



current

1

DESIGN
PROCESS

DESIGN
GOAL

2

3

FINAL
DESIGN

DESIGN
RATIONALE

4

5

REFLECTION

A G E N D A



1

DESIGN
PROCESS

AN OVERVIEW

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Idea generation

Themes and Emotions
Embryonic Storyboard

Feedback

Dot Voting
Peer Discussion

Understanding Fear

Concept Portrait

Understanding weather apps

Break-Up/Love Letters
MDA Framework

Hi-Fi Prototype

Create mock-ups in Sketch

Sketching

Paper Prototyping
Finding inspiration

Fiction Development

Literature
Papers
Books

Background Research

Literature
Papers
Articles

Evaluation

UX Curve
Speculative Futures diagram

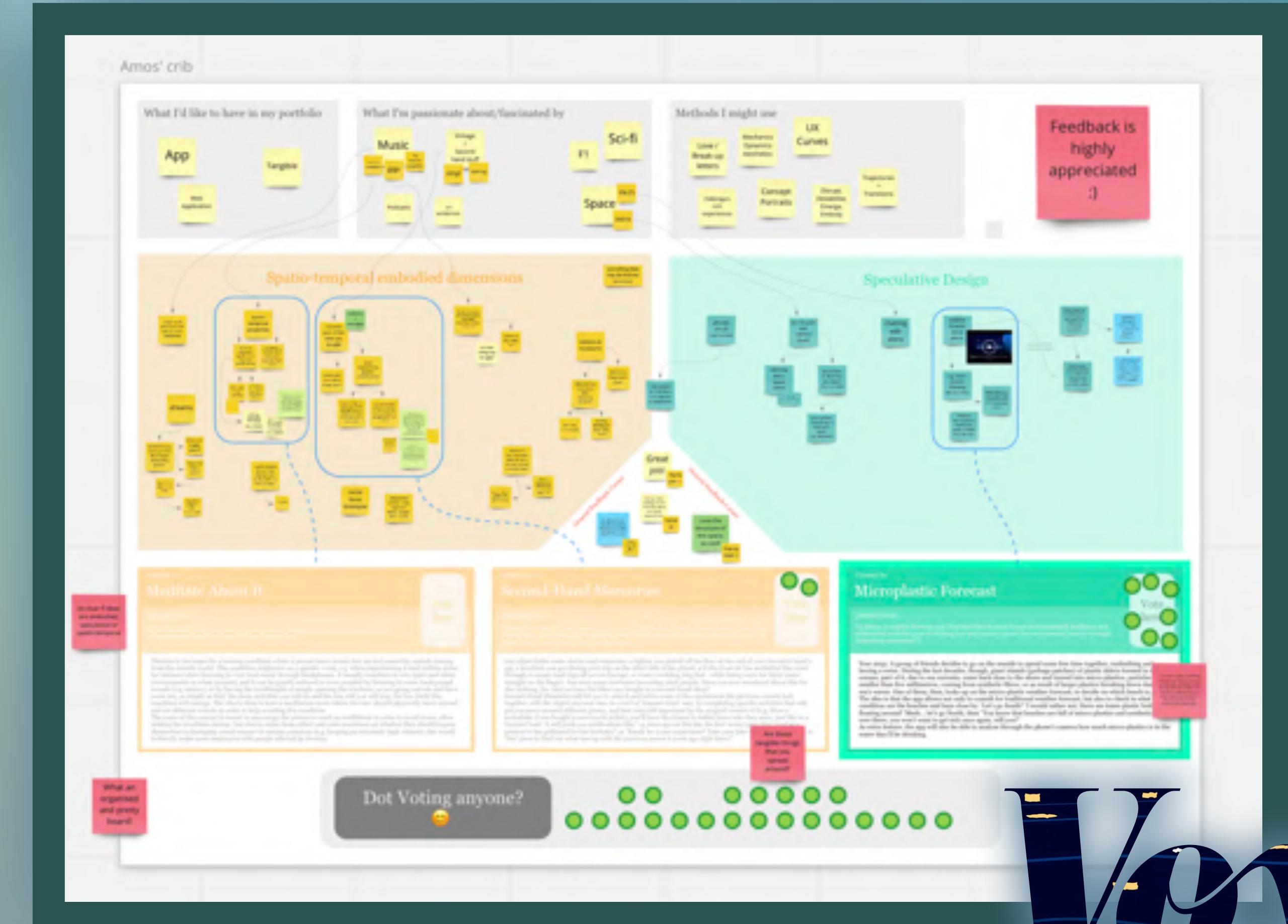
Implementation

Refine final design

a bit stuck :(

IDEA GENERATION

- Dreams collector
- Songs recalling memories
- Tinnitus relief meditation app
- Word of mouth letters
- Second-hand memories, discover past of the items you own
- Rating app for gigs, connect people
- Weather aquarium
- Immersed visitors at museum
- **Microplastic forecast/report**
- Chat with aliens
- Launch own satellite objects
- Future world with rationed water and food



Vox

A STORYBOARD

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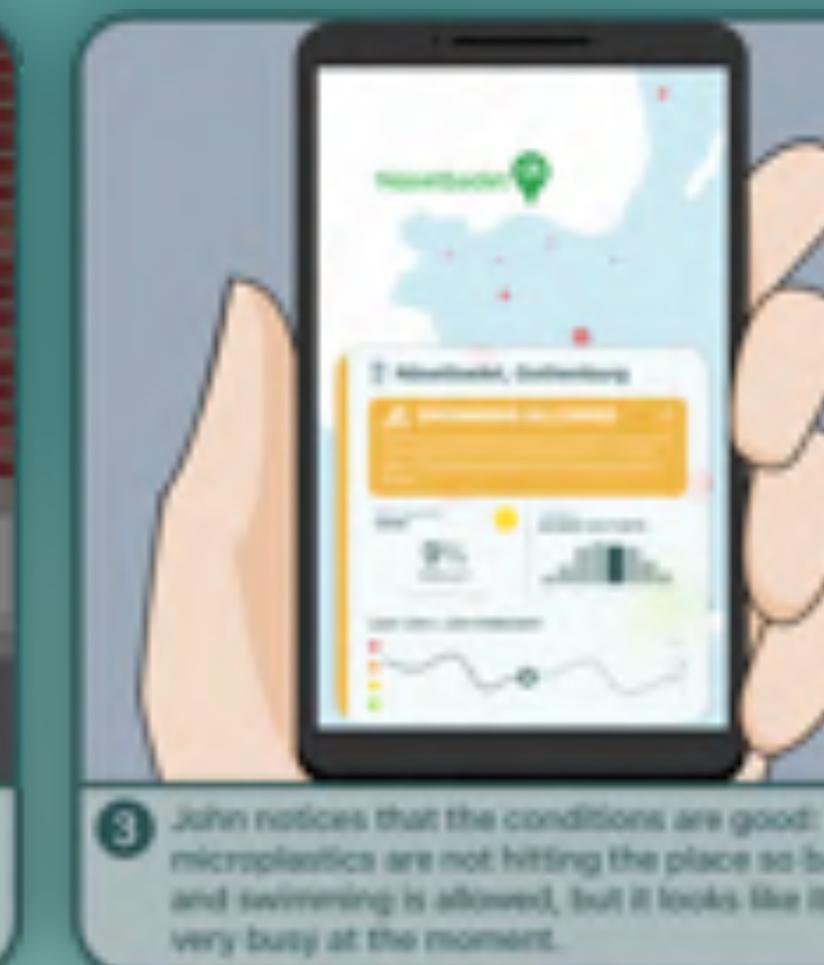
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1 John invites his friends Emma and Jack to his house. They think about what to do the whole afternoon, until Emma suggests to go to a beach and hang out over there.



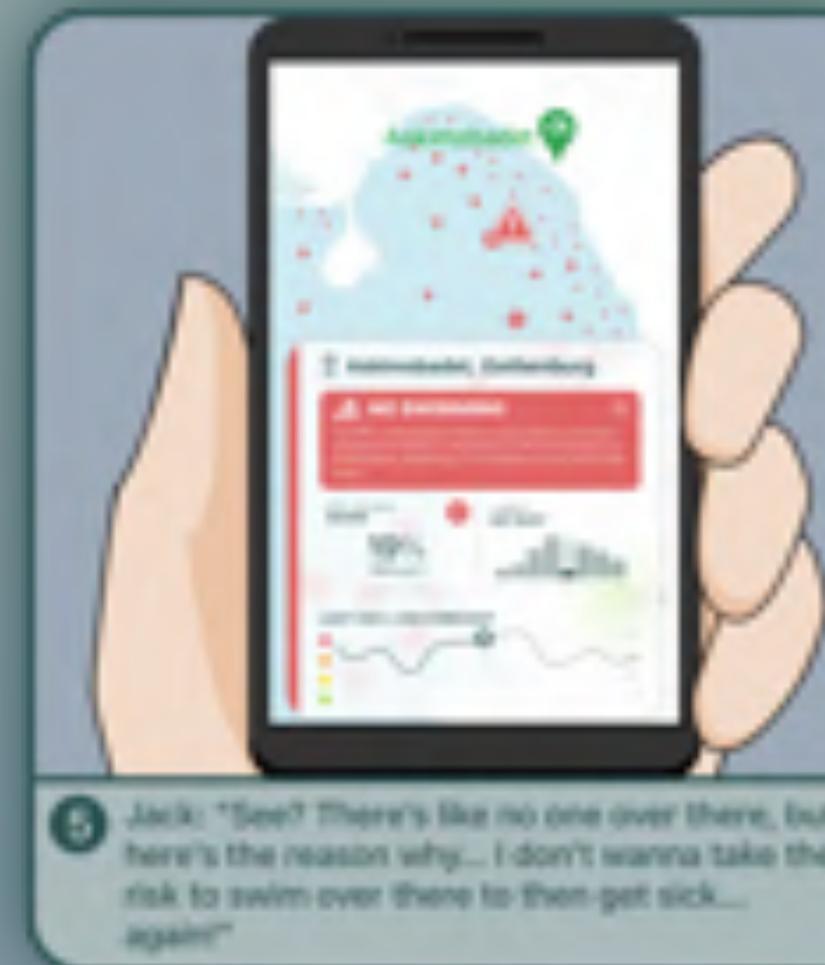
2 John, Emma and Jack decide to go to Hässelbäck, so they go to the closest bus stop. John thinks they should check Current to see how are the conditions, so he takes his phone out.



3 John notices that the conditions are good: the microplastics are not hitting the place so bad, and swimming is allowed, but it looks like it is very busy at the moment.



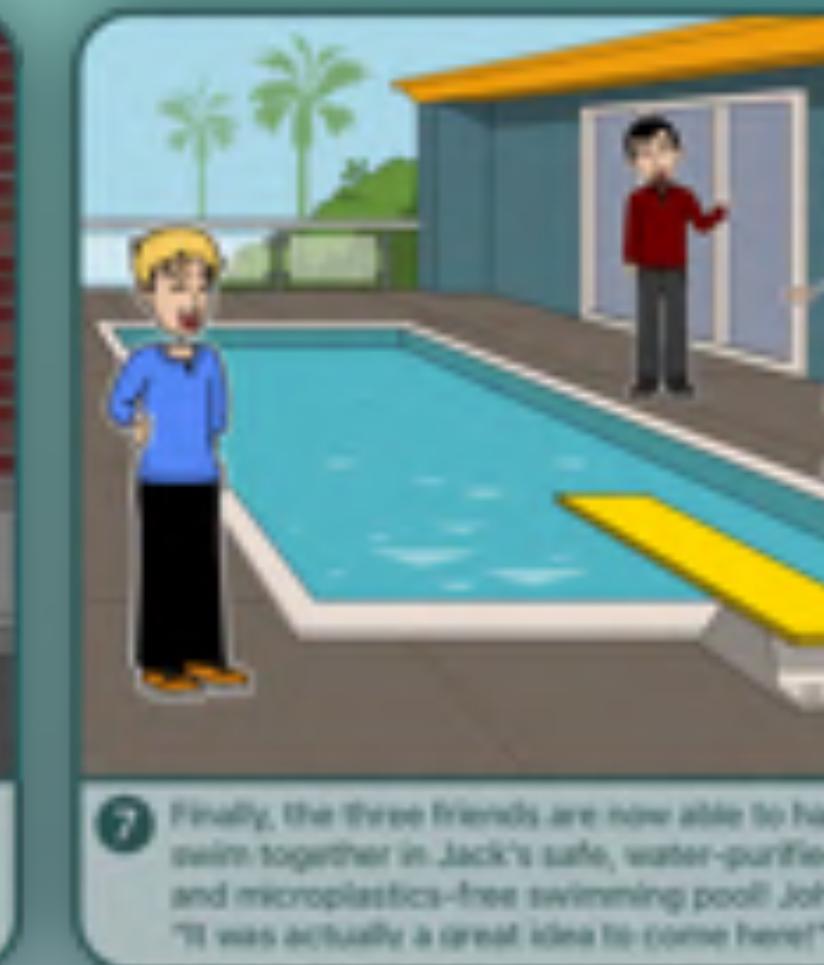
4 John tells his friends about this. So Emma says: "I got one! Should we check out Askimslädet?" Jack: "Yeah, there's no way! I'll check on Current but it's always so polluted over there..."



5 Jack: "See? There's like no one over there, but here's the reason why... I don't wanna take the risk to swim over there to then get sick... again!"



6 Emma: "C'mon guys, whatever! We're gonna figure it out, I'm getting in the water today." Jack: "You know what? Let's go to my place, you remember I have a swimming pool?"



7 Finally, the three friends are now able to have a swim together in Jack's safe, water-purified and microplastics-free swimming pool! John: "It was actually a great idea to come here!"

fear [fir] (noun) a feeling of concern about somebody's safety or about something bad that might happen



