



POLITECNICO
MILANO 1863

DIPARTIMENTO DI DESIGN

Movable Expo In The City

Social and cultural innovation and sustainability
development in self driving society 2030

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Tutor

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INDEX

INTRODUCTION	8
BACKGROUND	
Part 1 Megatrends Research	13
1. Capitalism at Crossroads	18
1.1 Urban growth	18
1.2 The city is facing challenges	22
1.3 The city should rethink the public space	24
Case 1 Rental Space Tower	26
Case 2 Chisinau Civic Center	27
1.4 Cultural diversity	30
1.4.1 Traditional culture should be protected and developed	31
1.4.2 The future world is a dynamic world	32
1.4.3 Cultural innovation	33
1.4.4 Conclusion	33
2. Digital Disruption	38
2.1 Industry Revolution 4.0	38

2.2	Driverless Car	40
2.2.1	The benefits of driverless car	41
2.2.2	The impact of autonomous vehicles on the city	41
2.2.3	The liberation of human hands and time	42
	Case 1 The future of moving spaces IDEO	46
2.3	Smart City	48
2.3.1	AI is having greatest impact on the eight domains	48
2.3.2	Future dynamic set of experiences space	50
	Case 1 One Family Under a Wireless Roof	50
3.	Democratization of Creativity	52
	Case 1 Fablab	53
	Case 2 Coach House Trust	54
	Case 3 Liberte	55
	Case 4 Block by Block	56

INDEX

Part 2 Mindset 59

Being a ‘Culture protector and communicator’ 61

Part 3 Global Filter 63

1. A multicultural city 65

2. Cultural needs of the people in Shanghai 68

3. Shanghai smart city development 73

SCENARIOS

Part 4 Scenarios 77

1. The profession orientation in 2030 78

2. Movable Expo in the city 80

2.1 The significance of Movable Expo 84

CONCEPT

Part 5 Concept

- | | |
|---------------------------------------|-----|
| | 87 |
| 1. 'MOVEXPO' in Shanghai | 88 |
| 2. Cultural experience in each module | 92 |
| 3. Interior layout | 110 |
| 4. Moving system | 112 |

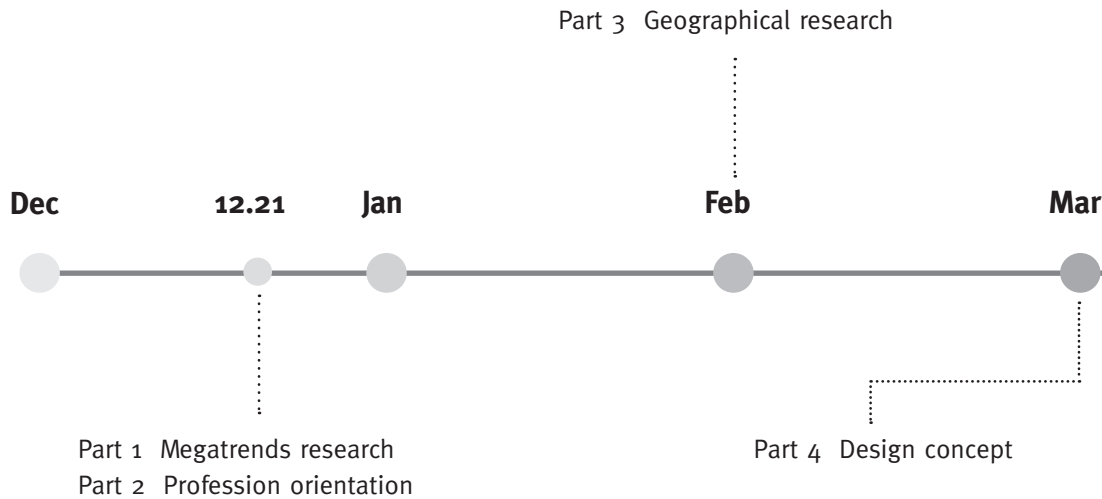
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SITEGRAPHY

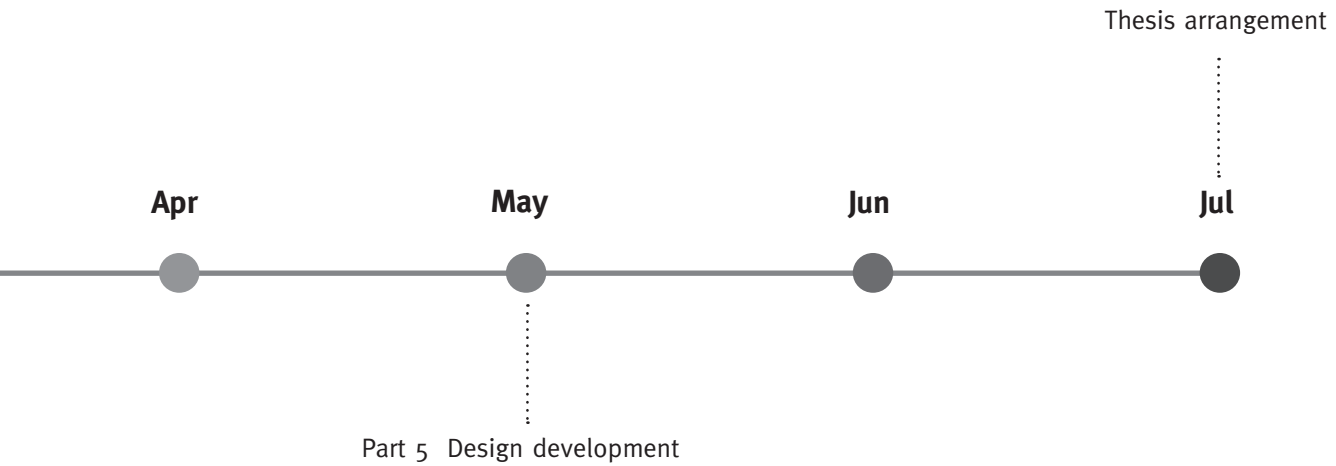
120

121

DELIVER CALENDAR



- Research methods
 - Research information written and online
 - Personally involved
 - Communication with related persons/ potential partners (cultural ambassadors, curators, traditional culture practitioners, activity participants...)



- Design presentations
 - Storyboards
 - Concept visions
 - 3D models, App...

INTRODUCTION

Under the influence of globalization, culture becomes more diversified. More and more people are pouring into cities. The development of this trend has also brought many problems to the city. The rapid growth of urban population has caused various problems such as overcrowding of urban space, shortage of housing resources, deteriorating environment and some conflicts arising from cross-cultural hybridization.

Another trend is that the future of the world is a dynamic world, people move all around the world for travelling, working or studying, ect, people are anxious to experience different cultural characteristics, different lifestyles, looking for fresh experiences. As a result, the boundaries between countries will also gradually blur.

There are similarities and differences in the culture of different regions. Cultural diversity may collide with sparks and conflicts may arise. Therefore, the development of cultural sustainability is crucial. How to protect and develop the local culture, how to treat the foreign culture and how to create a better cultural experience for people of different cultural backgrounds. These problems should be considered carefully.

In the sustainable society, everyone can create and everyone can participate in the urban planning. Under the wisdom and creativity of the general public, some existing social problems can be solved more intelligently. The common goal is to improve

the quality of life and to create a better city. People will live in a very emotional and happy society, people can share experience and knowledge, social communication and interaction will be increased, the connection of people will be much closer.

