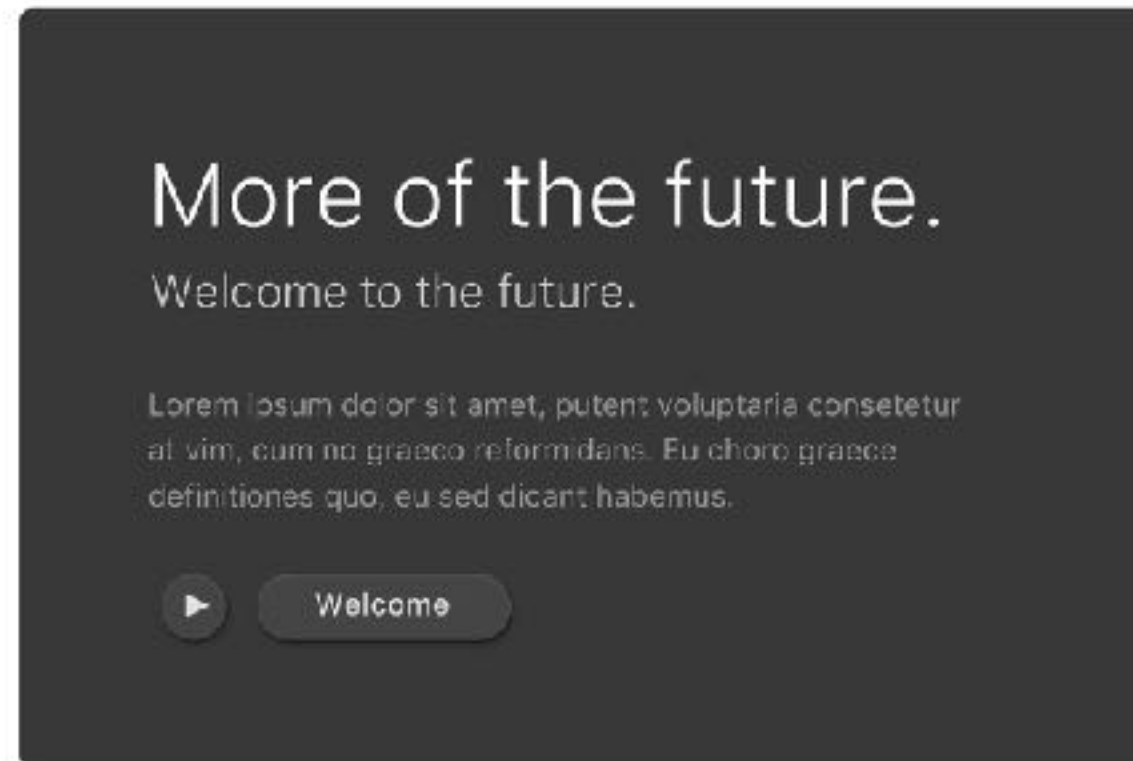
WELCOME TO THE FUTURE

ACTION Status Status

BUTTON Welcome Welcome
WELCOME TO THE FUTURE

ICONS

COLORS



APP DESIGN

VISUAL INTERFACE TEAM:

- Izzy Cruz
- Charlotte de Wolfe
- Tam Hoang
- Julia Rater



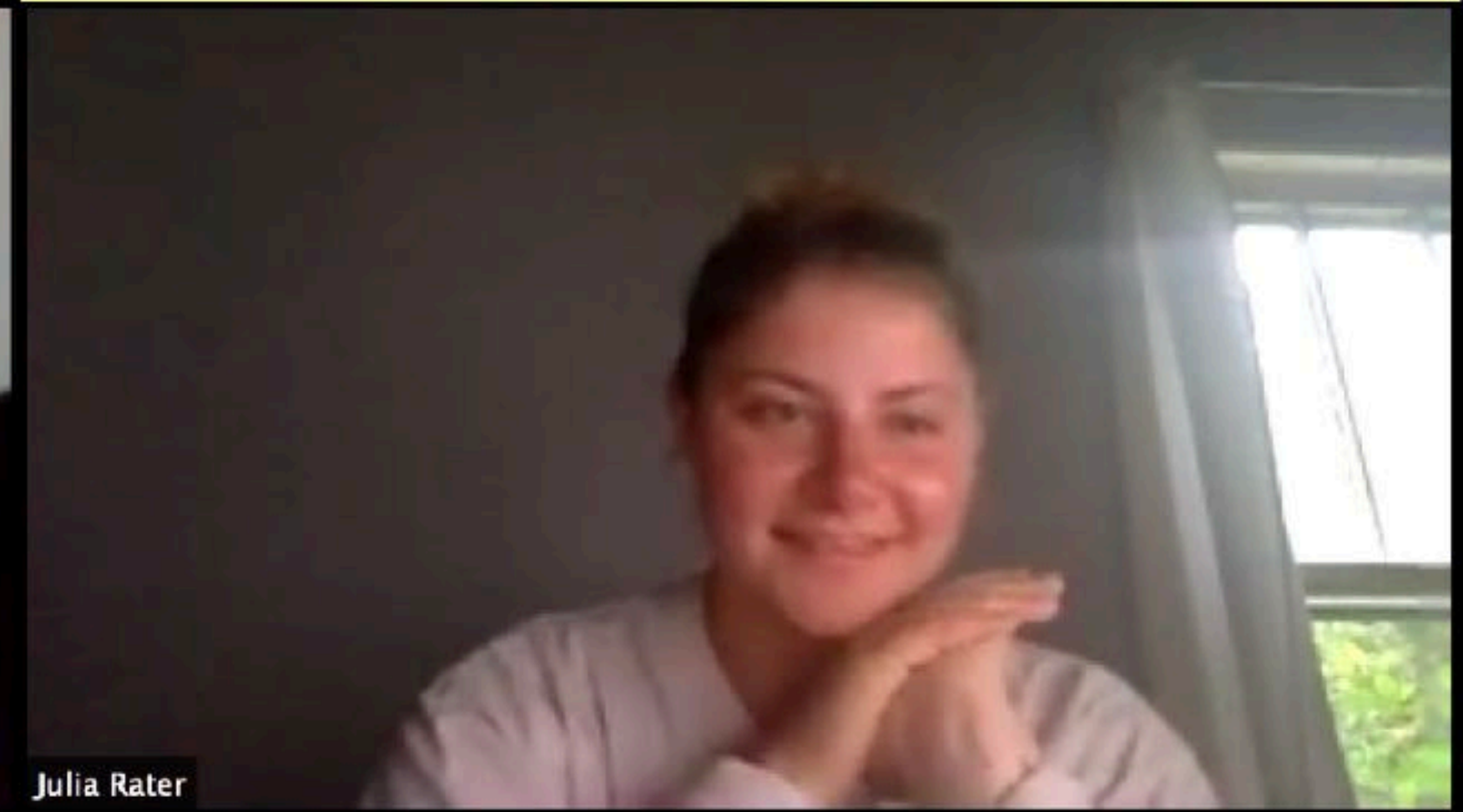
Tam Hoang



Meaghan Dee



Izzy Cruz