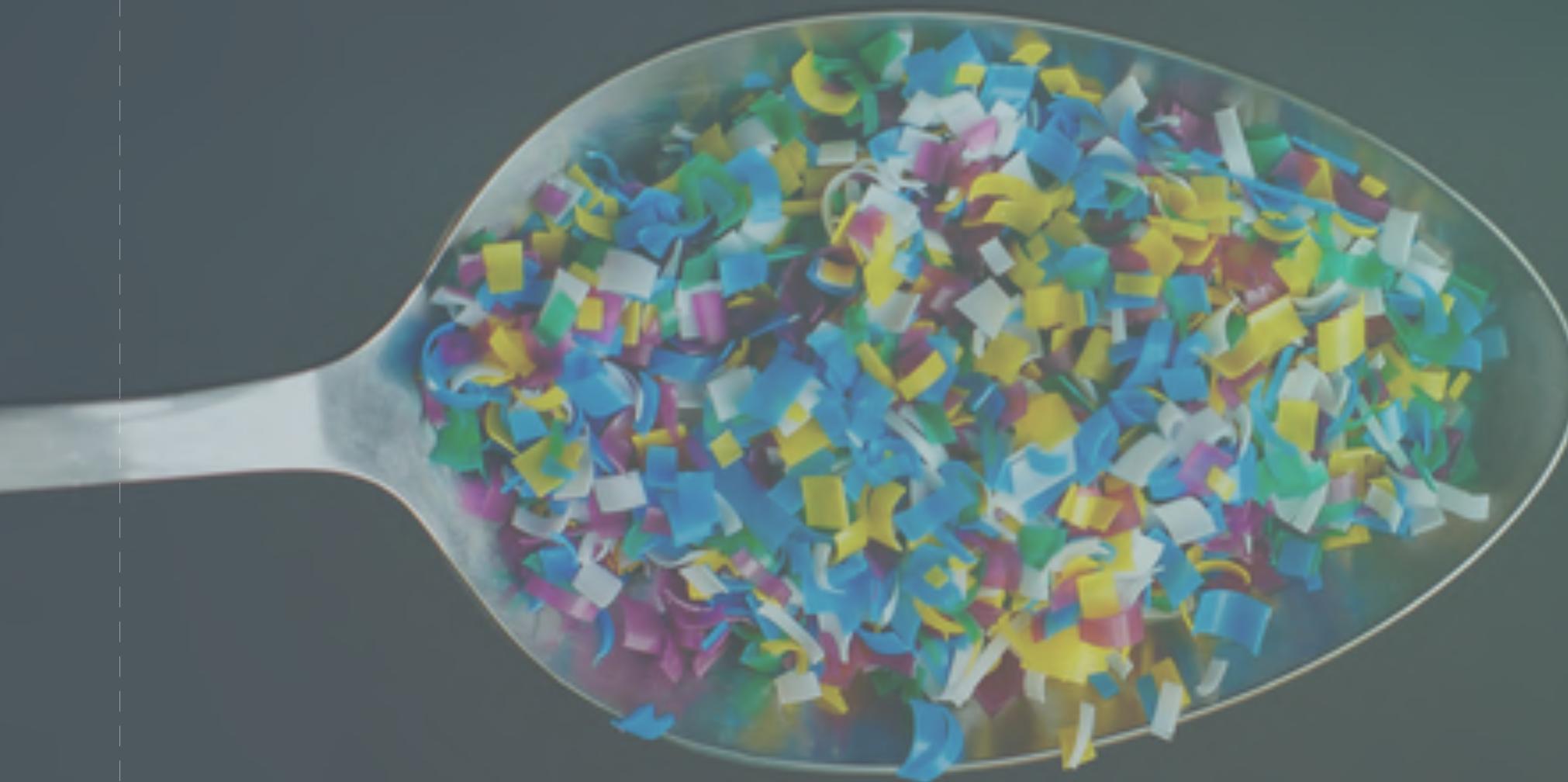
CONCEPT PORTRAIT · FEAR



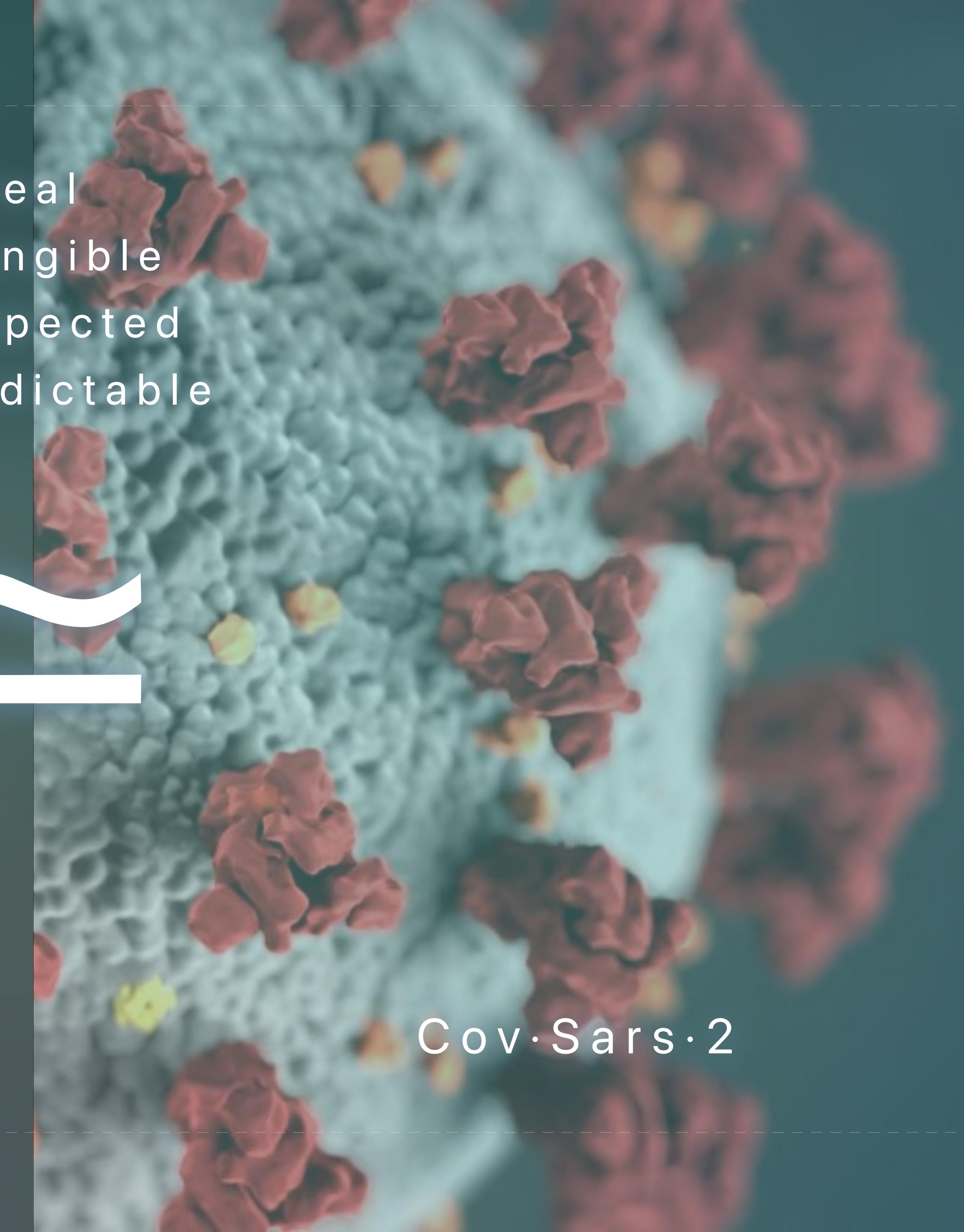
real
intangible
unexpected
unpredictable



Microplastics



Cov·Sars·2

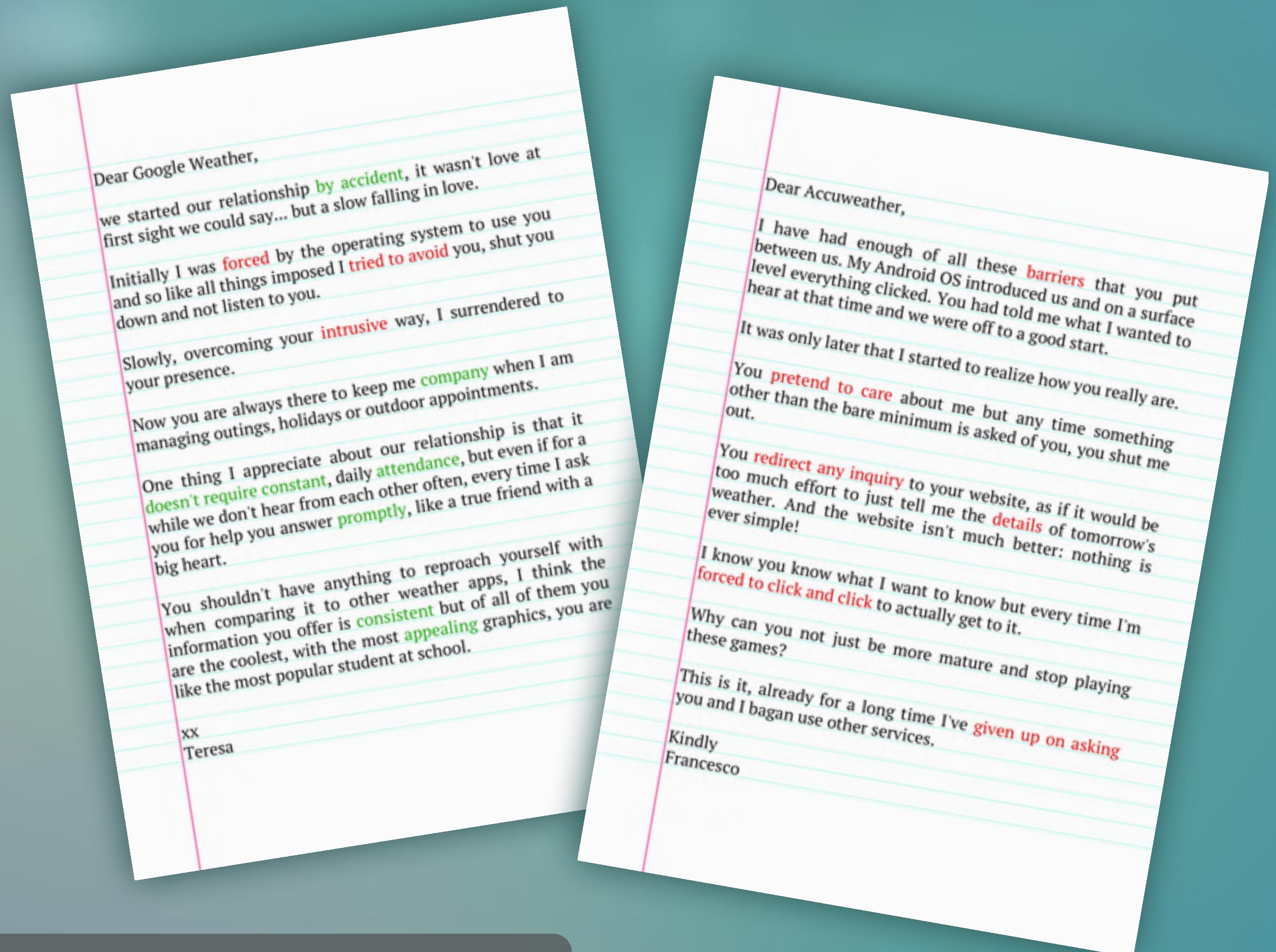


BREAK-UP / LOVE LETTERS · WEATHER APPS

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what is good
what is bad

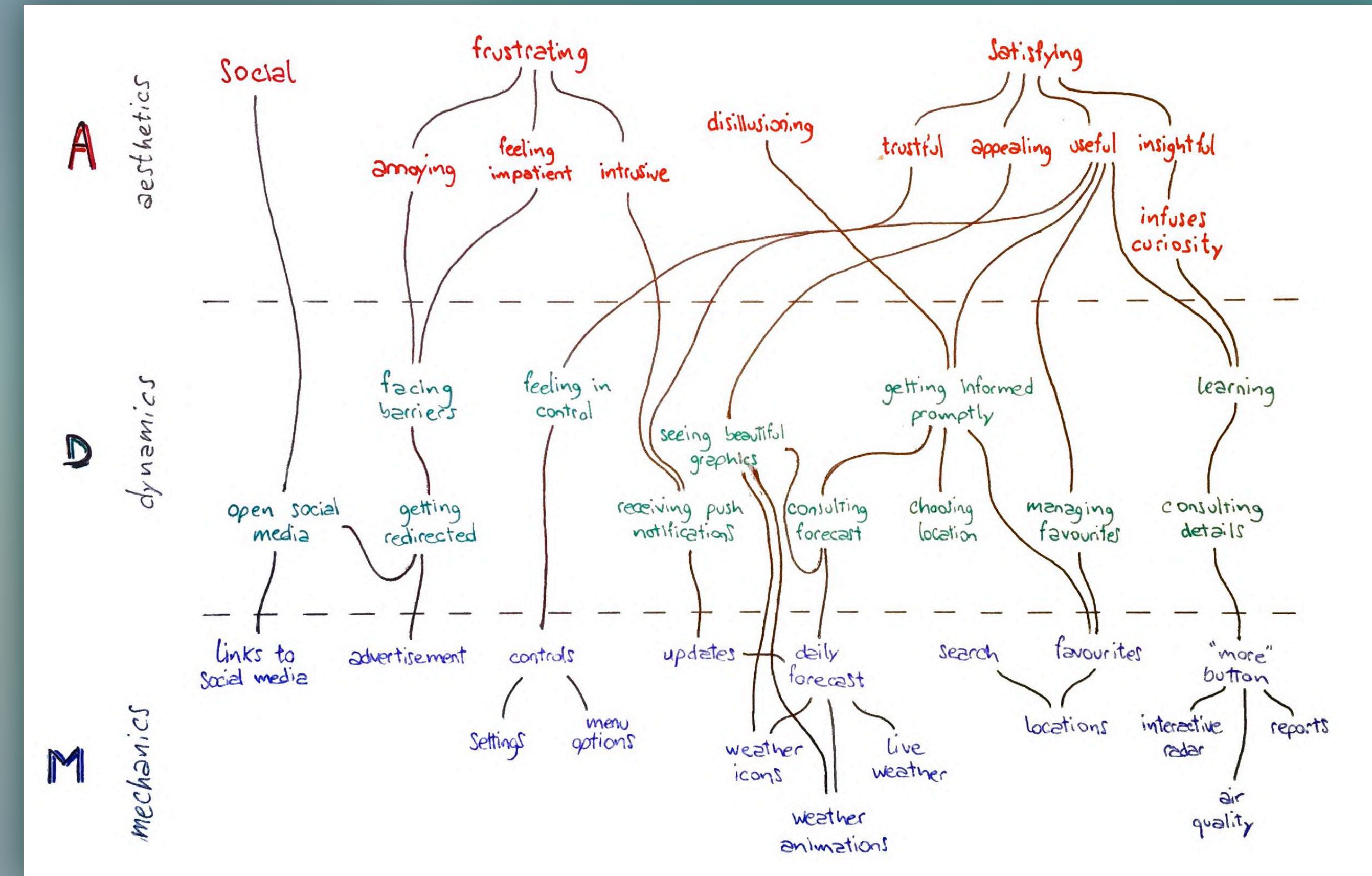


Design Method Toolkit · Break Up/Love letter (toolkits.dss.cloud/method-card/break-uplove-letter)

MDA FRAMEWORK · WEATHER APPS

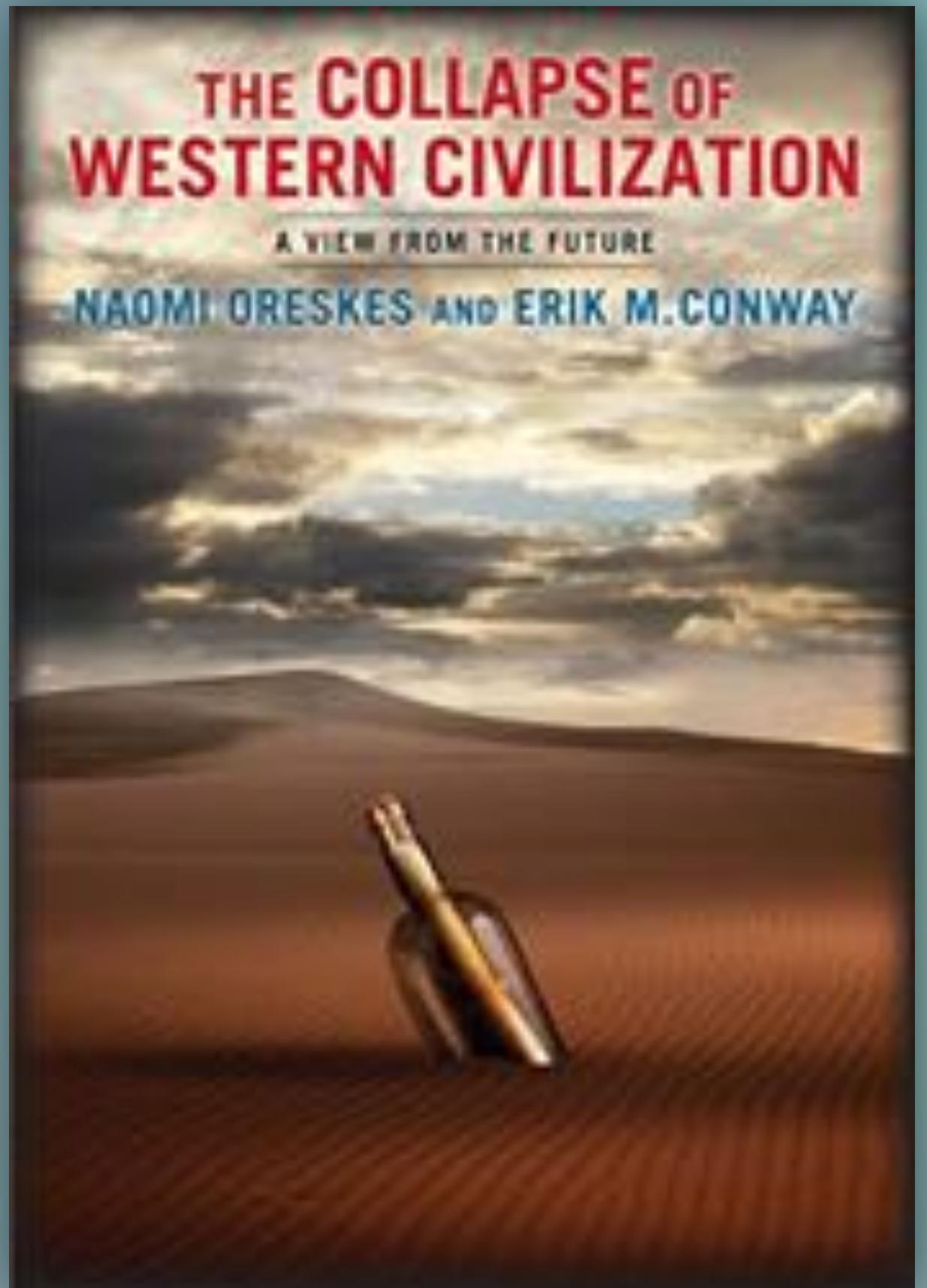
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 Hunicke, R., LeBlanc, M., & Zubek, R. (2004). MDA: A Formal Approach to Game Design and Game Research

