Gamified Urbanism

Playful Interventions to reinvigorate the "Golden Ghost City"

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Introduction

During our visit to LuxeLaakes in Chengdu, China, we were asked to address a challenge faced by the development, but also one that is increasingly common elsewhere in China; empty, new urban developments sometimes nicknamed as "Golden Ghost Cities". In spite of the significant amount of money and effort invested by the developer Wanhua in the high-end neighborhoods and the "Luxe" brand, the physical environment seemed underutilized. Without the people inhabiting in it, all that effort put into developing public spaces and liveable neighborhoods would simply go to waste.

To attract more people to want to visit, and more importantly, live in LuxeLakes, we started to believe that Wanhua needs an entirely novel change in strategy.

After one particularly long day of site visits, we stumbled upon this eureka moment; what if we thought of this entire development as a game? All the parts seemed to be there, a mascot, the "themepark" nature of parts of the development, and branding of it ... From there, we found ourselves inspired by the world of gaming and a whole slew of related topics, from mascots and the soft power of cuteness, to the rapid advancement and adoption of technology in the everyday in China, to the seemingly inevitable merging of the digital and physical.

Over the next few chapters, we hope to inspire a rethinking of how this "Golden Ghost City" problem that is common in China, and even across Asia, might be solved by games! We believe that the built environment can learn a lot from game design, particularly in its ability to attract interaction and create experiences that are fun, addictive, and shared. We are defining "gamified urbanism" as an approach that builds a sense of community and connectedness through playful interactions with the virtual and the physical.

01 Empty Urban Spaces that examplify the "Golden Ghost City". Despite the amount of time, effort and money poured into such new urban developments, they somehow end up underutilized.

Source: Photographs by authors from site visit to Luxelakes, Chengdu, China.

The "Heatherwick Effect"

Early on in our discussions about the project, we constantly referred to a certain phenomenon with new urban objects that we nicknamed the "Heatherwick Effect", in reference to The Vessel at Hudson Yards [02].In brief, these are urban designs that generate a larger than life presence through traditional and social media propagation and a kind extended virtual interaction after the physical.

Whilst there exists numerous other examples of this, including Howeler+Yoon's Swing Time in Boston, MA, and Urban Light by Chris Burden at LACMA, the Vessel perhaps exemplifies this to the highest degree. The most important part of one's interaction with the building-sized sculpture is perhaps that moment when you take a selfie with it, and post it on social media. The likes and virtual interactions that it generates, further incentivizes this behavior with the next Vessel-equivalent.

It is this game-like effect that we sough to research and extrapolate on in this project with LuxeLakes.

Gamifying Golden Ghost Cities

The concrete moment of relating this effect to the urban issues of LuxeLakes occurred as we toured around both Luxelakes and its sister development, LuxeHills. Being the newer iteration for the Luxe brand, LuxeLakes was the more ambitious of the two , creating entire themed neighborhoods complete with requisite services and ammenities, and featuring unique activities and luxurious residences.
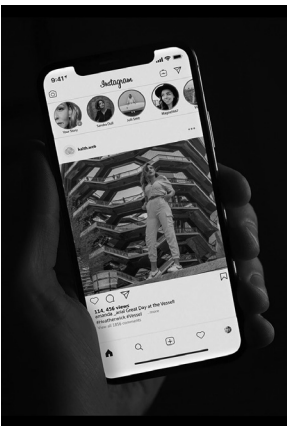
Yet, like parts of LuxeHills, it seemed that it suffered from low resident participation in urban life, resulting in eerily empty scenes like the ones pictured in the introduction and to the right. These scenes almost seemed like game environments or backdrops, waiting to be populated by players, aka the residents. In fact, we found an uncanny ressemblance between social media images of the sites [04] with screenshots from the massively popular online shooter game, CS Go. [05]

Several factors further this comparison; both the environemnts present as "exotic", both employ elements of the "real" and the "unreal" at the same time, both are similarly isolated from the outside world, both bare the same sense of emptiness, and lastly, both are actually

02 Thomas Heatherwick's The Vessel in Hudson Yards

Source: Caro's Editorial (http://caroseditorial.com/the-vessel-new-york/)

03 And to Instagram it goes!

Source: Visualization for project pitch, by authors

monetized environments, requiring a certain amount of literal buy-in for their use. This parallel compelled us to further investigate this phenomena and speculate on how it might actually be used to mitigate the challenges faced by a generation of empty, new urban developments.

Strategies of Gamification

In researching the origins of gamified urbanism and its implementation (we have curated a series of references in the appendix), we started to devise a framework for how strategies of gamification might be applied to various scales and phases of urban design. Broadly categorized, they are as follows: Gamified Planning and Design, Gamified Mascot, Game Broadcasts, Gamified Urban Experience, and Gamified Living. In reference to these, a gamified urbanism might be thought of as a series of nested operations, where the same sense of gamifying things would be applied throughout the design and subsequent inhabitation and operation of an urban project.

The first of these categories, Gamified Planning and Design, are games that serve to engage designers, stakeholders and even future residents in the planning process. These can range from simple voting games to more elaborate role-playing or Monopoly-style scenarios that encourage the palyers to react to a given set of parameters and concerns and simulate various results and behaviors.

Gamified Mascots are less of a singular strategy, but rather, a consistent approach in how an urban proejct might be presented and thought of. Mascots personify a project and its stakeholders, granting an increased sense of relatability, whilst also unifying possibly disparate phases of planning and implementation. The efficacy of mascots in accomplishing this for urban projects might be seen in Takashi Murakami's Planet 66 family of alien characters for Minoru Mori's Roppongi Hills, as well as the globally recognizable mascot of the Kumamon bear for the Japanese prefecture of Kumamoto.

Game Broadcasts makes the leap to a completely different kind of media: reality TV. Inspired by the variety of outdoor activities that LuxeLakes offers, from dragon boating to horse riding, we immediately dreamnt of a scenario where a dating reality show might take place there, with the dates of the couples featuring these urban experiences. The potential of such shows to promote and

04 Luxe on social media.

Sourced from social media content featuring LuxeHills

05 Game Environment of CS Go.

Source: Screenshot of CS Go multiplayer game

virtualize activities and destinations may be observed in shows such as the wildly popualr Terrace House, and its various spin-offs, like Heart Signal. These would serve an urban development by packaging the lifestyle it offers into a format that is familiar to a wide audience, with an appeal beyond that of traditional advertisement media.

The particular strategy that we will dive into later in this report is that of the Gamified Urban Experience. Here, a hybrid physical and digital environment, enabled by interactive technology, would allow for the urban experience to be as exciting as a game environment. Whilst this may certainly also be "low-tech" and equally effective, the introduction of Internet of Things (IoT) objects in its implementation would also allow for a different model of Smart City implementation in existing urban developments.

