

# Industrial Design Portfolio

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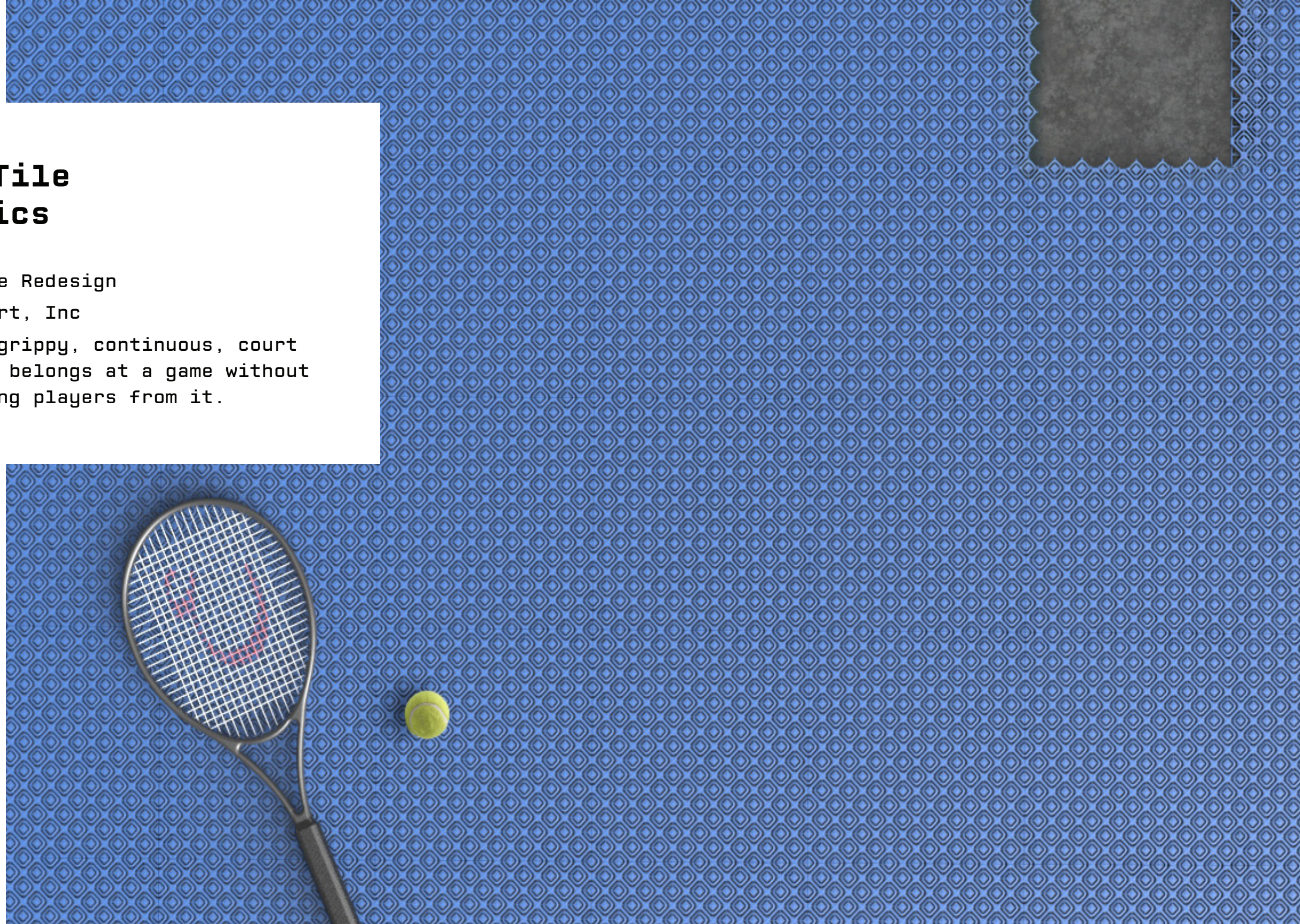


# A Subtler Tile for Athletics

Project: Court Tile Redesign

Client: Sport Court, Inc

Goals: Design a grippy, continuous, court  
tile that belongs at a game without  
distracting players from it.





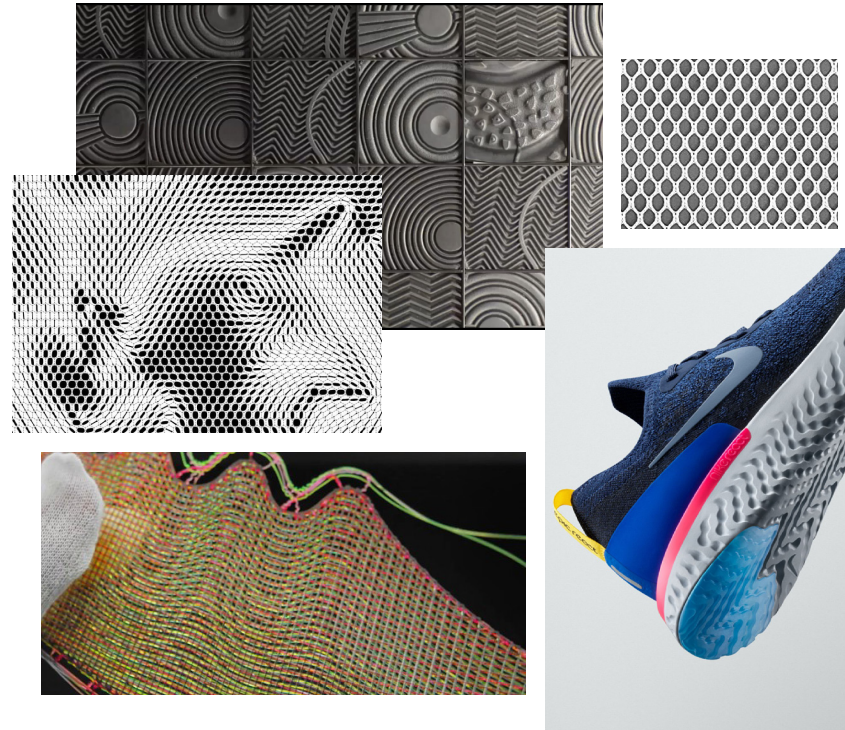
# Project Goals

1. Create the illusion of a continuous surface



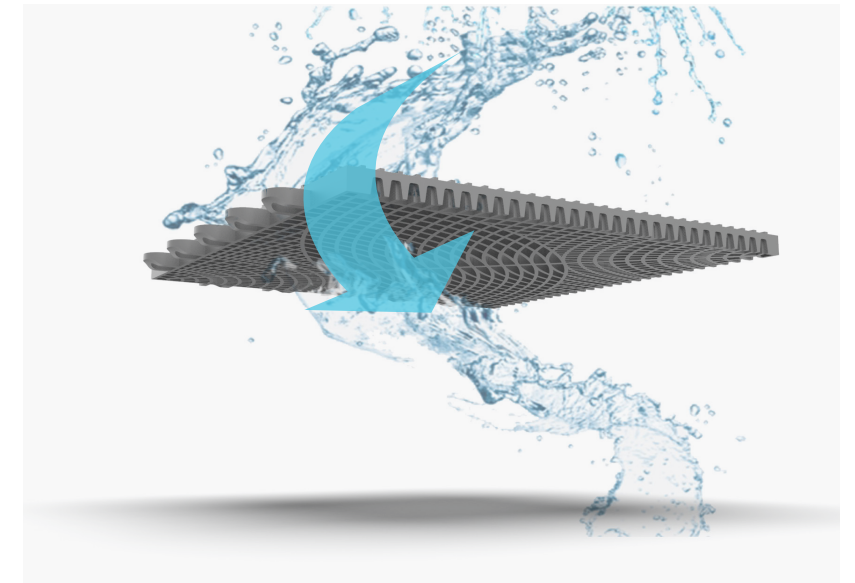
Help players focus on the game lines by making one tile's pattern blend seamlessly into the next.

2. Craft a differentiated, "sporty" pattern



...without drawing attention away from the game. To paraphrase, "A pattern should be discovered, not announced."

3. Maintain mostly open space for water drainage

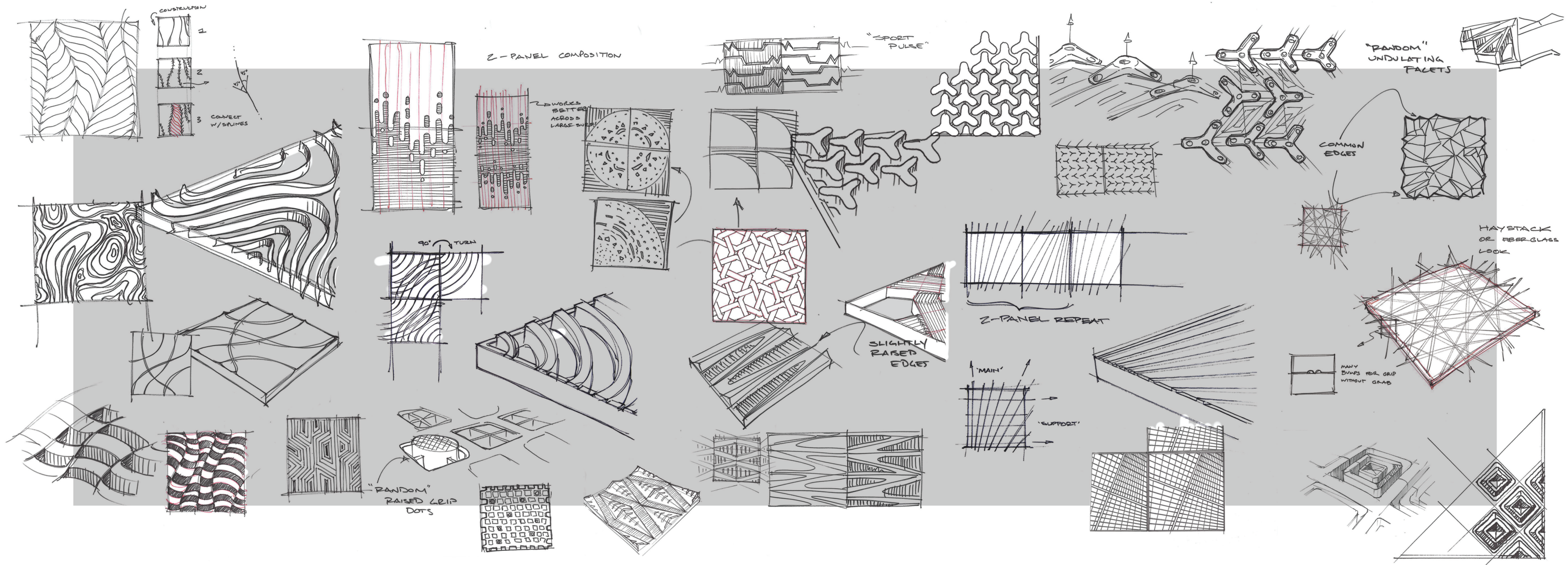
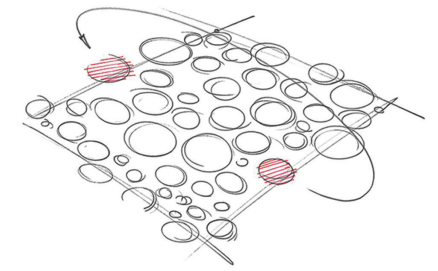


Tiles for outdoor use need to drain water effectively and leave no buildup on surfaces.



# Ideation

Aiming for a pattern that tessellates smoothly across tiles



Inspiration, roughly L to R:

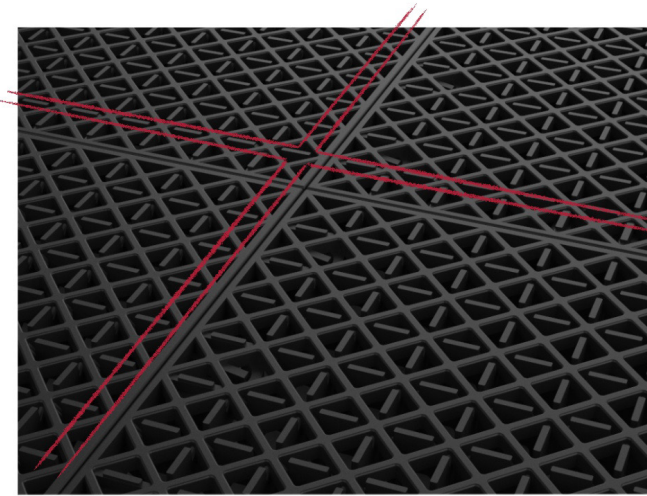
Basketball Shoe Tread Topographic Maps Sand Dunes Checked Flags Retro 2-Tone Gradients Artisanal Tile Patterns Ripples in a Pond Hiking Shoe Tread Heartbeat EKG Moorish-Style Lattice Geometry Zaha Hadid's 520 West 28th Street Y-Patterned Storage Bin Video Game Sunrise Voronoi Pattern 'Random' Straw or Grass Patterns Skate Shoe



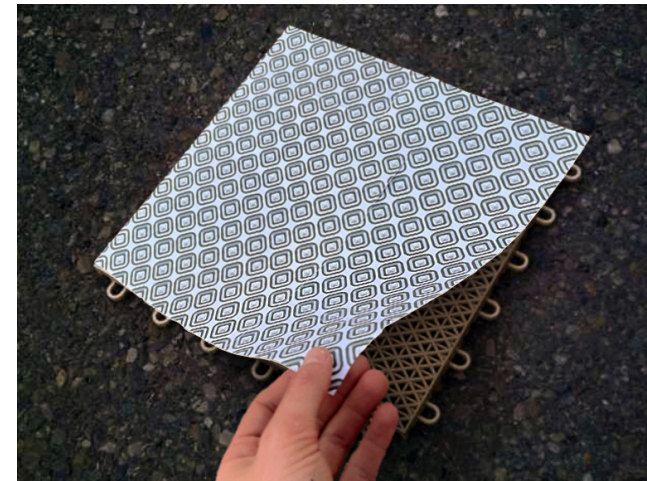
## Refinement

- 1 Removing 'double walls' in adjacent tiles would go a long way towards continuity.
- 2 Concepts created in Illustrator can be easily printed for scale, pattern, and tessellation checking.
- 3 "Stepped-down" edges reduce emphasis on tile borders.
- 4 Focused ideation involved rapid-fire, scale mock-ups in illustrator or Solidworks, whichever was fastest for the concept