THE FICTION · INSPIRATION

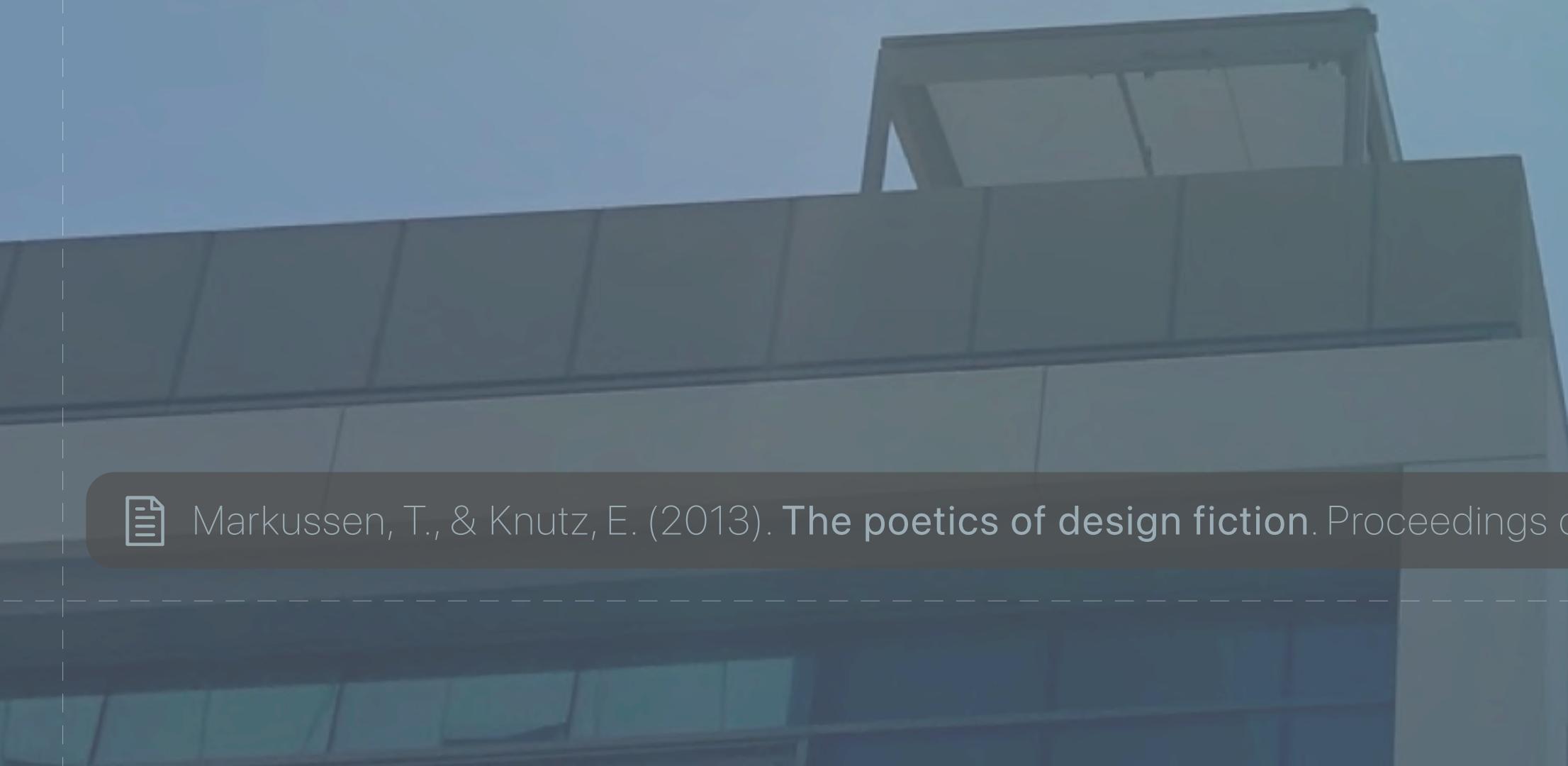
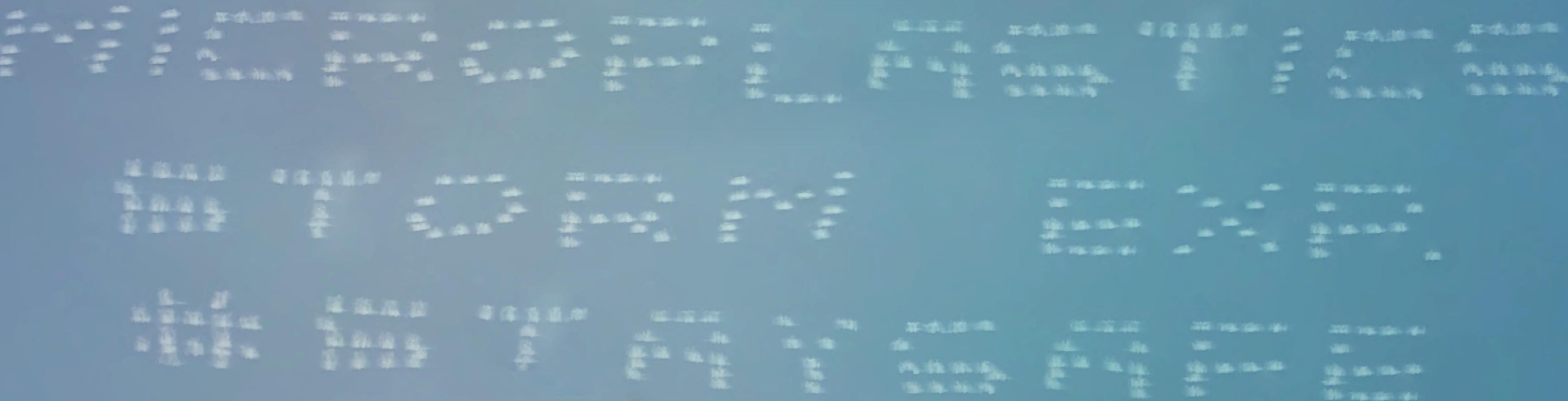


 Oreskes, N., & Conway, E. M. (2014). **The Collapse of Western Civilization**

2043



 SOM · What Should Cities Be Like in 2050? (som.medium.com)



THE FICTION



THE FICTION

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Presidential Documents

Executive Order 18362 of January 26, 2057 Mandatory implementation of last-generation HVAC cleaning and purifying systems for indoor public spaces and businesses

Indoor air contains pollutants that can affect human health. Some of these pollutants come from outdoors, and others come from indoor sources and activities, such as cooking, cleaning, secondhand smoke, building materials, consumer products, and home furnishings. These indoor air pollutants can be particles or gases, including volatile organic compounds (VOCs). Common contaminants that can be found indoors include particulate matter (including PM2.5 [fine] and PM10 [coarse]), formaldehyde, mold, and pollen. Indoor air quality will vary from home to home and over the course of a day within a home. Since most people spend about 90% of their time indoors, mostly in their homes, much of their exposures to airborne pollutants will happen in the home.

The most effective ways to improve your indoor air are to reduce or remove the sources of pollutants and to ventilate with clean outdoor air. In addition, research shows that filtration can be an effective supplement to source control and ventilation. Using a portable air cleaner and/or upgrading the air filter in your furnace or central heating, ventilation, and air-conditioning (HVAC) system can help to improve indoor air quality. Portable air cleaners, also known as air purifiers or air sanitizers, are designed to filter the air in a single room or area. Central furnace or HVAC filters are designed to filter air throughout a home. Portable air cleaners and HVAC filters can reduce indoor air pollution; however, they cannot remove all pollutants from the air.

THE FICTION

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2

DESIGN
GOAL

01 DESIGN GOAL

Design a weather forecast app that takes into account future environmental problems caused by microplastics, with the goal of eliciting fear and concern about the environment and our daily lives.

02 DESIGN THEME

Speculative Design

03 DESIGN MEDIUM

App*

*with support of public digital billboards

04 DESIRED EMOTIONS

Fear and Concern



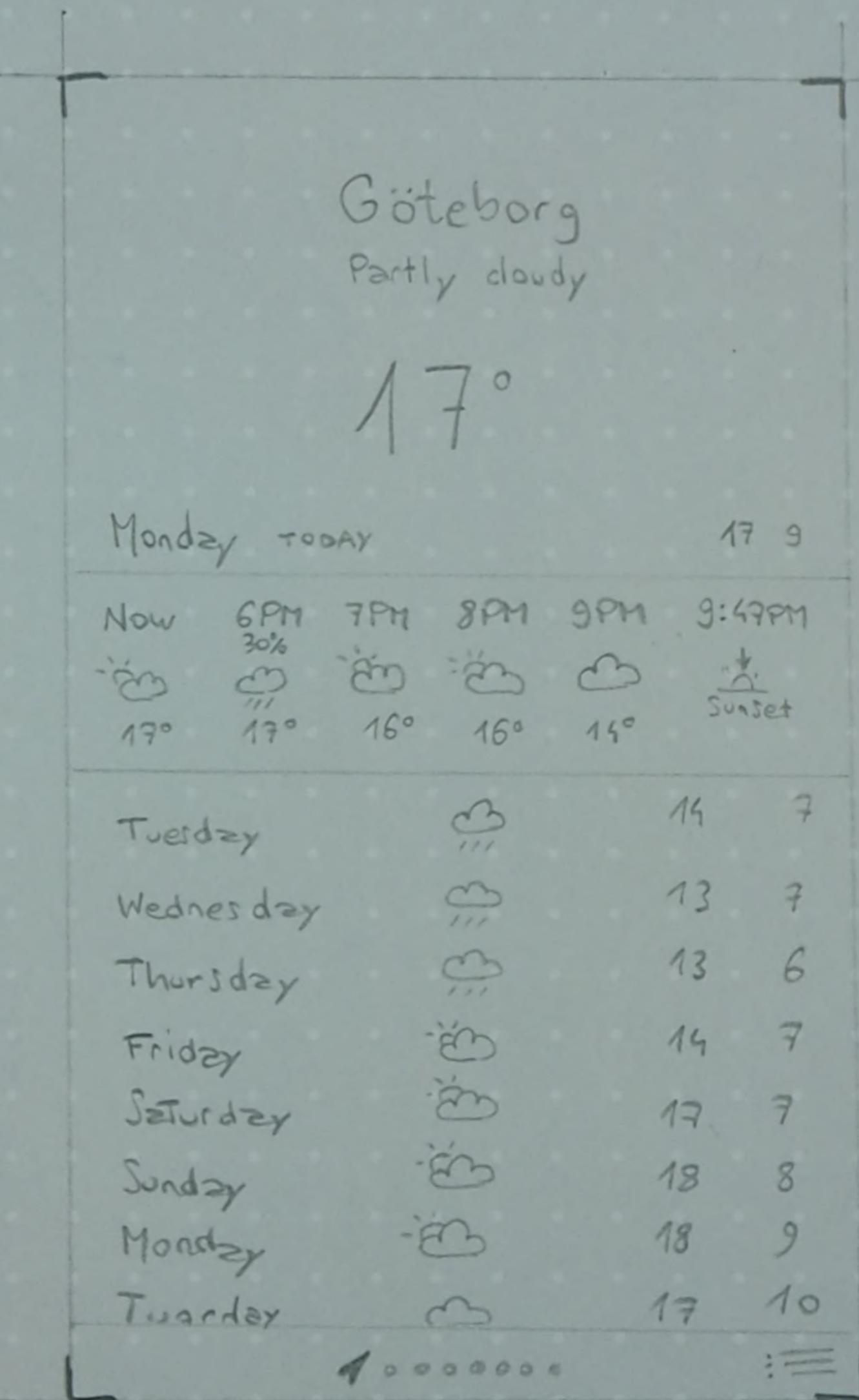
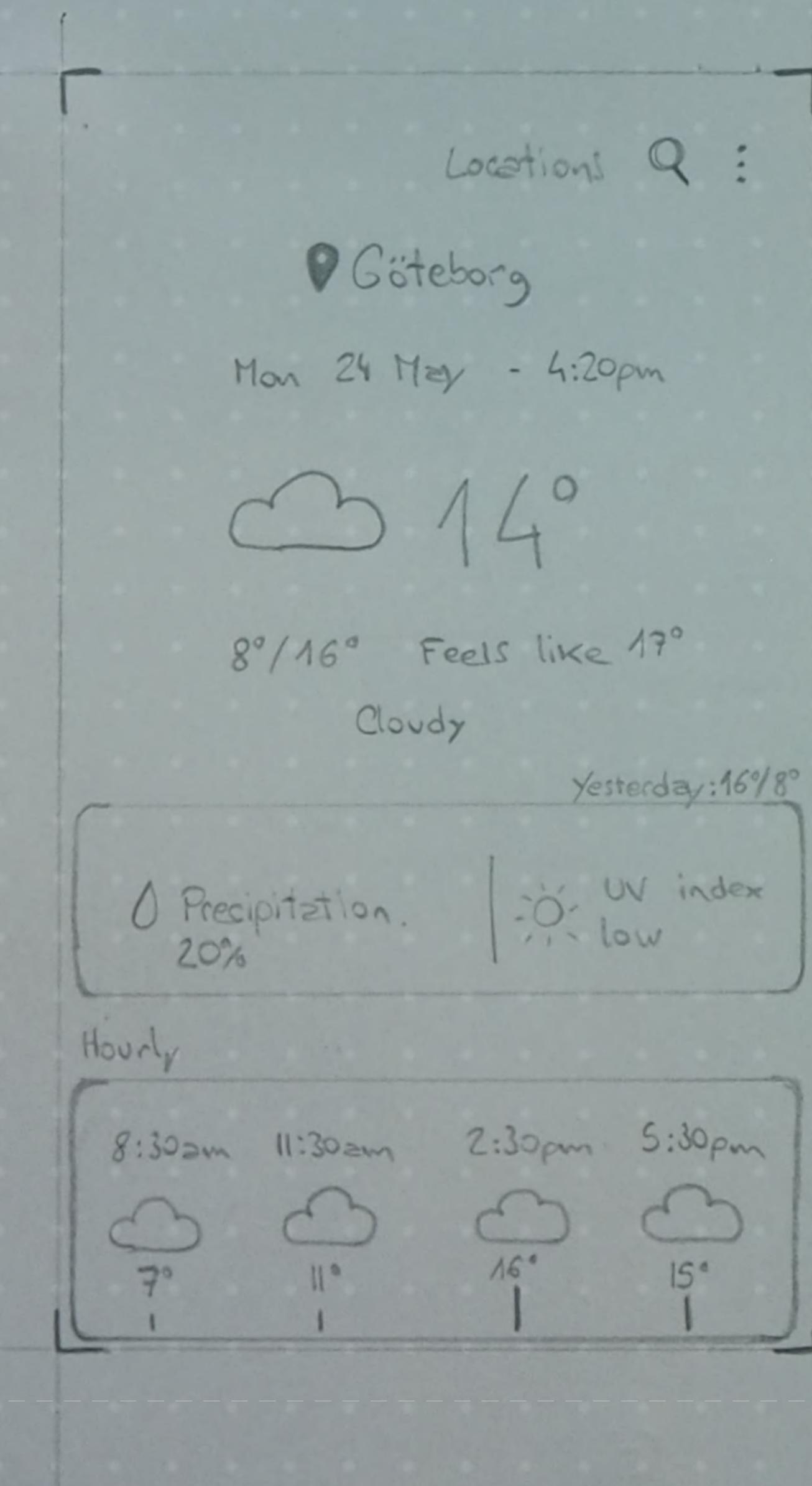
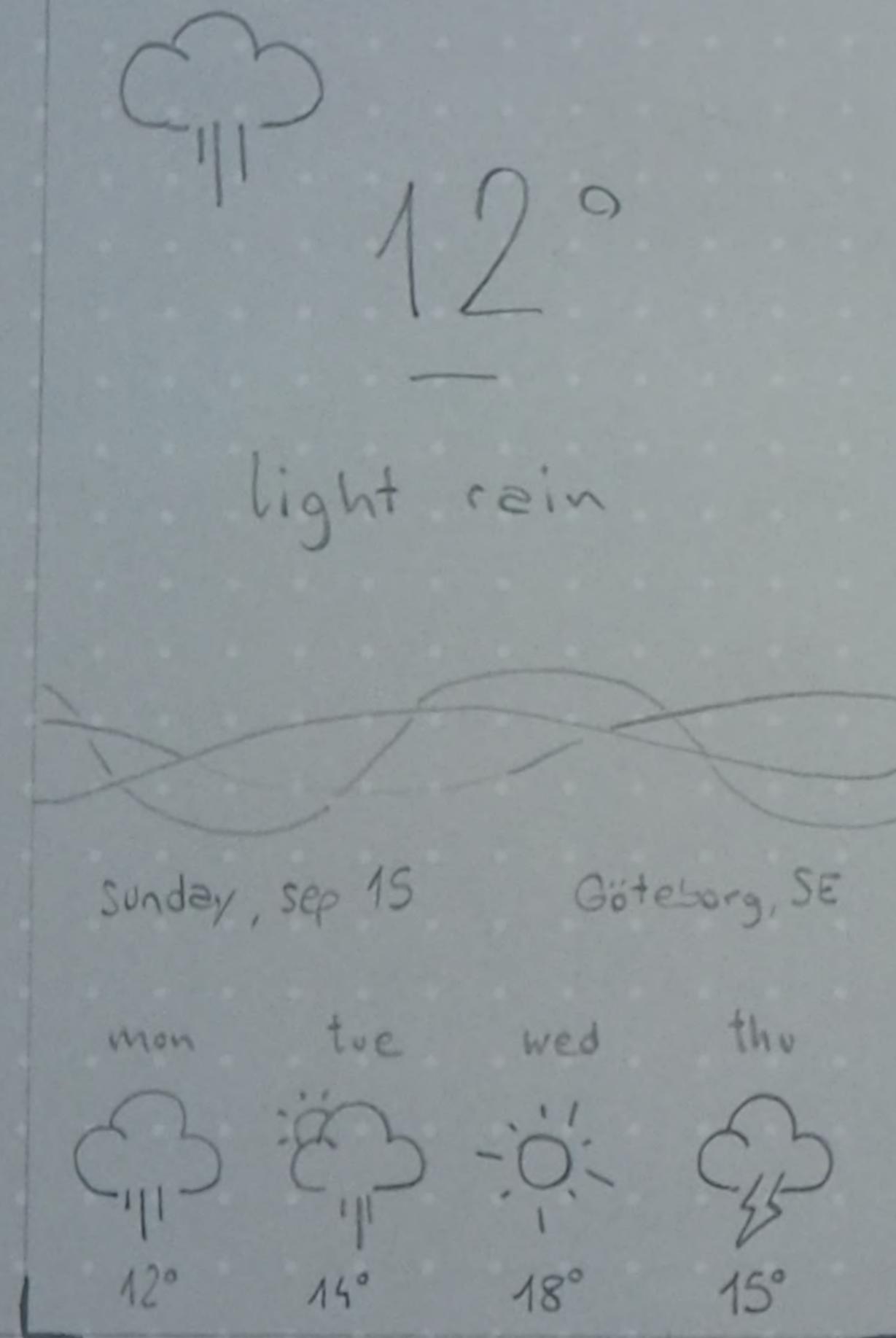
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FINAL
DESIGN