Julia Rater

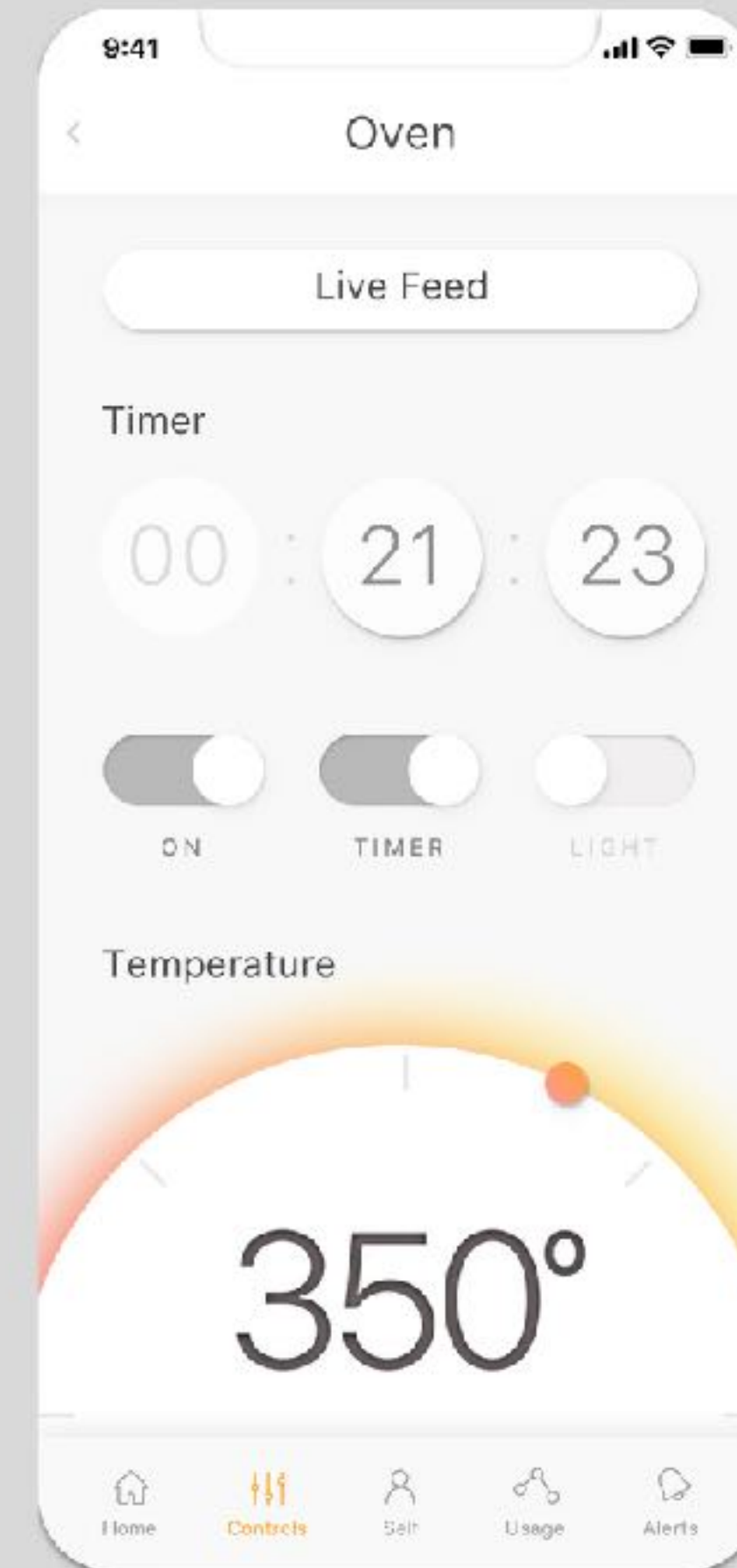
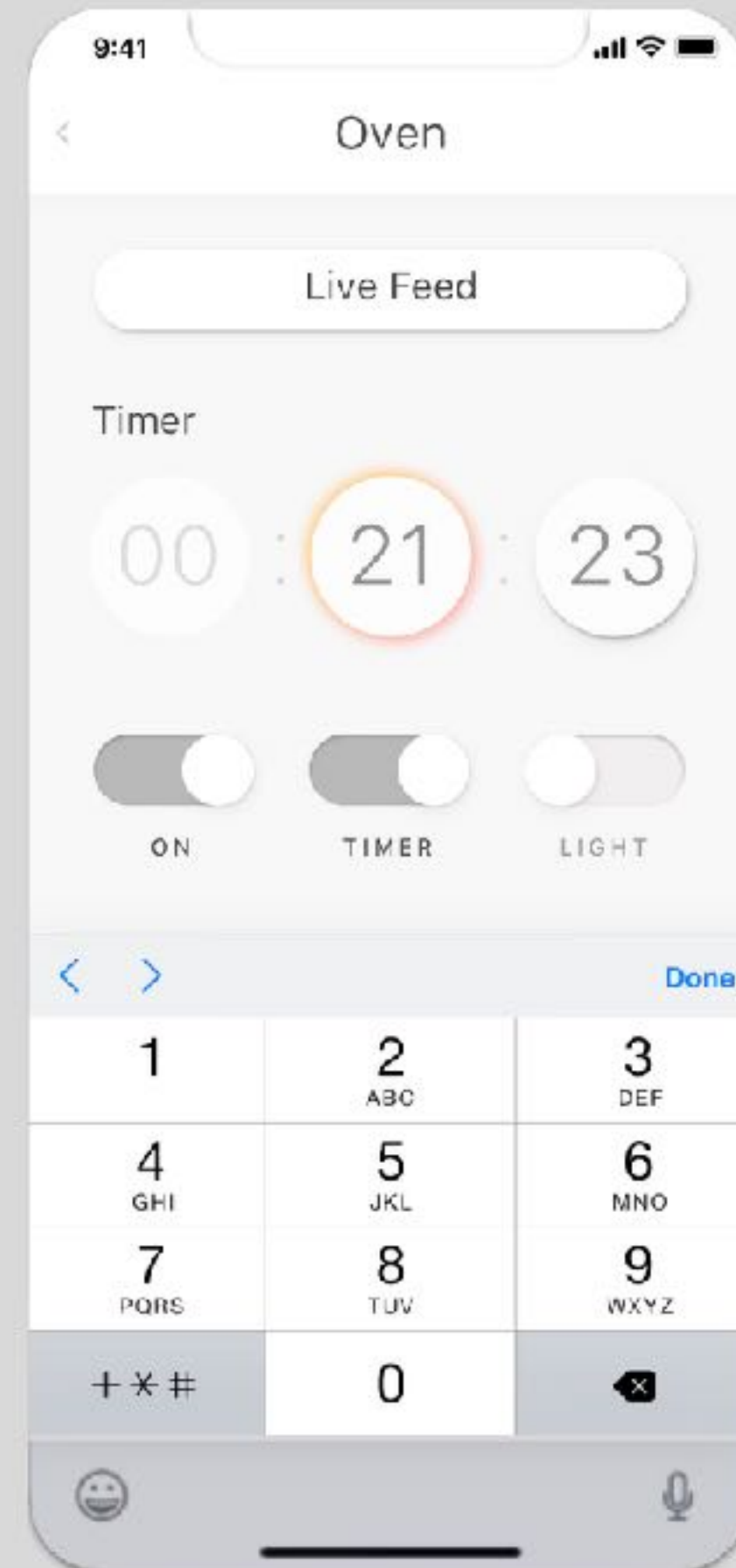
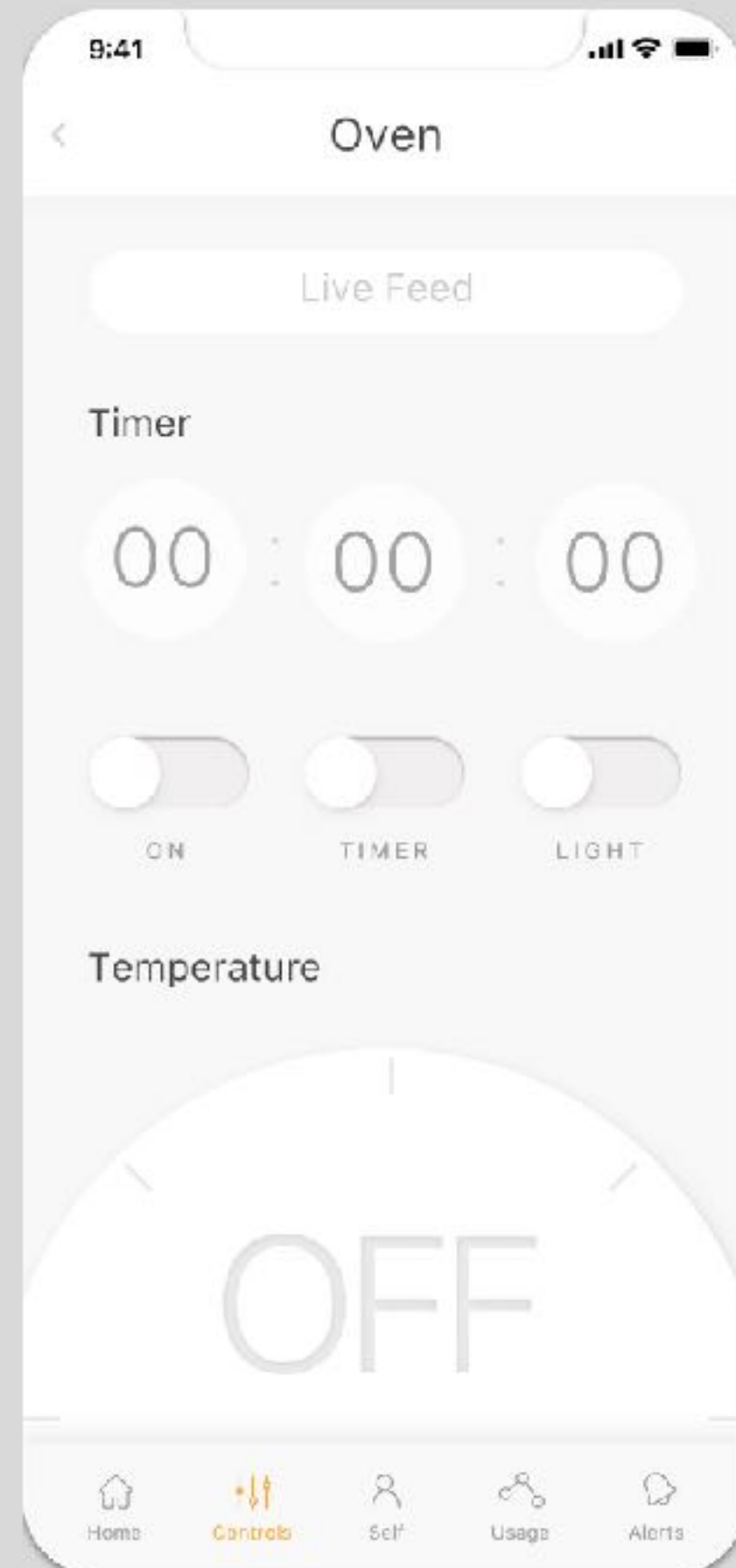