As this gamified environment and their related technologies are propagated, we forsee a watershed moment that might only be described as Gamified Living. Here, fully integrated urban games employ task- or money-based models to engage residents and encourage participation in civic efforts whilst also generating support for underlying operational needs, such as revenue for a maintenance fund or for an activities budget.

Although there might be a plethora of smaller projects and ideas that fit under this umbrella of gamification, it really is the attitude of it that might benefit an urban project in any phase of its development. The increased user engagement throughout this process might allow designers access to opinions and views previously not considered, or even enable a Big Data approach to the spatial analysis of public space much later on during its occupancy and use.

Gamified Planning and Design

games that user can participate, input parameter, and simulate results

Gamified Mascot

Evocative and interactive mascot used across a variety of media

Game Broadcast

Packaging Luxelake Lifestyle as a gameshow

Gamified Urban Experience

With all the interactive technology, the urban experience can be as exciting as a game

Gamified Living

When the service is integrated and data is collected, the lives get smarter. Task and money based engaging models encourage residence participatory and generate revenue for maintenance fund.
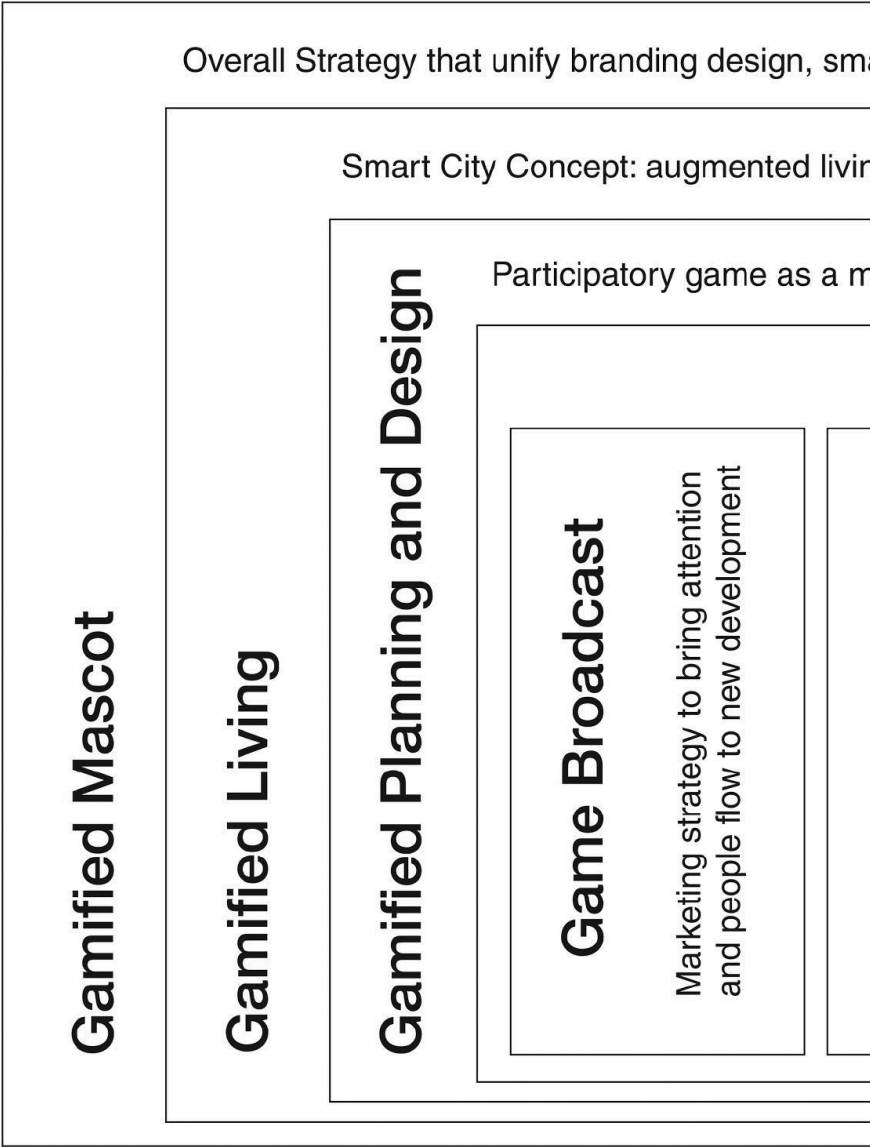
design phase

All Phases

After Initial Project Delivery

After Construction

Community Building and Maintaince

Overall Strategy that unify branding design, sm[...]

Smart City Concept: augmented livin[...]

Participatory game as a m[...]

Gamified Mascot

Gamified Living

Gamified Planning and Design

Game Broadcast

Marketing strategy to bring attention
and people flow to new development

art city concept, community building and maintainance model

g for community building and neighborhood maintainance
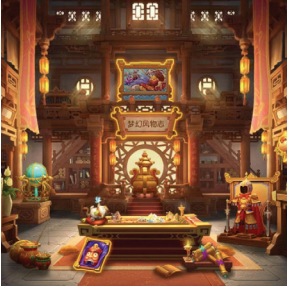
ethod to simulate and test planning and design idea

Gamified Urban Experience

Hacking existing urban infrastructure,
make the public space fun and inviting

Learning from Games

How and where might we begin then, to introduce elements of games to our built environment? The potential number ways to creatively do this is perhaps limitless, but we believe that successful urban gamification projects will offer their take on the following game elements.

In any popular online game, one might often observe that objects in the game environment exhibit behaviors that invite interaction. In this scene [06], for example, objects glow to attract attention. Gamified design should be able to similarly "seduce" urban users into interacting with the physical environment.

In this screenshot from Overcooked 2 [07], the user interface element of a game is emphasized. It shows both the game environment that characters move around in, but also an interface with key information. If applied to urban design, this implies that virtual and physical "pop-up notifications" should be incorporated, providing information to people through some variation of a user interface.

The last aspect of games is that of a saturated media environment. [08] This strategy is a particularly good way to work around an overly diverse design language, or even around severe constraints on new physical additions, all whilst serving to unify disparate elements of the design and convey information to passerbys.

Physical / Digital

In approaching this mode of gamified design, there is also the question of how it might be implemented in the urban realm. Any gamification project is inherently virtual in some sense, but might be conveyed in any combination of physical and digital means. The following are three examples that span the gamut of physical and digital environmental designs.