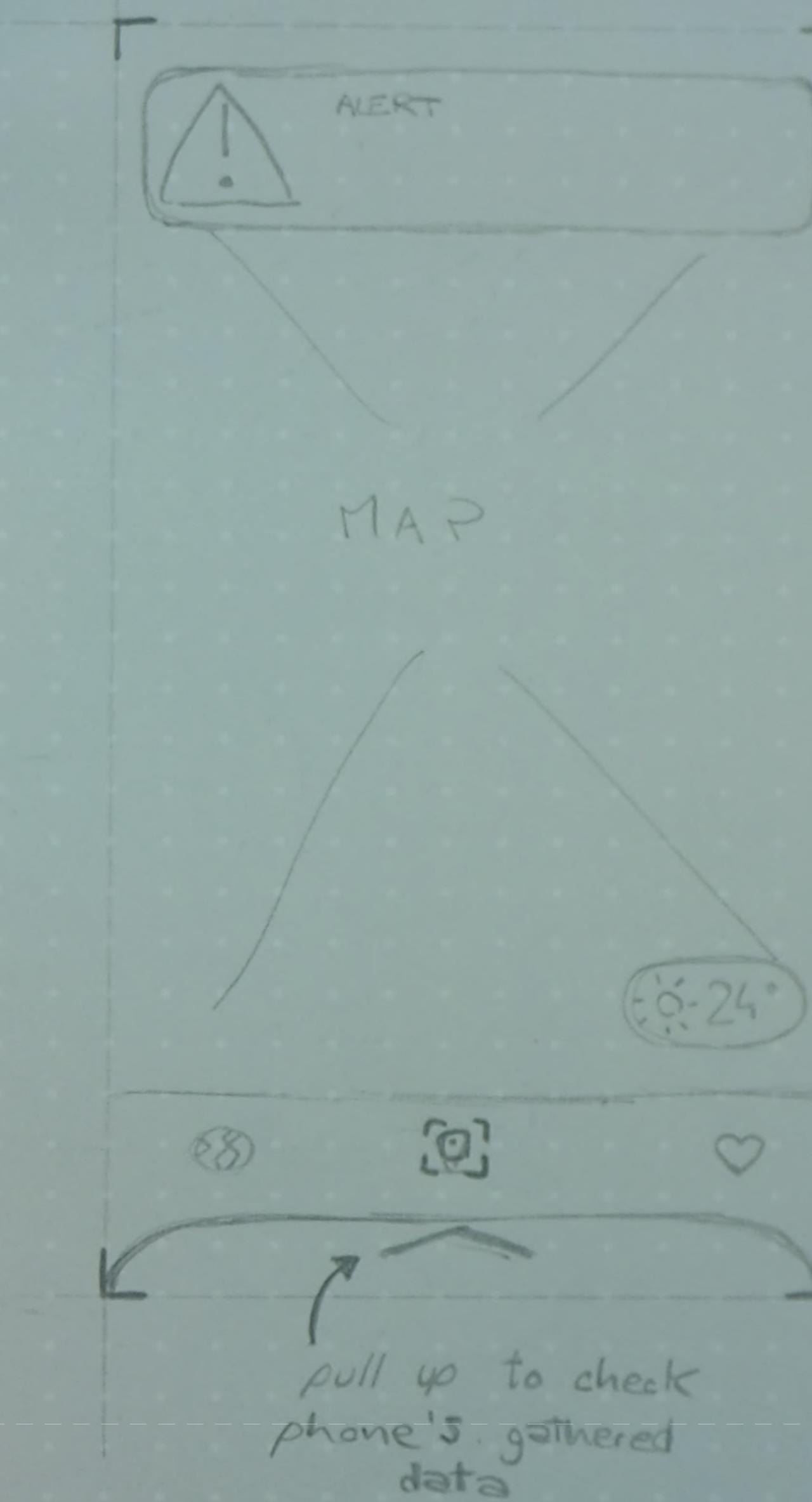
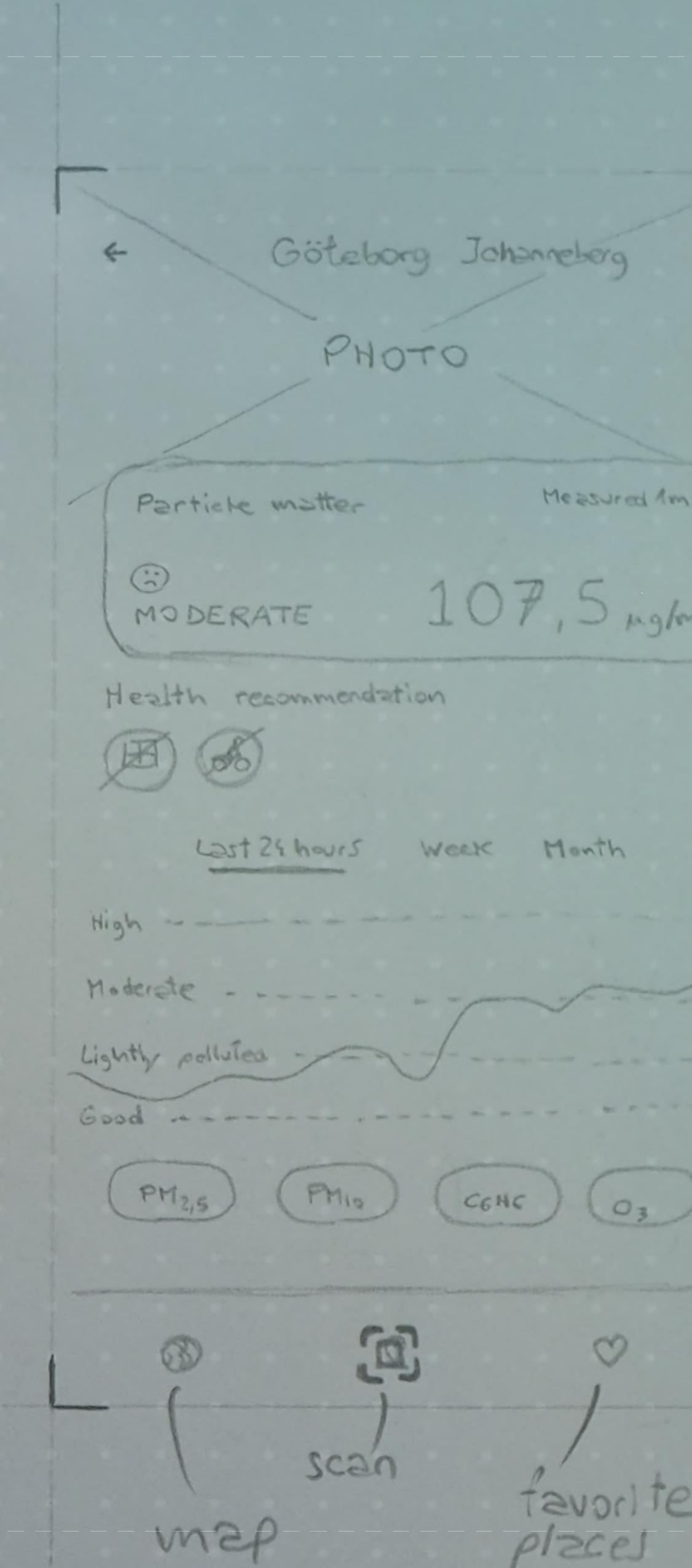
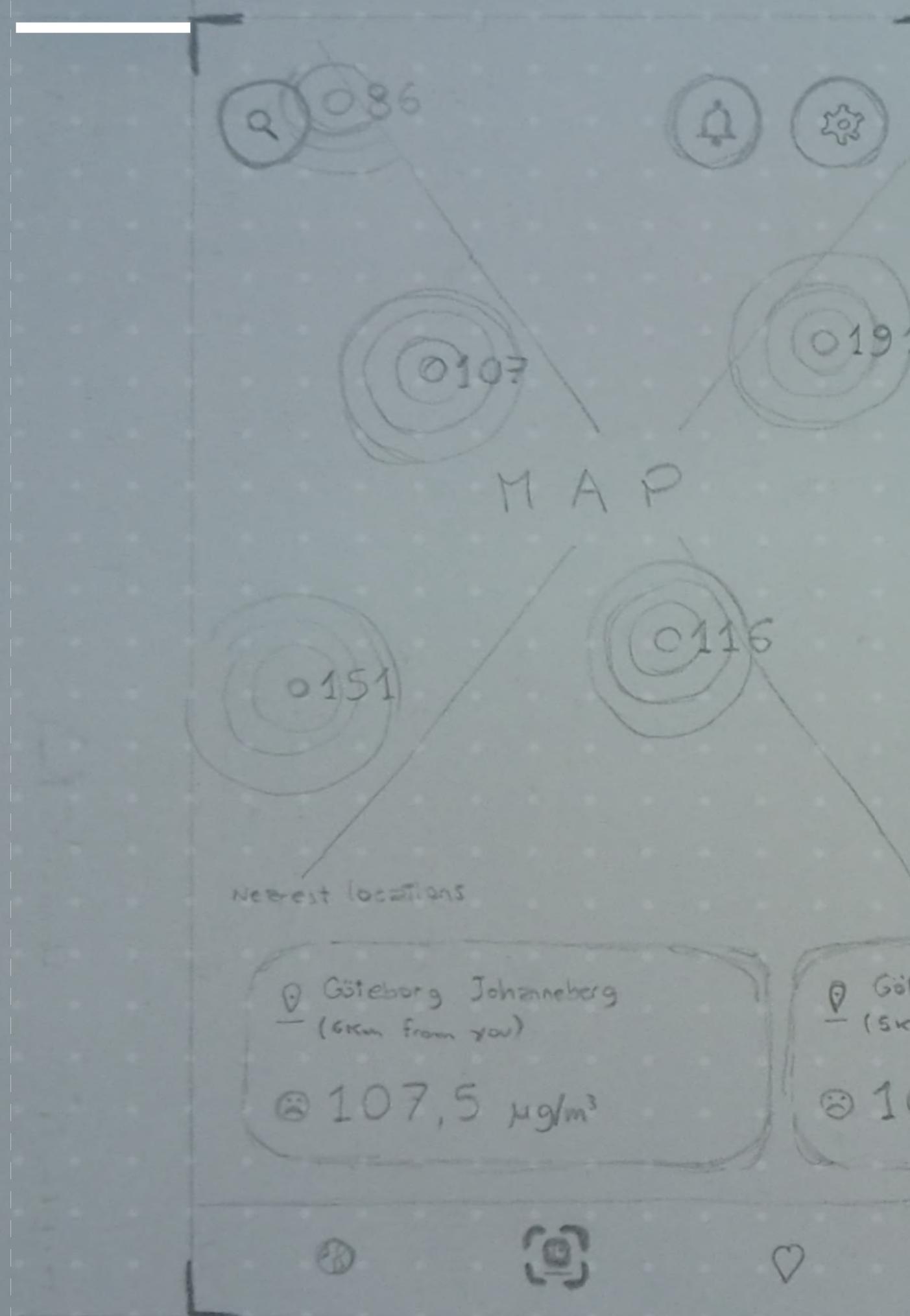
SKETCHING