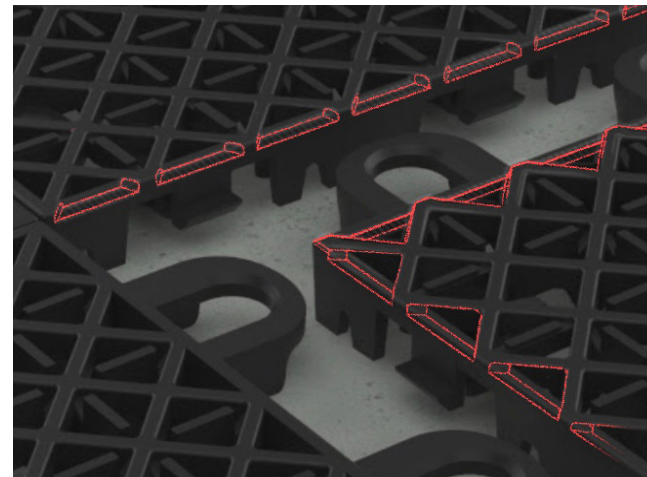
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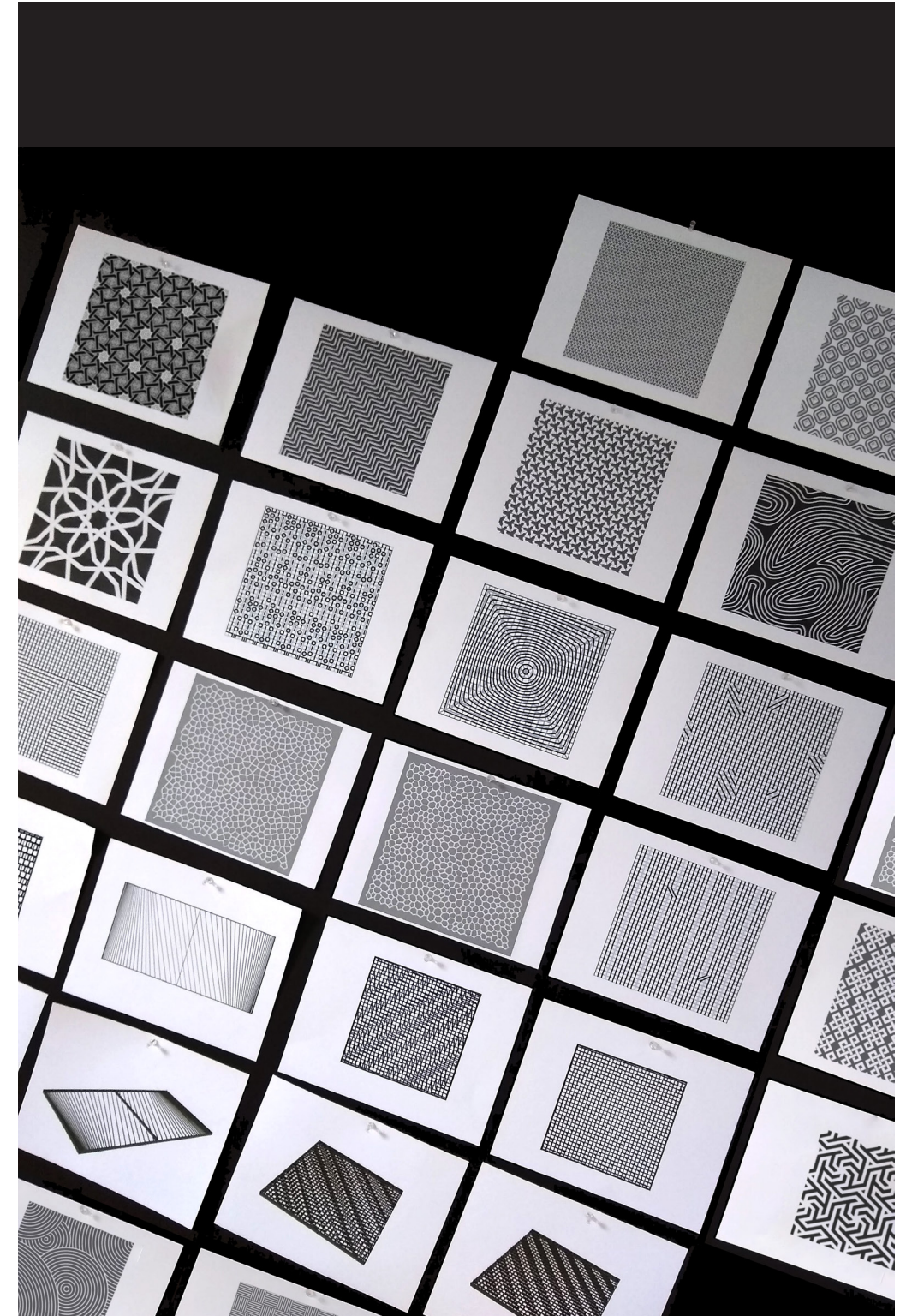
2



3



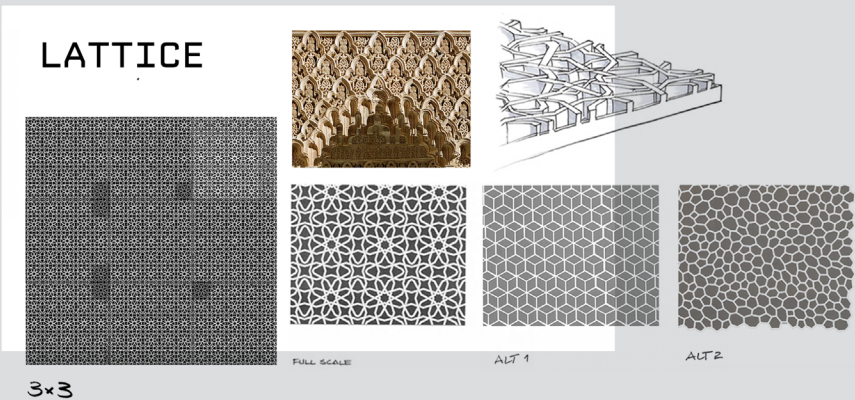
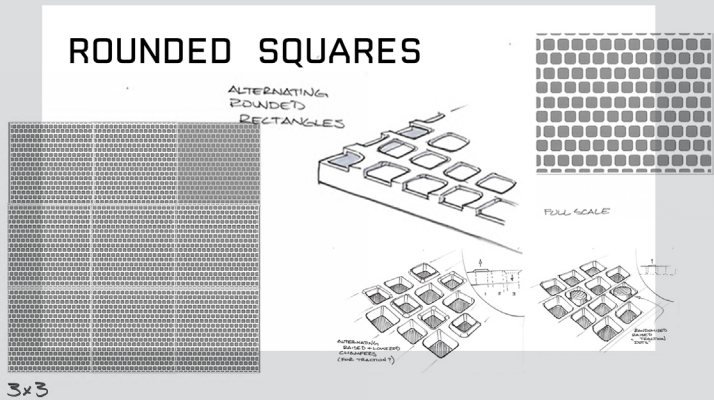
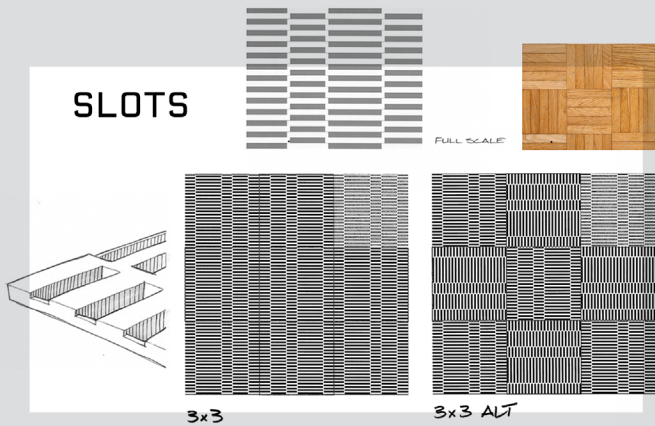
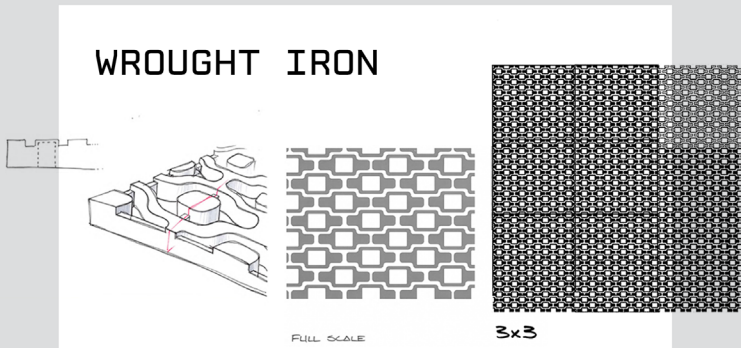
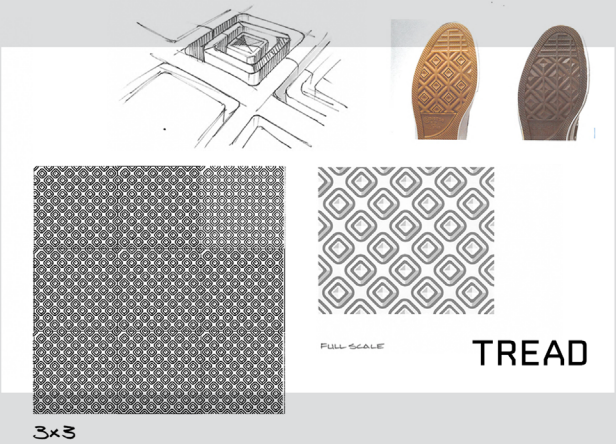
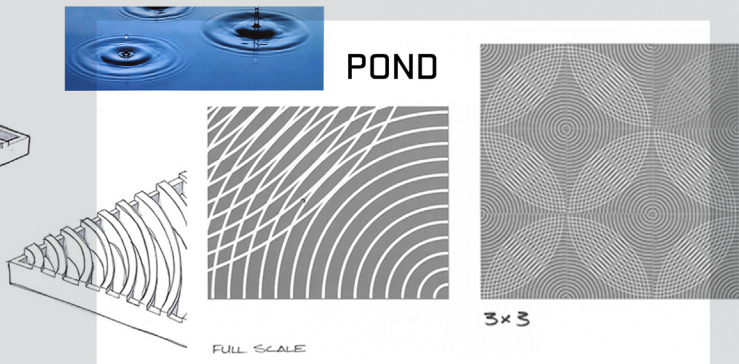
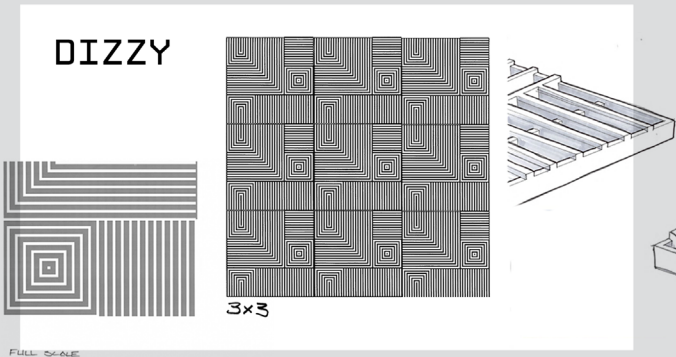
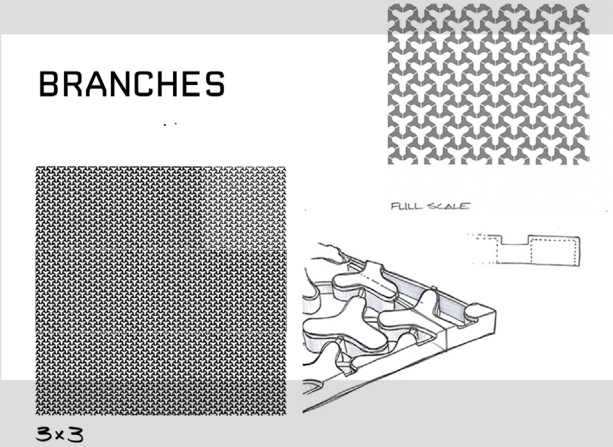
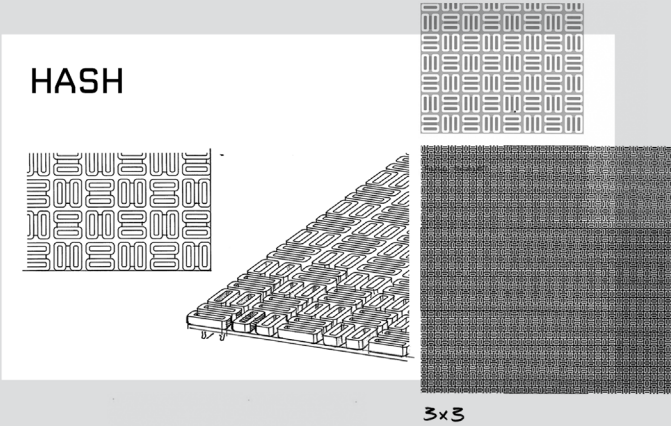
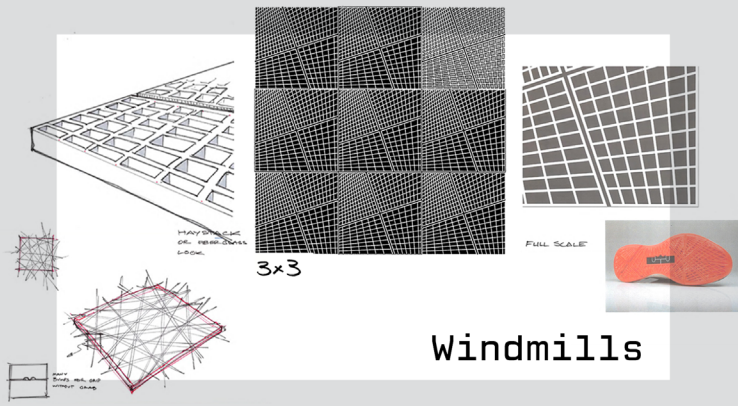
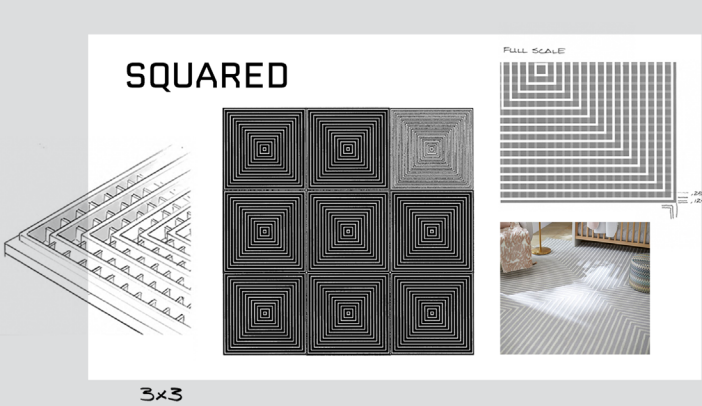
4





Concept Review

Will the pattern grip as well in any direction? Is the intended visual reference coming through? Do the edges of adjacent tiles knit together naturally?



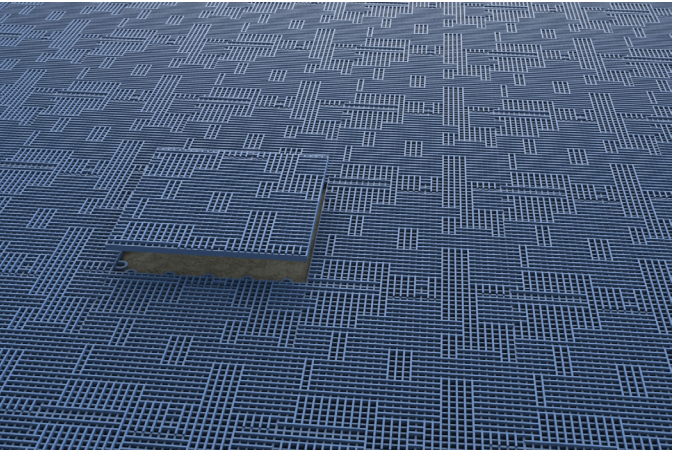
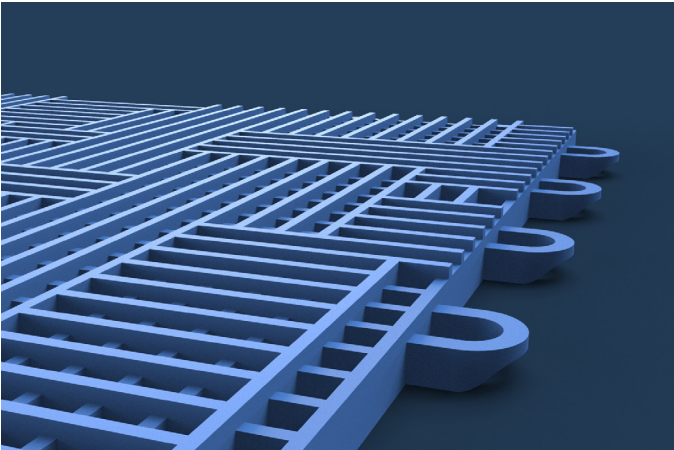
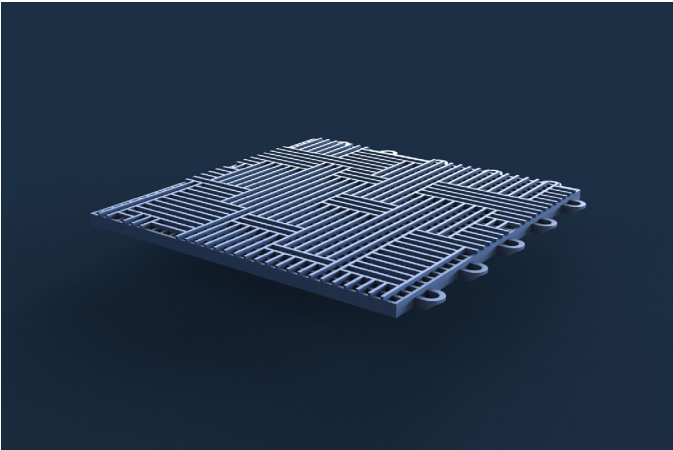


# Final Selection

I modeled and rendered the final three court tile concepts.