On the entirely physical end of the spectrum, is the resort island of Sentosa, in Singapore, which has positioned itself as an island-sized playgorund. One might describe it as Las Vegas combined with a theme park, in a rainforest, on a beach. The island is full of gameful adventurous experiences, for example, one way to access Sentosa is by cable car, a pretty unconventional means of transportation. The island itself is also man-made, complete with artificial beaches. These two elements, in particular, bear striking parallels

06 Game Environments
Source: Screenshot from Meng You Xi You

07 Game User Interface
Source: Screenshot from Overcooked 2

08 Saturated Media Environment
Source: Watchdogs

to LuxeLakes, with its constructed waterways and boat services.

A mixed physical and digital case study we referred to early on in our project is that of Disneyland. The renowned theme park augments its offerings through a mobile application, providing a number of basic functions to complete your experience of the park. Disney is also now enhancing this strategy with smart wearable objects for a more personalized experience, where staff might "magically" know customers' preferences, or accommodate a visit by your favorite mascot!

The last example in to consider would be that of Pokemon Go, a purely digital augmentation of the existing environment. The popularity of this augmented-reality game by Niantic is by now, well-documented. What we might learn from this, is that to activate existing urban space and encourage social interactions, designers can also operate purely in digital space.

09 A7 Hotel Island [below] Rendering of the A7 Hotel Island. With the theme of "Senses" the A7 parcel of LuxeLakes is designed to provide a selection of boutique hotels curated around multi-sensory experiences and events.

Source: Provided by Wide Horizons

Site Analysis

 After the research phase of the proejct, we were asked by our client and collaborators, Wide Horizon, to focus on a particular parcel within the larger LuxeLakes development, that of the A7 Hotel Island. [09] This portion of the masterplan is already in its schematic design phase and consists of high-rise residential and office, retail offerings, and most importantly, a series of boutique hotels curated around the concept of "senses". The highly programmed area, along with its aim of providing multi-sensory experiences and events, made it a good site to test our gamified urbanism approach on.

The first aspect of the design of A7 that informed our proposal is the fact that it has an incredibly busy visual vocabulary. Due to its goal of providing unique experiences for each of the hotels, each building is markedly different from the next, allowing for little room to propose entirely new physical designs. This encouraged us to adopt a more infrastructural approach, targeting the three main pathways along the island as well as key public spaces, such as the waterfront and areas for public seating.

Another prominent element of the design can be observed in the site section. Here, we began to categorize different parts of the island in terminology inspired by game environments. The boutique hotels and key retail outlets might be seen as a kind of "paid content", only accessible to customers and hotel guests. Next to these are "world features", or elements of landscape or architecture that best exemplify the image of LuxeLakes. These serve to attract visitors to LuxeLakes, but simultaneously should be poised to redirect them to the "Paid Content" nearby. The last category is the "Open World", referring to the rest of LuxeLakes, but could similarly be gamified for exploration and circulation.

The combination of the two inspires us to rethink the nature of access on the island in terms of gamification. What interactions are the public made privy to? Where are the hotel guests-only expereinces at in the public realm? How do these contribute to the overall hotel and events experience?

06 Game Environments
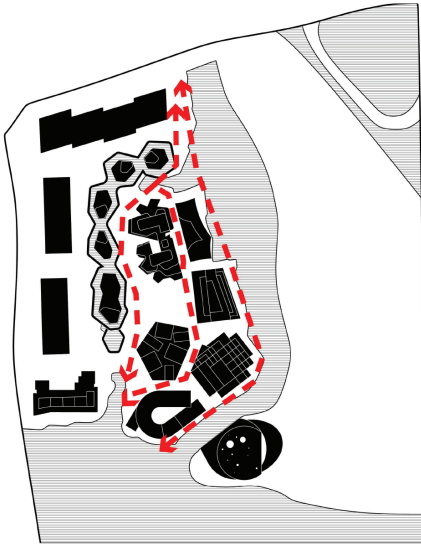Source: Screenshot from Meng You Xi You

07 Game User Interface
Source: Screenshot from Overcooked 2

08 Saturated Media Environment
Source: Watchdogs

Site Plan Analysis [below]
The three main axes of
circulation are highlighted
in red, moving along the wa-
terfront, between the hotels
and along a key landscape
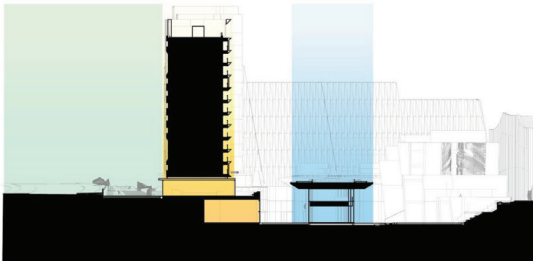feature. Main public spaces
are highlighted in the plan to
the right

Site Section [bottom]
Rethinking the site in terms
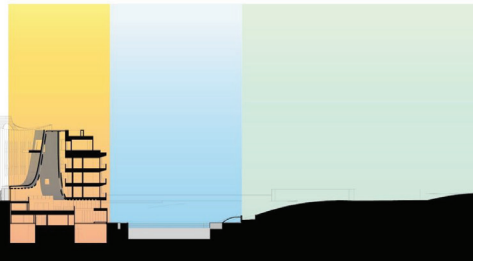of game terminology and
access

Paid Content

Open World   **World Feature**

Paid Content

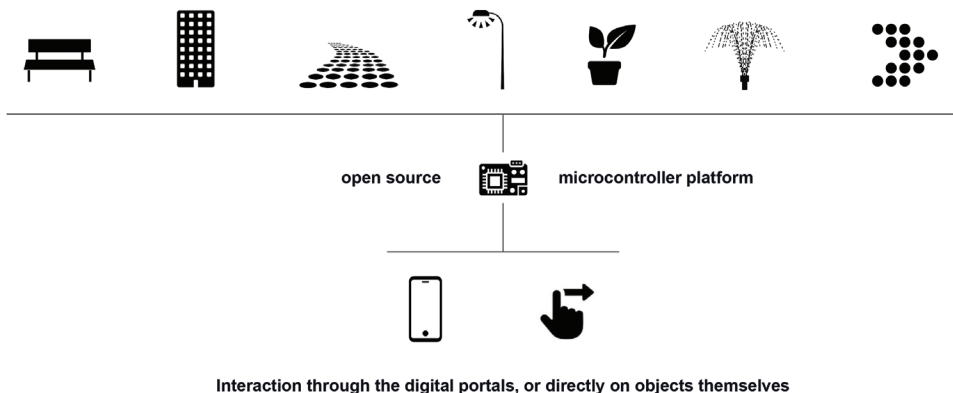**World Feature**   **Open World**

Hacking Infrastructure

Given the current state of the A7 design and the limits of how we might intervene, we decided to focus our proposal on creating a Gamified Urban Experience, and in the theme of "Hacking Chengdu", approach it by hacking existing urban infrastructure.