3

FINAL DESIGN



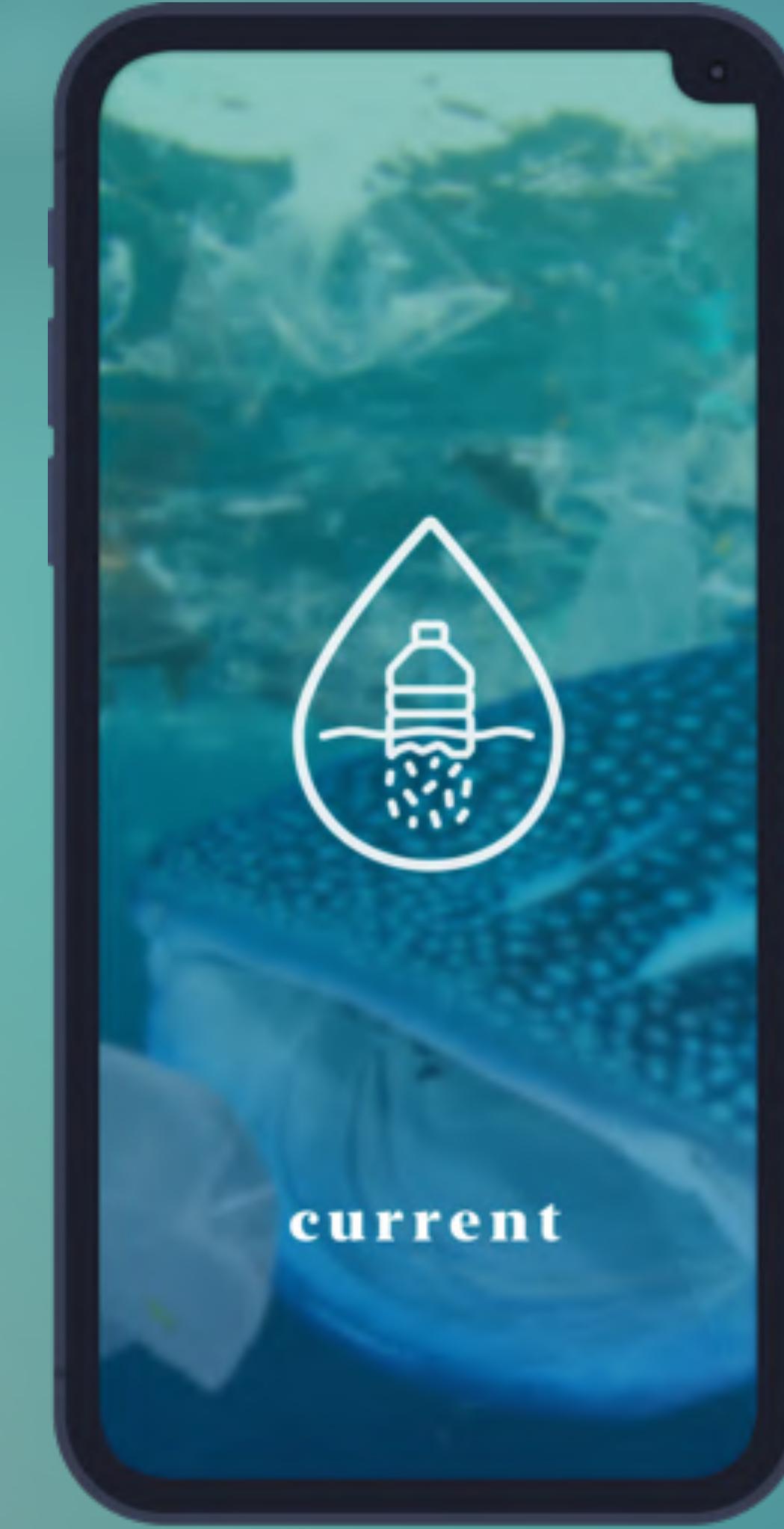
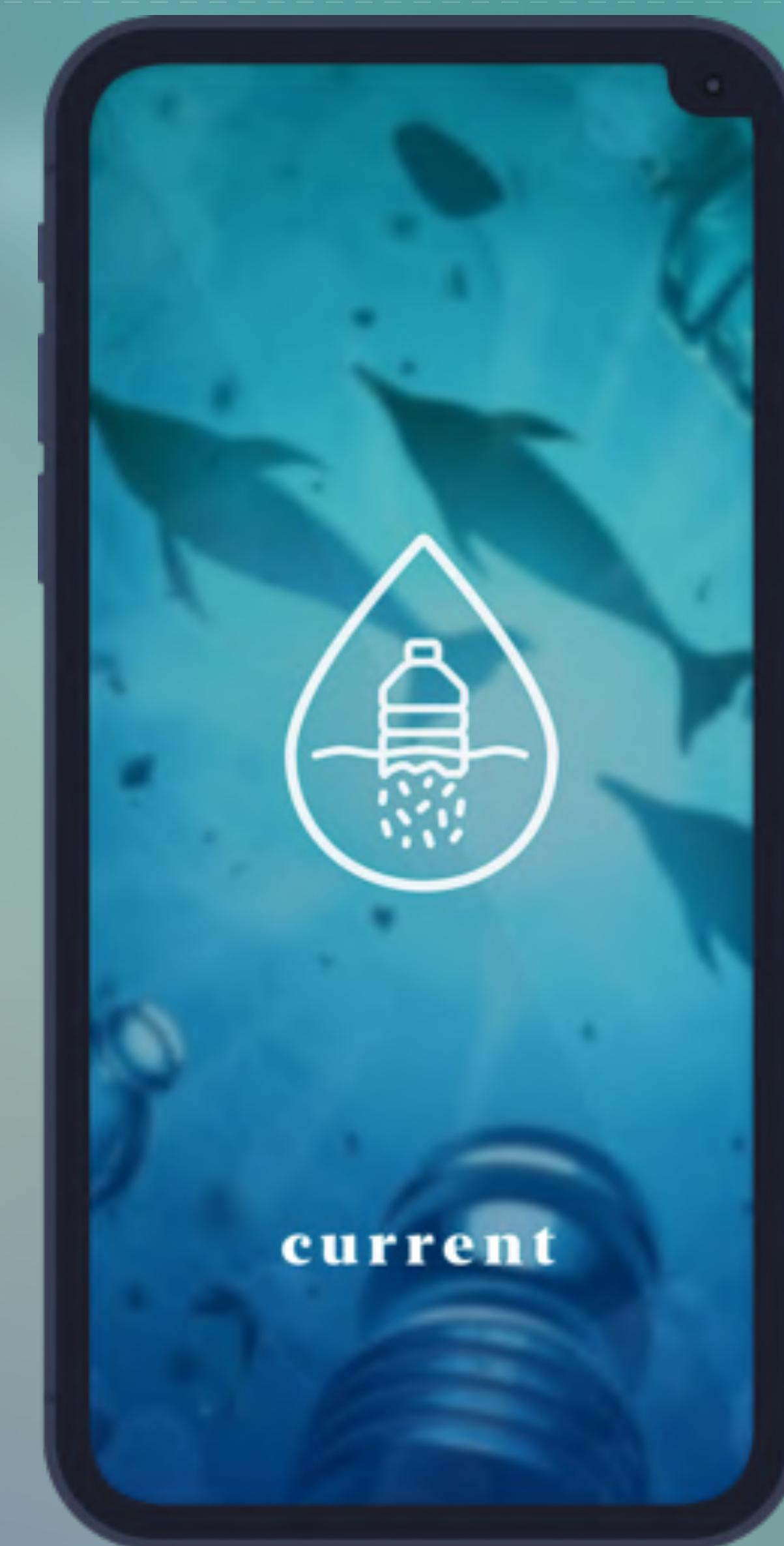
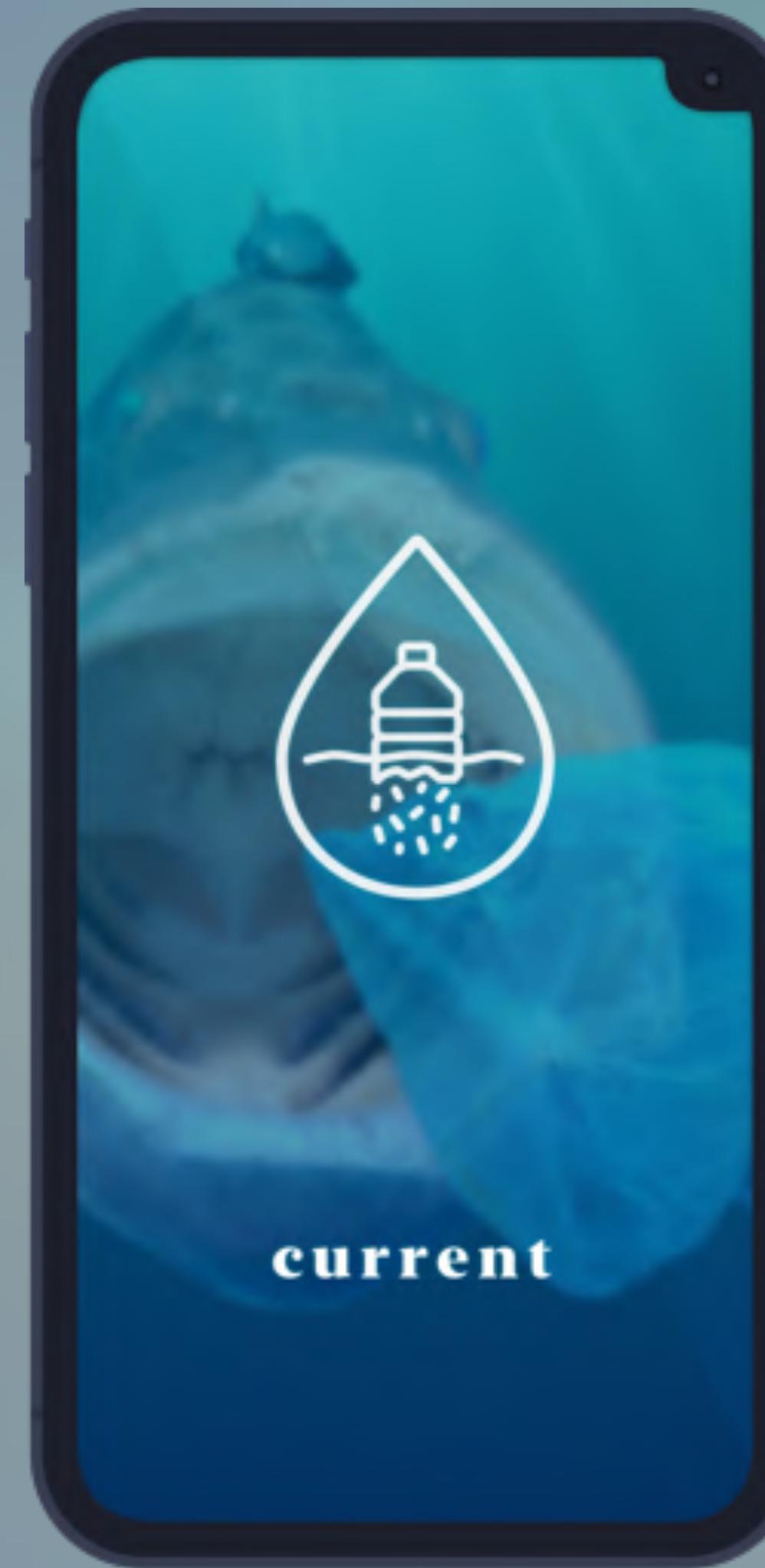
SKETCHING