We need a new profession in order to build a social and cultural sustainability and innovation city. Here I call it 'The urban culture cluster ambassador', this group of people come from different cultural backgrounds, they must have a wealth of their own cultural knowledge and to promote and develop the essence of their culture. They have to fully understand the cultural needs of different groups of people. They have good ability of communication and exchange different cultures. They should have the excellent capabilities to hold and creat meaningful and interesting exhibition activities to make people engage in actively and connect with each other much closer. The urban cultural cluster ambassadors in various cities will also exchange ideas, experiences and results.

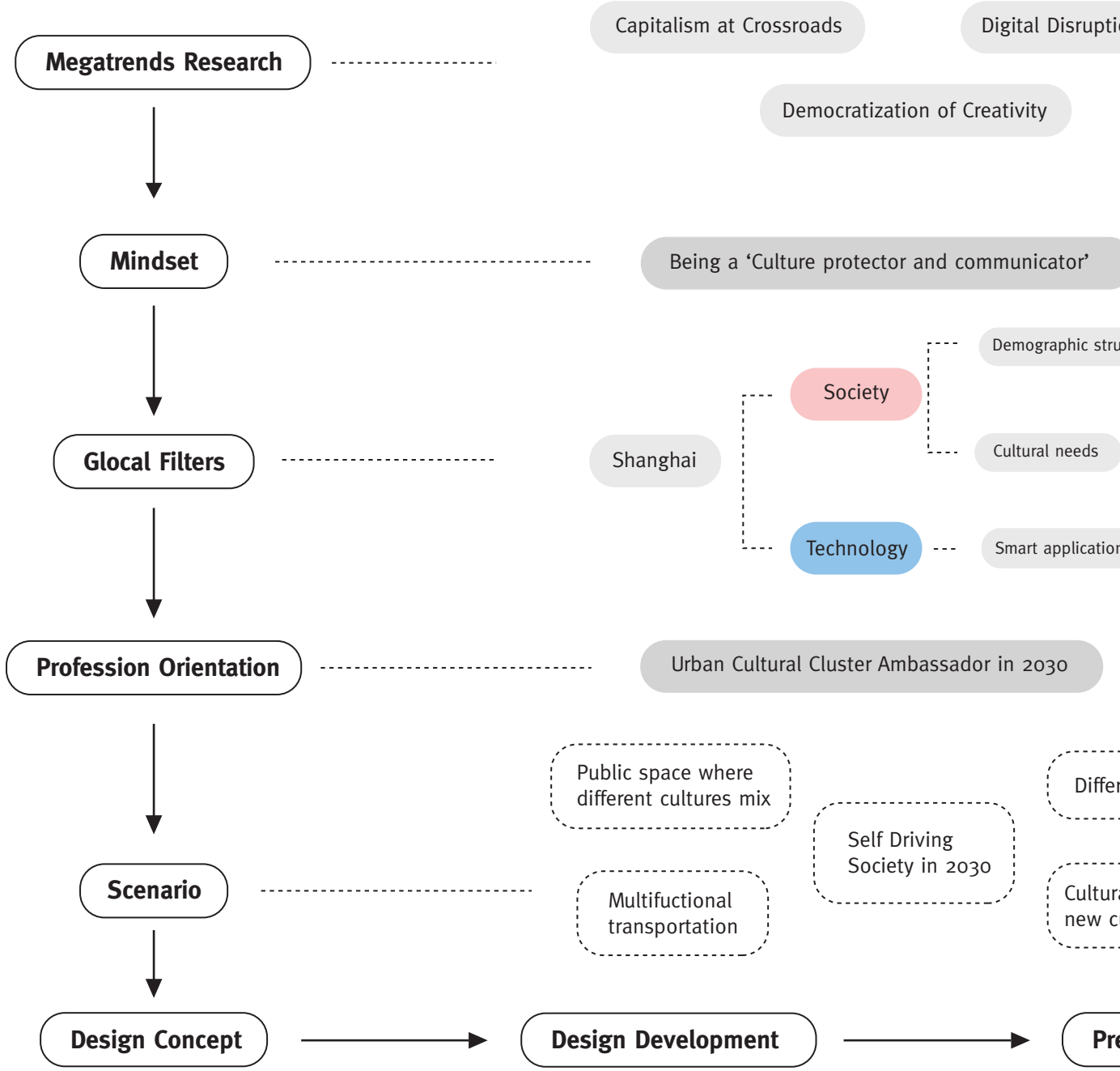
On the other hand, with the development of science and technology, the advent of Internet of Things and big data, people's lives will become more intelligent and convenient. The future city will be a highly smart city, which will change people's live ways including all aspects of basic necessities of life. People will live in a more dynamic space, maybe every surface will become interactive. The emergence of autonomous vehicles will liberate human hands completely, which means vehicles will no longer

be used merely as a means of travel, people will be able to do more in this mobile space and will get more experience during this period of mobility. The mobile devices will become more customized and will truly serve people and treat people as the center. In self driving society in 2030, autonomous vehicles will bring endless possibilities for human being.

The theme of this thesis is 'Movable Expo In The City' that aims to promote social and cultural innovation and sustainability development. It's integrated in 4 modules, in each module there is a cultural theme, people will get a different cultural experience and they can communicate and interact with each other. These modules will move all around the city such as the commuting routes, city attractions, parks, squares even infiltrate neighbourhoods in order to make everyone have the opportunity to relax, leisure, entertain, get knowledge and interact with others. These modules also can be integrated as a much bigger exhibition to attract much more people. People also can share their experiences and give suggestions on the platform. In this thesis, I choose Shanghai as a research city to design the appearance, inside activities, and the moving system according the city's characteristics and people's living customs. In further, Movable Expo should be designed to present the city's identity for each city. At the same time, the urban culture cluster ambassador will also design more cultural experiences for people.

This thesis was began in the last laboratory of the second year

in my master of Product design for innovation, from September 2017 to January 2018, I finished the research part and gave the primary idea, from March to July 2018 I mainly focused on the concept development part. I appreciate each professor of this course that gave me the guidance and suggestions for my each workshop, especially very appreciate my tutor Emmanuelle Villani who gave me many helps and suggestions that make me get the inspiration and complete this thesis successfully. I also appreciate my team members during this course and during my internship, I learned a lot from them that is also very useful and helpful for my thesis. Completing this thesis also means that I have grown a lot on the way of design.