In this approach, a whole host of urban objects become available to be co-opted into the game environment. These include but are not limited to interactive benches, playable facades, informative paths, atmospheric street lighting, educational planters, smart water features and mobile-integrated interactive way-finding.

Any of these objects might have purely physical game interactions, or more progressively start to incorporate the integration of open source microcontrollers. These would allow for interactions to take place either through digital portals, such as via smart phone or a tablet, or directly on objects themselves.

One might evaluate these interactions in terms of connectivity, interaction and infrastructure by referring to the adjacent matrix. Gamified urban experiences might be direct or complex in how they are connected. They might have more embedded means of interaction, such as a hand gesture sensor, or require more embodied responses from users. A favorite case study of ours is an example where a traffic light animation changes and mimics the dancing of people at designated sensors, transforming an otherwise mundane urban activity of waiting for a traffic light. The last parameter to consider is of how these interventions might engage individual or larger social interactions.

In parallel to this infrastructural approach in the physical realm, we are also proposing a digital infrastructure for A7 Hotel Island. We imagine a cohesive user experience that integrates a comprehensive LuxeLakes membership account, an attached task- and money-based rewards system and geo-based events. As the proposal gets implemented and is further developed, this would also serve as the platform for refined data sourcing and analysis of urban behaviours on the hotel island.

open source   microcontroller platform

Interaction through the digital portals, or directly on objects themselves

Direct					Complex
	QR Code	Near Field Communications	Radio Frequency	Bluetooth / BLE	WiFi

Embedded					Embodied
	App or Gesture Control	Proximity Sensing	Facial Recognition	Full Body Interaction	Group / Forum Interaction

Individual					Social
	Personal Health	Wayfinding	Commerce	Events	Social Network

Infrastructural Function

Events

Brand

Food

Attractions

Extra fun and addictive

Rewarding/Collectable System

Geo-Based Special Events

Unlock Function For Multiple Visits

Membership

15

Having made your reservation at one of the bespoke hotels on A7, you are ushered into the parallel virtual world of Hotel Island through the LuxeLakes portal application. Whether downloaded on your phone or provided by the hotel, this is the first step that allows guests to think of the island not just as a physical space, but a virtual one as well.

You look at the main interface, and it actually looks just like a game. You can see the main attractions on hotels on a rendered map, along with geo-based pop-up notifications. You notice your friend's profile appear on the bottom of hte screen, and you realize you are not the only one visiting today! You notice that an animated boat icon indicate a boat is arriving, and you deicde to take a boat to A7.

To access the whole virtual world and access basic functions, you are asked to create a Luxe account. As you finish the form, you are informed that you are now a privileged visitor of the island.

You click on your profile and you notice, that just like a game, there are tasks to accomplish, badges to win, and a rewards system that allows you to show them off! This account and system are fully integrated into every aspect of the island, from cultural and gustatory experiences, to retail, to more essential concierge services.

You arrive on the island, and look at your phone to orient yourself. You notice that the yoga hotel is changing in color, notifying you of an upcoming event. You swipe left to see the event details, and click on a button to navigate there.

Member Services
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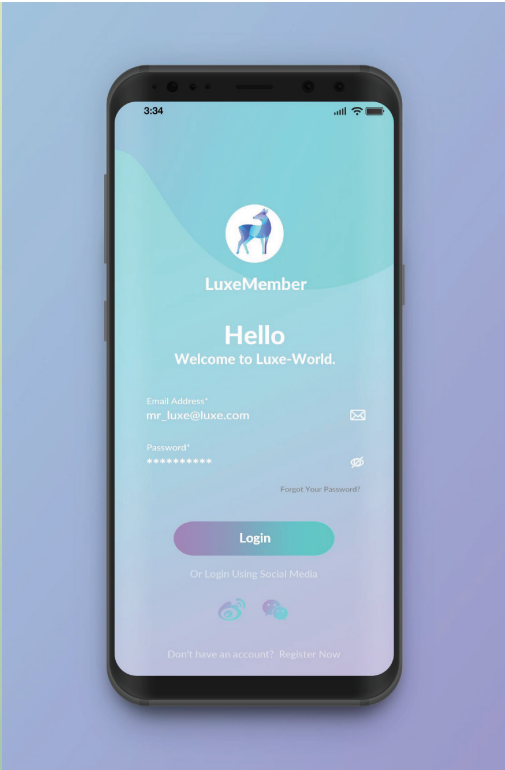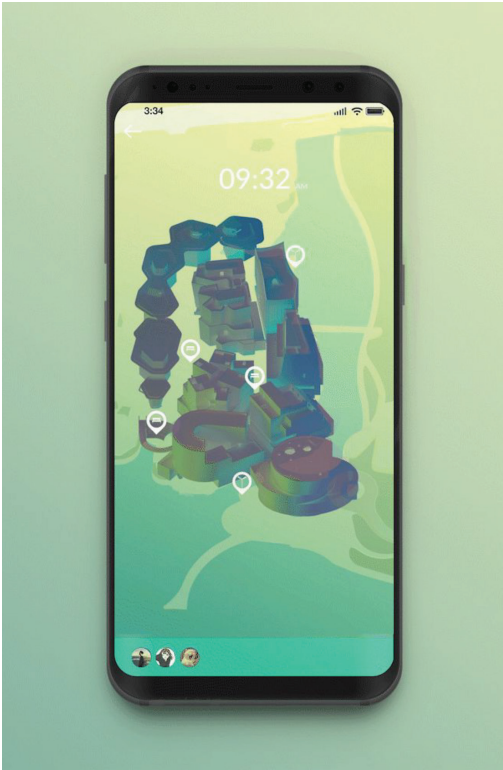
Account Login
Dundit vel ipsamus invendunt aditati sinciisti illab intia net quo ernam id magn

Virtual A7
Dundit vel ipsamus invendunt quo ernam id magnam sim inciatur sequodion explate ssunti optatem est aborit que dusande llabore henihit mol

Rewards System
Dundit vel ipsamus invendunt aditati sinciisti illab intia net quo ernam id magn