Charlotte de Wolfe

APP DESIGN

VISUAL INTERFACE TEAM:

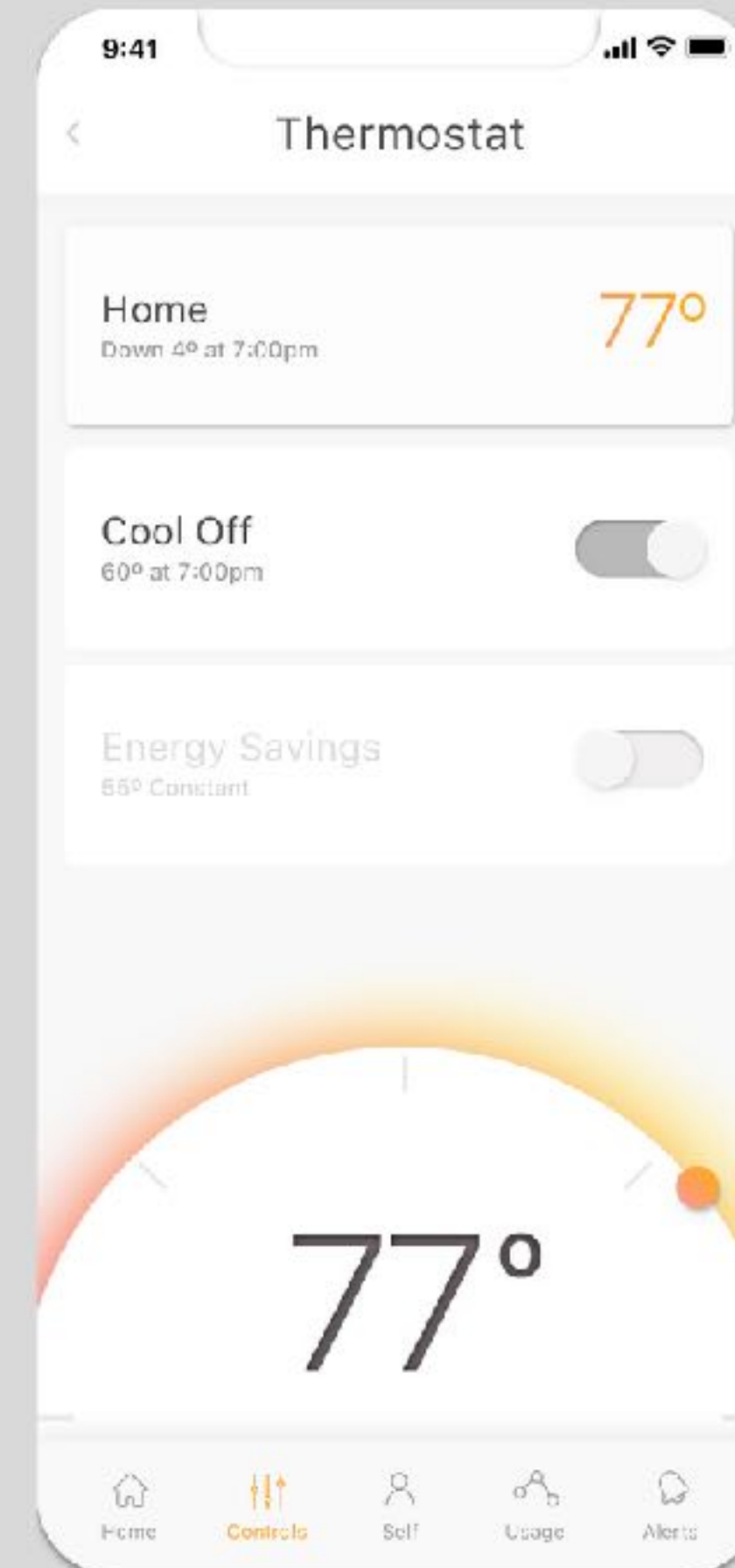
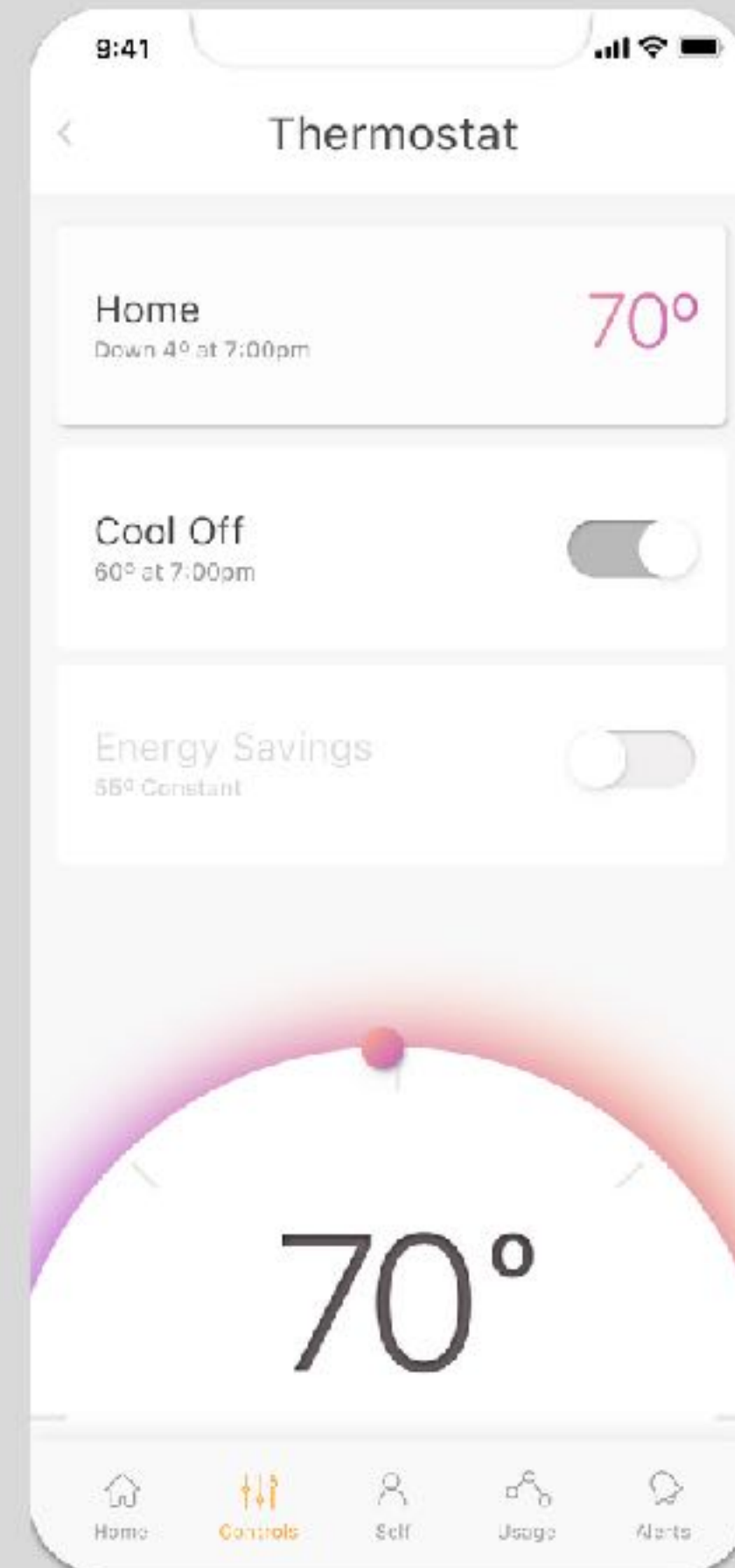
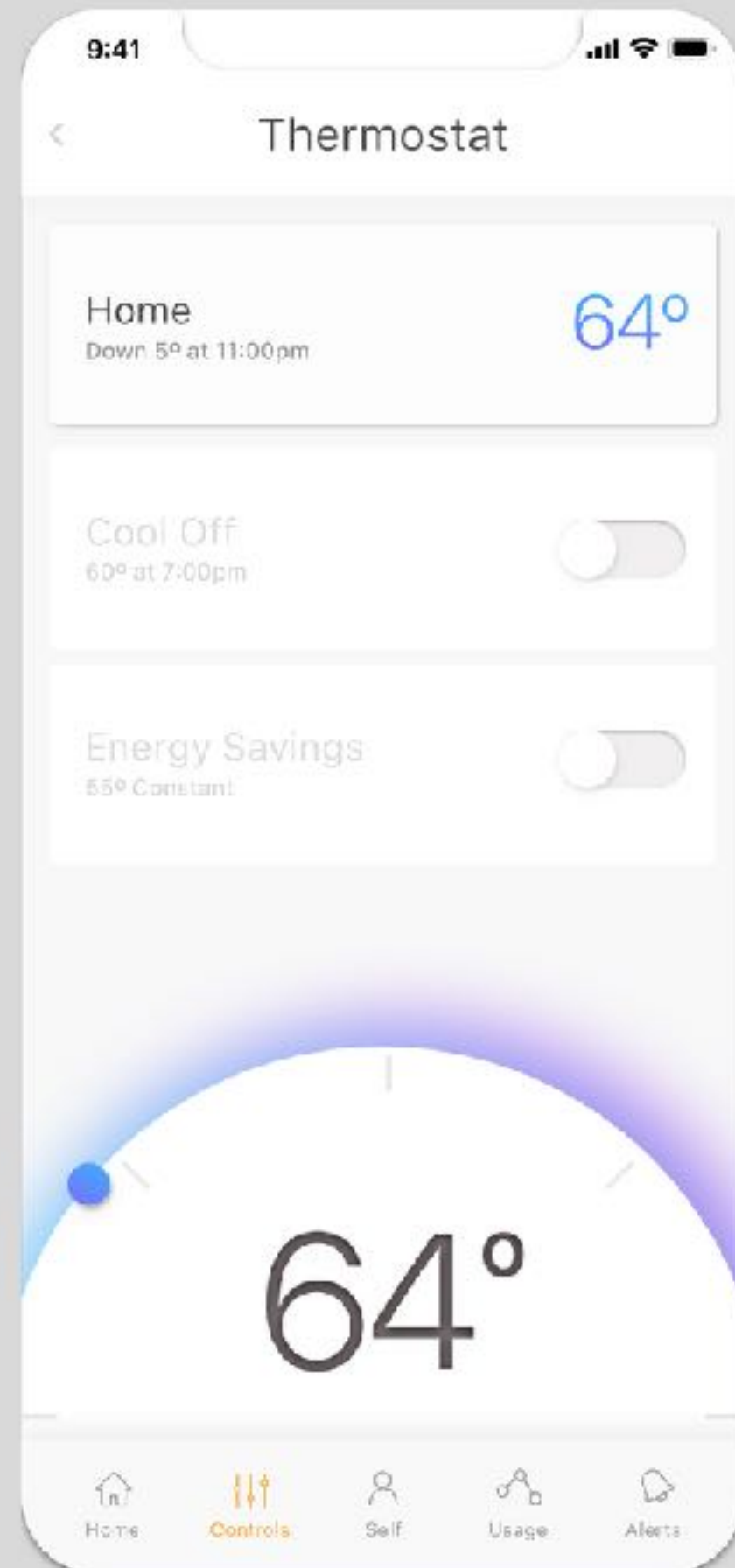
- Izzy Cruz
- Charlotte de Wolfe
- Tam Hoang
- Julia Rater