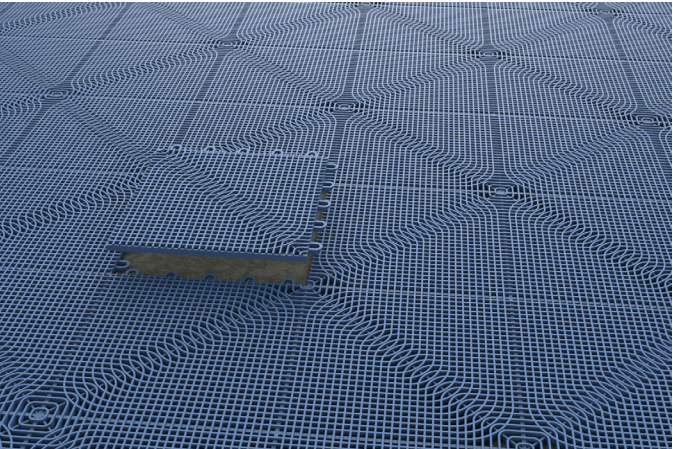
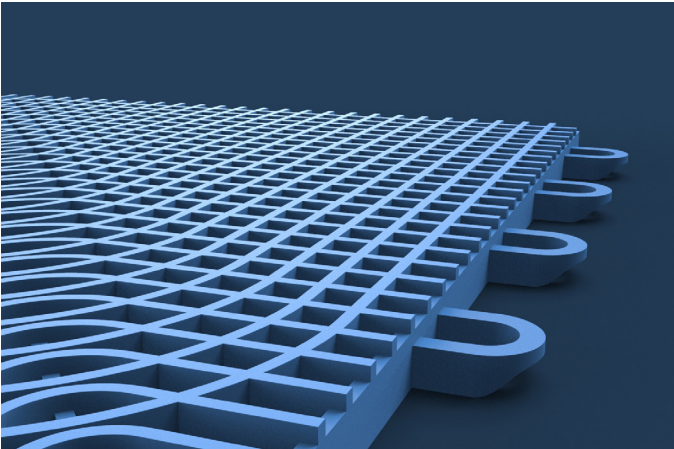
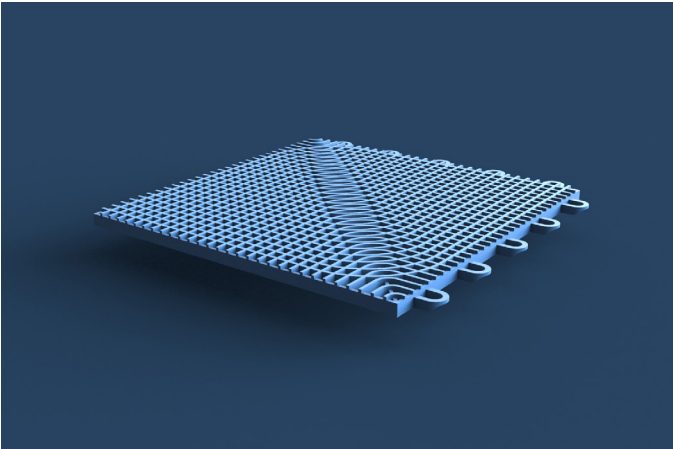
The clients originally preferred ‘Pond’ for its uniqueness, but in the end ‘Tread’ was chosen for better manufacturability.

Cpt 1  
Digital



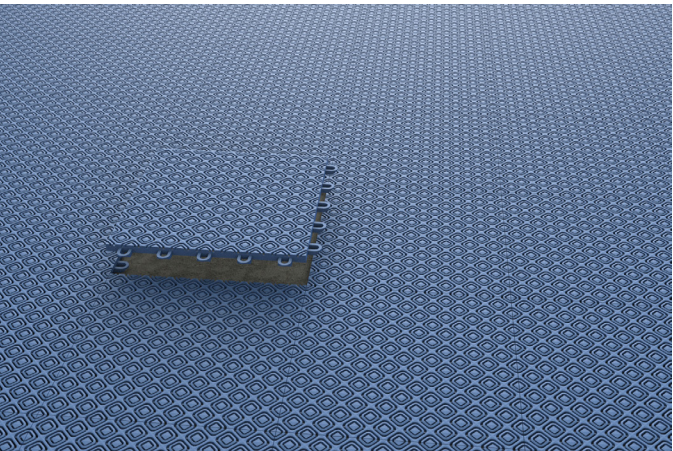
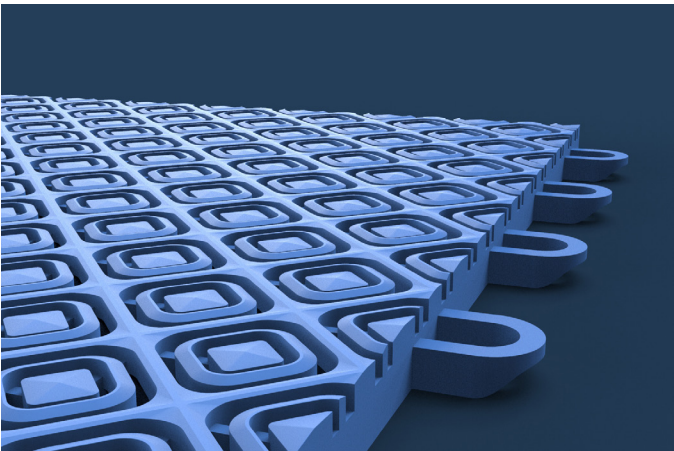
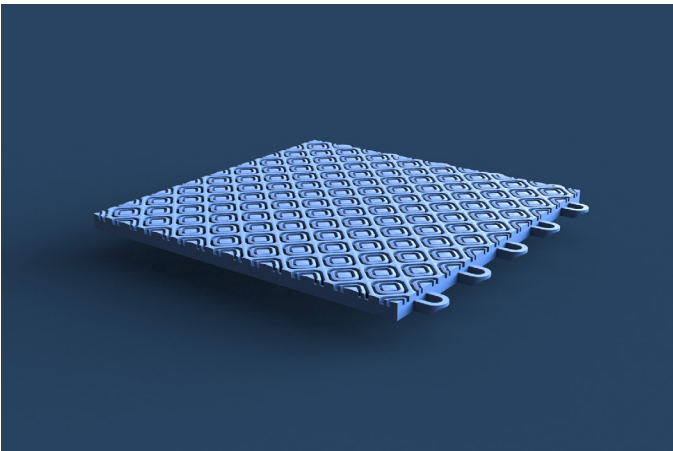
Hiding tile boundaries with lower outside edges

Cpt 2  
Pond



Branding opportunity at Pond tile intersections

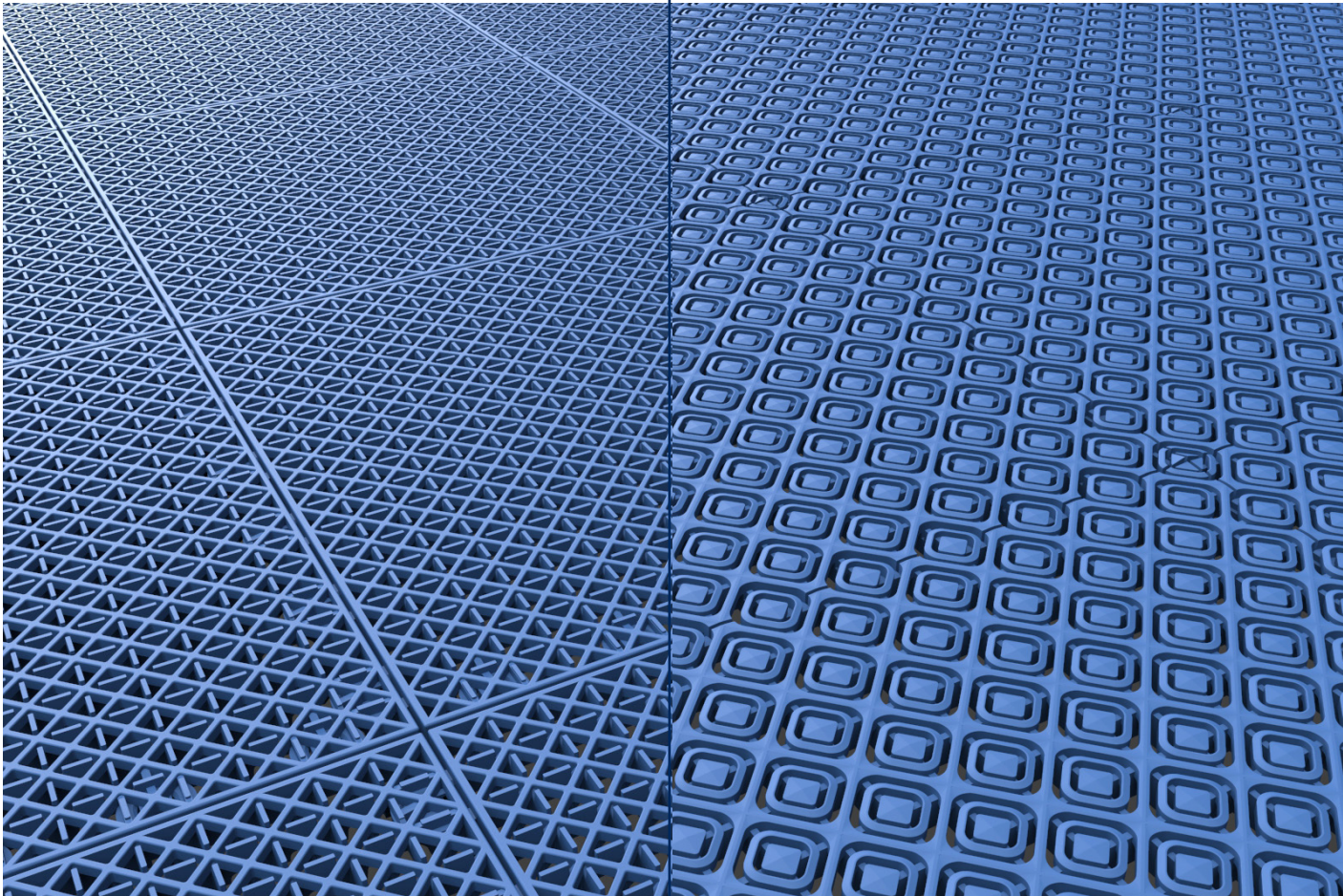
Cpt 2  
Tread



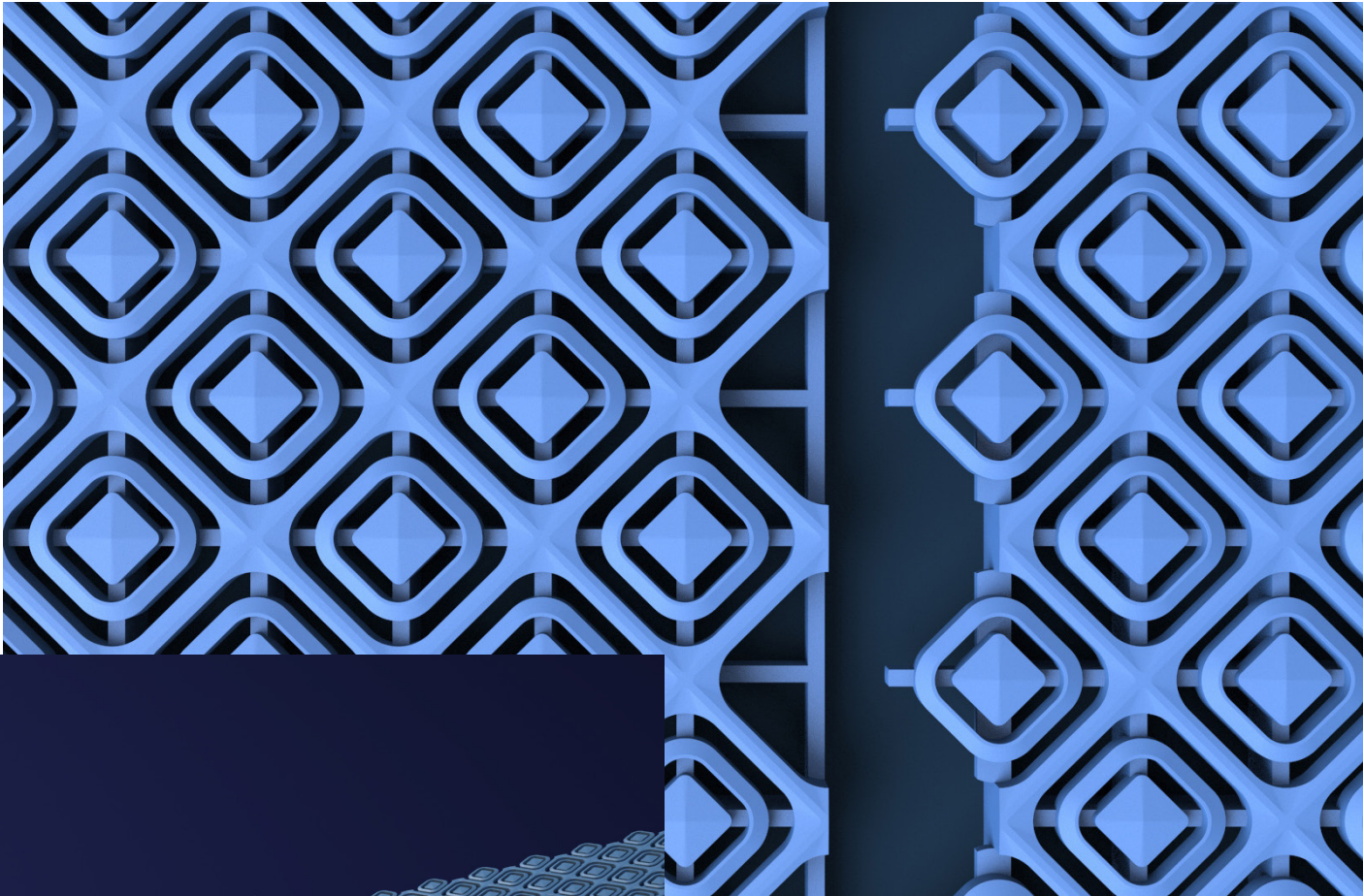
No acute angles required for molding. Feels ‘sporty’.