You arrive on the island, and look at your phone to orient yourself. You notice that the yoga hotel is changing in color, notifying you of an upcoming event. You swipe left to see the event details, and click on a button to navigate there.
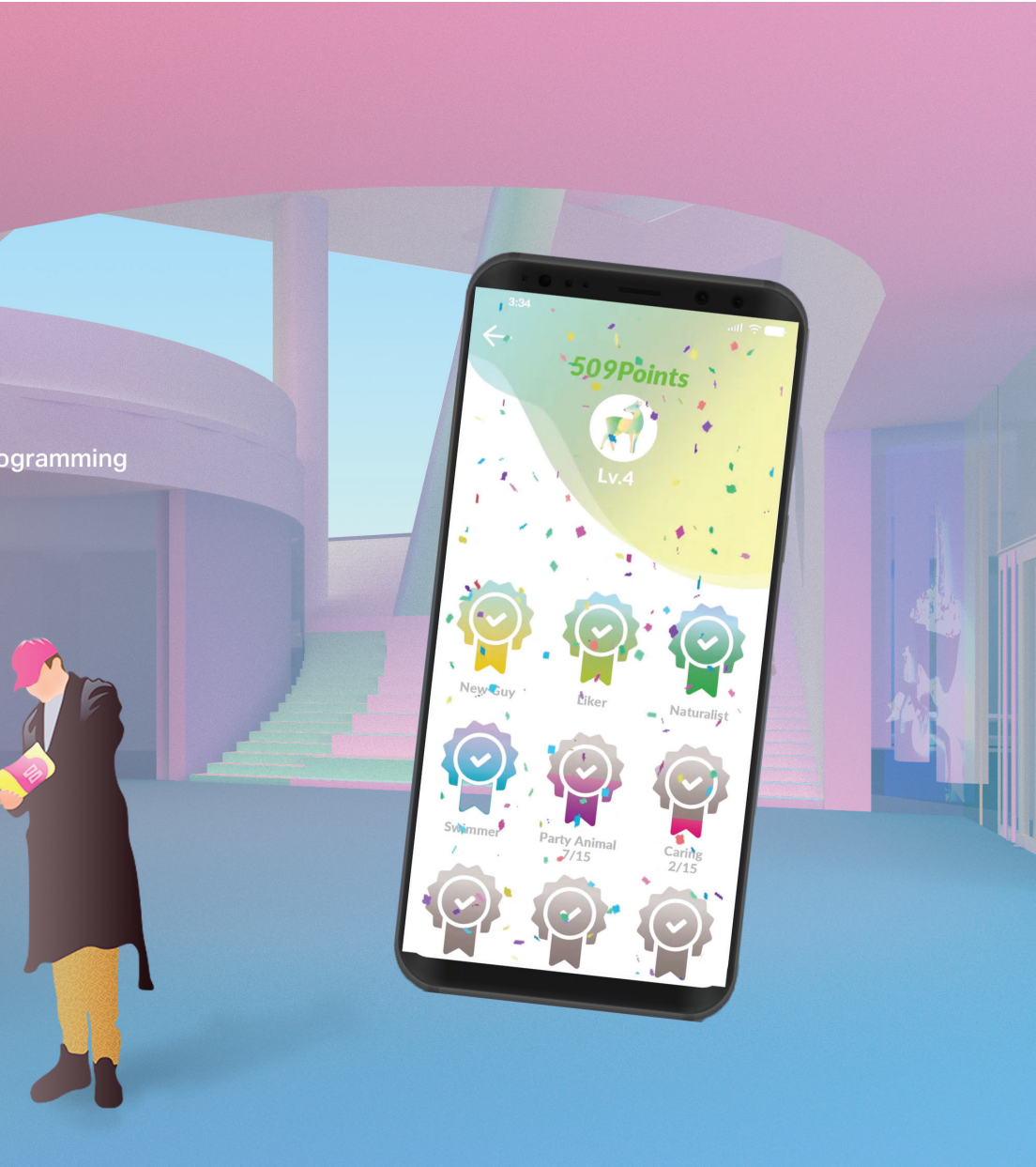

Visualizing Environmental Data

Along the way, your phone exchanges data with Bluetooth sensors to locate you, and the LED strip on the curbside starts to glow to show you the way in the physical environment. As you walk by, you barely notice a range of embedded smart urban objects, yet they engage with the app you are currently using.