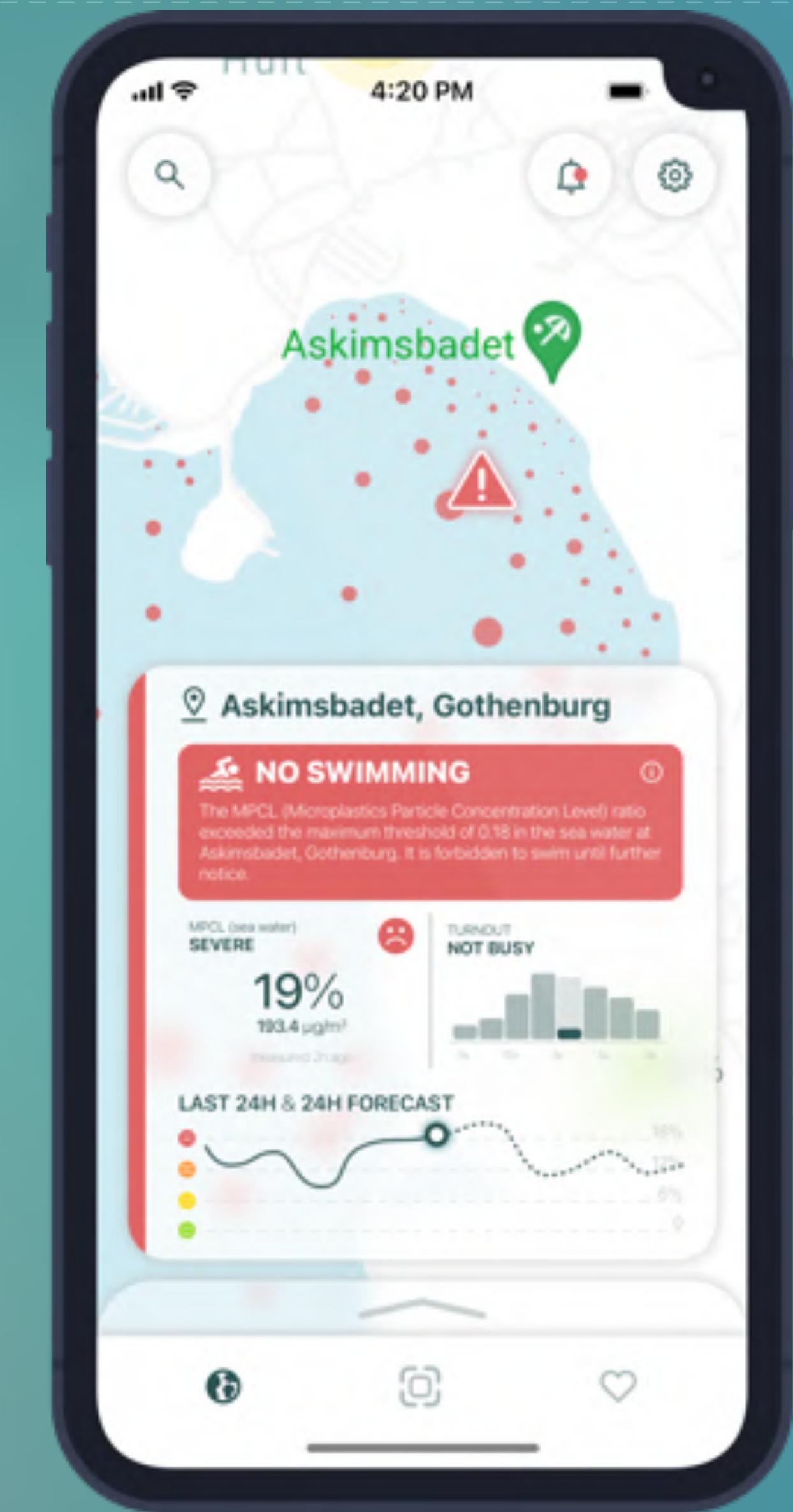
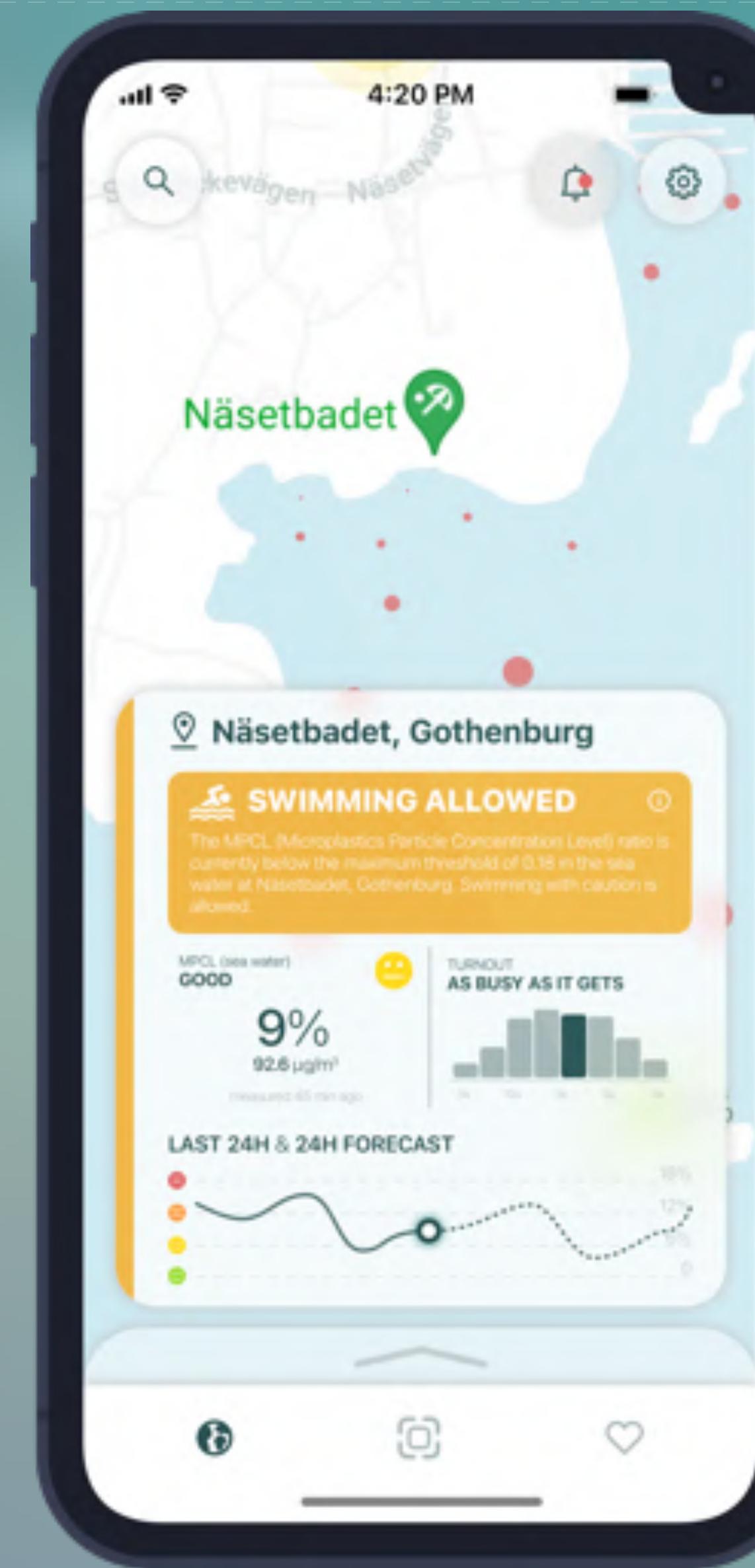
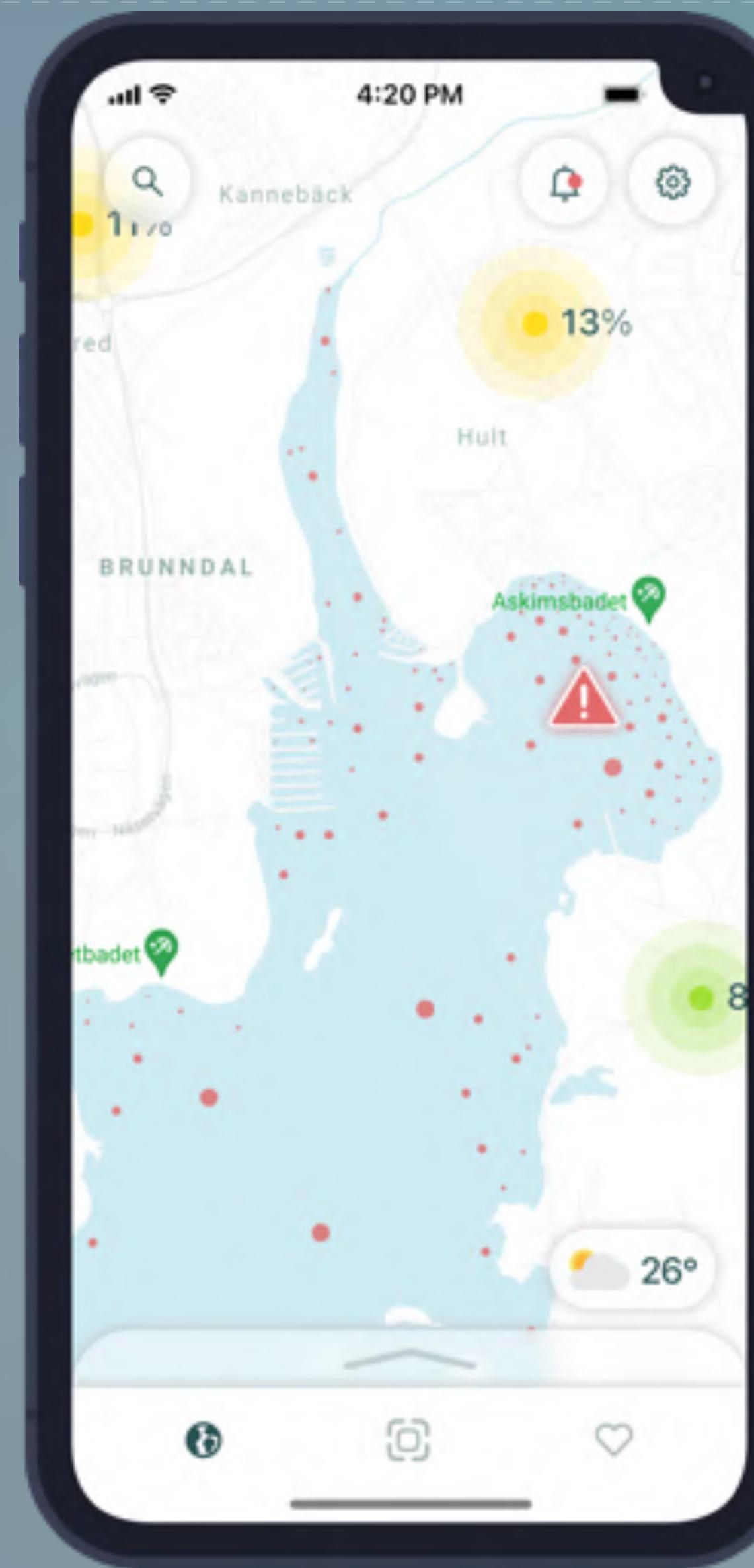
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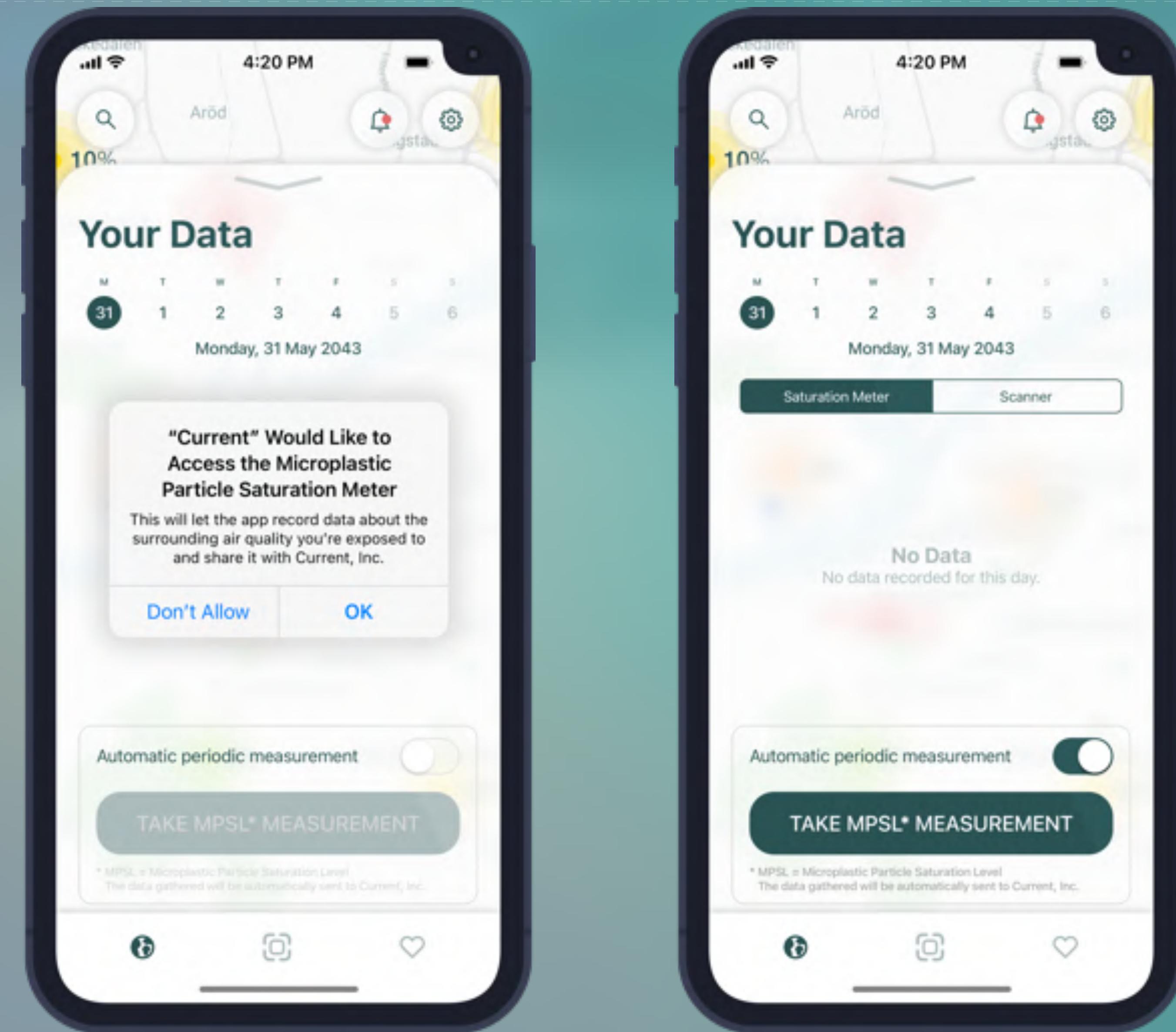












Today's AIMPSL*

Avg Indoor Microplastics Particle Saturation Level

23%

about 234,7 $\mu\text{g}/\text{m}^3$

* The "Today's AIMPSL" parameter is calculated by collecting daily measurements from our customers' devices. Thank you for sharing your data with us!

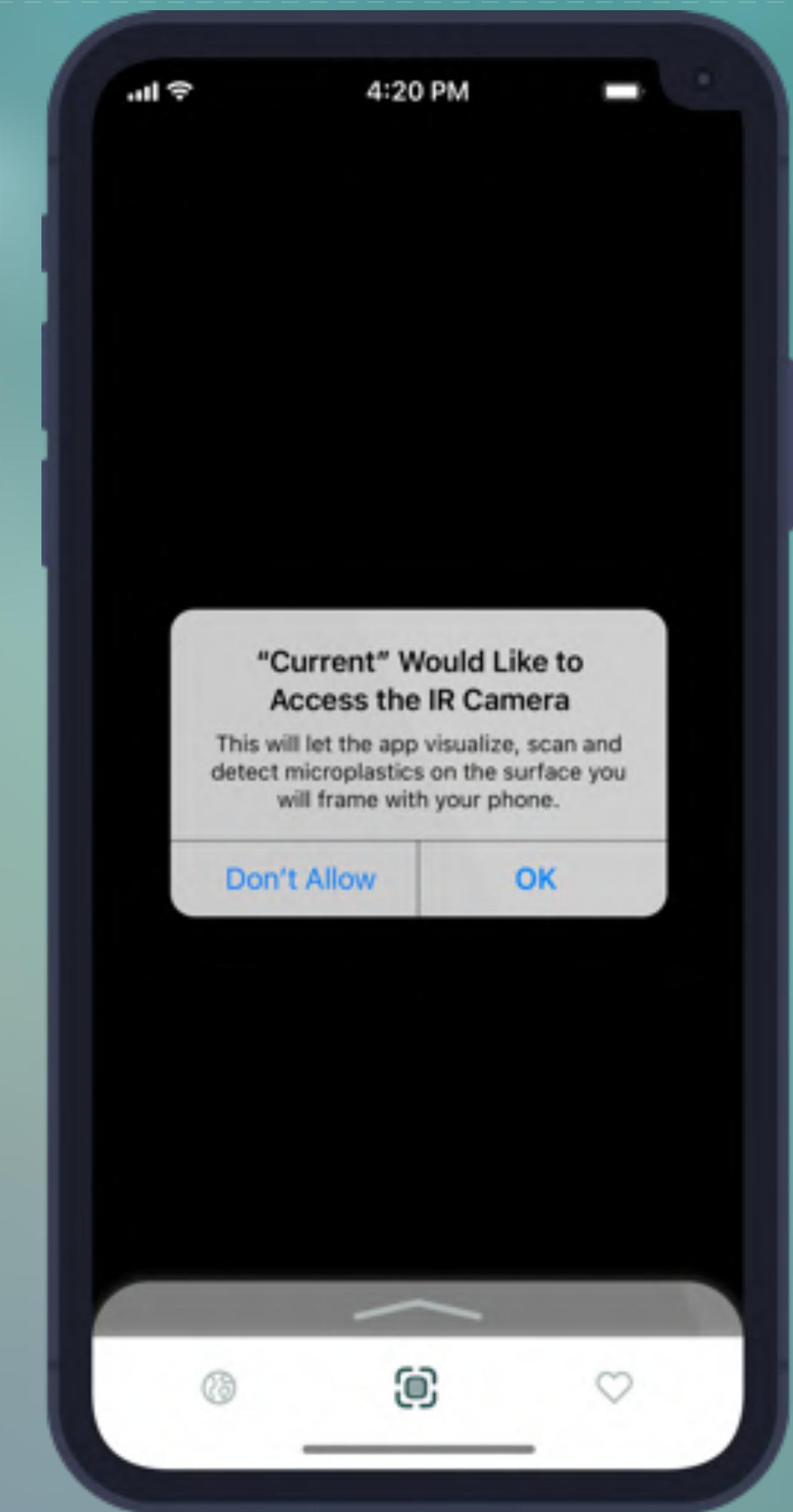
LERT! NO TRANSIT ZONE SET IN HAGA UNTIL JUNE 4, 2043