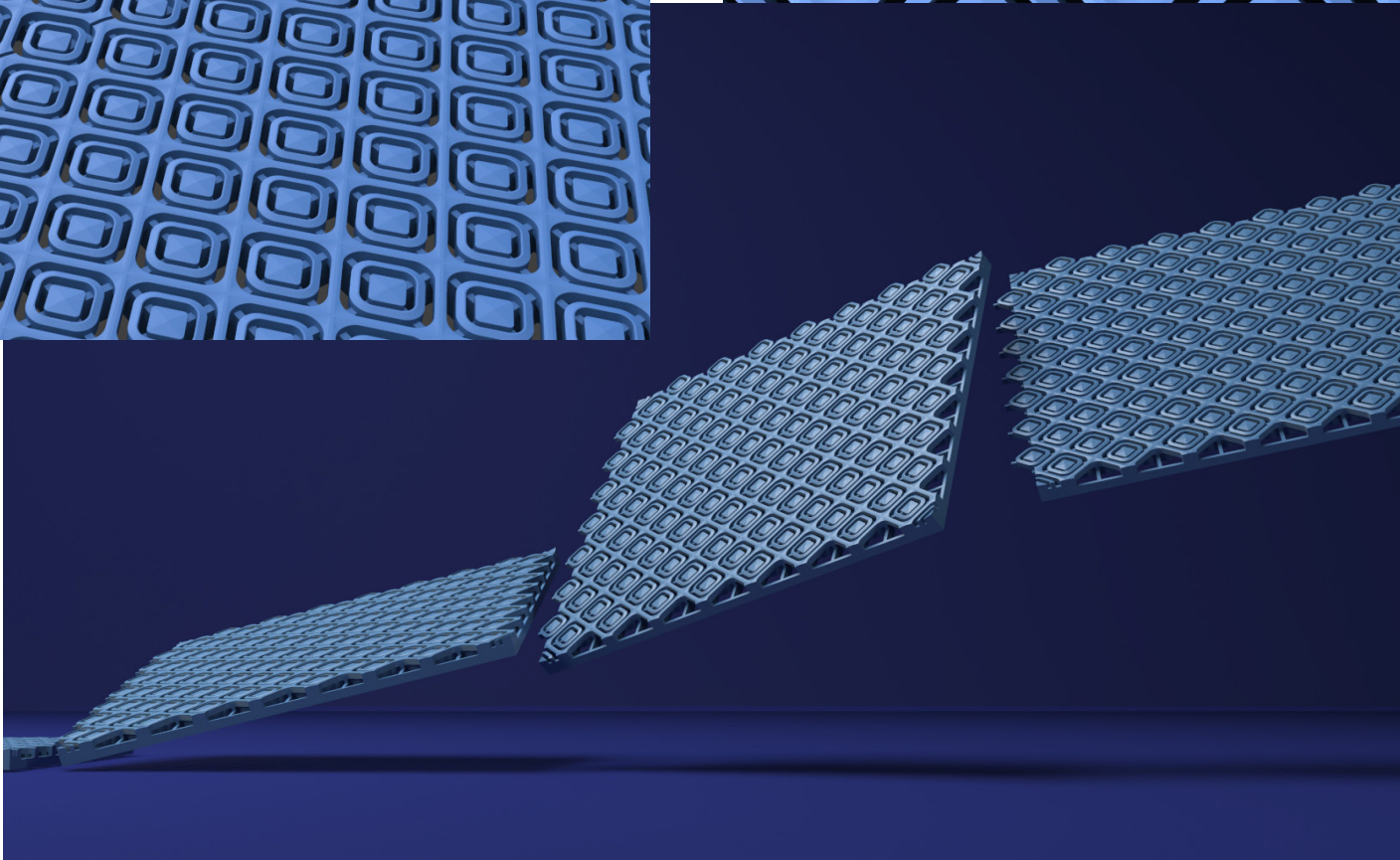
Final Concept Highlights



Grid Reduction, Before and After



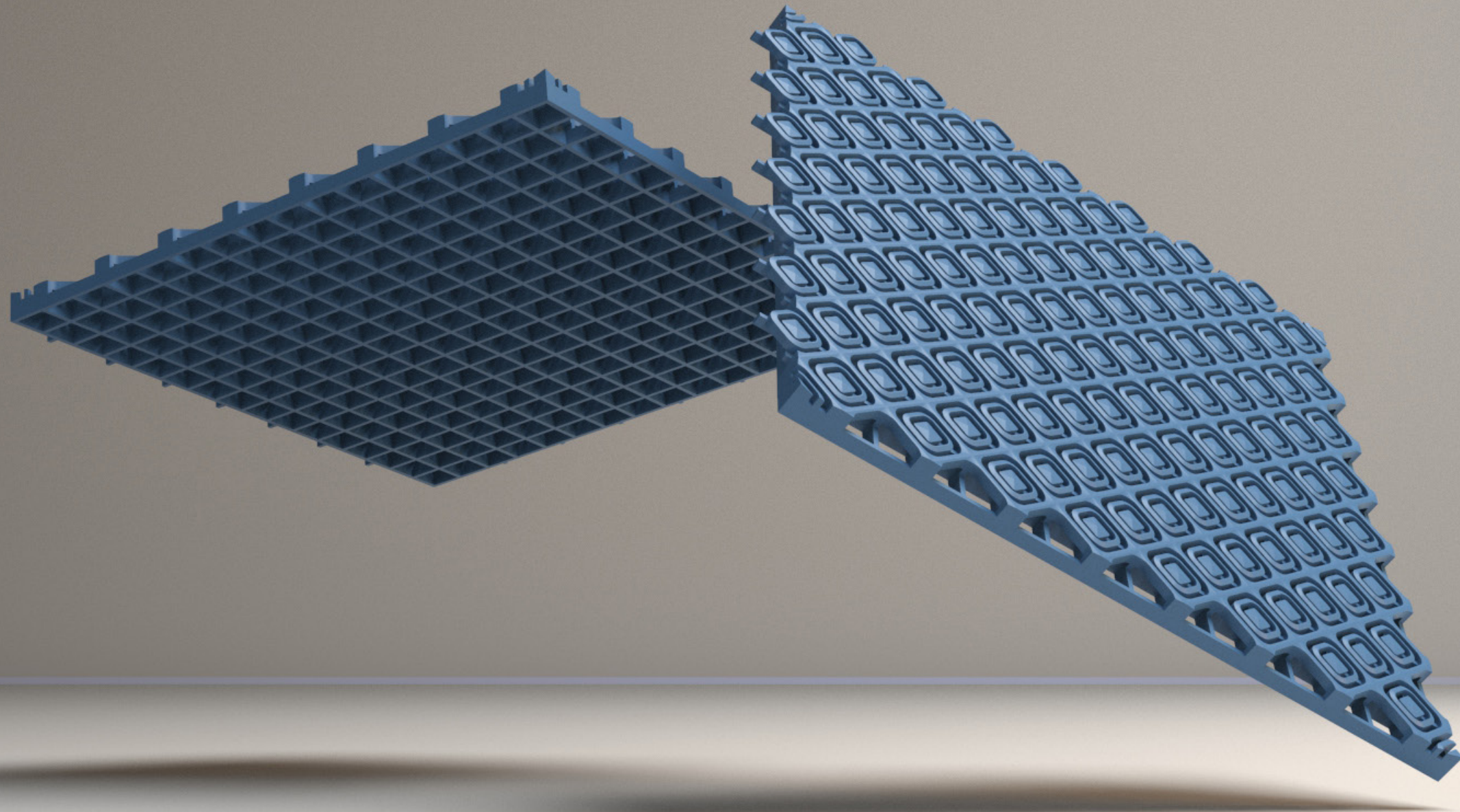
Staggered joint between two tiles



Tiles shown before interlocking



Final Concept



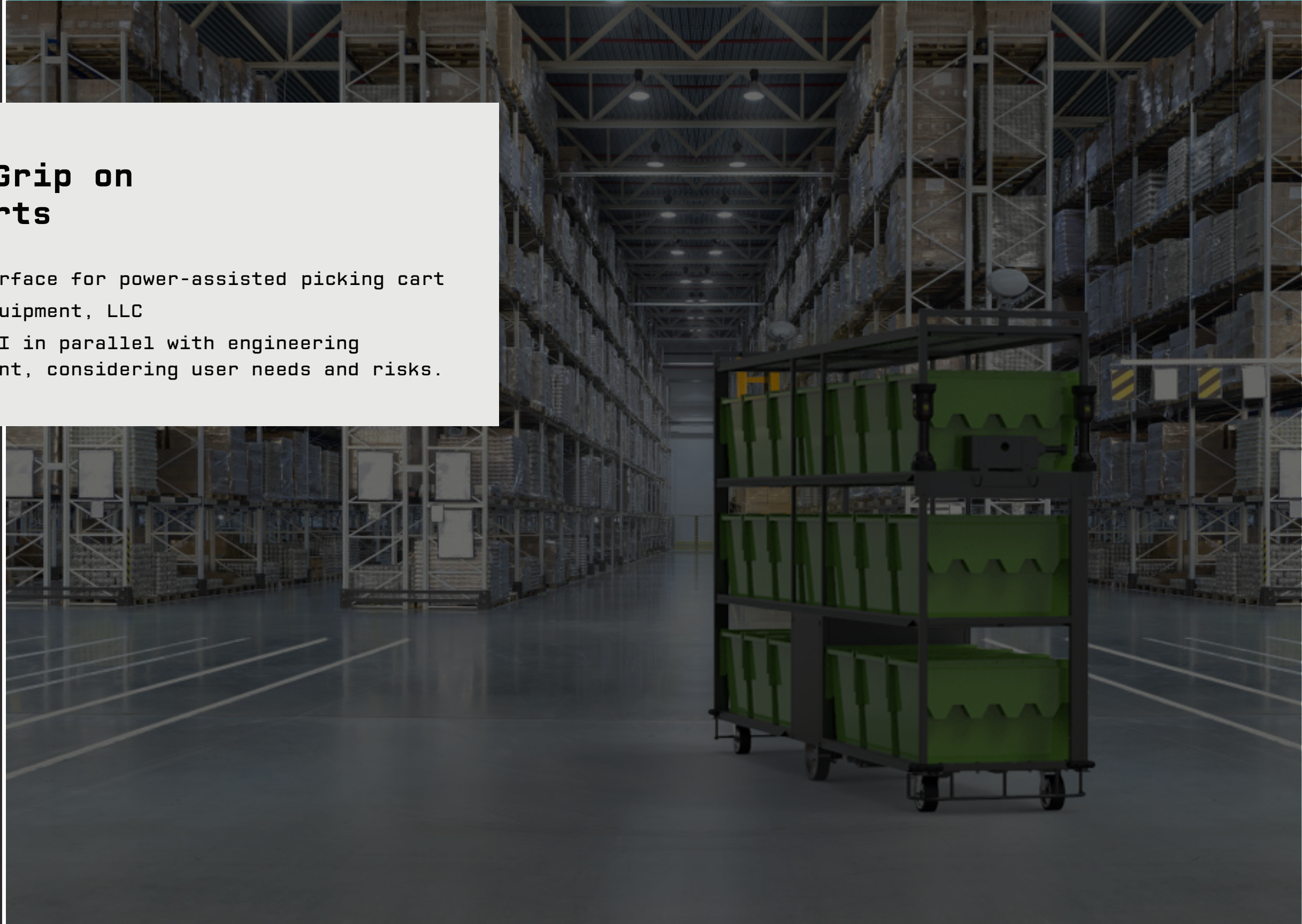


# Getting a Grip on Powered Carts

Project: User interface for power-assisted picking cart

Client: Cannon Equipment, LLC

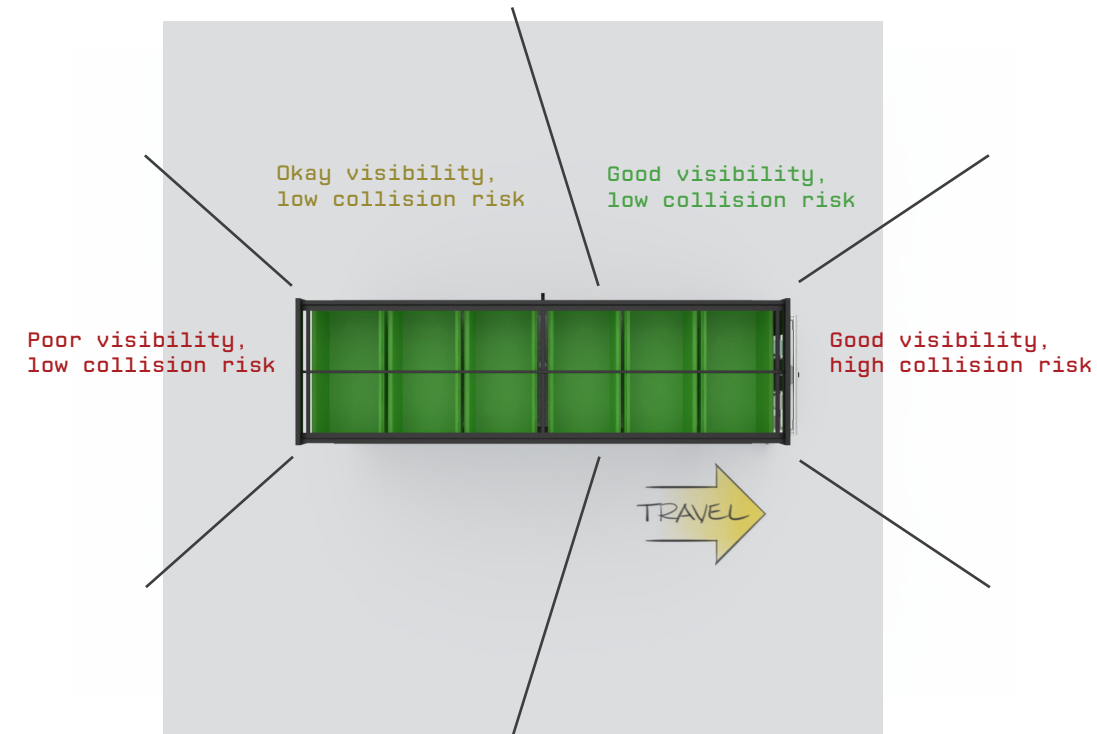
Goals: Develop UI in parallel with engineering development, considering user needs and risks.



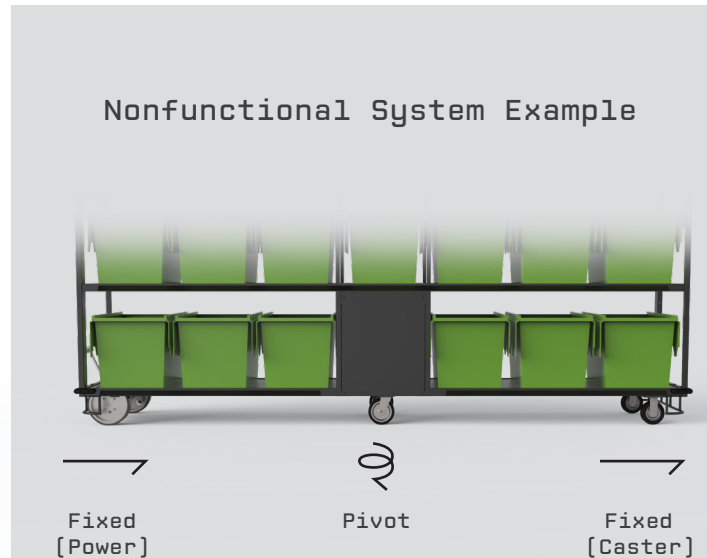


## Principles for a Safe, Useful UI

To start work on an undefined system, we created principles applicable across all 20+ potential configurations of power and steering systems.



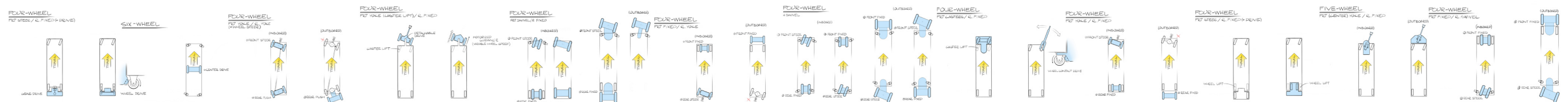
```
1 Control is preferred from front sides
  for safety and visibility
```