Interactive Educational Trail

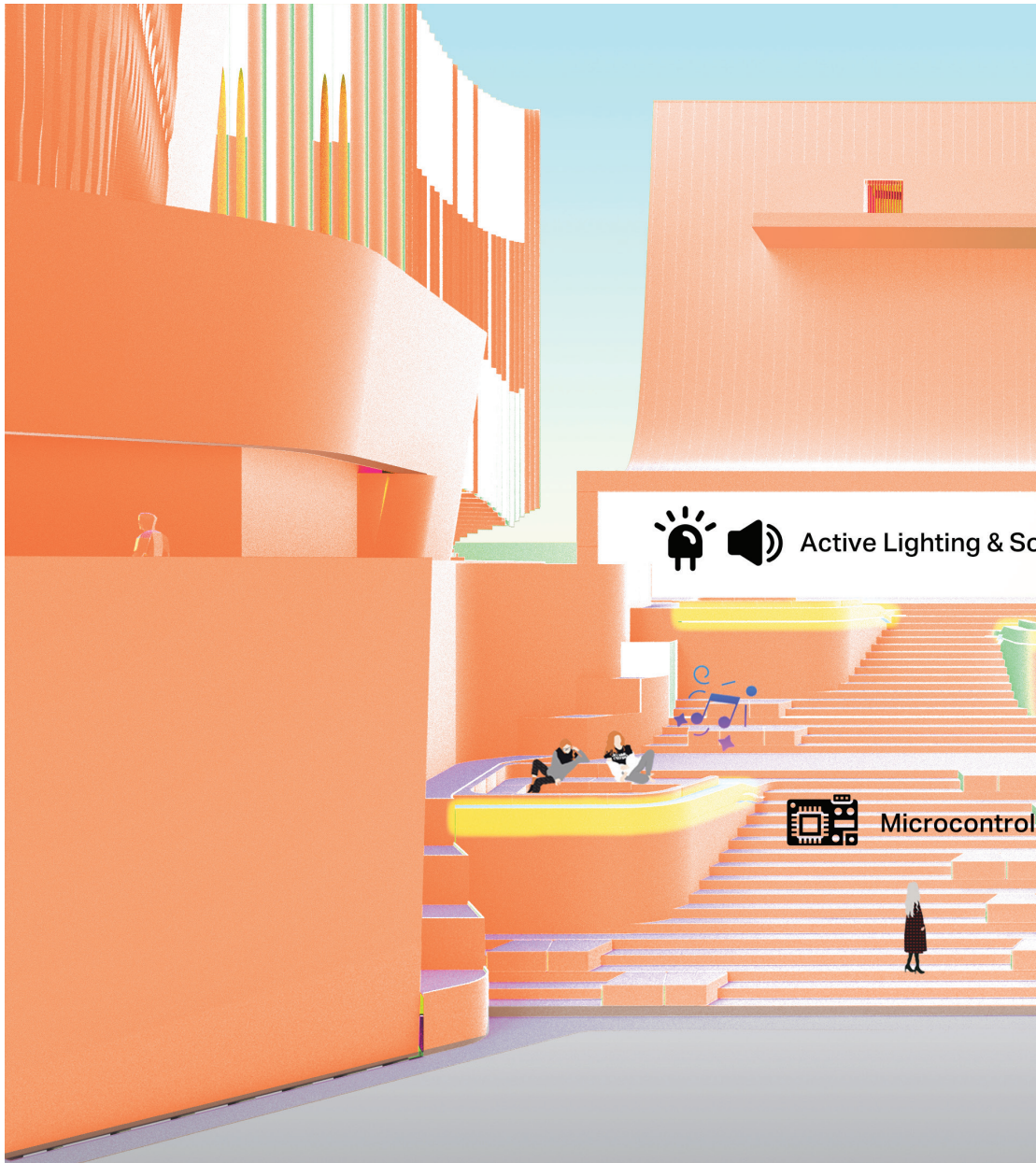Introduction of Simple Smart Objects

Smart Sprinkler System

As you walk along the street, you spy a vending machine in a building lobby. The mascot of LuxeLakes - Luxedeer or Lulu - is on the digital screen greeting you: Would you like a Coke or some Boba today? You think the Coke would be great and swipe your phone on the NFC sensor to pay for it.
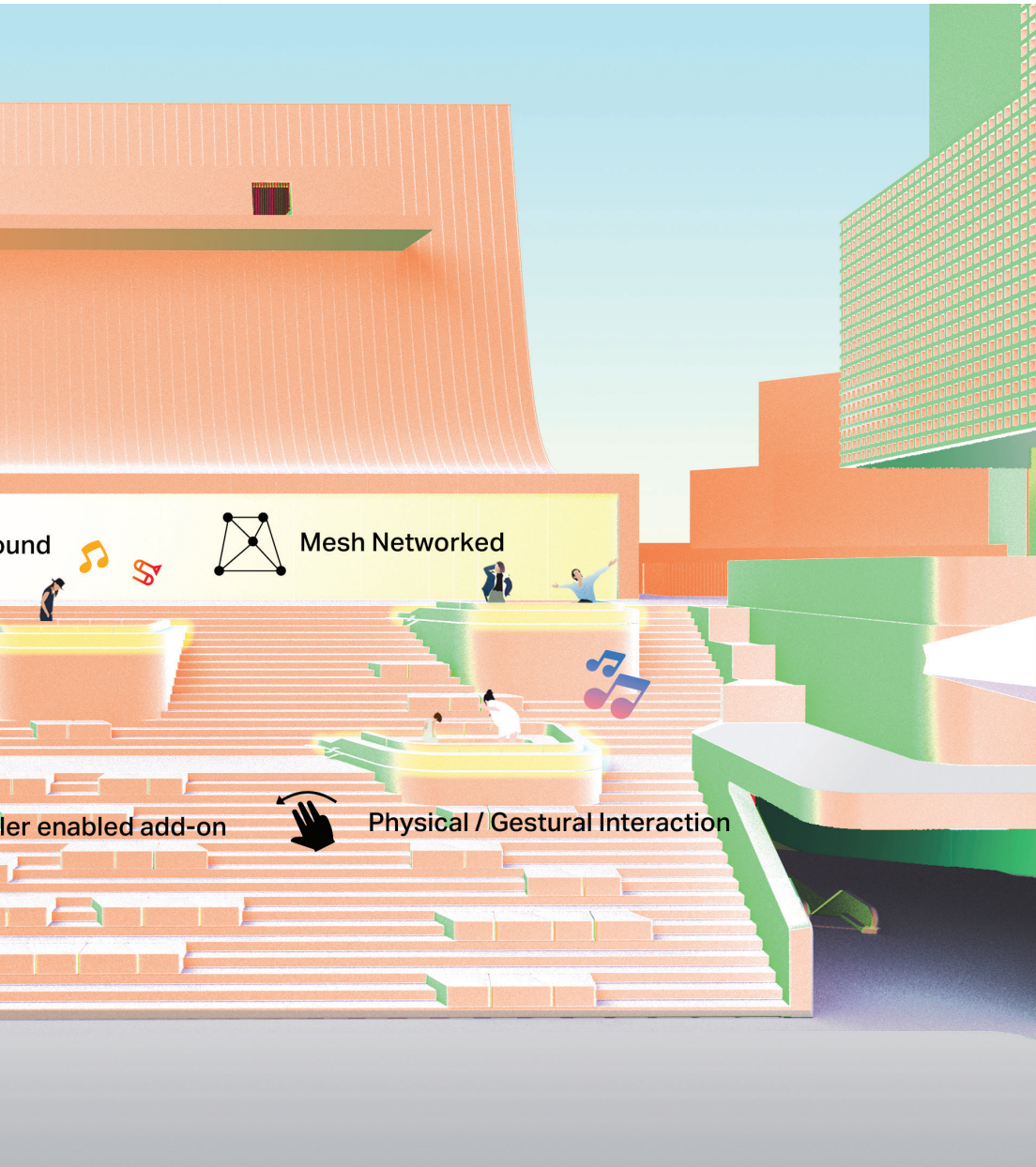

Environmental Pr

Integrated Rewards

Lulu reminds you: Once you finish your drink, throw the can in the recycling bin! You'll get a reward point for doing so!

As you walk out of the lobby, you arrive at a small plaza in front of the hotel. You observe people playing with the benches at the seating booths. As people pat and sit on these, you notice that the plastic seating changes in color and start to play sounds!

Active Lighting & So

Microcontrol

Just like a jazz band, each individual interaction interweaves into a larger impromptu composition, spurring people to participate together. You really want to try it out!