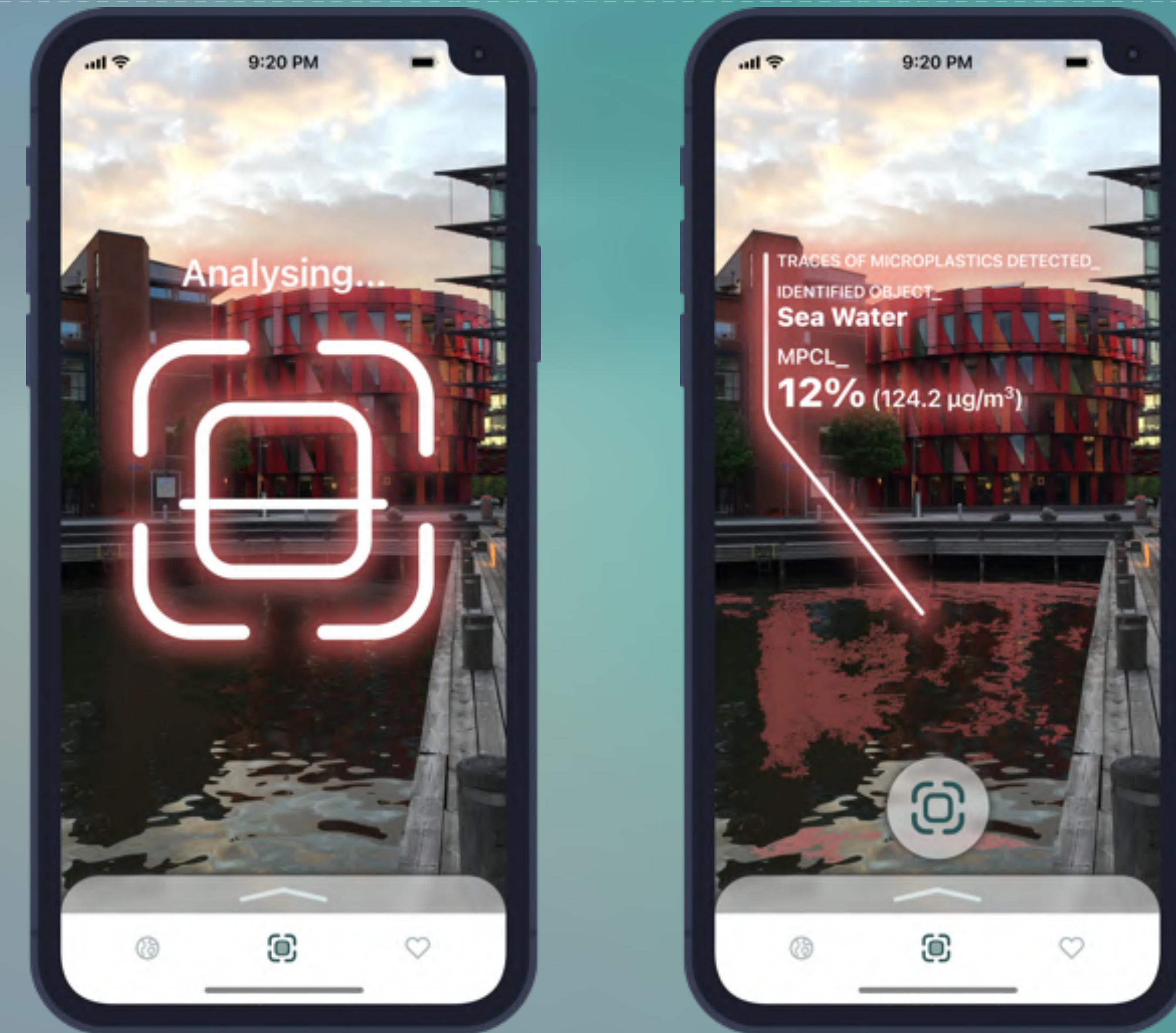
AIMPSL (Average Microplastics Particle Saturation Level) ratio exceeded the maximum threshold of 0.27 for three days in a row in Haga, Gothenburg. As safety measure, the area is set to No Transit Zone until June 4, 2043. Transit is only allowed for emergency reasons; it is strongly recommend to wear Organic Vapor Respirators in the area.

Powered by



current

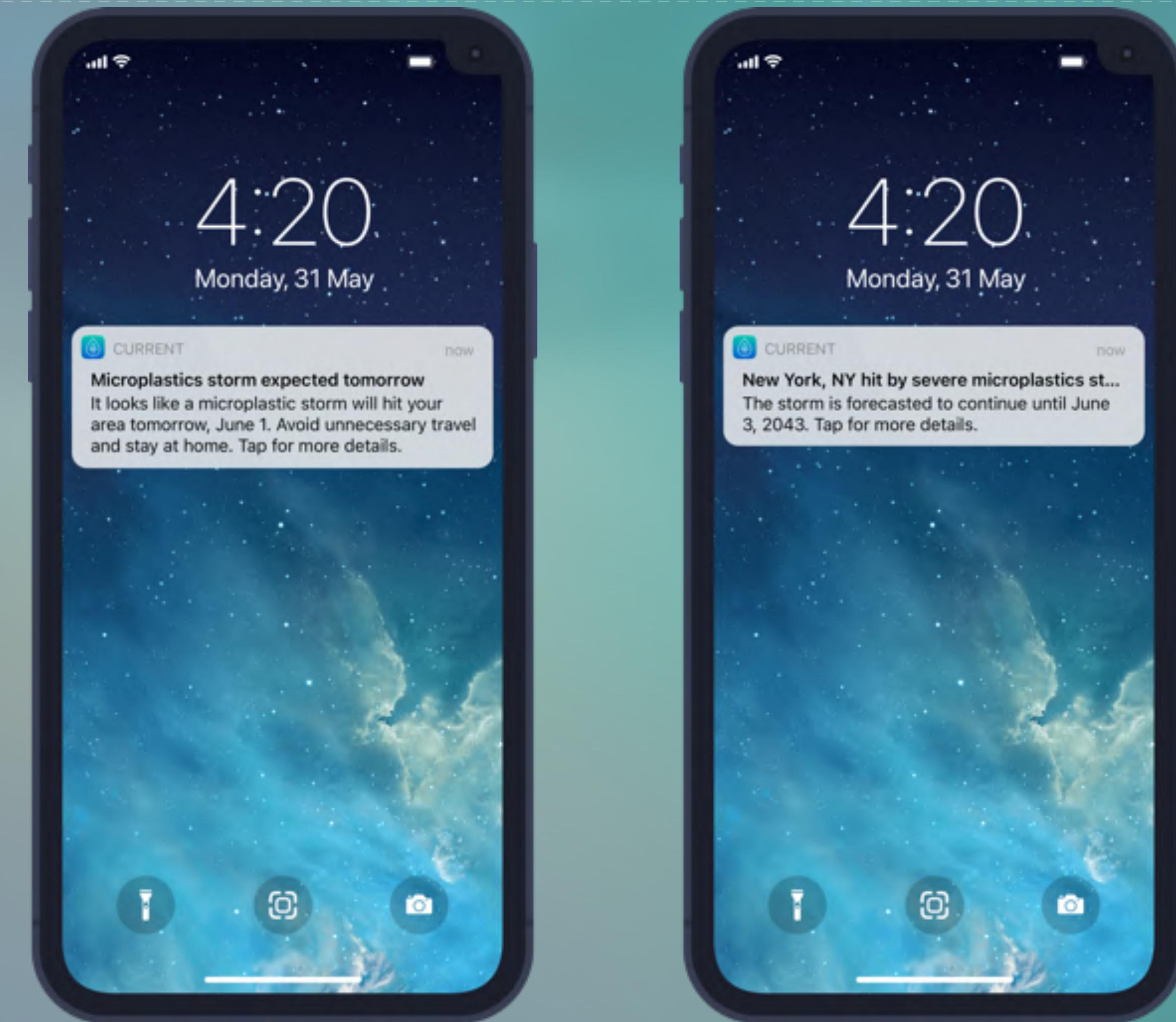














The image shows two smartphones side-by-side, both displaying the same microplastics information page. The page has a white header with the text 'MICROPLASTICS: WE GOT A PROBLEM' and a timestamp '4:20 PM'. The main content area features a large bold text: 'Plastic is polluting the air we breathe, the water we drink and the food we eat'. Below this, a paragraph discusses the long-term effects of plastic ingestion or inhalation on human health, referencing a study by Bigaud et al. (2019). A secondary heading 'and the food we eat' is partially visible above a section on 'MAIN SOURCES OF MICROPLASTICS'. This section includes a sub-section 'WATER' with an icon of a water tap and a sub-section 'AIR' with an icon of a wind symbol. The bottom of the screen shows a navigation bar with three icons: a person, a camera, and a heart.

MICROPLASTICS: WE GOT A PROBLEM

Did you know you eat roughly a credit-card's worth of microplastic every week (Bigaud et al, 2019)?!

The issue of microplastic is invisible, yet real, just like a global pandemic, which nowadays we're all experiencing: what would it be to go for another round?

Plastic is polluting the air we breathe, the water we drink and the food we eat

The long-term effects of plastic ingestion or inhalation on the human body are not yet well documented, but studies are underway to better understand the effects of plastic on our health.

MAIN SOURCES OF MICROPLASTICS

Larger plastics, degraded into smaller particles by micro-organisms, chemically by the sun's ultra-violet rays, and physically by waves.

Industrial processes which output small sized particles of plastics that enter directly into the environment, through waste streams or the air.

WATER

We are drinking water which contains high volumes of microplastics, and water purification systems are not detecting them. According to the Guardian newspaper, bottled water contains 22 times more microplastic than tap water. Yet tap water also contains microplastics, at varying ratios around the world.

AIR

Due to the size of microplastics, they can be easily inhaled. The majority of microplastics have been found concentrated indoors, as the main source of airborne plastic particles come from textiles and household plastic products, which react to light and heat and thus break down into tiny pieces. However, microplastics can also be found airborne outdoors, which allows them to spread quickly through the environment.

4

DESIGN RATIONALE

A SPECULATIVE DESIGN

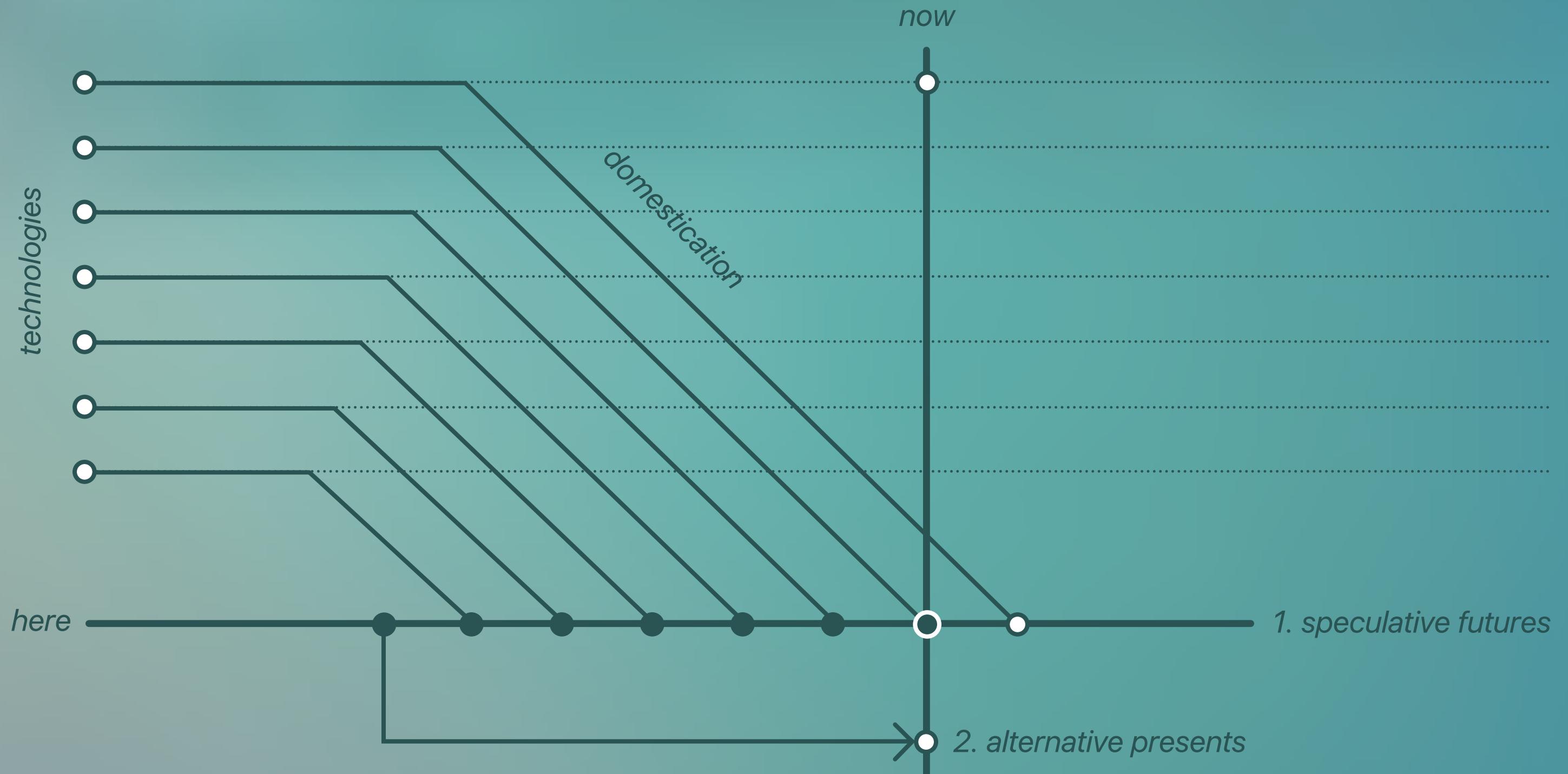
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THE UNCANNY

"in order to elicit audience engagement and contemplation on a subject it is sometimes helpful for a speculation to provoke"

"the design solution is complex and contradictory: provocative whilst at the same time familiar"



 Mitrović, I. (2016). **Introduction to Speculative Design Practice**. (speculative.hr/en/)

 Auger, J. (2013). **Speculative Design: Crafting the Speculation**. *Digital Creativity*, 24(1), 11–35.

A SPECULATIVE DESIGN

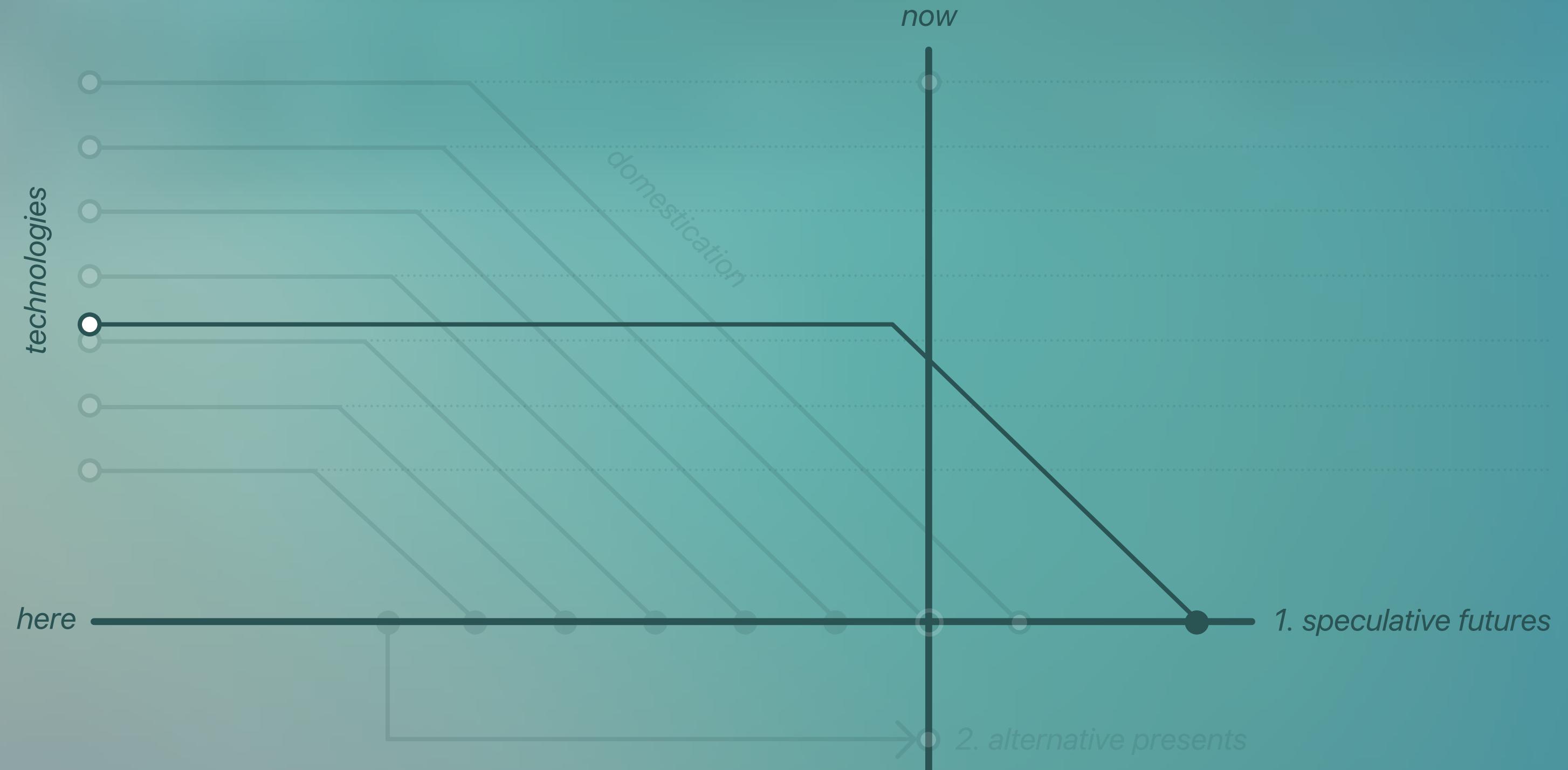
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AMBIGUITY