2 Power units must replace, abutt, or  
drive fixed casters to steer properly

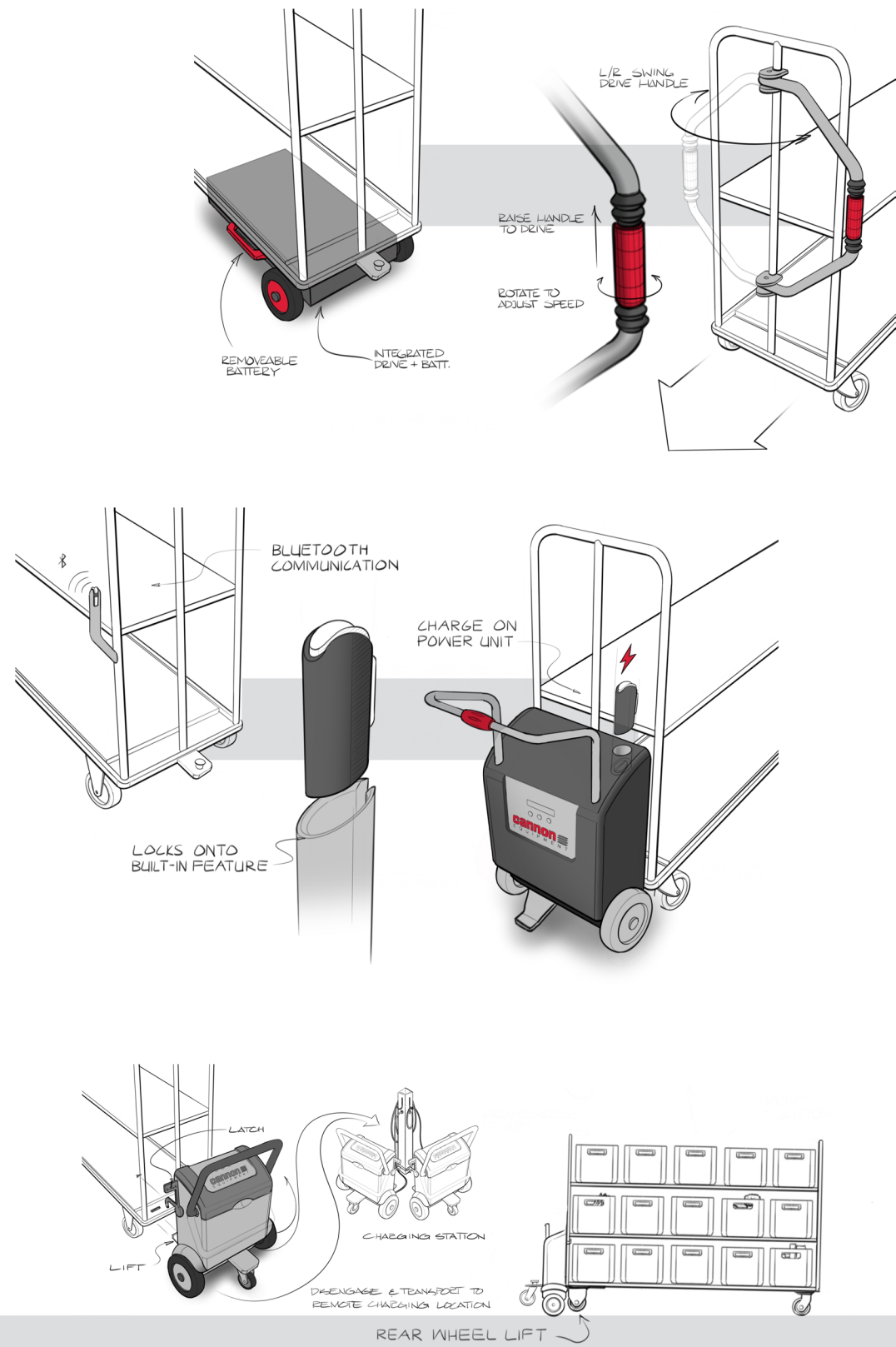
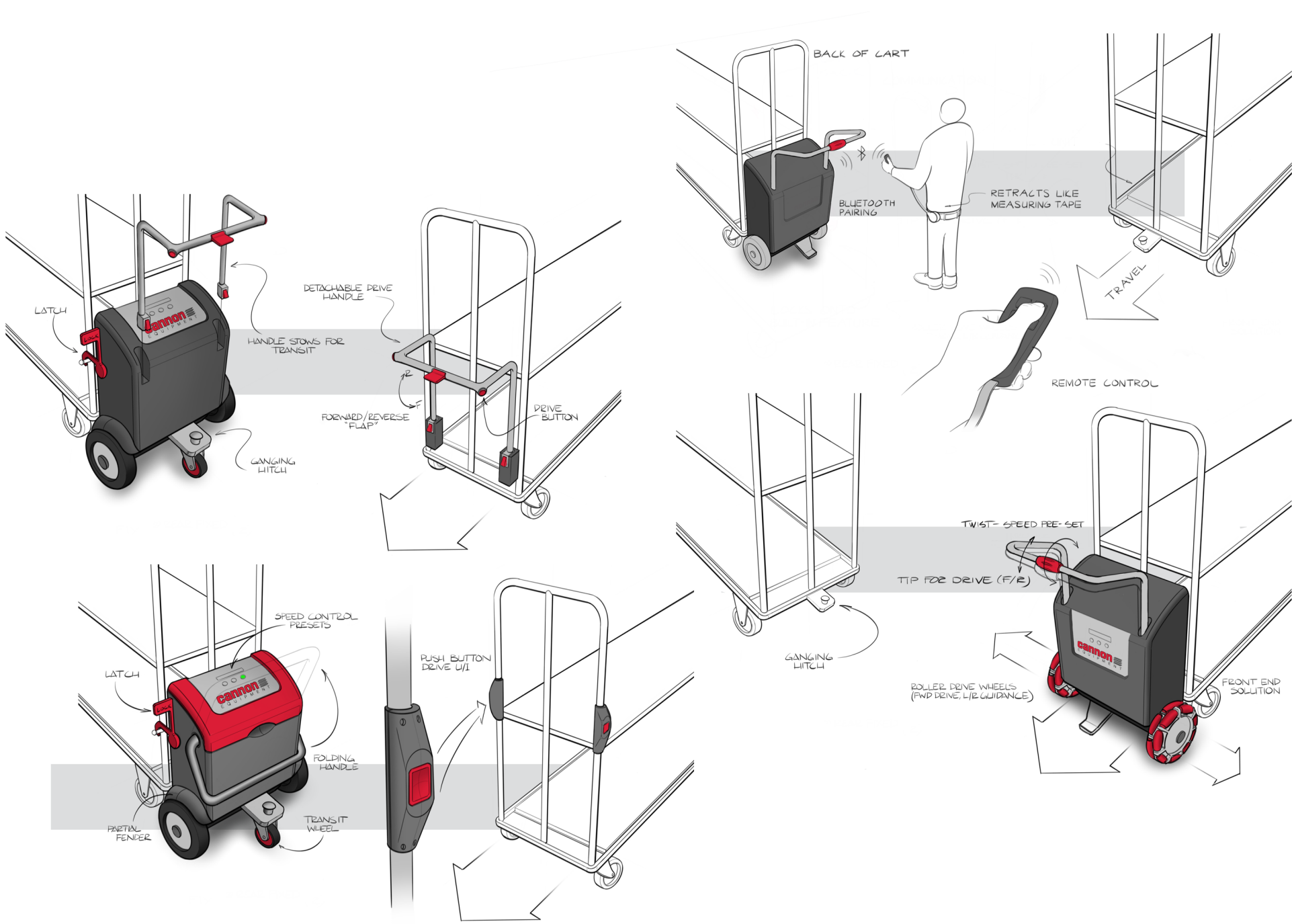


3 All UIs should incorporate a dead-man switch to prevent runaway carts





Concept Consolidation



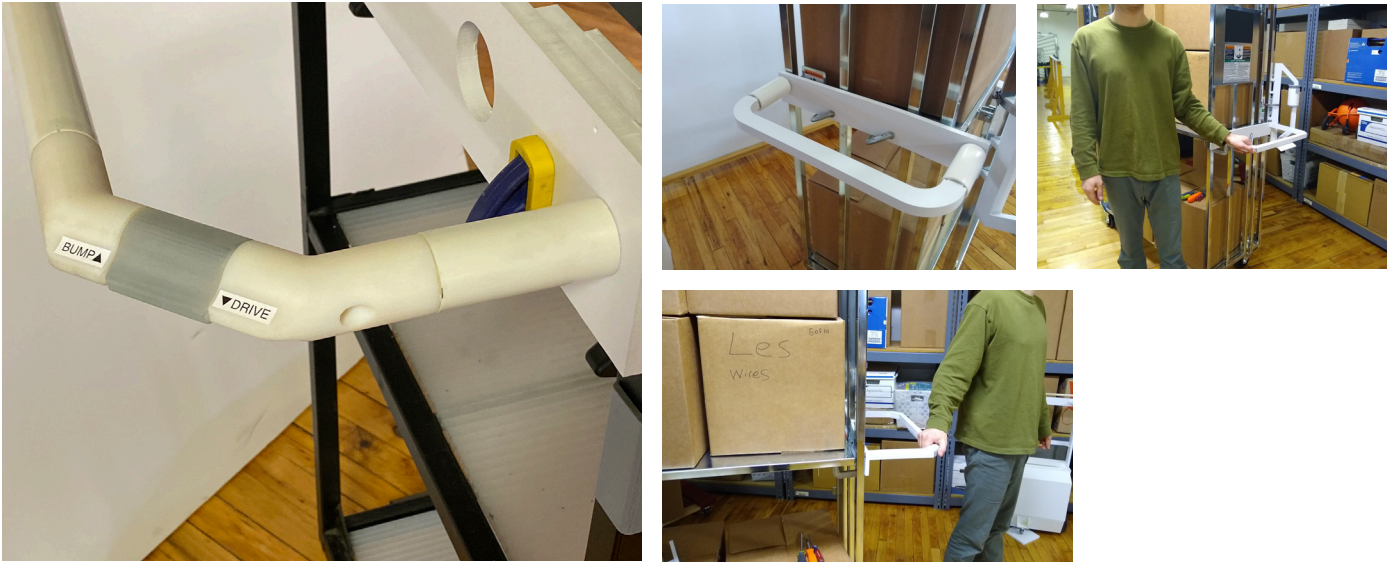


# Mocking Up Intention

Other  
Mockups



**Thumb Paddle UI** / Fin blocks accidental hits



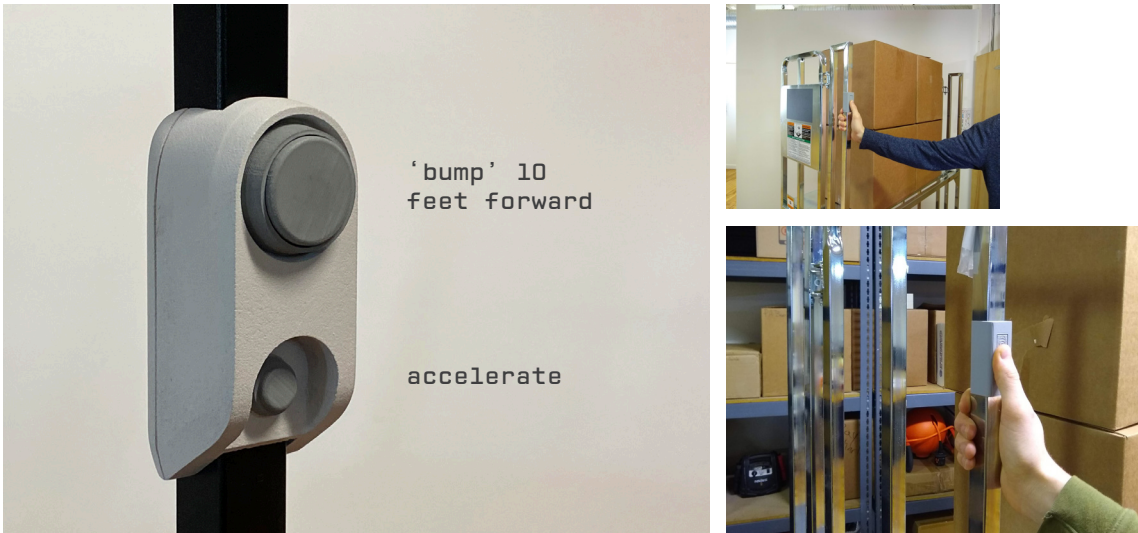
**Thumb Depress** / Easier to accelerate from cart side than front



**Sheath Lift UI** / Spring-loaded grip falls if not lifted



**Bus Button UI** / Guarded buttons allow for 'bump' or acceleration





# Alpha Prototyping

## A Impact Bumpers

protect handle from accidental impact in warehouse environment

## B Battery Indicator Light

clarifies cart battery left before recharge

## C Cherry MX [Keyboard] Switches

for “positive” feedback, long life





# Versamatic + Sandpiper Pump Consolidation

Project: AODD Pump Family Merger

Client: Warren-Rupp, Inc.

Goals: Combine pumps of two merging companies, streamlining maintenance without compromising either brand's unique identity.





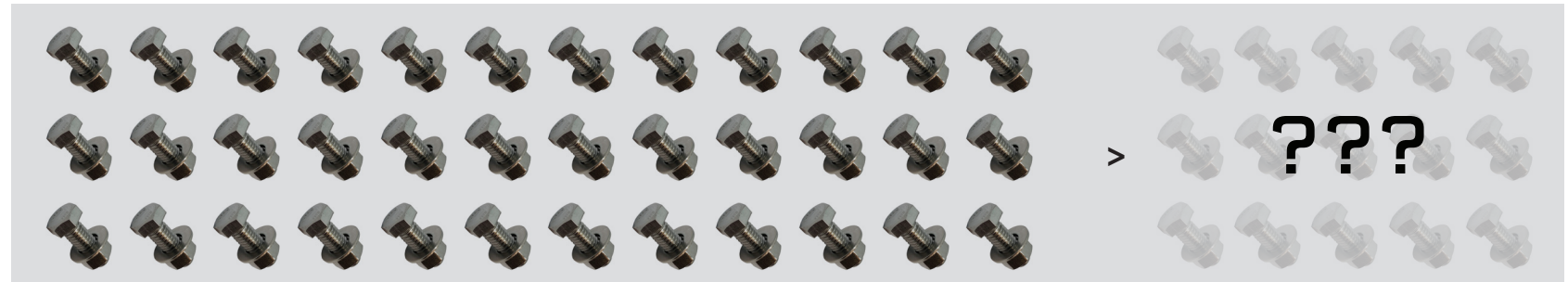
# Merging Two Pump Families

Both brands sell pumps to move acid, gravel-mud slurries, and other caustic materials.

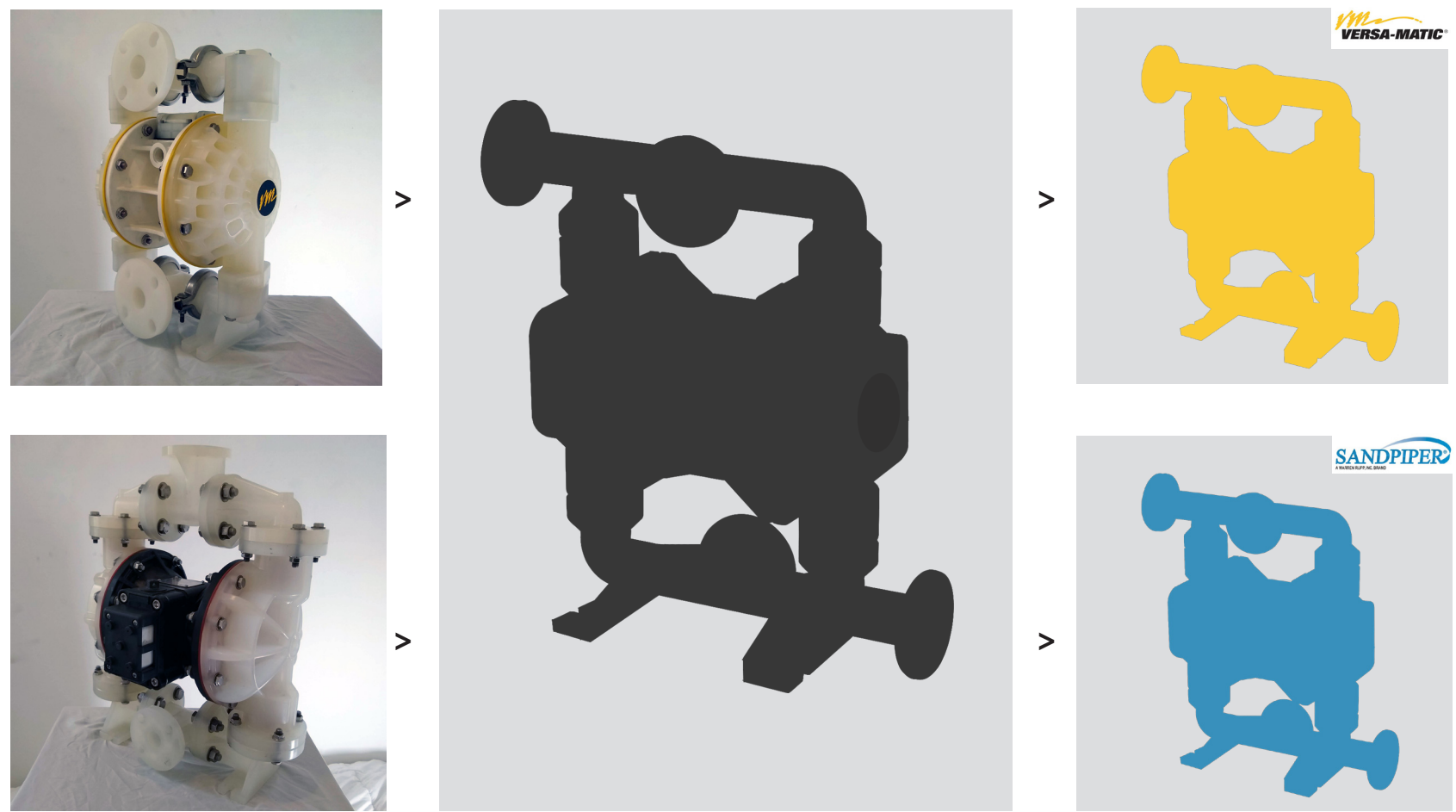
Regular maintenance is a pain point and an opportunity to improve customer experience.