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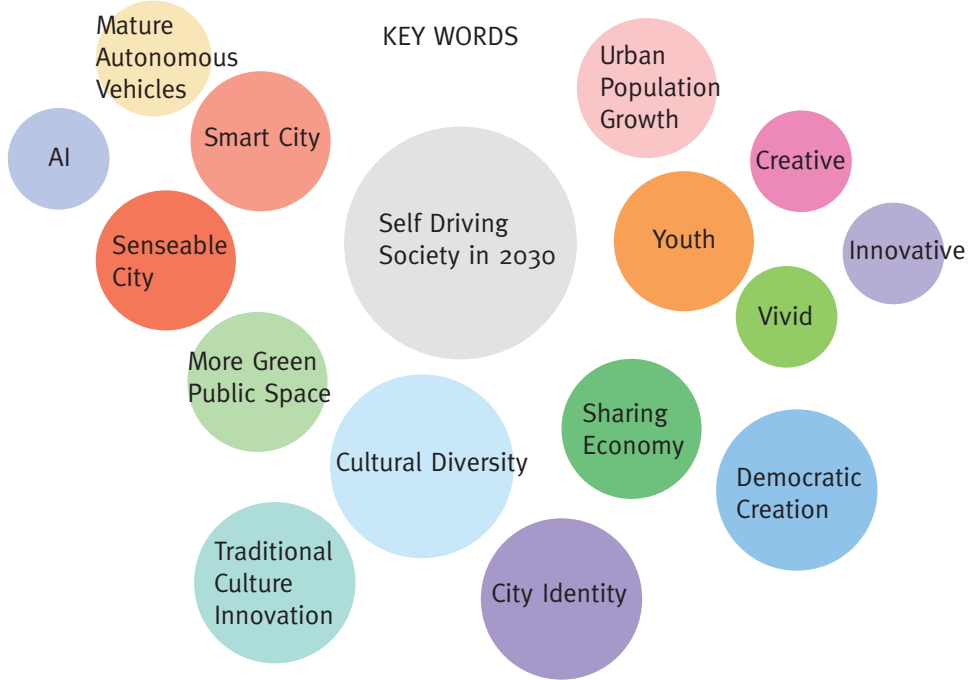
ecture analysis

ns

ent cultures communication

al innovation in a smart city,
cultural experiences

esent Future Scenario



PART 1


MEGATRENDS RESEARCH

Capitalism at
Crossroads

Silver Megapolis

Democratization
of Creativity

Social Production
and Co-creation



Planet under
stress

New Welfare

Search for safety

Digital disruption

Capitalism at Crossroads

Urban growth

The city is facing challenges (accommodation, ethnicity, public space, safety, education...)

Different ethnics, different social groups, different cultural background...

Culture diversity

rethinking Pulic Space

Where cultures mix and exchange (leisure, entertainment, education...)

Local Culture
Traditional Culture

Foreign Culture

Social Interaction and Communication

Protect & develop

Inclusive

Mix

Culture Innovation

Culture Sustainability
Social Sustainability

PEOPLE

ENVIRONMENT

Research

Digital Disruption

Democratization of Creativity

Smart City

Driverless Car

Smart Interactive Space

Moving Space

Dynamic set of experiences
space

Social Sustainability

TECHNOLOGY

Enrich people's cultural experience,
increasing social connection.

1. Capitalism at Crossroads

1.1 Urban growth

Cities are the main creators of economic wealth, generating over 70 per cent of the world's Gross Domestic Product (GDP). Most industries and businesses are located in or within immediate vicinity of urban areas, providing city residents with jobs. Because most employment opportunities are within urban areas, cities attract large parts of a country's job seeking population. This is especially true in developing countries, where an increasing share of economic activities take place in cities, and the differential between urban and rural wages is growing. This causes rapid rural-to-urban migration. Today, over 50 per cent of the world's population is urban dwellers, with this figure expected to rise to over 65 per cent by 2030. If urban economic opportunities do not keep pace with the influx of job-seekers, urban poverty can have dire results for the health and well-being of large shares of the population.



EXPRESS @ EX

EXPRESS

HONEYMOON

BEST ACTOR
BILLY PORTER
2013 TONY AWARDS

IRRESISTIBLE!
Beautiful
The Carole King Musical

ZHINGO

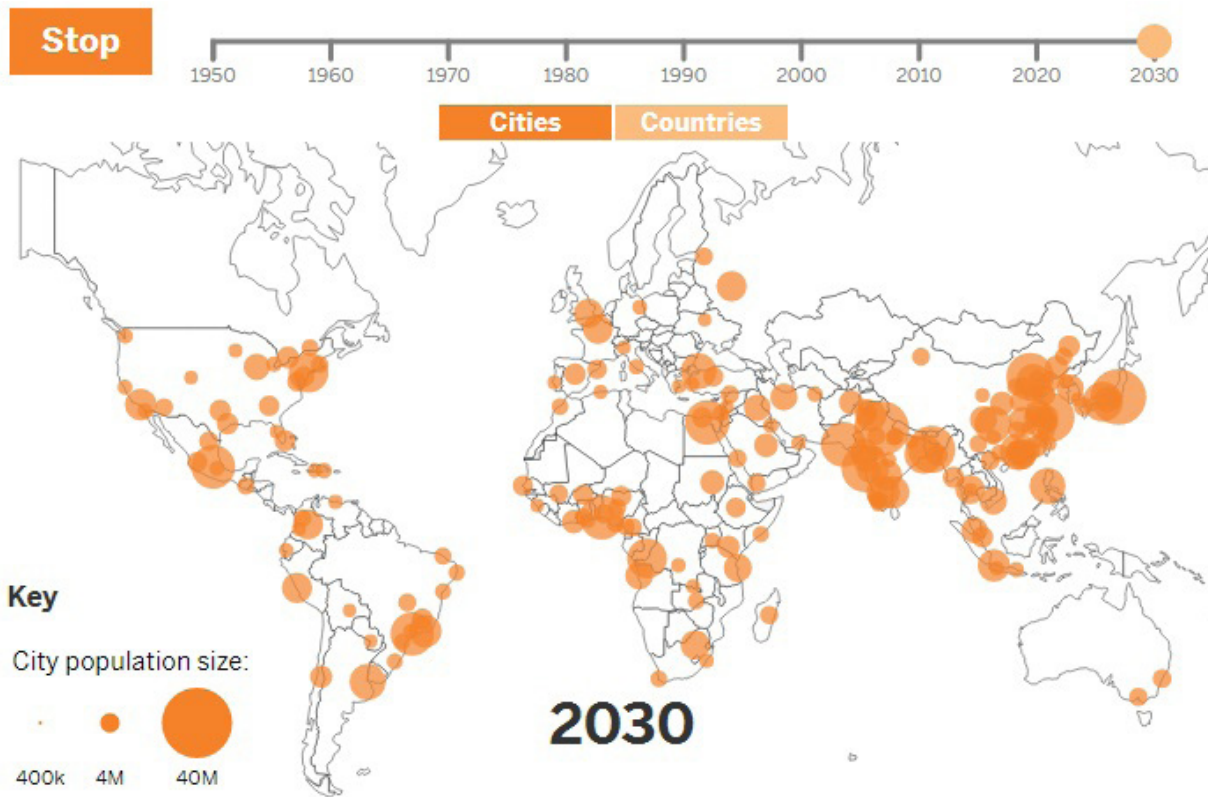
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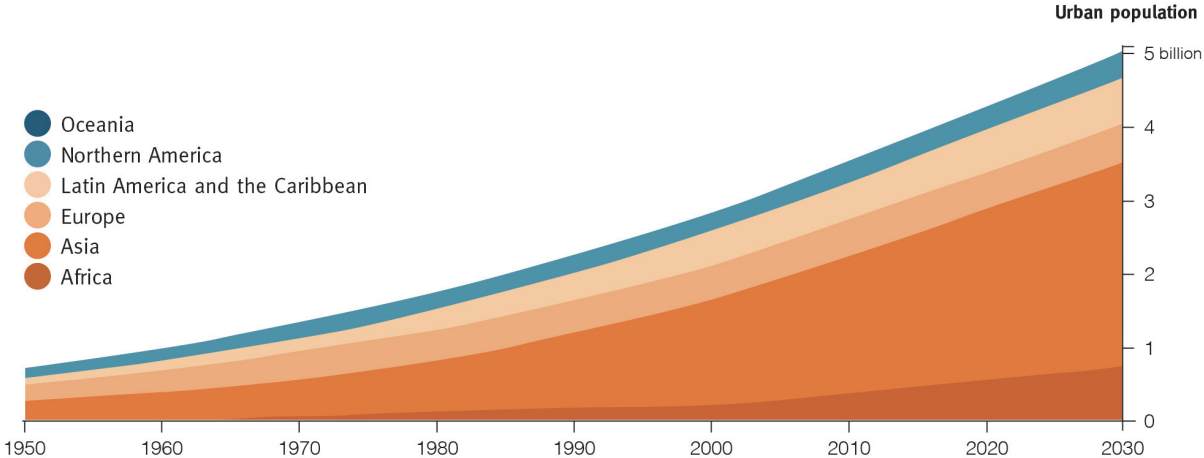
6TDK