Gaver et al. (2003)

"By impelling people to interpret situations for themselves, it encourages them to start grappling conceptually with systems and their contexts, and thus to establish deeper and more personal relations with the meanings offered by those systems"

Eventually *"Breaking the fourth wall"* to eliminate ambiguity



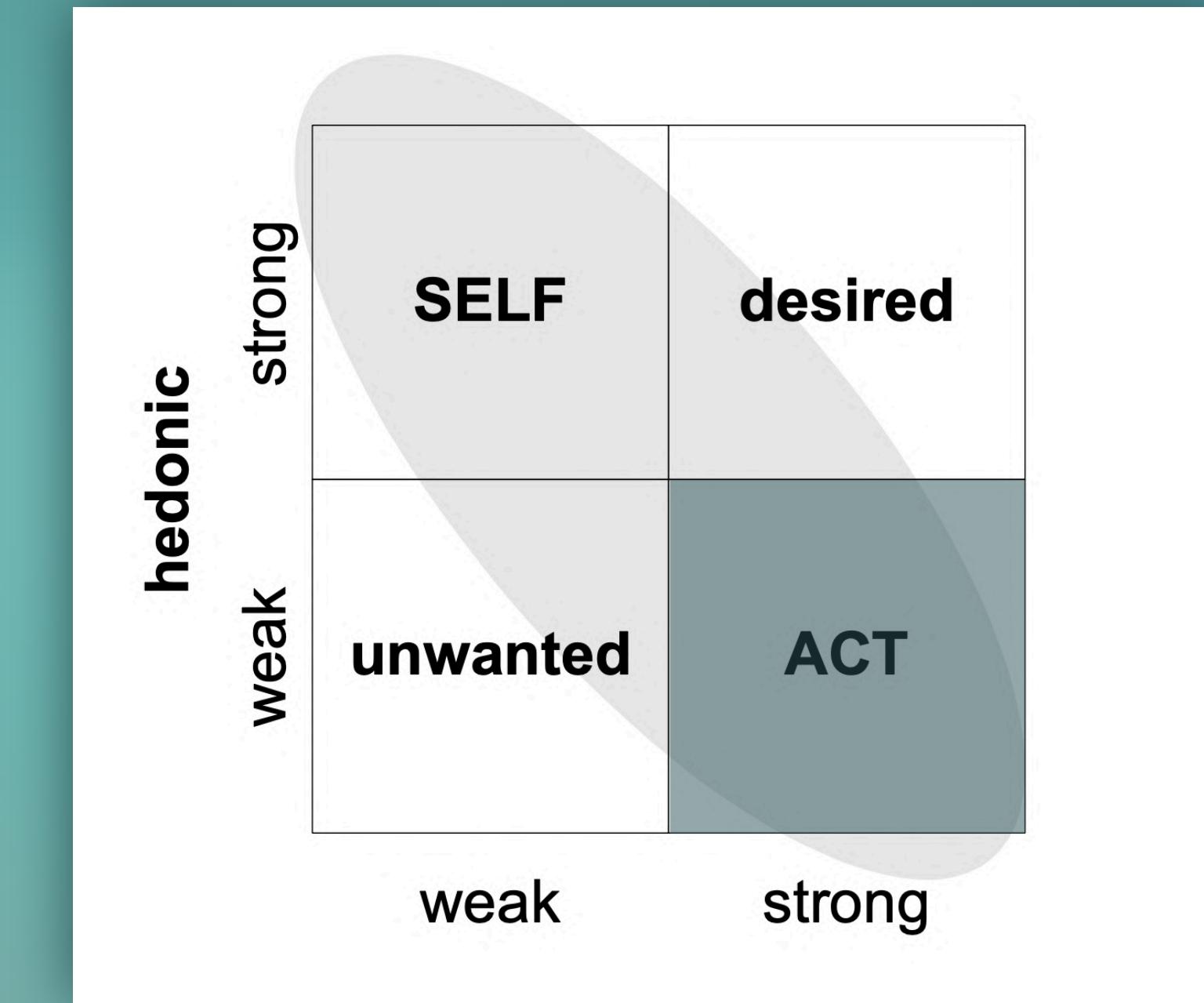
ACT OVER SELF

Hassenzahl (2003)

"a product may be perceived as pragmatic because it provides effective and efficient means to manipulate the environment"
"a product may be perceived as hedonic because it provides stimulation, identification or provokes memories"

Frijda's Law of Concern and Apparent Reality (1988)

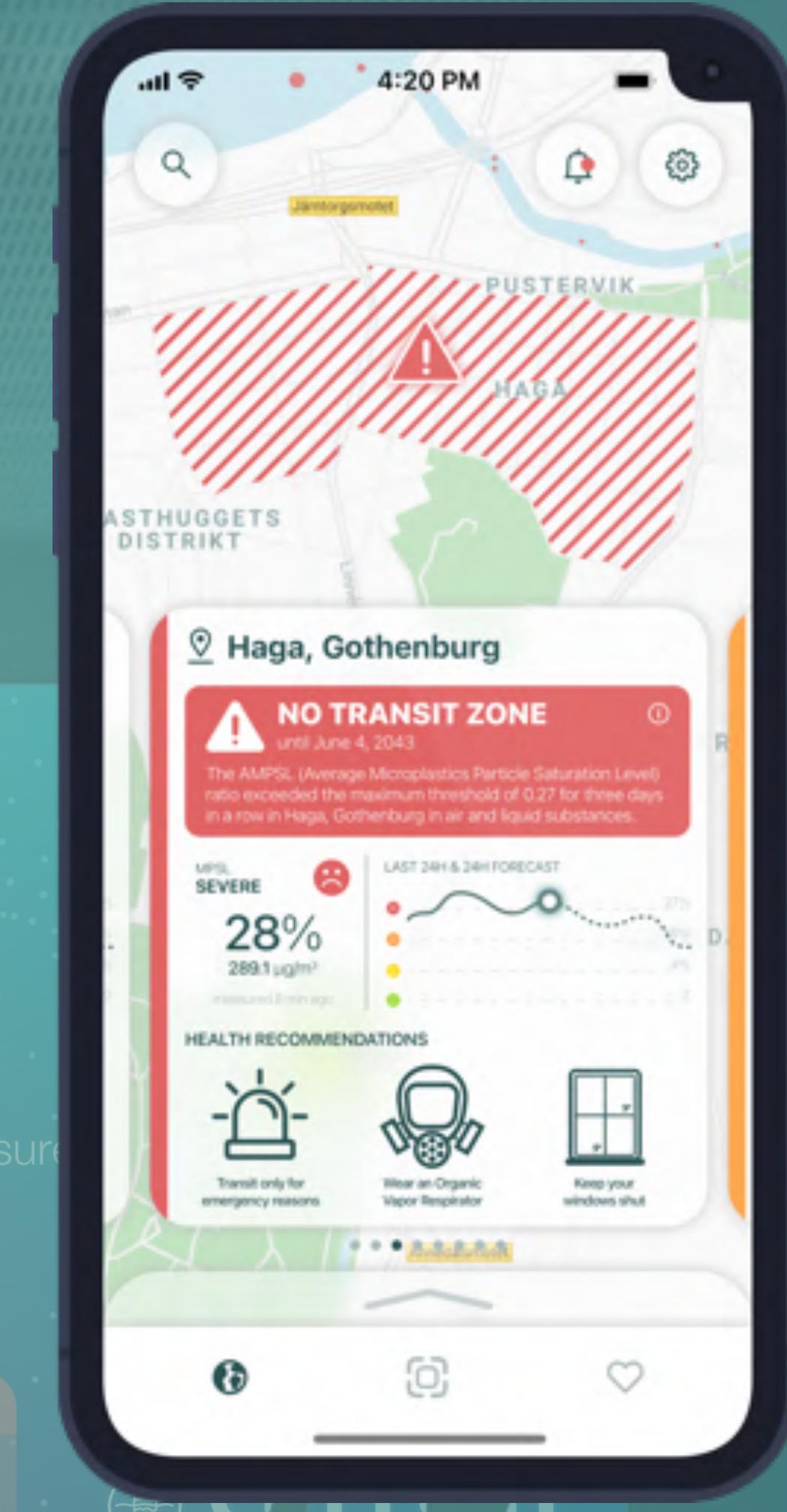
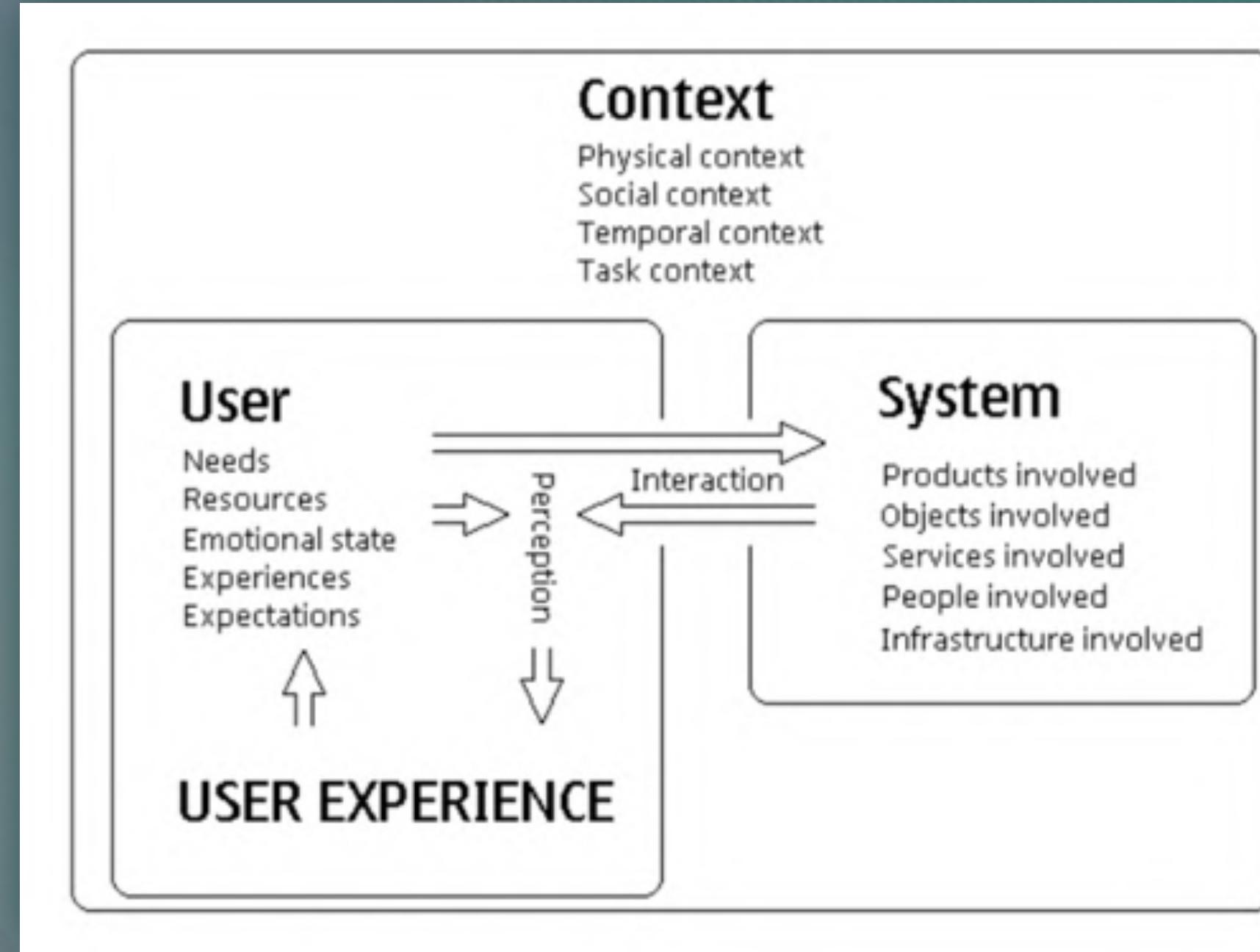
"the more you care about something, the more you will feel"
"the more real [...], the more you will feel"



 Frijda, N. H. (1988). **The Laws of Emotion**. *American Psychologist*, 43(5), 349–358.

 Hassenzahl, M. (2003). **The Thing and I: Understanding the Relationship Between User and Product**. *Human-Computer Interaction Series*, 31–42.

THE BUILDING BLOCKS



UX CURVE

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 Kujala, S. et al. (2011). UX Curve: A method for evaluating long-term user experience. *Interacting with Computers*, 23(5), 473–483.

RELATED DESIGNS

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Climate Clock



One Plus 8 Pro IR camera



Cigarette Packages



Plasticful Foods

 Climateclock (climateclock.world)

 Plasticful Foods: a Case Study (speculativeedu.eu/case-study-plasticful-foods)



5

REFLECTION

Raise people's awareness about the specific problem of microplastics

People would start discussing around the topic, reflecting about it

People might still not get what they could/should do to tackle the problem

Risk of not finding out the informative pop-up explaining the problem around microplastics, if the user doesn't explore well the app

Risk of losing users who might get annoyed by the app over time

RANKING OF PAPERS · COURSE LITERATURE

1 Speculative Design: Crafting the Speculation

Auger, J. (2013). *Digital Creativity*, 24(1), 11–35. DOI: 10.1080/14626268.2013.767276

2 Introduction to Speculative Design Practice

Mitrović, I. (2016) URL: <http://speculative.hr/en/>

3 The Thing and I: Understanding the Relationship Between User and Product

Hassenzahl, M. (2003). *Human-Computer Interaction Series*, 31–42. DOI: 10.1007/1-4020-2967-5_4

4 Exploring the Reflective Potentialities of Personal Data with Different Temporal Modalities: A Field Study of Olo Radio

Odom, W., Yoo, M., Lin, H., Duel, T., Amram, T., & Chen, A. Y. S. (2020). In *Proceedings of the ACM Designing Interactive Systems Conference (DIS '20)*, 283–295. DOI: 10.1145/3357236.3395438

5 Uncomfortable Interactions

Benford, S., Greenhalgh, C., Giannachi, G., Walker, B., Marshall, J., & Rodden, T. (2012). In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '12)*, 2005–2014. DOI: 10.1145/2207676.2208347

6 23 Ways to Nudge: A Review of Technology-Mediated Nudging in Human-Computer Interaction

Carabu, A., Karapanos, E., Gonçalves, D., & Campos, P. (2019). In *Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '19)*. Paper 503, 1–15. DOI: 10.1145/3290605.3300733

7 Ten Ways to Design for Disgust, Sadness, and Other Enjoyments: A Design Approach to Enrich Product Experiences with Negative Emotions

Fokkinga, S. F., & Desmet, P. M. A. (2013). *International Journal of Design*, 7(1), 19–36.

8 Our Symbiotic Life: An Exploration of Interspecies Relations

Budinger, K., & Heidmann, F. (2019). In *Proceedings of the Designing Interactive Systems Conference (DIS '19)*, 1349–1362. DOI: 10.1145/3322276.3323698

9 "Annoying, but in a Nice Way": An Inquiry into the Experience of Frictional Feedback

Laschke, M., Diefenbach, S., & Hassenzahl, M. (2015). In *International Journal of Design*, 9(2), 129–140.

10 From interaction to trajectories: designing coherent journeys through user experiences

Benford, S., Giannachi, G., Koleva, B., & Rodden, T. (2009). In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '09)*, 709–718. DOI: 10.1145/1518701.1518812

thank you