APP DESIGN

VISUAL INTERFACE TEAM:

- Izzy Cruz
- Charlotte de Wolfe
- Tam Hoang
- Julia Rater





APP DESIGN

VISUAL INTERFACE TEAM:

- Izzy Cruz
- Charlotte de Wolfe
- Tam Hoang
- Julia Rater

APP DESIGN

ICON SYSTEM

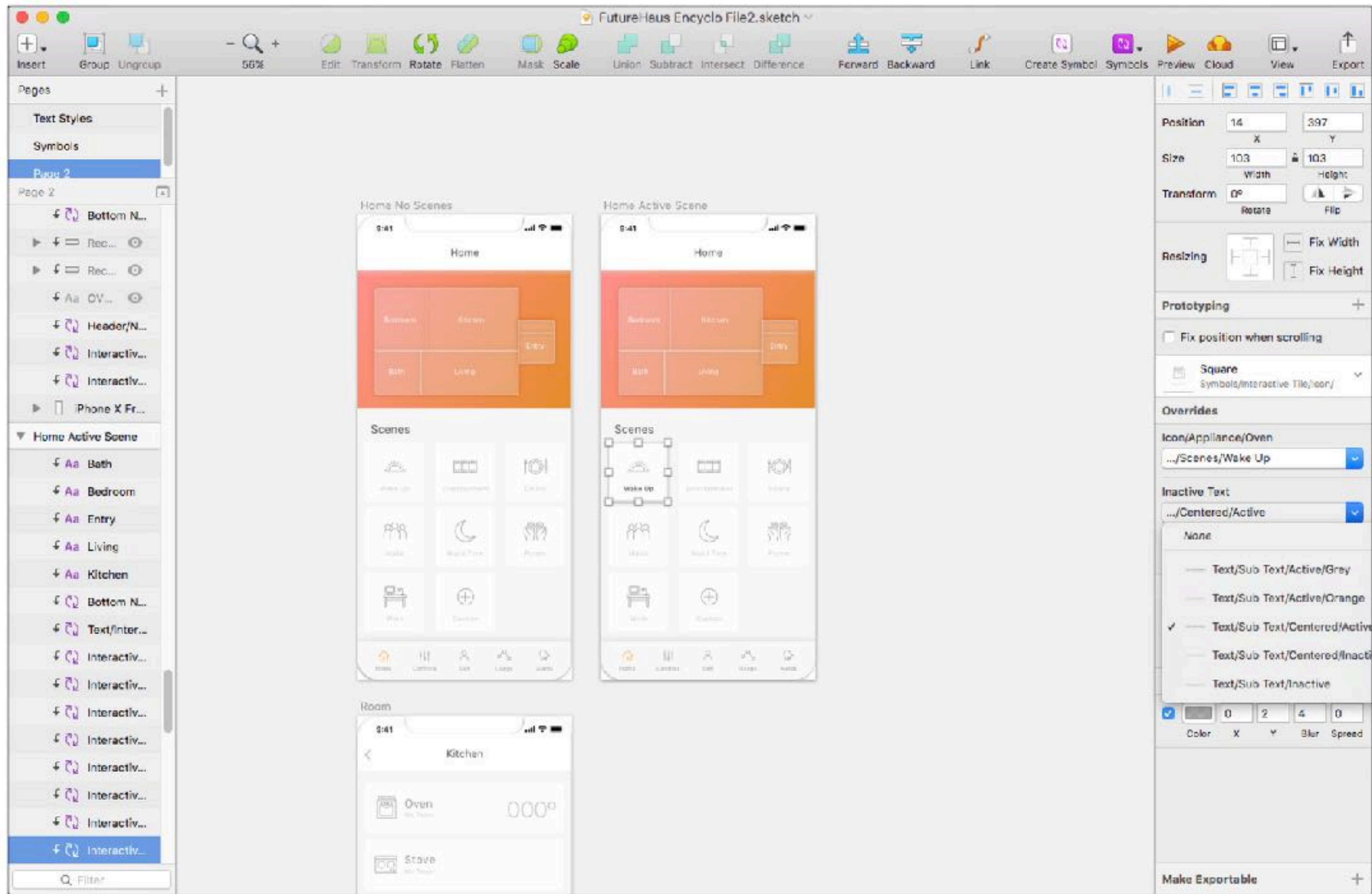




APP DESIGN

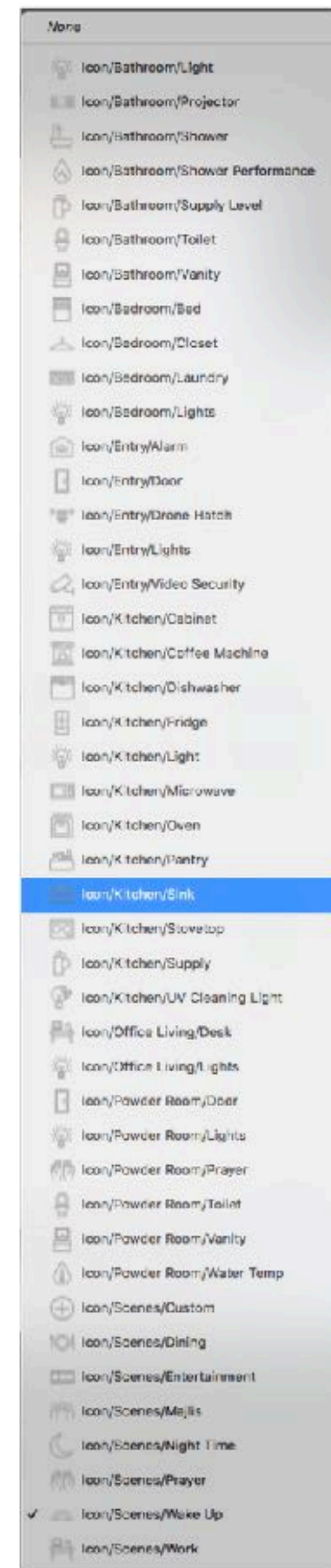
VISUAL INTERFACE TEAM:

- Izzy Cruz
 - Charlotte de Wolfe
 - Tam Hoang
 - Julia Rater
-



APP DESIGN

SKETCH



Where is this going?..

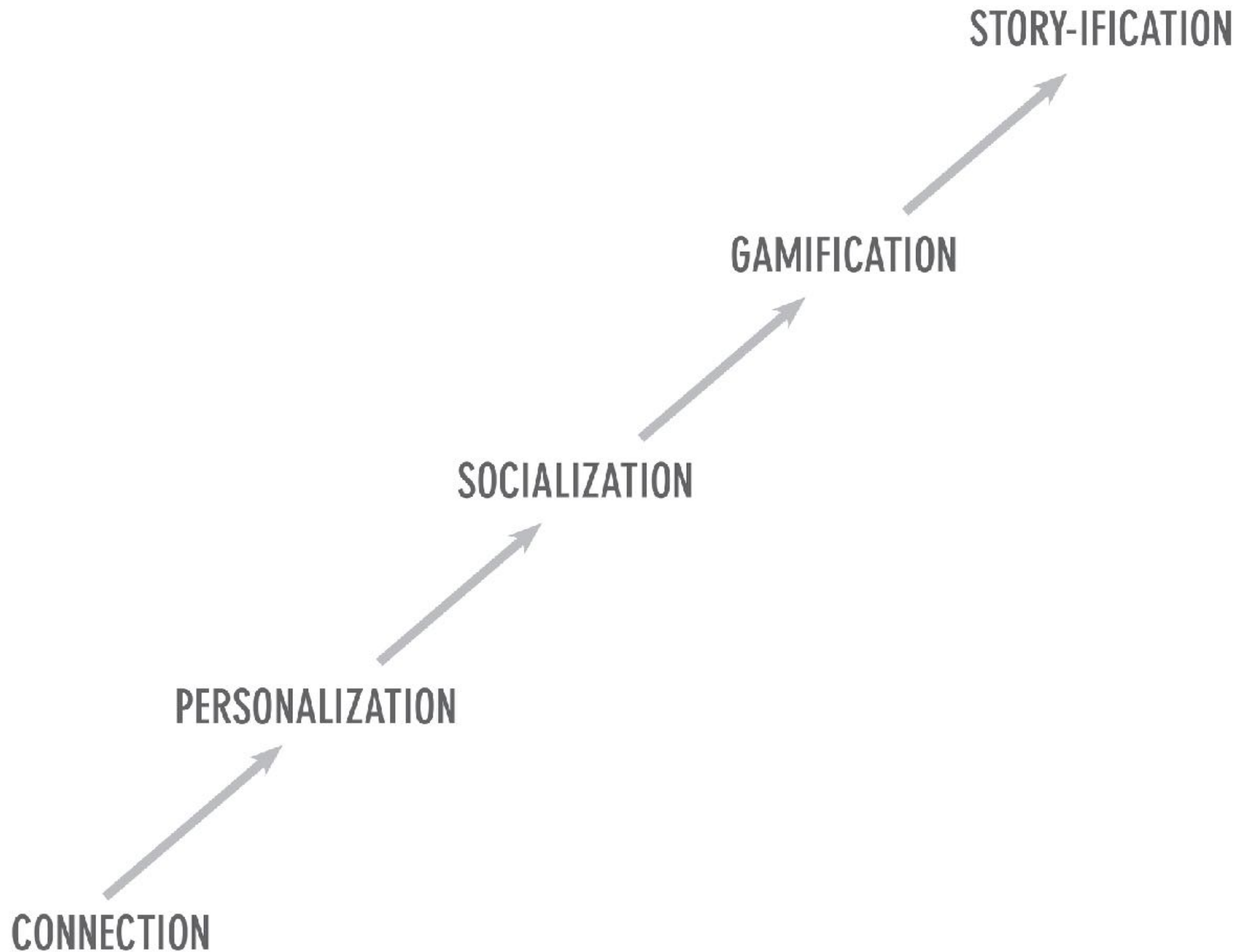
What does this all mean for
future living and
the designer of 2025?