THE LION KING
THE AWARD-WINNING BEST MUSICAL

GIFTS • LUGGAGE

PHOTOGRAPHY






1.2 The city is facing challenges

Cities are facing unprecedented demographic, environmental, economic, social and spatial challenges. There has been a phenomenal shift towards urbanization, with 6 out of every 10 people in the world expected to reside in urban areas by 2030. Over 90 per cent of this growth will take place in Africa, Asia, Latin America, and the Caribbean. In the absence of effective urban planning, the consequences of this rapid urbanization will be dramatic. In many places around the world, the effects can already be felt: lack of proper housing and growth of slums, inadequate and out-dated infrastructure – be it roads, public transport, water, sanitation, or electricity – escalating poverty and unemployment, safety and crime problems, pollution and health issues, as well as poorly managed natural or man-made disasters and other catastrophes due to the effects of climate change.

THE CITY NEEDS TO FACE THE PROBLEM




Accommodation



Job




Ethnicity




Transportation



Welfare



Safety



Energy



Climate




Water



Public space



Education



Environment

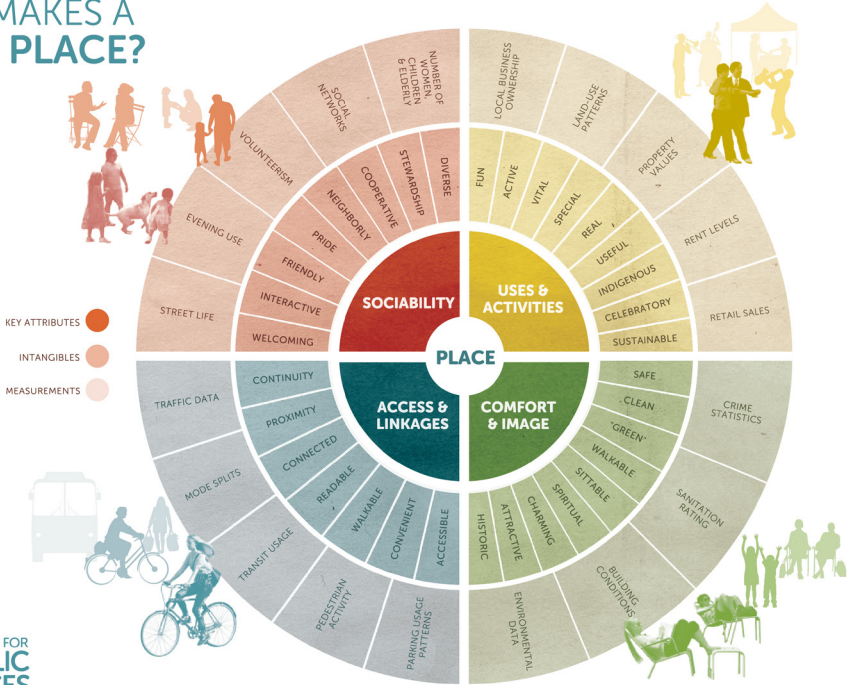
1.3 The city should rethink the public space

City authorities need to rethink public spaces such as parks, green areas, and streets. Well-designed public space not only contributes to improving the overall visual character, but also invigorates economic activities and enhances the functionality of the city. High density neighbourhoods with adequate public space, infrastructure and public transport facilities encourage walking, cycling, and other forms of eco-friendly non-motorized mobility, thereby reducing carbon emissions and cutting down reliance on fossil fuels. Furthermore, the provision of pedestrian friendly streetscapes and public structures where residents can gather — such as athletic, recreational, or cultural centers — will promote social connectivity and diversity, thus making neighbourhoods more cohesive, lively maximizing access and use of public spaces by all citizens, resulting in an overall improvement of urban quality of life. From an environmental point of view, city planning should create a green economy that is not reliant on fossil fuels. When designing their urban development plans, authorities should incorporate low emission strategies as well as resilience to climate change.

The Place Diagram shows that great public spaces are those places where celebrations are held, social and economic exchanges occur, friends run into each other, and cultures mix. They are the “front porches” of our public institutions – libraries, field houses, schools – where we interact with each other and government. When these spaces work well, they serve as the stage for our public lives.

In evaluating thousands of public spaces around the world, PPS has found that to be successful, they generally share the following four qualities: they are **accessible**; people are engaged in **activities** there; the space is **comfortable** and has a good image; and finally, it is a **sociable** place: one where people meet each other and take people when they come to visit. PPS developed **The Place Diagram** as a tool to help people in judging any place, good or bad.

WHAT MAKES A GREAT PLACE?