Reduce  
Part  
Count

Typical Bolts Removed in Maintenance [both pumps comparable]

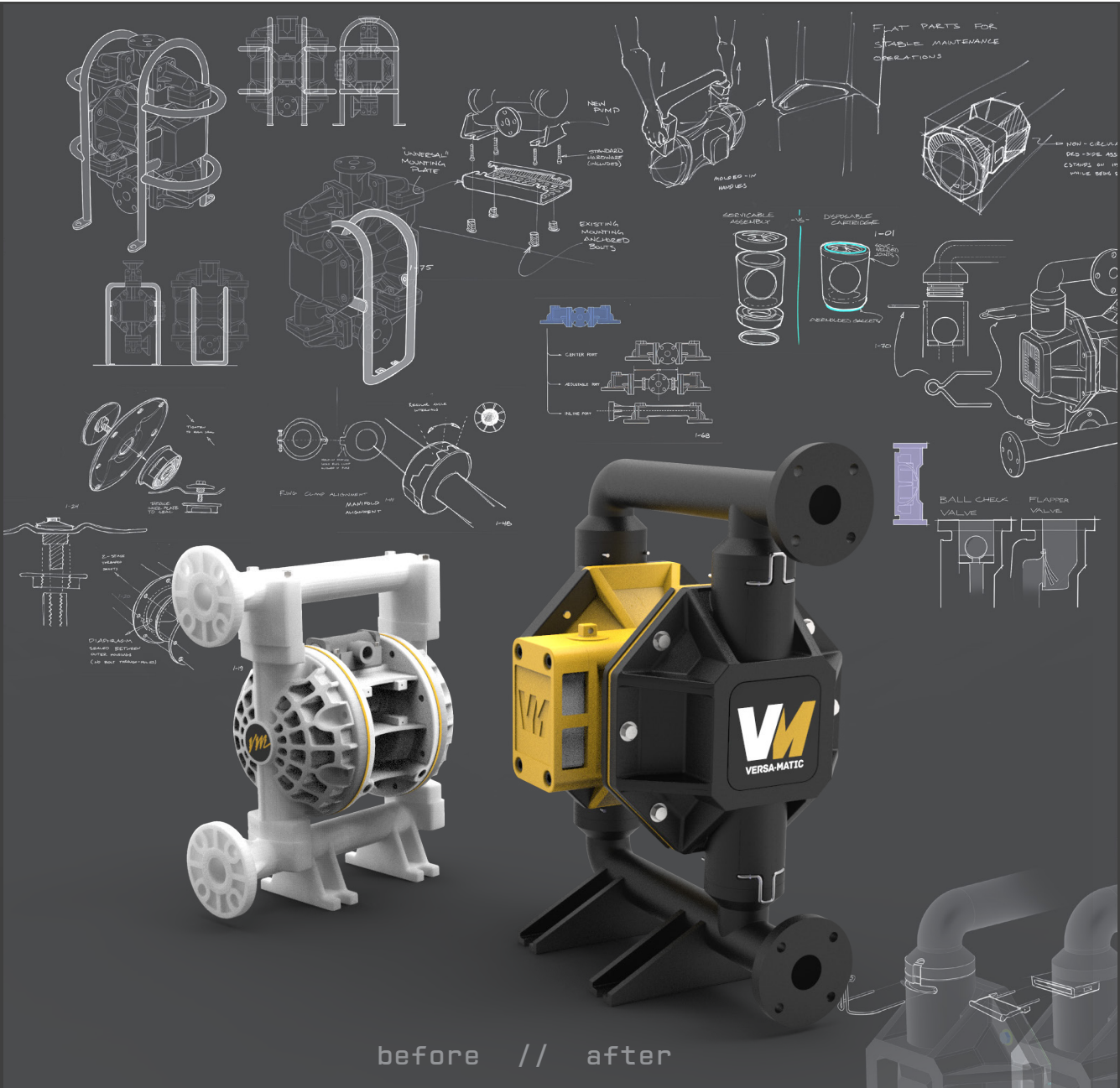


Merge  
Models  
without  
Merging  
Brands

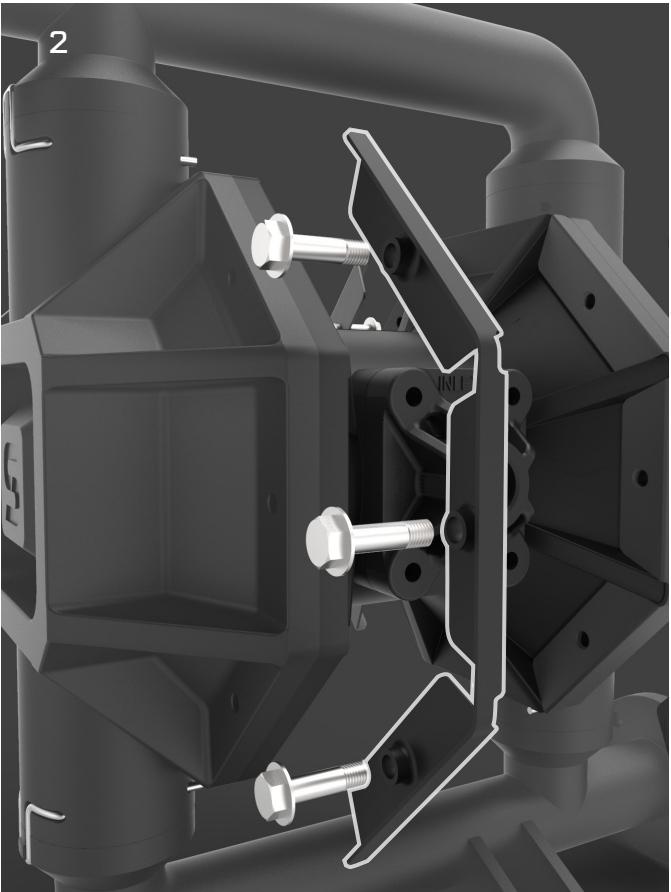
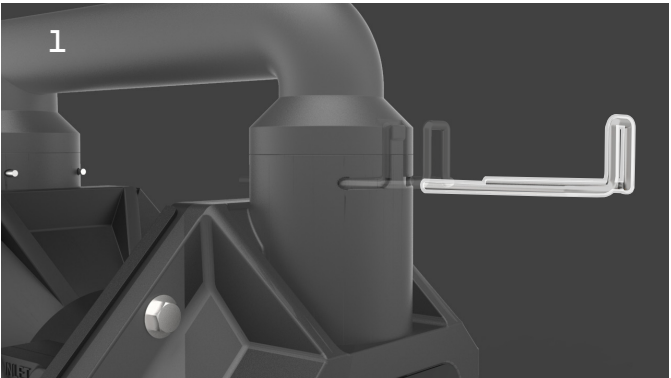




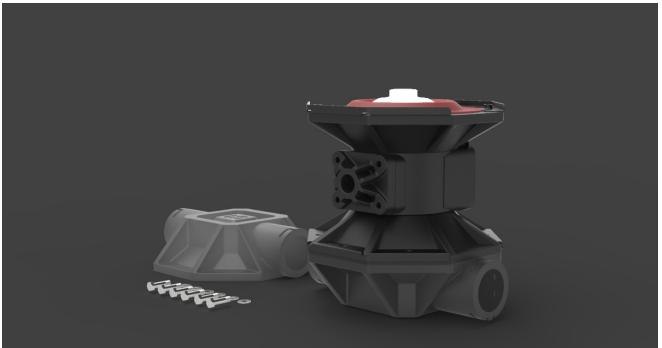
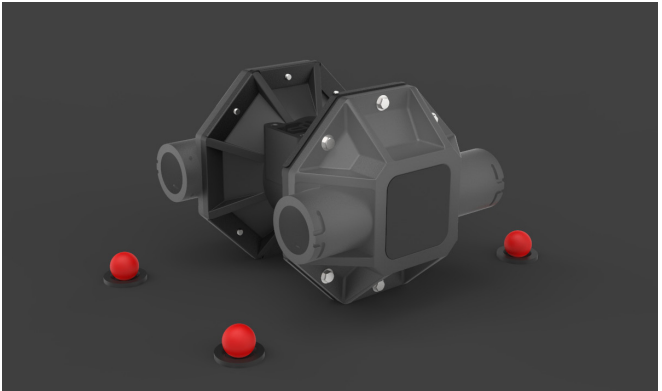
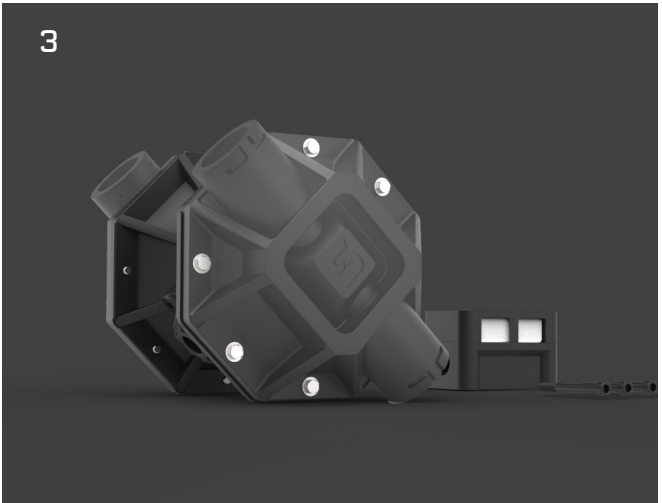
# Technical Improvements



- 1 Pins potentially replace two to four bolts each
- 2 Nut plates replace three bolts and simplify operation to one hand



- 3 Octagonal housing rests flat at every stage of disassembly





# One Pump, Two Languages

I imagined a different branding for both brands, with one [Versamatic] highlighted here

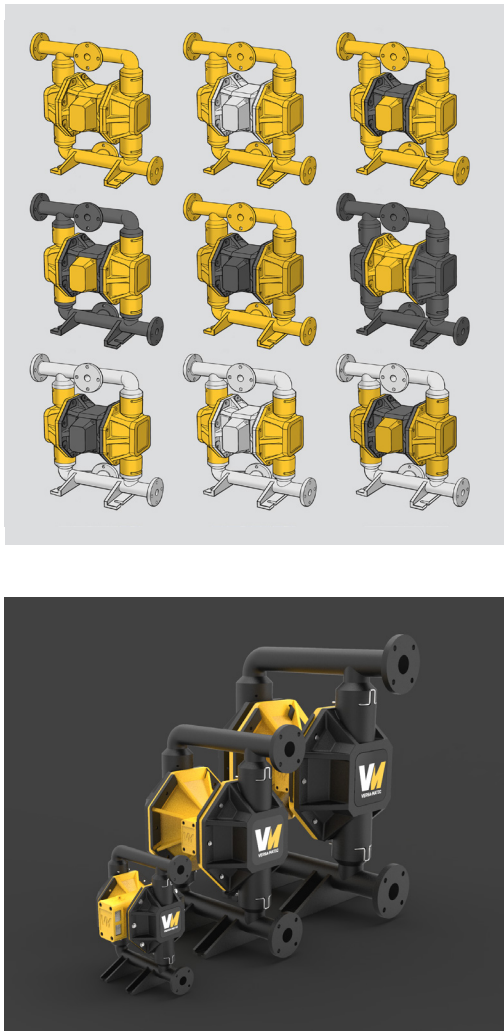
1 Goals included retaining the 'dynamic' feeling of the original and simplifying geometry



2 Original logo  
Mockup logo  
New company logo



3 Color exploration  
4 Render created to point towards a brand family



5 Metal plates are placed over the undesired logo, leaving the desired molded-in logo visible. Mold inserts could achieve similar effect.





ONE SIMPLIFIED PUMP, TWO UNIQUE BRAND IDENTITIES







## A High-Precision Vape Pen

Project: Adjustable-Dose Marijuana Vaporizer

Client: Alleviate Labs

Goals: Mock up then flesh out a THC + CBD  
vape pen to give users precise control  
over dosage and for predictable results.



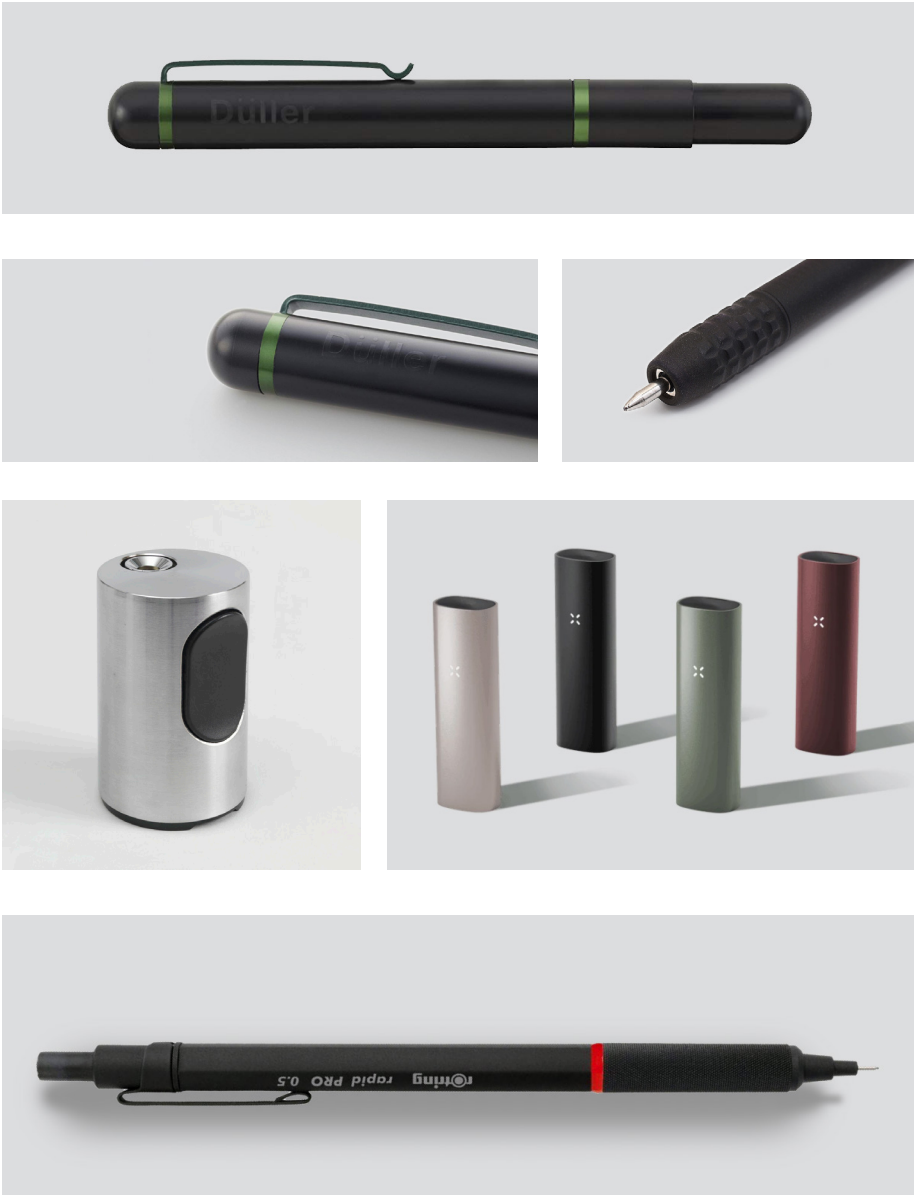
Attribution note:

This project's lead designer was Peter Muller [[peterpaulmuller.com](http://peterpaulmuller.com)] All sketches, CAD work, and renderings shown are my own, but the final form chosen by clients and UI design are his.