ound

Mesh Networked

ler enabled add-on

Physical / Gestural Interaction

With an event coming up, a fellow guest that you are interested in meeting arranges a meeting at a hotel-exclusive booth.
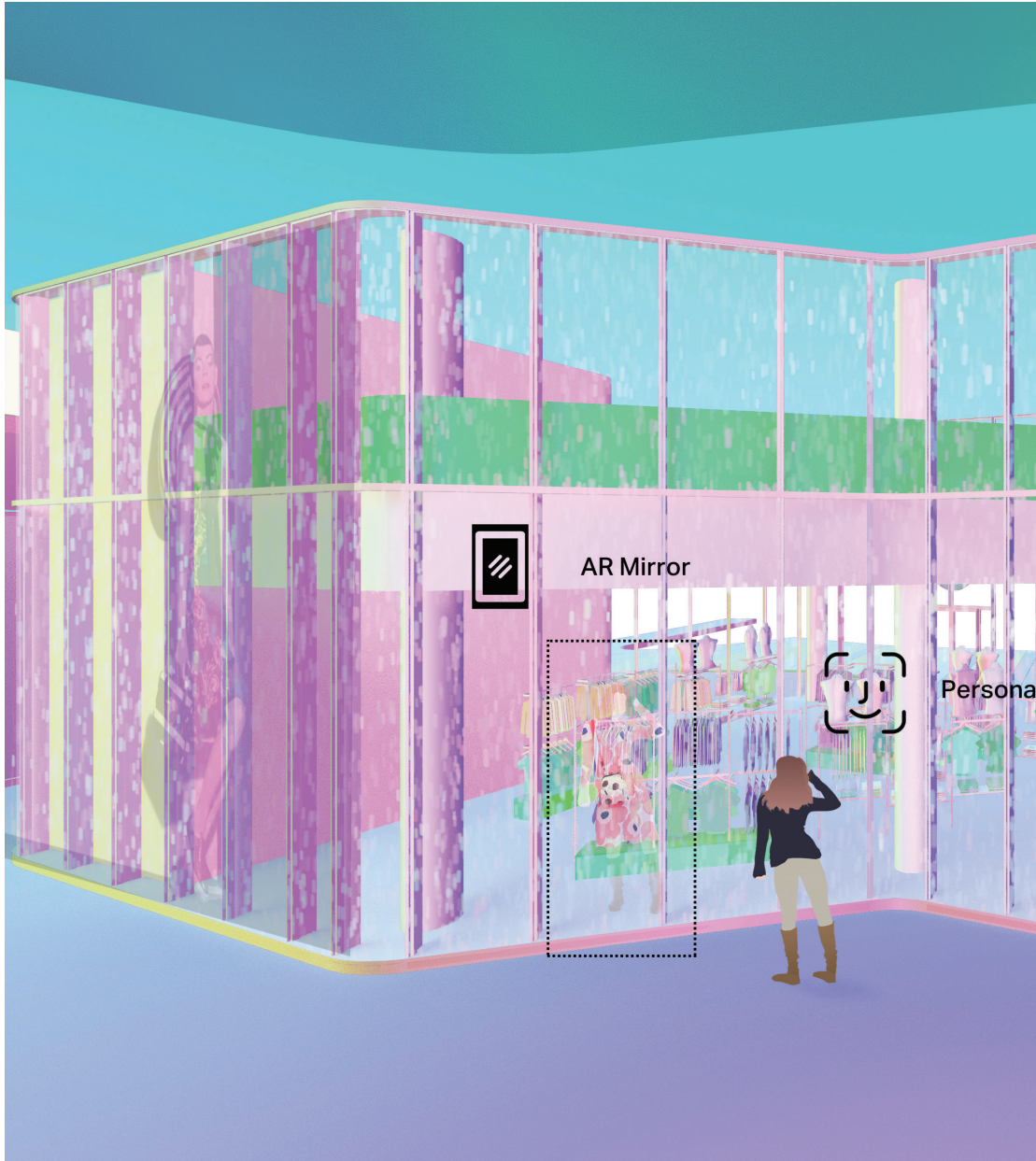