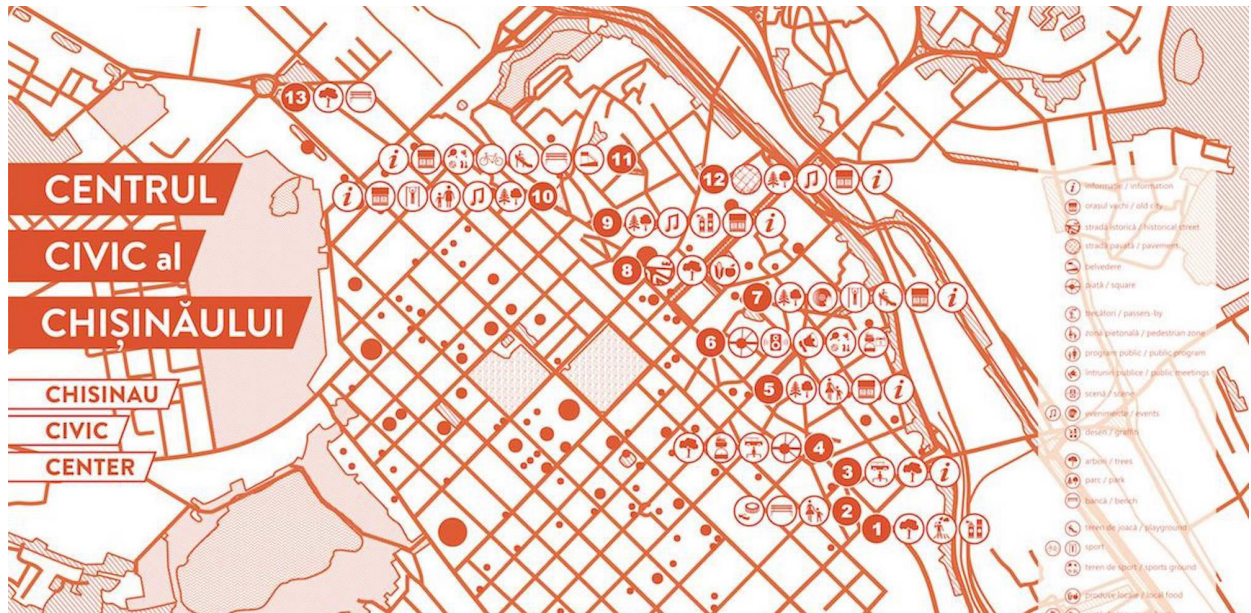




Case 1

Rental Space Tower - Daito Trust Construction X Sou FUJIMOTO (House Vision 2016)

The theme of residential leasing and management company Daito Trust Construction and architect Sou FUJIMOTO is “redefining the rental house”. Rental housing had always been configured so that space for exclusive occupancy is maximized while common areas are confined to passageways. But what if private spaces are minimized to provide spacious shared spaces, such as kitchens, baths, theater rooms and gardens? One can have a luxurious kitchen to enjoy cooking skills, a spacious bathtub in which to stretch your body, and an extensive library to read books for diversion. Unlike house sharing, where the living room and other spaces outside of one’s own room are shared with others, the private and shared areas here are clearly divided, and then recombined anew to provide a glimpse of a comfortable and relaxing rental housing. If elderly people with time on their hands or people with gardening skills manage the shared gardens, then everyone can enjoy them too. The dull corridors are transformed into vibrant composite spaces.



Case 2

Chisinau Civic Center: Vacant Lot Reclaimed as a Public Park for Community Gatherings

—Cat Johnson

A neglected plot of triangular land once lay in the city of Chisinau in Moldova. Cars regularly drove over it. Some used it to dump their garbage and construction rubble. Now, the site is a lively public space, known as the Chisinau Civic Center. The transformation was initiated by the local nongovernmental organization — the Oberliht Association, and was created together with local officials as well as artists, architects, scientists, students, and community members. In the very beginning, they held a public picnic at the park as a way to invite nearby residents to get involved in the park's restoration. The organizers then built a wooden platform in the center of the park with support of the nearby residents. This eventually led to the Civic Center becoming a play area for children, as well as a place for community gatherings, film screenings, games, exhibits, and performances.



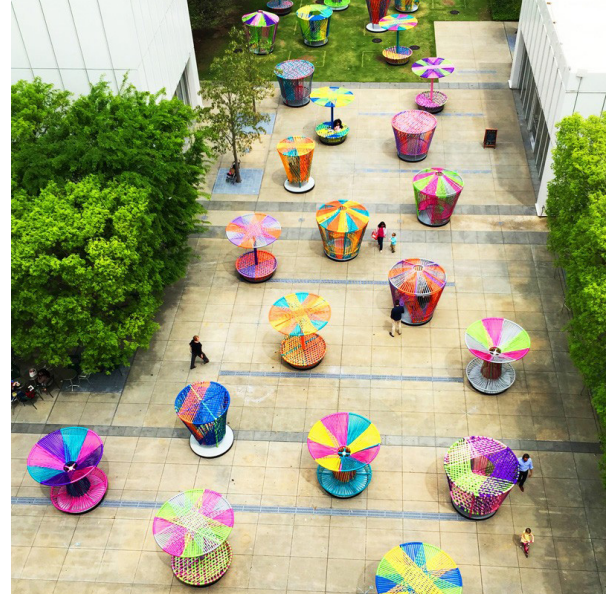
‘People like to play in public space: on streets, footpaths, in patches of sunlight, dodging around lampposts. Play is a unique and compelling way to relate to your environment, a way of being at home and at peace.’

-Holly Gramazio (a game designer, designed Scotch Hoppers)

Left: Electric forest 2014
<https://www.electricforestfestival.com/2018-info/faq/>

Right Top: Runaway 2017, Sep.
<https://www.edhat.com/news/pop-up-art-installation-on-state-street>

Right Bottom: Scotch Hopper Glasgow 2014



Left Top: 'Penetrable' by Jesus Rafael Soto
Left Bottom: Tom Fruin-Stained glass house at Brooklyn Bridge Park 2014T
Right: LOS TROMPOS

1.4 Cultural diversity

The growing diversity within the city is a striking feature of contemporary urban development, especially in major cities throughout the world, which also include cultural diversity. The rapid growth of urban population has resulted in the diversification of the urban population structure resulting from the migration from different ethnic and cultural backgrounds. As cities can provide people with a broader space for development, a better living environment and a more attractive cultural atmosphere, more and more people are transferred from their rural areas to cities or international immigrants. There are also many attractive cities that attract countless visitors from all over the world as well as temporary learners and workers. These people from different countries, regions, ethnicities and cultural backgrounds make up the diversity of the urban population and at the same time make the cultural structure of the city more complicated. This diversity of cultural structures may cause conflicts on the one hand and enrich the urban culture on the other. The ability to create good conversations among cultures in an innovative way and to embrace different cultures in a more inclusive and open-minded manner could create a more prosperous urban culture and thus contribute to a more vibrant urban economy, forming a more vibrant city, such as London, New York, Paris, Tokyo and so on.

Rye lanes are a shopping street in Peckham, South London, one of London's most diverse neighborhoods and one of the poorest in the UK. The shop owners here are immigrants from over 20

countries around the world. Only a street brings together such a diverse population group, so that people have excellent intercultural communication skills. Nearly one-third of rye alley owners can speak in four or more languages. Immigrants just arrived in London will also come here to share living space with immigrants who have settled.

The cultural diversity provides people with more perspectives on values and provided more options for lifestyles. For example, you can taste the food from different regions, wearing different styles of clothing, enjoy different movie and music produced from different cultural contexts. Due to people's educational level and different backgrounds, their choices will be different, gradually forming personal values and worldviews. Each region has a different degree of development and a different degree of tolerance for cultural diversity. Areas with relatively free economic development are more open to foreign cultures and more inclusive. In economically underdeveloped regions, the ability to accept new matters is weaker.

The most prominent phenomenon of cultural communication is the diversity of food culture. Food in any region has its own unique personality. It does not need to change its cooking style to cater to the tastes of different people. People like a certain regional flavor will naturally remain the same enthusiasm, people who do not like the food of this regional taste will have other options.

There are various exhibitions in Milan every year, often with Japanese painting exhibitions, which always attract numerous locals. Bookshops also place Japanese art books in a prominent place. When I visited the exhibition of Katsushika Hokusai, I saw Italian pupils sitting in the halls listening to the teacher's explanations and learning another country's culture different from their own from such young age. These art exhibitions not only bring the art of painting to the whole world, but also spread a kind of national culture. The people who visited the show learned more than just the paintings of a master, from these classic works understanding the history and culture, what kind of daily necessities ancient people use, what kind of clothing they wear, how people communicate with each other, what kind of living environment they lived in.