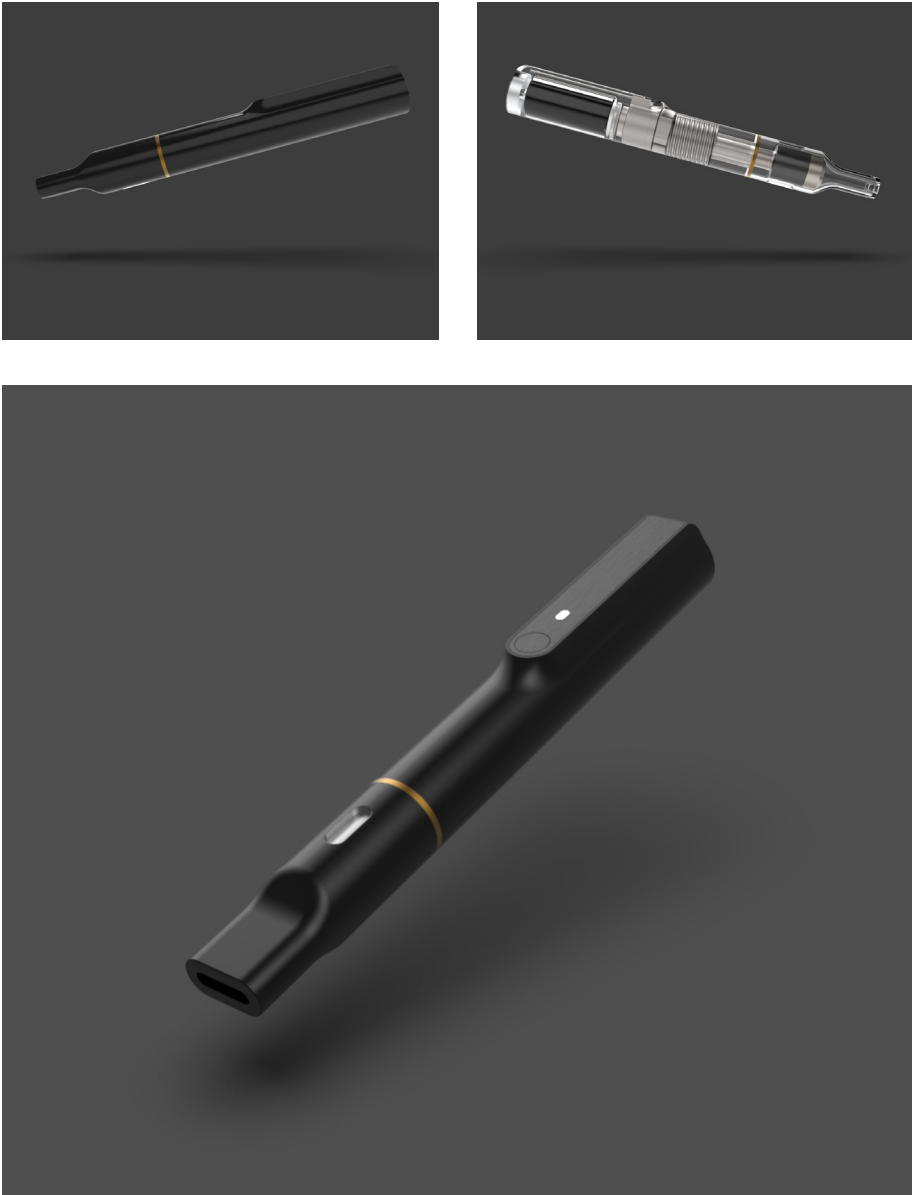


# A Sample, a 1-Day Mockup, and a Narrowed Scope

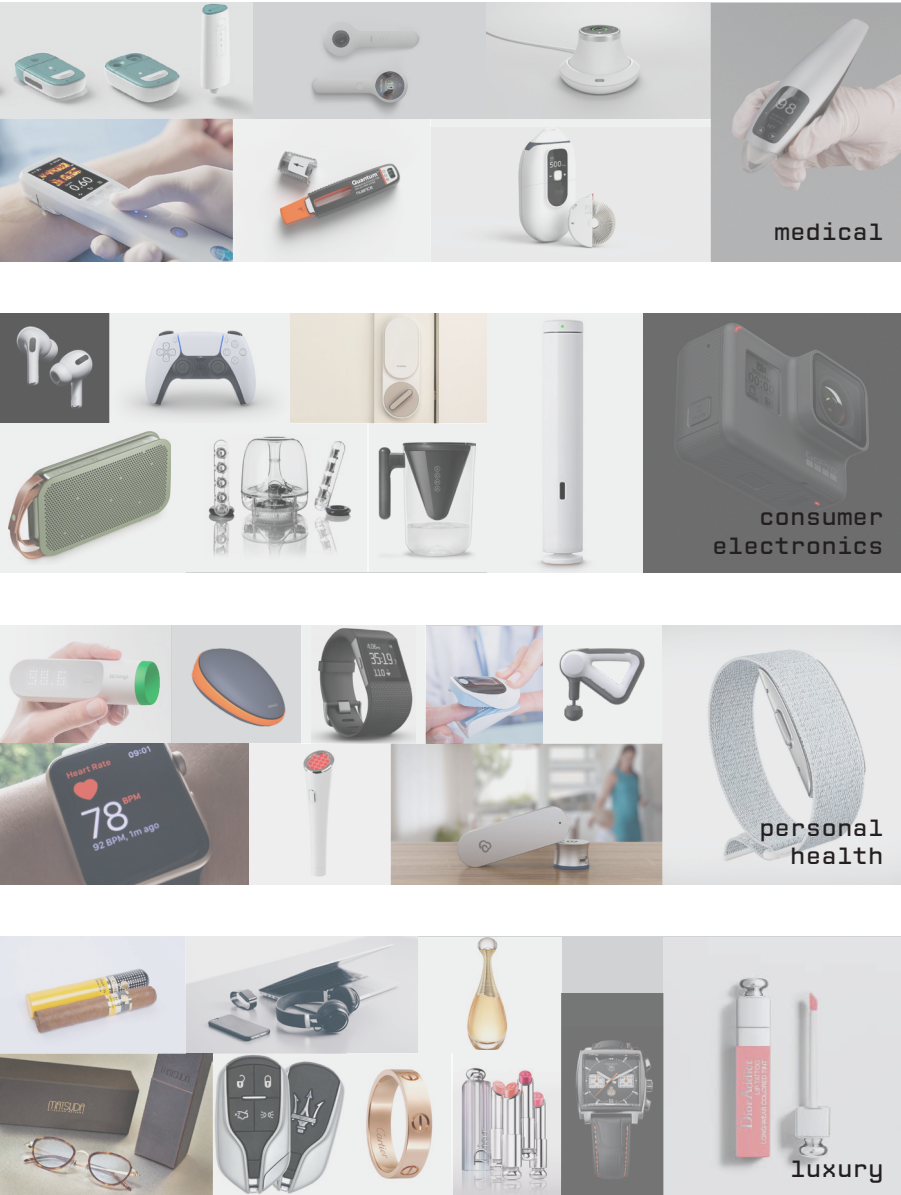
A selection of forms relevant for a minimal, high-precision dosing device.



I modeled and rendered a quick mockup for the clients to use in pitching the concept to investors.



Due to conflicting direction, we created mood boards to ask: What style speaks most strongly to you?





# Parallel Engineering + Design





# Alleviate Labs Adjustable-Dose Vaporizer



< **glossy mouthpiece**  
for easy cleaning

< **removable cartridge color band-**  
indicates sativa / indica / cbd strain

< **black and white display**  
for battery, cartridge level, current  
dose setting

< **directionally textured buttons**  
allow no-look increase or decrease of  
dose



# A Battery of Ant Baits

Project: Ant Bait Product Pipeline

Client: Spectrum Brands

Goals: Identify market opportunities, brainstorm,  
and create a number of concepts to be  
developed commercially over the next 5 years.





# Baits Opportunity Identification

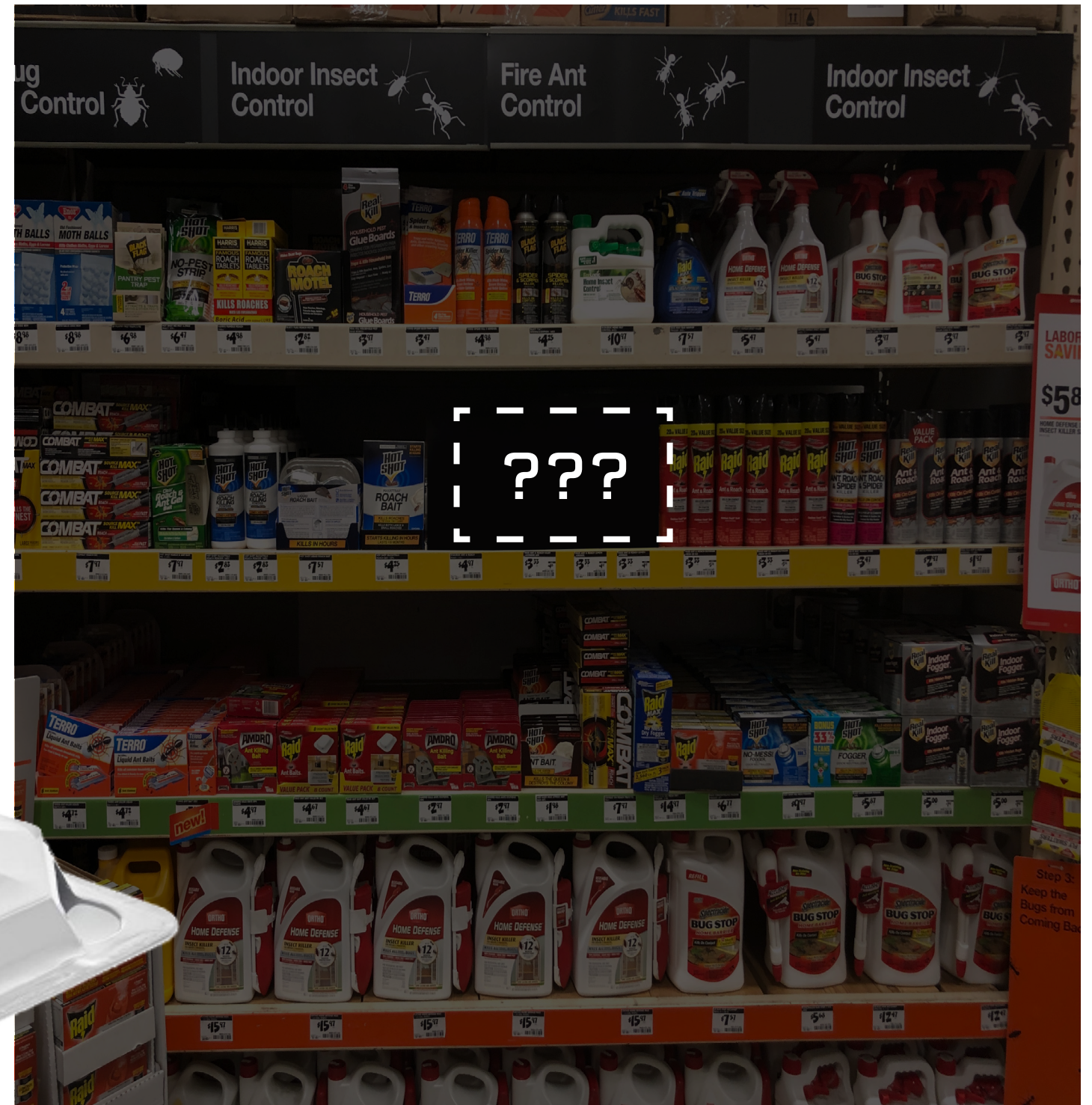
## 1 Market Opportunities

All major brands tell similar stories [fear, power, and lethality] in their packaging.

## 2 Product Opportunities

Most products in this category are shaped by engineering constraints as much as user needs.

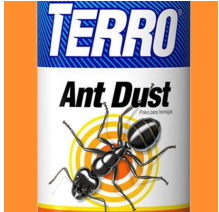
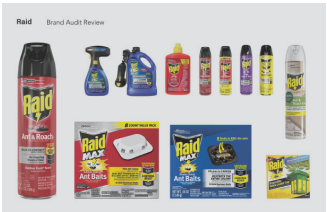
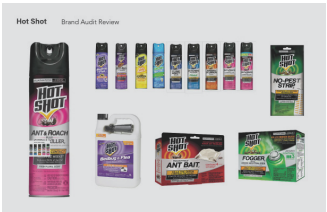
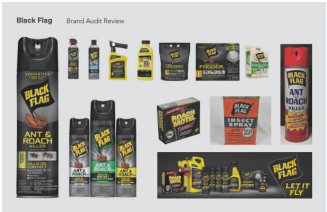
Attention paid to pain points like the 'ick factor' and the shame associated with pest problems could tap into powerful emotional needs.





# Brand Opportunities

Ant bait graphic elements all say the same thing: Kill



Is there opportunity in some different direction?



minimal, efficacious



playful, humorous



safe, natural



modern, neutral

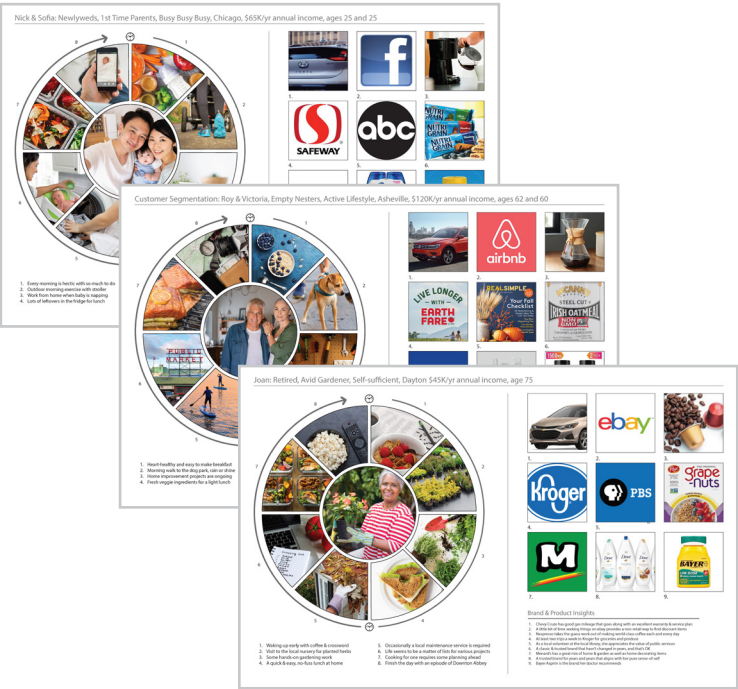
I noticed all baits have a version of: bold logo, a weapon, a dying ant, and a visual indication of power.

I then made [rough, 2-hour] mockups to illustrate for clients some brand languages beyond current the one brands use.



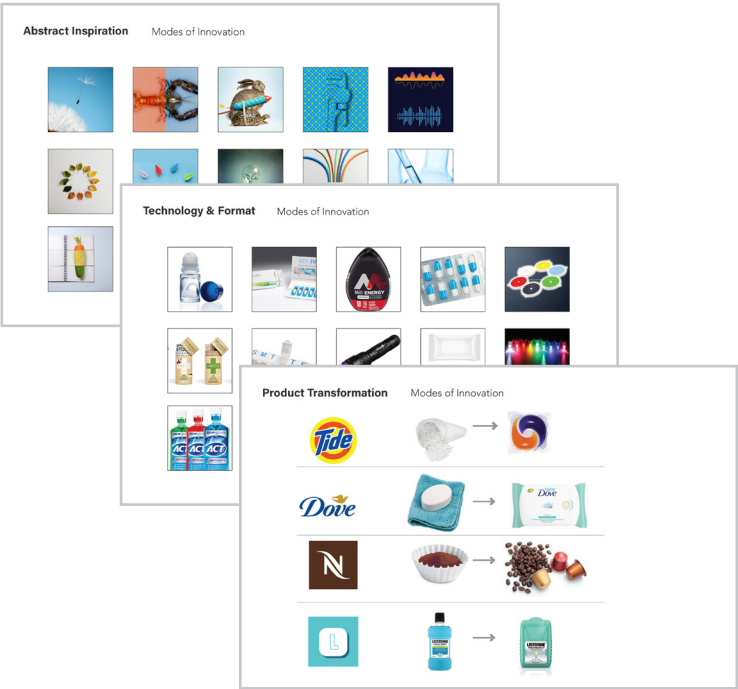
# Product Opportunities

## Consumer Profiles



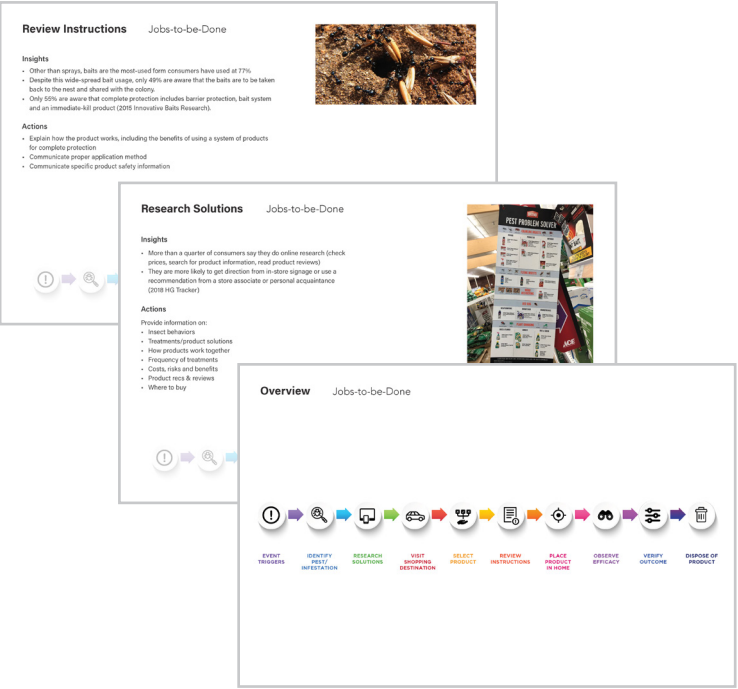
“What needs of a user like Victoria are not being met already?”

## Modes of Innovation



“What would the pest control version of mouthwash strips look like?”

## Jobs-to-be-Done



“What options do we have to create a moment of connection in the aisle?”

This stage concluded with a stack of brainstorm topics, a ream of printer paper, and box of pens.