CORNING

CORNING GLASS

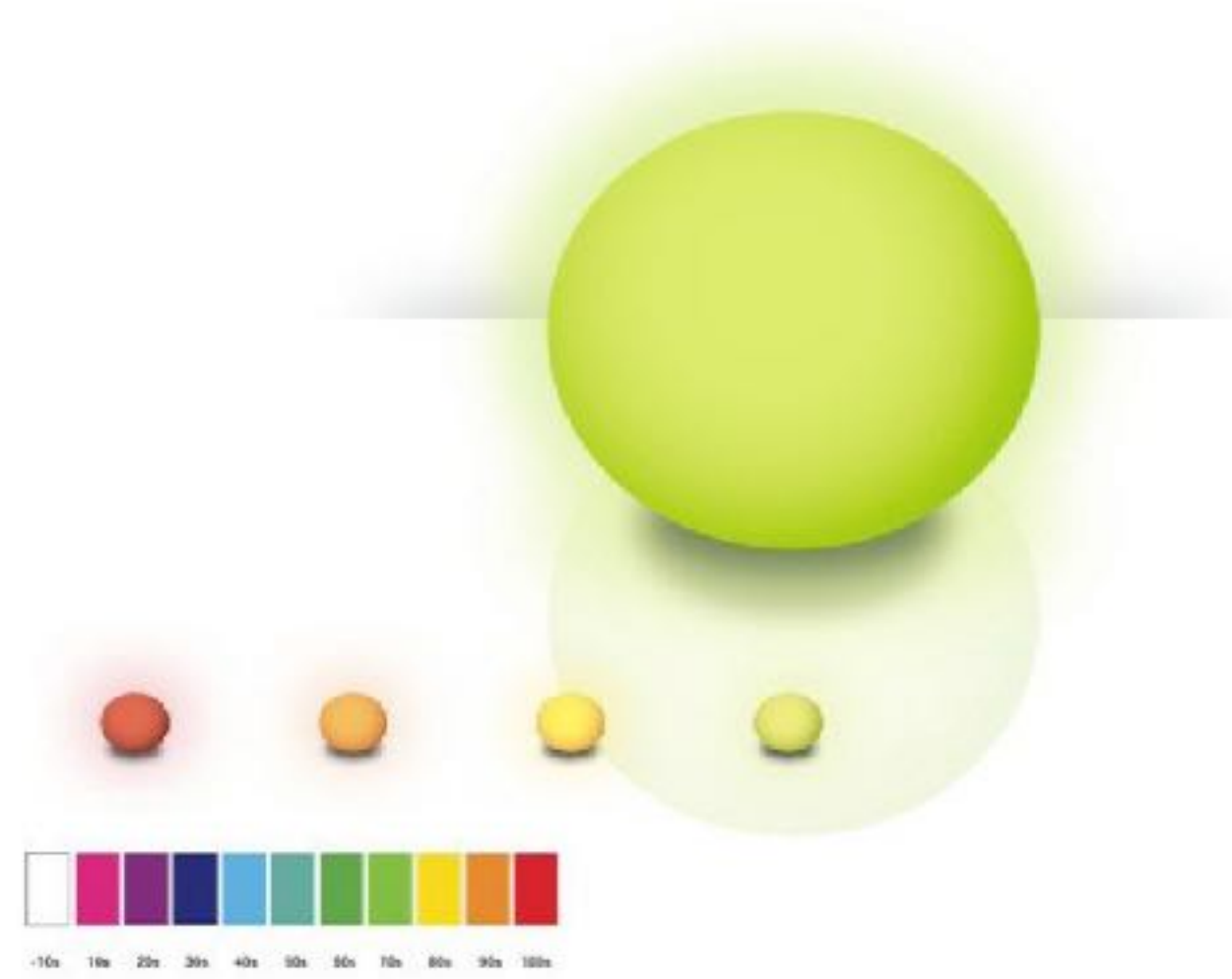
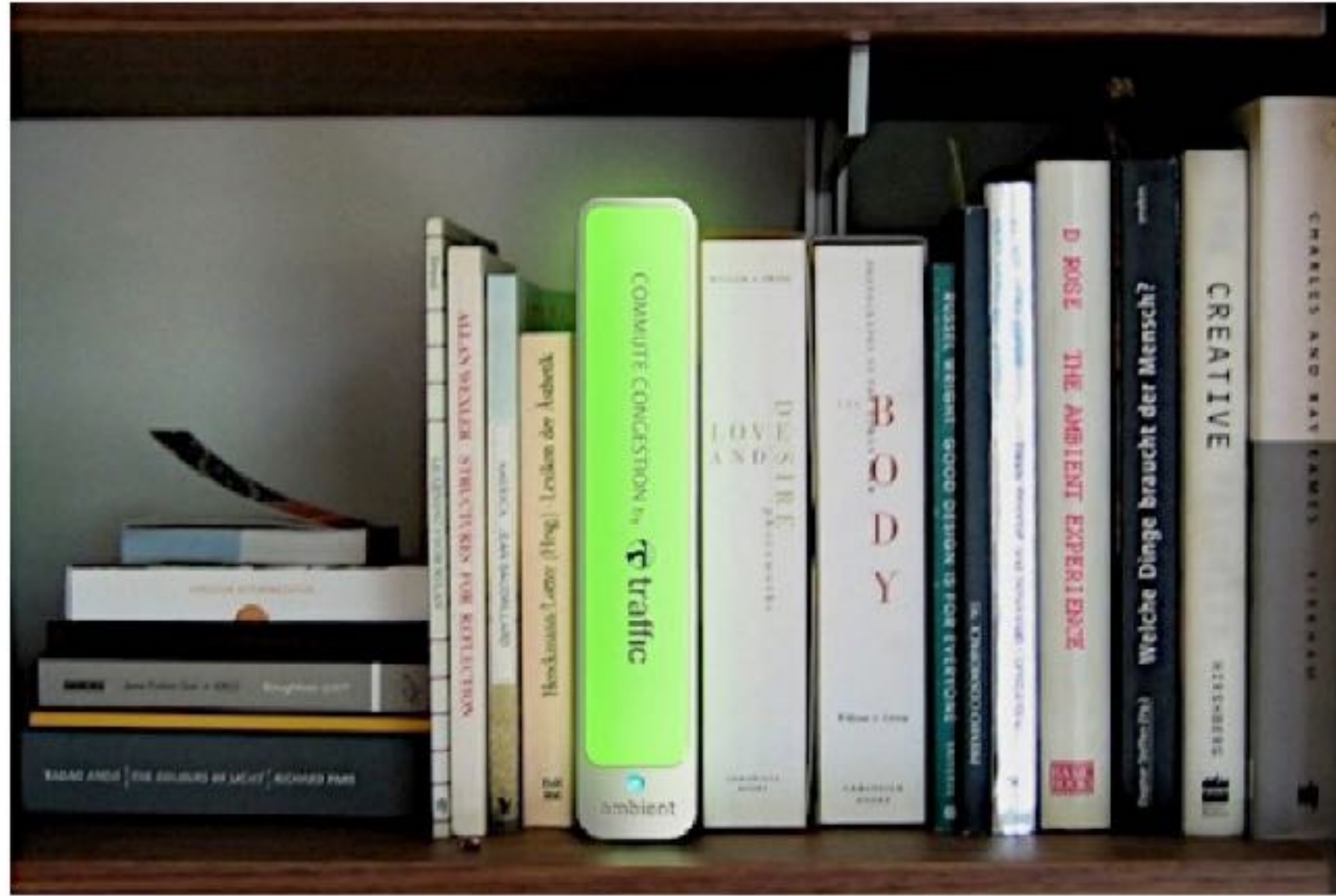
A DAY MADE OF GLASS



ENCHANTED OBJECTS

LADDER OF ENCHANTMENT

- Each rung of the Ladder implies a higher level of sophistication
- The most basic level is connection, which Rose defines as the addition of a sensor or other “smart” technology to an otherwise ordinary object
- Personalization means making a meaningful connection to the user
- Sharing features enable socialization
- Gamification is the addition of elements similar to video games, with rewards for users
- Story-ification involves a narrative and makes interaction impactful



ambient
Manage everywhere

ENCHANTED OBJECTS

AMBIENT OBJECTS

- Indicate change without interference (such as a clock)
- You engage when you choose to