This kind of cultural transmission beyond geographic limits has enriched people's perspectives, expanded people's views on the world and made people's life forms more colorful.

Anything produces both positive and negative effects. Cultural diversity sometimes can weaken indigenous cultural identities because of some more powerful cultures have spread rapidly around the world and affect people's values and way of life, People sometimes neglect their own traditional cultures because of their over-emphasis on foreign popular cultures.

In recent years, Western Christmas and Halloween have been

particularly prevalent in China, especially among young people. This phenomenon reflects the changes in people's needs, due to the improvement of living standards and from the pressure of high-intensity life and work, young people pursuit a more relaxed, more romantic, more free, more crazy ways of life so that they can release themselves from these pressures. Especially in these western festivals, people always use this opportunity to meet these needs. On the contrary, Chinese traditional festivals have encountered indifference and neglected attitude. If only blindly pursuing foreign cultures and ignoring the local culture, these intangible cultural heritage will be slowly lost. However, in some economically backward and less open areas, local cultural specialties tend to maintain their purity because of the single cultural diversity.

1.4.1 Traditional culture should be protected and developed

Due to the city's good living environment and more development opportunities, the population is gradually shifting from the rural areas to the cities. Many cities with a good cultural atmosphere and well-known cultural heritages also attract countless tourists, learners and workers. The tangible and intangible cultural heritage of major cities has been well spread in the world. And some of the real cultural forms with traditional national characteristics are actually folk or townships. Part of the reason is that because of the migration of the population, there is no longer that the younger generation has the awareness of

inheritance and can not be promoted and developed. Partly because the government has not given enough attention, partly because the local economic development is too backward or the area is relatively closed and there is no opportunity to spread it. Gradually, these cultural heritage, especially invisible cultural forms, will disappear. These interesting, meaningful and ethnically distinctive forms of culture that deserve to be preserved and developed and require the recognition and remembrance of people.

1.4.2 The future world is a dynamic world

The future world is a moving world this means that the future world is dynamic and people are in a state of moving. There is no longer a clear geographical division. People have more freedom to choose where they want to go and want environment they want to live in. People's needs are also rising. They are no longer satisfied with the daily lifestyles that they repeat. They want to go out of their regular life circles and go to different places to experience different cultural practices and lifestyles.

Perhaps the future world is likely to no longer have a clear east-west difference because of the preference for a particular culture or other reasons, the Westerners going to the East and the Easterners studying and living in the West, as the racial structure of each region may produce a similarity. For example, in the recent two years I have found that more and more Westerners

have emerged in my hometown. They live here and seem to have adapted completely to the local life style. This phenomenon no longer occurs only in China's first-tier cities such as Beijing, Shanghai, Guangzhou and Shenzhen. These people have been able to adapt to integrate into the local cultural circle, but due to cultural differences, they will certainly form their own local cultural circle. This also prompted the formation of local cultural diversity.

In addition, the purpose of people's movement is often to seek a different and fresh experience. They leave their place of residence, leave the familiar living environment and go to another completely strange place in order to experience the local cultural identity and learn about the local cultural practices. For example, in recent years, more and more tourists choose the house with local characteristics in Airbnb, not just because of the convenience to live in a unique, consistent style world chain hotel. Kenya Hara ever said in an interview that it is speculated that by 2030, the world will have 1.8 billion to 2 billion people, that is, one-third of the world's people are in the mobile state and they will go all over the world. Tourism and sightseeing actually means that they are looking for an experience. Therefore, the design foreground of different countries is to retain their own characteristics. Something that has a very good quality and very essence in history and culture should be thoroughly tapped.

1.4.3 Cultural innovation

In today's interconnected world, culture's power to transform societies is clear. Its diverse manifestations – from our cherished historic monuments and museums to traditional practices and contemporary art forms – enrich our everyday lives in countless ways. Heritage constitutes a source of identity and cohesion for communities disrupted by bewildering change and economic instability. Creativity contributes to building open, inclusive and pluralistic societies. Both heritage and creativity lay the foundations for vibrant, innovative and prosperous knowledge societies.

UNESCO is convinced that no development can be sustainable without a strong culture component. Indeed only a human-centred approach to development based on mutual respect and open dialogue among cultures can lead to lasting, inclusive and equitable results. Yet until recently, culture has been missing from the development equation.

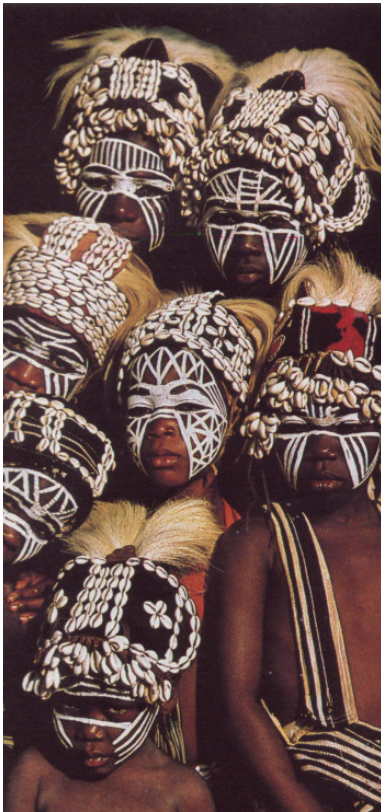
1.4.4 Conclusion

Cultural globalization transcends geographic constraints, providing people with more choices and satisfying different needs. Cultural structures everywhere may be slowly becoming similar. Cultural globalization has enriched the diversity of local cultures and brought more possibilities for the development of local cultures. Different cultures interact with and influence

each other and may create a new form of culture. How to treat foreign cultures, how to accept foreign cultures in an inclusive and appreciative manner, how to protect outstanding local cultural features, promote and develop the essence of indigenous cultures, and how to fuse foreign cultures and native cultures in an innovative way to create a more easily accepted cultural form, these issues deserve our consideration.



Commuters crossing 8th Avenue in New York City

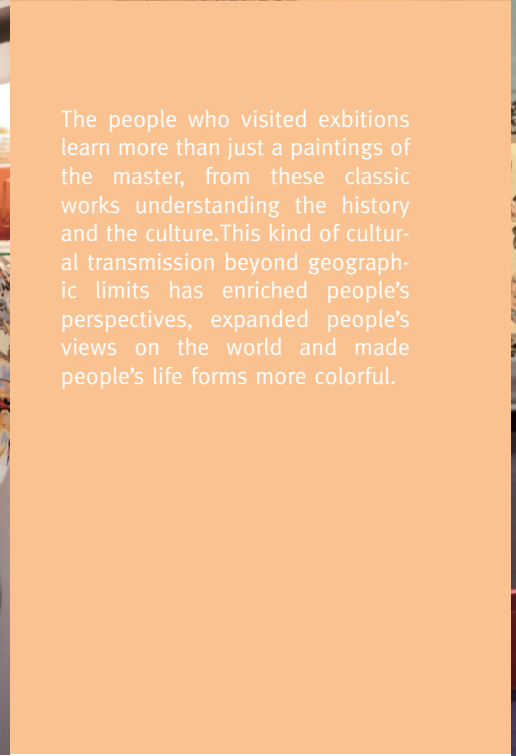




The cultural heritages, especially invisible cultural forms which are very interesting, meaningful and ethnically distinctive deserve to be preserved and developed and require the recognition and remembrance of people.