NFC / Proximity Activation

Enabled with NFC detection and a curated AR experience, these booths offer you a joruney into a whole new LuxeLakes experience! Each is finely tuned to the latest A7 Hotels event.
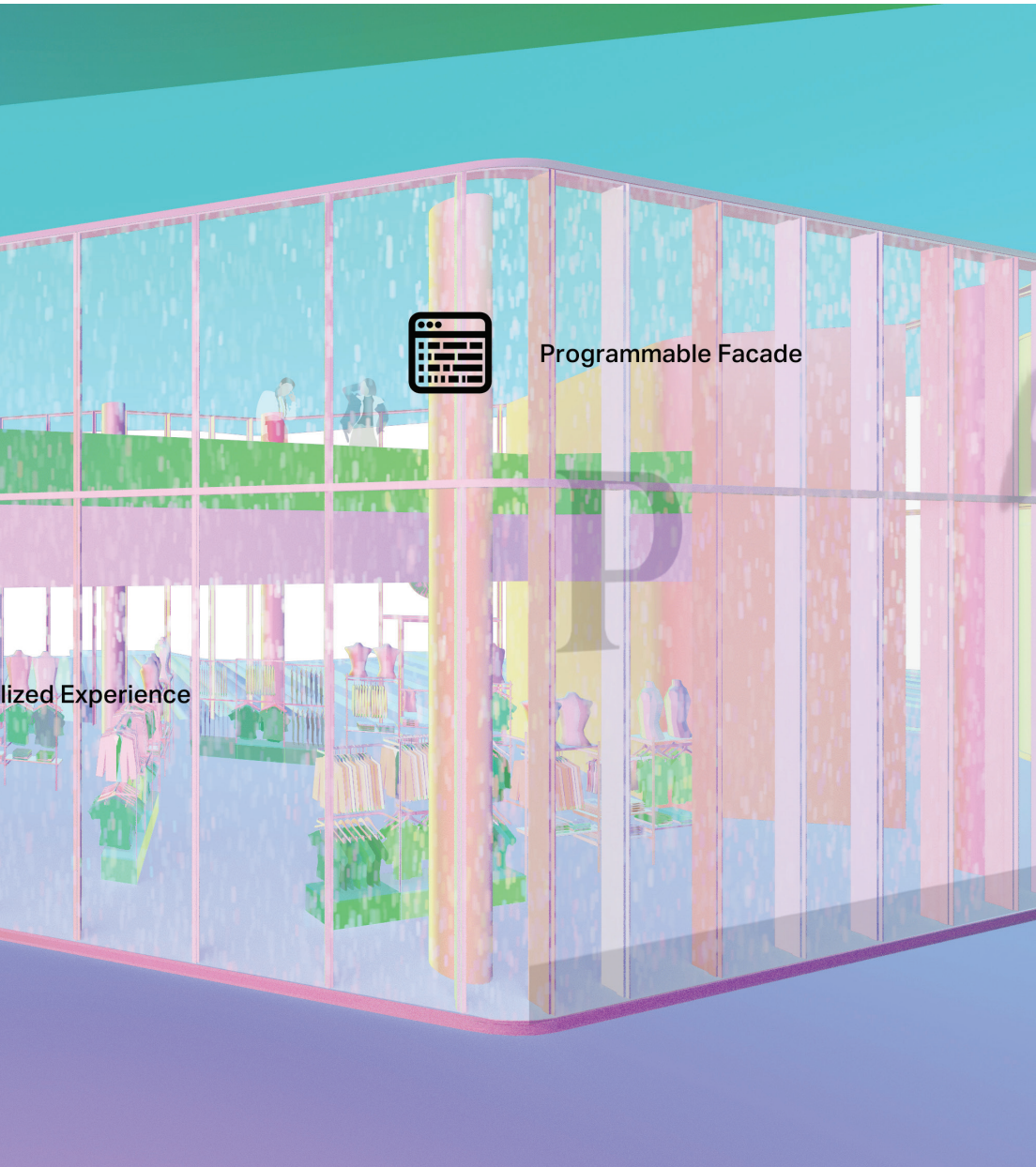
After the event, you walk stroll leisurely by the main water feature, window shopping. You stop when you notice that the glass wall is actually a curtain of water, with advertisements that are projected on them. You look into the window and see yourself projected back, but now dressed in the latest fashion!
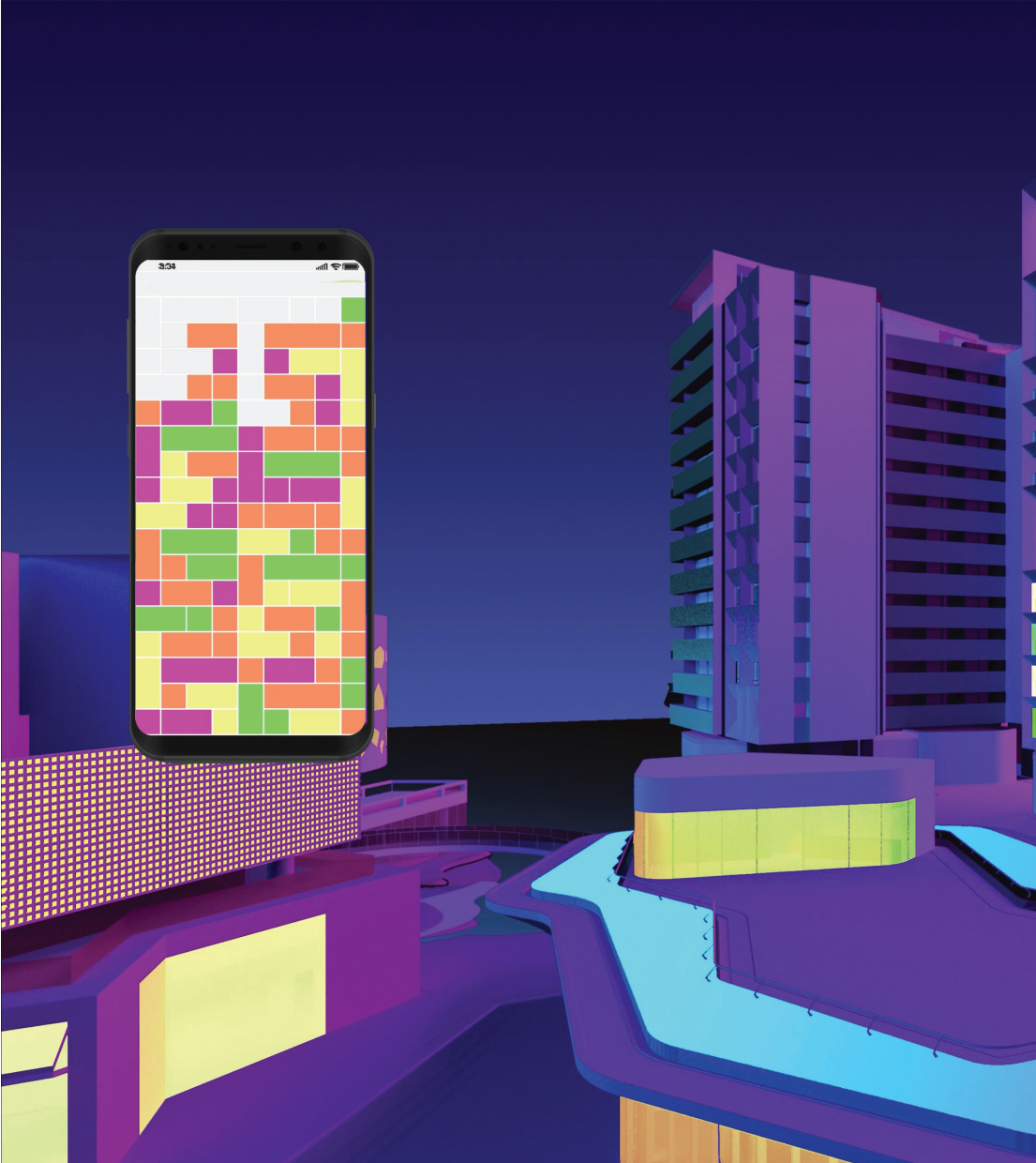

AR Mirror

Persona

You know that this is achieved through a hidden camera and an augmented reality mirror, but seeing it swirl around in the water, it still feels like magic!

The outfit looks good on you, and you deicde to enter the store. The water curtain parts to make way for you.

Programmable Facade

lized Experience

As night falls, you head to a restaurant for dinner. At your window seat, you are surprised that on the otherwise banal facade of the building across from hotel island, it looks like a game of Candy Crush is being played!

Noticing your amusement, your waiter informs you that the buildings are wirelessly controlled with LEDs embedded in the facade.

He encourages you to give it a go, and you and your friend soon figure out how to play it on the Luxe app. As you play, your fellow diners and passerbys spectate in awe.

After a short while, you unfortunately lose the game and now owe your friend dinner!

You decide to call it a night and leave the restaurant. Just as you do so, the LED pattern on the building morphs into a giant heart! There's music! There's fireworks! People start cheering as they realize what's going on.

A fellow guest is proposing on the terrace of the water island atop the stores.

What a romantic way to end the evening, you think.

Concluding Thoughts

As the addage goes, "nothing ever looks as dated as old science fiction ..."

In the history of future-thinking, we have often tried to portray the world of tomorrow in as convincing terms as we can. We extrapolate from the latest discoveries and propel them into the future - only to discover how outdated they are in retrospect.

Our project on gamified urbanism is also a project that is thinking about the city of the future. And thus, it is also a quesiton for us, on how we might avoid being oudated in this world of rapidly changing technology.

While on the surface our project might seem to be very technology-focused, our goal is not really to preach about the magical world that technology might create for us, but more about how we might rethink the relationship between people and the built environment. The kind interactivity we are espousing exists in both digital and physical media. How might we use our tools, regardless of its level of technology, in our given constraints, to playfully solve the issues of today?

Hacking originally meant illegally gaining access to and, sometimes, tampering with systems in a computer or an even with an object. But today, the scope of what is "hackable" has broadened significantly, and along with it, the definition of what "hacking" is and what its culture is about. The urban interactions we have proposed make it about playfulness, social interaction and exploration. We hope that "hacking" means exploring what this spirit means, and in the context of this course, what is possible in the existing contexts of LuxeLakes and Chengdu.