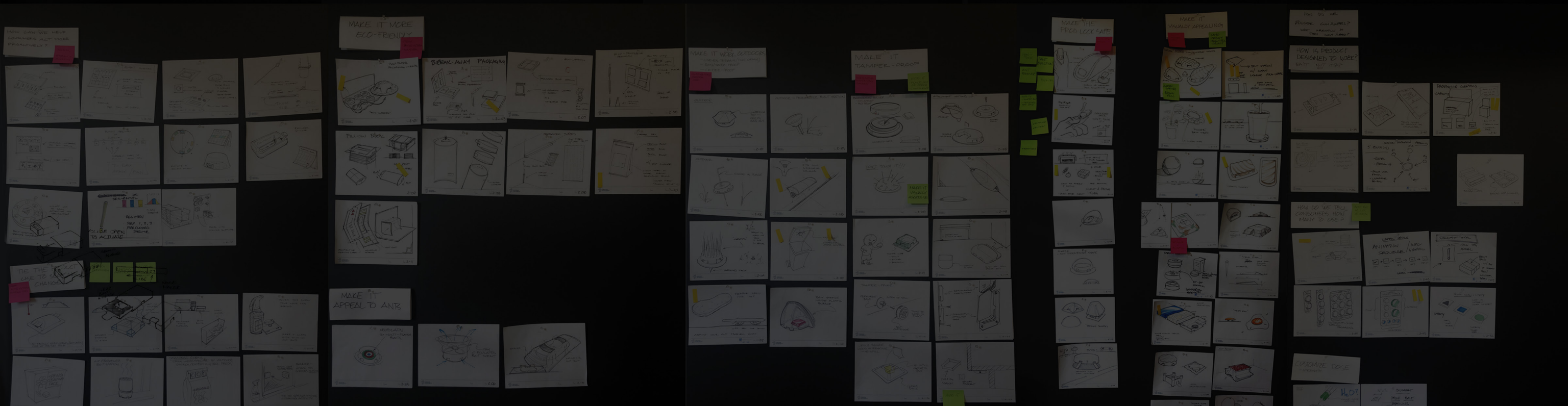


**Ideation**

After a guided brainstorm with clients and a series of internal ones, finding direction was a bigger challenge than enough ideas.

**Ideation**

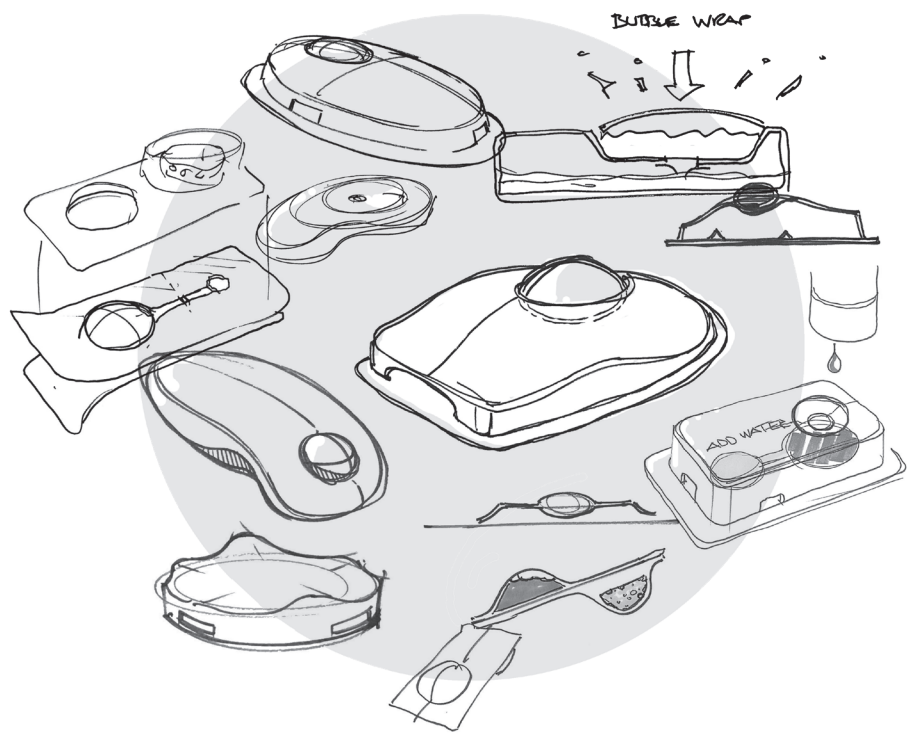
After a guided brainstorm with clients and a series of internal ones, finding direction was a bigger challenge than enough ideas.





# Conceptual Design

## 1. Explore



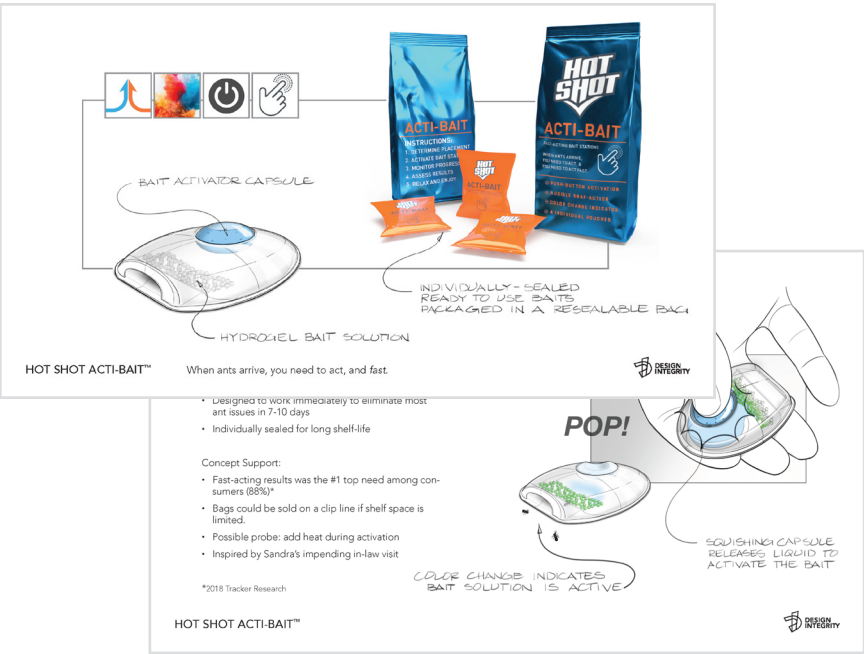
Sketch through details and variants on thirteen chosen 'concept areas'

## 2. Refine



Mock-up and model to evaluate manufacturability and interaction experience.

## 3. Explain

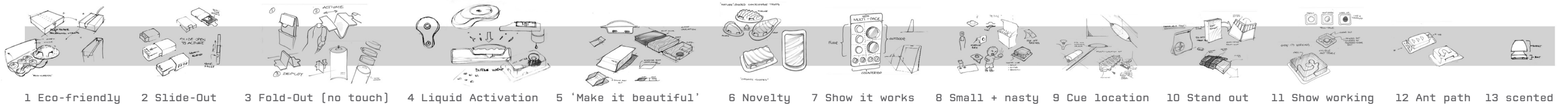


Presenting each concept to clients in an engaging, easy-to-absorb way.

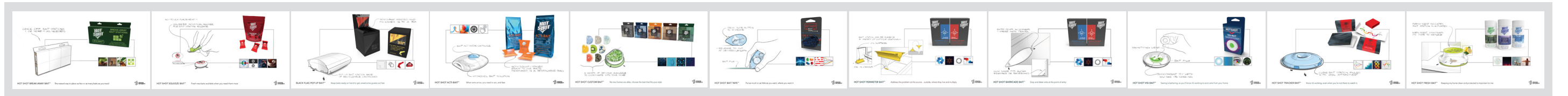


## Preparation for User Research

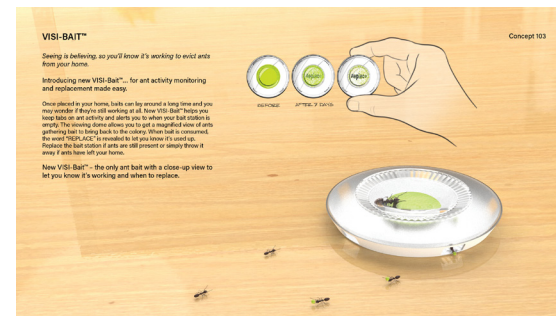
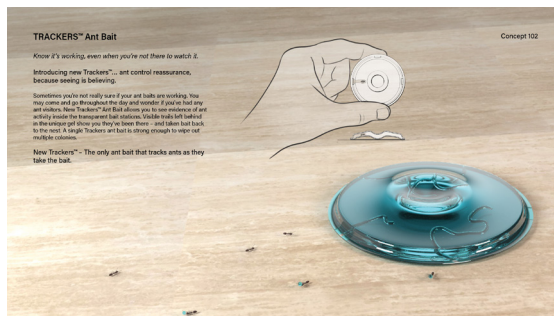
### 13 Concept Areas selected from ideation



## 10 Concepts elevated and explained

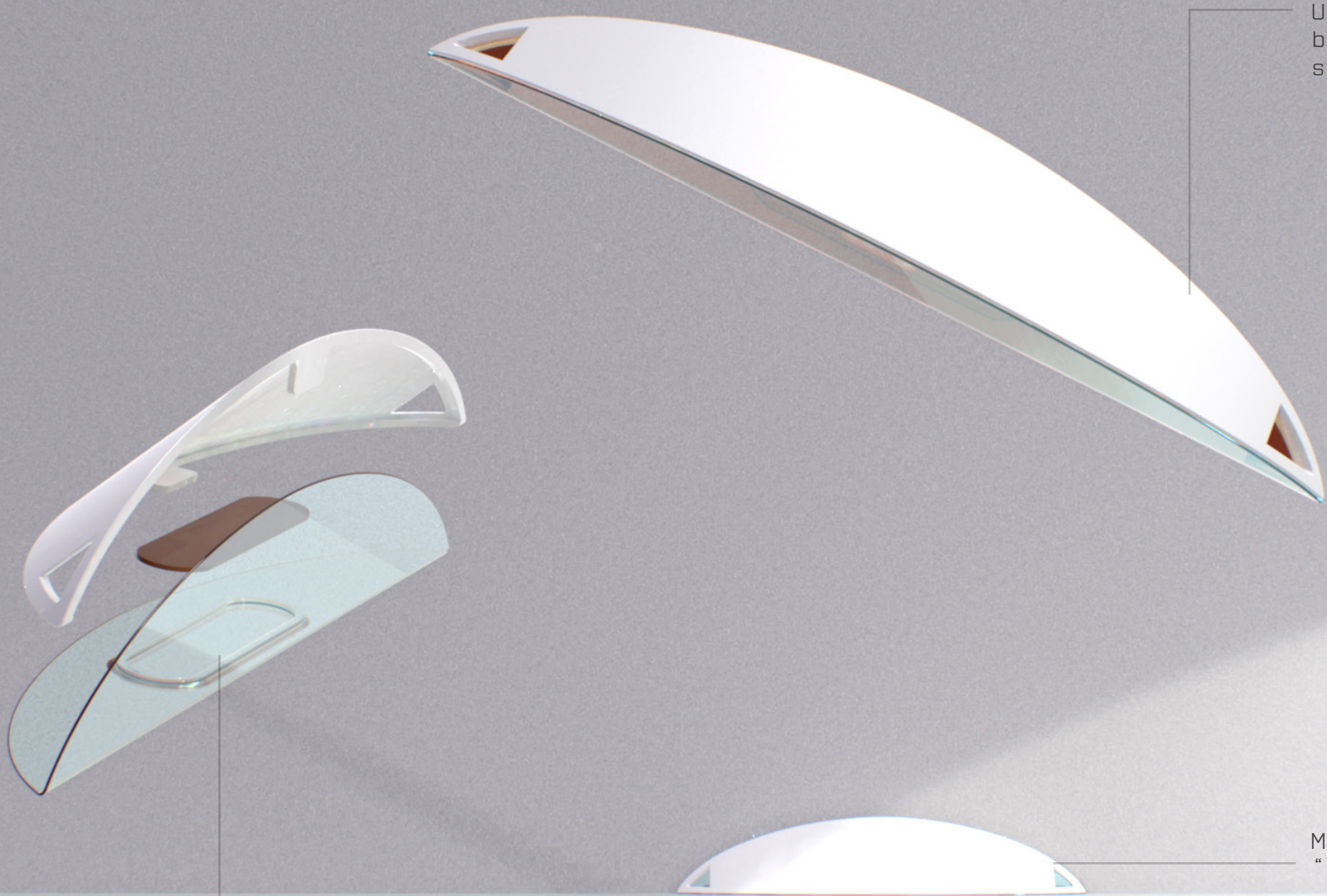


## 7 Preferred Concepts modeled, rendered, and animated for user research





**Barricade Bait** I elevated users' favorite concept to illustrate a possible outcome.

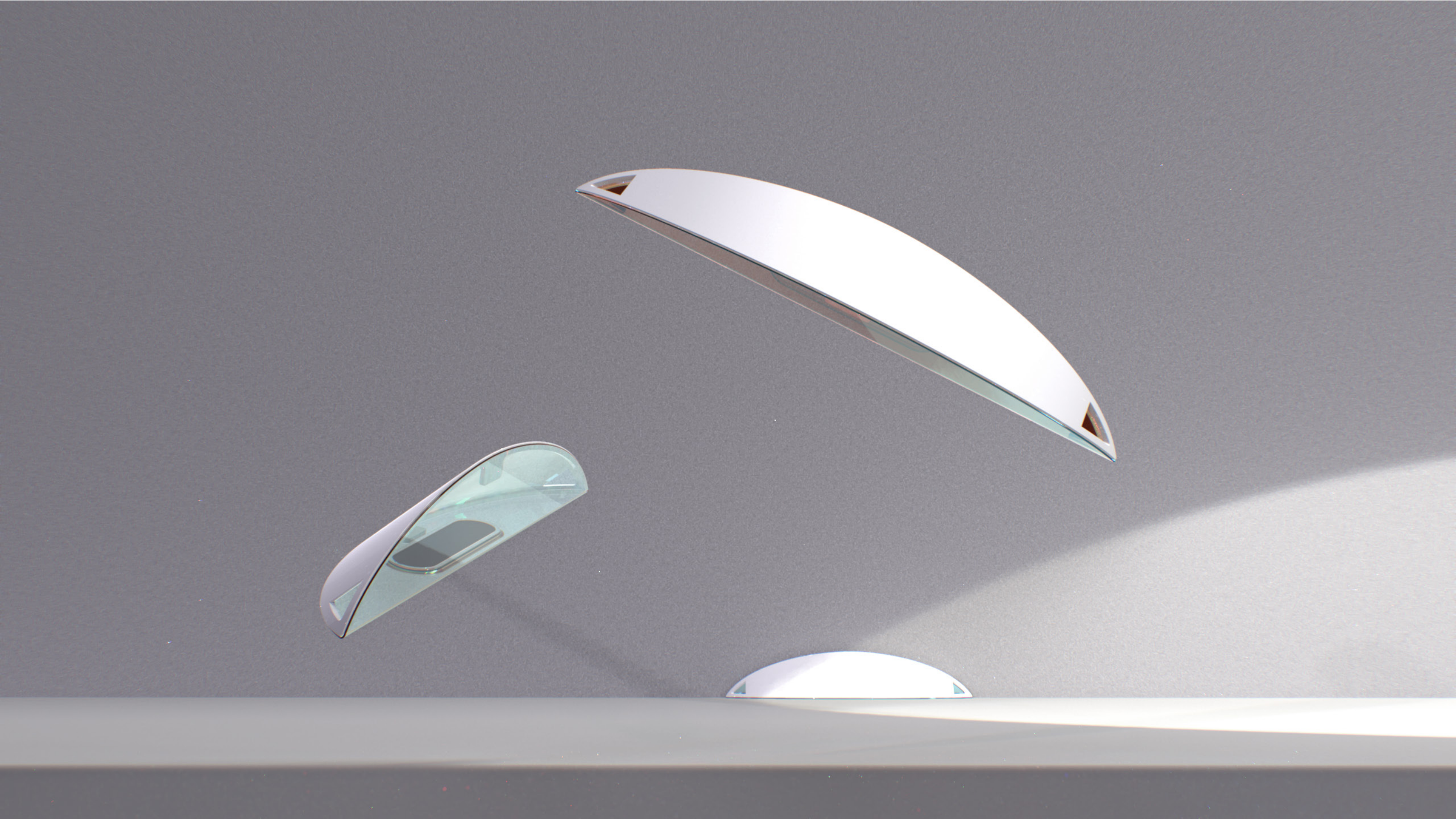


Users liked checking whether VisiBait concept still contained bait

Users preferred not to see the bait [or ants!] in everyday use so one opaque side was retained

Matte finish chosen to maximise "discreet look" users liked







**Thanks for looking!**

Questions, critiques, or a conversation  
are all welcome. Just send me an email  
at or give me a ring to get in touch.

**-Brian**