UNESCO is convinced that no development can be sustainable without a strong culture component. Indeed only a human-centred approach to development based on mutual respect and open dialogue among cultures can lead to lasting, inclusive and equitable results.



The people who visited exhibitions learn more than just a paintings of the master, from these classic works understanding the history and the culture. This kind of cultural transmission beyond geographic limits has enriched people's perspectives, expanded people's views on the world and made people's life forms more colorful.

The cultural diversity provides people with more perspectives on values and provided more options for lifestyles. People can taste the food from different regions, wearing different styles of clothing, enjoy different movie and music produced from different cultural contexts.



In recent years, Western Christmas and Halloween have been particularly prevalent in China, especially among young people. On the contrary, Chinese traditional festivals have encountered indifference and neglected attitude. Instead, Chinese living abroad will pay special attention to their own traditional festival. Also, in some economically backward and less open areas, local cultural specialties tend to maintain their purity because of the single cultural diversity.



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The future world is a moving world this means that the future world is dynamic and people are in a state of moving. There is no longer a clear geographical division. People have more freedom to choose where they want to go and want environment they want to live in. They want to go out of their regular life circles and go to different places to experience different cultural practices and lifestyles.



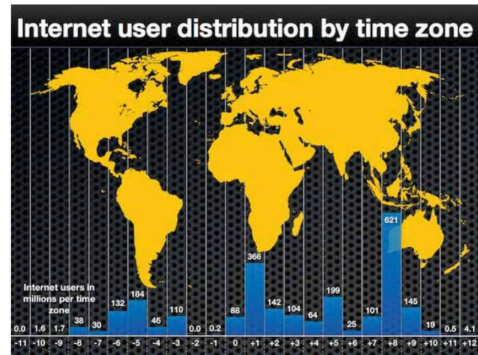
2. Digital Disruption

2.1 Industry Revolution 4.0

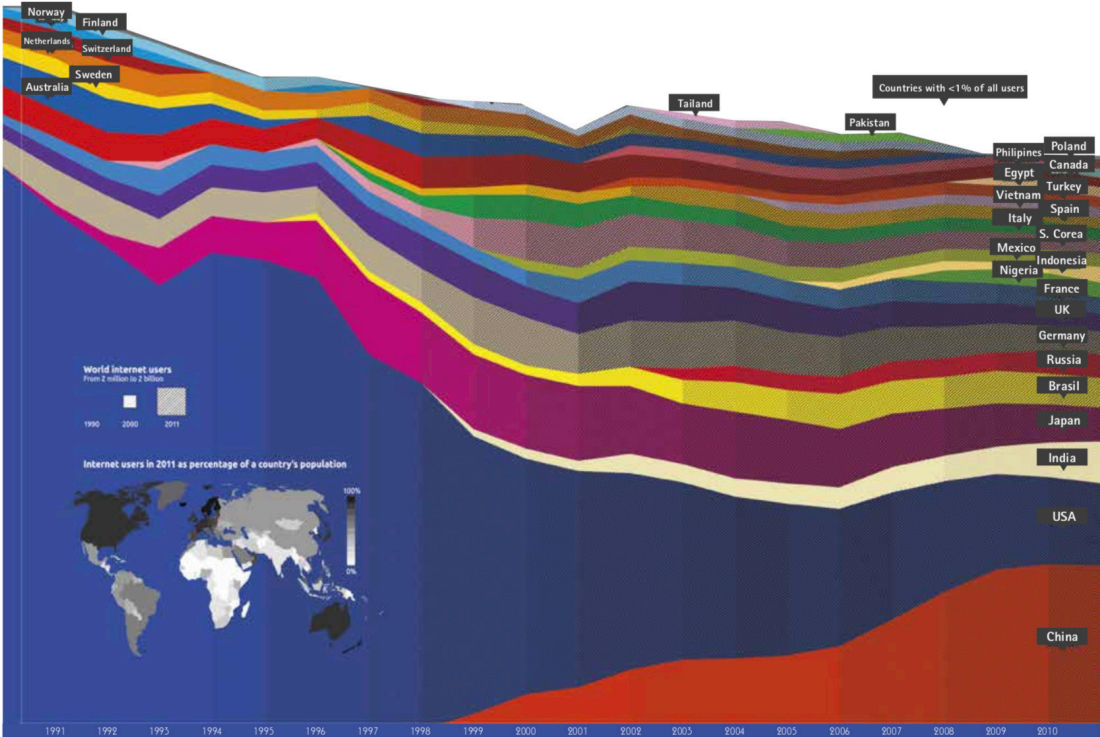
Industry 4.0 is a name for the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing. Industry 4.0 is commonly referred to as the fourth industrial revolution. Industry 4.0 creates what has been called a “smart factory”. Within the modular structured smart factories, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions. Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real-time both internally and across organizational services offered and used by participants of the value chain. The ability of machines, devices, sensors, and people to connect and communicate with each other via the Internet of Things (IoT) or the Internet of People (IoP).[Wikipedia]

The world is going digital and we are close to the 4.0 revolution. Millennials are the next leading class, being considered the first generation of digital natives. Internet of things, additive printing, wearables...are just few of the digital technology that will shape our future through the power of the web. In 2014 Google brand seems to be the 1st in brand in awareness, bypassing Coke and for 2020 the forecast it is for 4 billions people to be online and more than 16 billions devices connected to the net. Online shopping it is going to become a new relevant channel able to grant accessibility to goods and services for fast increasing markets as China and India.

top 10 most seeling products in Mercado Libre(2015)



World internet users



2.2 Driverless Car

Self-driving cars have existed both in people's minds and on paper for a long time. The visions and utopias from the past tell the history of our automotive future. What shall we do if the car's driving itself? Turn the seats round and play cards on a little table in the middle! The F 015 research car was not the first to take this approach, which also appears in a drawing from the middle of the last century. As bewilderingly new as the idea of autonomous driving seems, it's a dream that has been around for a long time. It was a lack of practical feasibility that had prevented the vision of a robot car being turned into reality. But with the advent of the smart era, driverless cars are no longer just dreams. By 2021, the first production self-driving vehicle should be for sale. In 2014, Elon Musk said fully autonomous cars should be on the road in five to six years. And the folks at Ford, Google, and other companies have made similar projections. The challenge, of course, will be communicating to the other autonomous and human-piloted cars on the road. What lies beyond? Short of the massive class schism predicted by Fritz Lang's *Metropolis*, cars should certainly still be around by 2026, but they will have certainly changed enormously. Automakers like Audi and Mercedes-Benz believe that in 10 years, fully autonomous driving will be sophisticated enough for regular use. Perhaps we'll even have the legalities and moral quandaries of self-driving cars sorted out by then. If so, cars will have to be accommodating for the hands-off moments. Volvo, heavily exploring self-driving car technology, is preparing for this eventuality with ideas like its Concept 26 design study. This

demonstrates how a car's cabin will be configured to change depending on the driving mode — kick back and relax, watch a film, or connect to the Internet and work in a mobile office.