**How does future living
impact the future of design?**



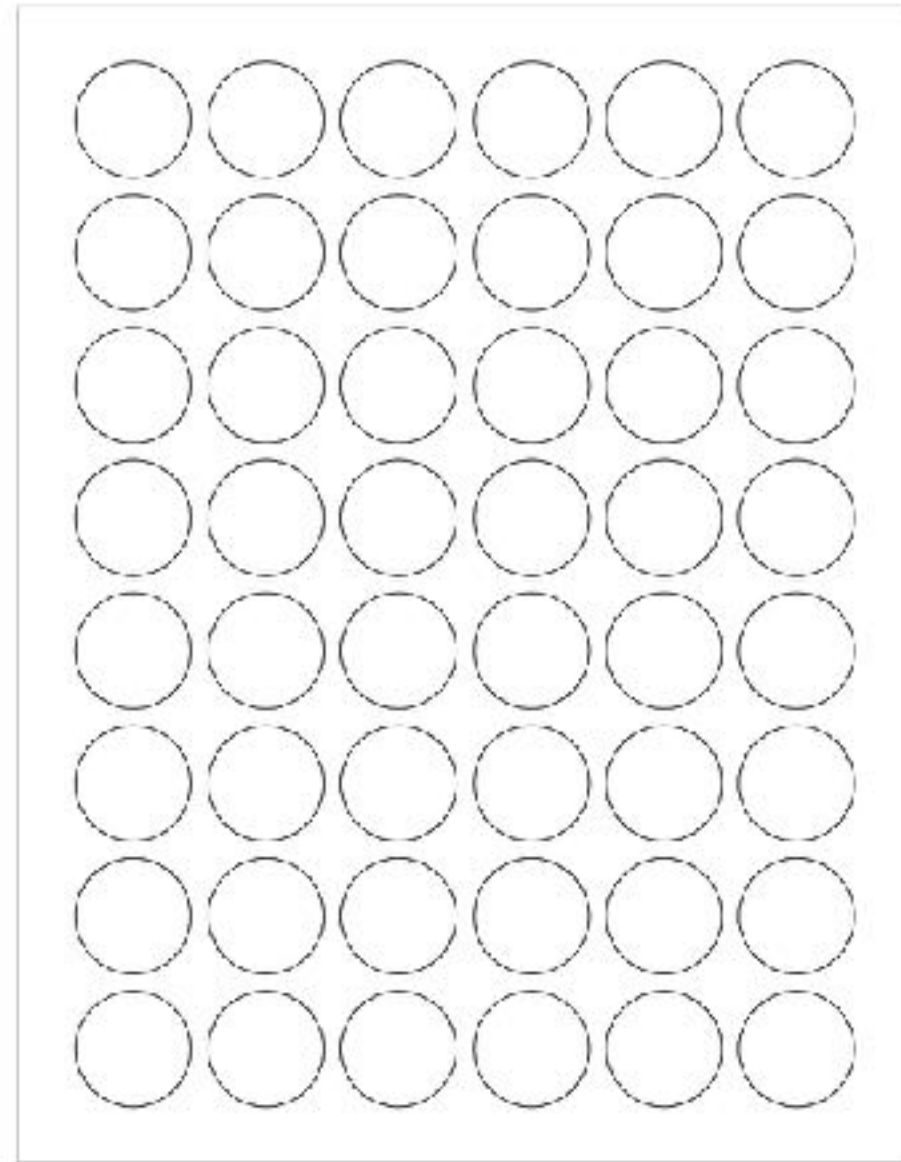
AR / VR / MR

MICROSOFT HOLOLENS



[MICROSOFT.COM/EN-US/HOLOLENS](https://microsoft.com/en-us/hololens)

**As educators, how do we
prepare students for
things that do not yet exist?**



VI VIRGINIA TECH - DESIGN PLAY AS AN INTEGRAL PART OF DESIGN EDUCATION HEADKIVA.DIG

DISRUPTUS

EXAMPLES:
Two illustrations of a robot's face.

A GAME ABOUT INNOVATION
I wish players to feel an anxiety, who cannot use different approaches — is dominated by the end of the game. The game is a very important part of the innovation process.

CREATE
Using 7 cards to create a representation of elements, from each card choose those to create a new object or form.

IMPROVE
Using 7 cards to create a representation of elements, from each card choose those to improve the object or form.

TRANSFORM
Using 7 cards to create a representation of elements, from each card choose those to transform the object or form.

DISRUPT
Using 7 cards to create a representation of elements, from each card choose those to disrupt the object or form.

FOUR CARDS WITH ME
1. Draw
2. Imagine
3. Describe
4. Create

VII VIRGINIA TECH - DESIGN PLAY AS AN INTEGRAL PART OF DESIGN EDUCATION HEADKIVA.DIG

DISRUPTUS - CREATE

EXAMPLES:
Two illustrations of a game controller and a skateboard.

(10 seconds)

VIII VIRGINIA TECH - DESIGN PLAY AS AN INTEGRAL PART OF DESIGN EDUCATION HEADKIVA.DIG

DISRUPTUS - IMPROVE

EXAMPLES:
A 'HELLO my name is' name tag illustration.

(10 seconds)

IX VIRGINIA TECH - DESIGN PLAY AS AN INTEGRAL PART OF DESIGN EDUCATION HEADKIVA.DIG

THING FROM THE FUTURE

CARDS:
1. The future is a place where we live today.
2. The future is a place where we live tomorrow.
3. The future is a place where we live in 100 years.
4. The future is a place where we live in 1000 years.

1) YOUR CARDS
GROW COMMUNICATIONS DEVICE WELLBEING

2) DESCRIPTION
3) SKETCH

1) YOUR CARDS
TRANSPORT LEARNING TOOL WEIRDNESS

2) DESCRIPTION
3) SKETCH

Use Ideas for the Future
A primary school classroom activity.

X VIRGINIA TECH - DESIGN PLAY AS AN INTEGRAL PART OF DESIGN EDUCATION HEADKIVA.DIG

CARTOON CAPTIONS

EXAMPLES:
A New Yorker cartoon and a cartoon of a man at a desk.

XI VIRGINIA TECH - DESIGN PLAY AS AN INTEGRAL PART OF DESIGN EDUCATION HEADKIVA.DIG

COPY WRITING

CAPTION / COPY
Write a caption or copy for the illustration.

XII VIRGINIA TECH - DESIGN PLAY AS AN INTEGRAL PART OF DESIGN EDUCATION HEADKIVA.DIG

PERSONAS

REFERENCES:
Personas are fictional characters that represent different user types within a specific community, organization, or market segment.

PERSONAS AND USER-CENTRIC DESIGN
Personas are a key tool in user-centered design, helping designers understand the needs, goals, and behaviors of their users.

HOW TO DO IT
1. Research: Gather data about your users through interviews, surveys, and observations.
2. Identify: Look for patterns and commonalities in the data.
3. Create: Develop fictional characters that represent different user types.
4. Validate: Use personas to inform design decisions and test prototypes.

EXAMPLE: PERSONAS FOR A WEBSITE
Personas are fictional characters that represent different user types within a specific community, organization, or market segment.

NOTE: THE PERSONAS SHOULD BE USED TO INFORM DESIGN DECISIONS.



MEXICO CITY

EARTHQUAKE

IMAGE FROM VOX



HOUSTON

HURRICANE, 2008

IMAGE FROM THE HOUSTON CHRONICLE



PUERTO RICO

HURRICANE MARIA, 2017

The designer of the future
will face many challenging problems,
but if they embrace technology,
can interpret large amounts of data,
and keep core values in mind —
they will be prepared for what lies ahead.

BACK TO THE FUTURE™



THANK / YOU

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