Perhaps we will incorporate these ideas into one: Cars with the ability to drive and compute independently, but communicating through the cloud. These vehicles will “sense” which cars are on the highway — even the ones that aren't in autopilot mode. Let's face it: Many people will still be cruising along in old-school classics like our 2008 Mustangs. Cars of the self-driving era will keep an eye on those old clunkers thanks to myriad LiDAR sensors and small camera arrays. And with such a set up, a fully autonomous highway system built to work with our current infrastructure doesn't seem that far fetched. The future may be impossible to predict, but we're the ones making it; it's up to us to decide what we want to happen.

Starting in 2009, Google begins developing its self-driving car project, now called Waymo, in secret. The project is initially led by Sebastian Thrun, the former director of the Stanford Artificial Intelligence Laboratory and co-inventor of Google Street View. Within a few years, Google announces that its autonomous cars have collectively driven 300,000 miles under computer control without one single accident occurring. In 2014, it reveals a prototype of a driverless car without any steering wheel, gas pedal or brake pedal, thereby being 100 percent autonomous. By the end of last year, more than 2 million miles had been driven by

Google's autonomous car.

2.2.1 The benefits of driverless cars

(1) Reduced traffic congestion

Vehicles on the road will all rely on the same smart road system. Driverless cars follow the data collected by the system to regulate traffic flow and keep the best distance between vehicles and ensure that there are no traffic jams on the road.

(2) Increased car utilization

In the absence of an driverless car life, the car often parked in the parking lot for most of the time after it was used. In the self driving society, the utilization of the car will increase, most of the time driving on the road. Cars in the early morning can send the children to school, and send the mother to the company, the left time can serve others in a shared mode, after the work can pick up the mother to the supermarket to buy food, the car will be higher and more effectiveness. At the same time can also reduce the use of the car costs.

(3) Reduced the accident rate

The biggest benefit of driverless vehicles is that they are unaffected by emotions and are not tired. Plus, it is a smart product that can sense nearby people, objects and cars. This will reduce people's personal feelings, fatigue, or any human negligence offense of traffic rules, greatly reducing the probability of a car accident.

(4) Parking space will be diverted to other uses

The appearance of the self driving car will reduce the time it takes to stay in the parking lot. The city has plenty of parking space for other uses such as staff lounges, indoor pools, tennis courts and even football pitches.

(5) To save energy, more environmentally friendly

Self driving vehicles will be powered by electricity and make a significant contribution to the city's sustainable development.

2.2.2 The impact of autonomous vehicles on the city

Mobility is a key dynamic of urbanization, and the associated infrastructure invariably shapes the urban form. Our urban environments will be changed more than any other by self-driving cars. Because when driverless vehicles are not being used there will be no need for them to remain parked close to a home or place of work. It might be possible, for example, to instead have an automatic parking management system – say, using underground parking facilities with charging stations – that would relieve town and city centers from the overbearing presence of parked cars taking up valuable space. Shared vehicles, meanwhile, will be permanently on the move instead of merely waiting for their next occupant. In its 2015 paper 'Urban Mobility System Upgrade. How Shared Self-Driving Cars Could Change City Traffic', the International Transport Forum predicts that the utilisation rate of certain cars will increase dramatically thanks to new concepts and services. This could mean that in a town or city you would need only around one tenth of the number of

cars that are currently in use today to perform the same number of journeys. The average self-driving vehicle will therefore be used more than ten times as much as a present-day car. During the transition period in particular this could present real challenges in the management of urban traffic flows.

There will also be a change in the amount of space needed for car parks, which will fall by up to 80 per cent in big cities. Traditional filling stations will also become rarer as they are initially replaced by a charging infrastructure for electric vehicles. This transformation will free up space that is so badly needed in densely populated regions. As the issue of parking requirements shows, mobility is about much more than just getting from A to B. It also has an enduring impact on how we define, shape and perceive the spaces that we occupy. Virtually every expert agrees that the rise of whole fleets of these vehicles will change not only our roads but also, in the medium term, the entire urban environment. The swarm intelligence of self-driving cars has the potential to unite previously strictly separated functions such as private cars and taxis, delivery vans and car sharing vehicles while at the same time raising efficiency.

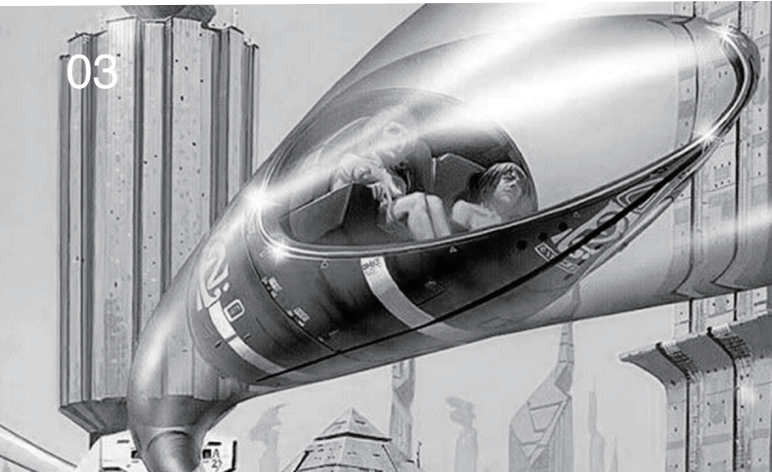
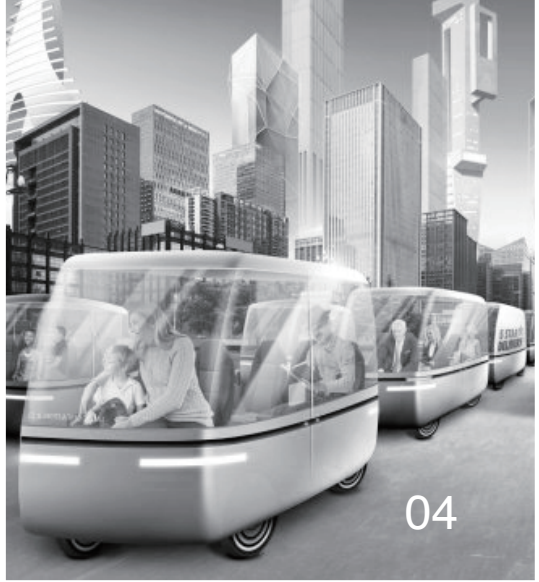
2.2.3 The liberation of human hands and time

The reality is that the automobile is a very liberating and flexible means of transportation. It fulfills people's desire to move around freely and independently. With the advent of driverless

technology, the mobile tools will not only have the function of moving from A to B, but will become more smart and have more functions, the interior environment and functions will be more people-centered, autonomous vehicles will better serve human, build more intimate relationships and have more interaction with human. For example, many car companies are already working with Apple to integrate Siri into automobiles, creating virtual personal assistants in the car to help us with routes, traffic information, and the scheduling of our day. Our vehicles will be fully integrated into the digital lifestyle. Another example is a research by car black-box insurance firm Ingenie found the key changes for cars between now and 2045 will be the adoption of technologies already in use in other areas. Instead of a key you could have a fingerprint sensor, iris scanner or other biometric system to identify you as you walk up and open the door. The windows will be active with touch screens and gesture controls, and the cars would not only be autonomous but smart on the inside, with computers programmed to do your bidding.

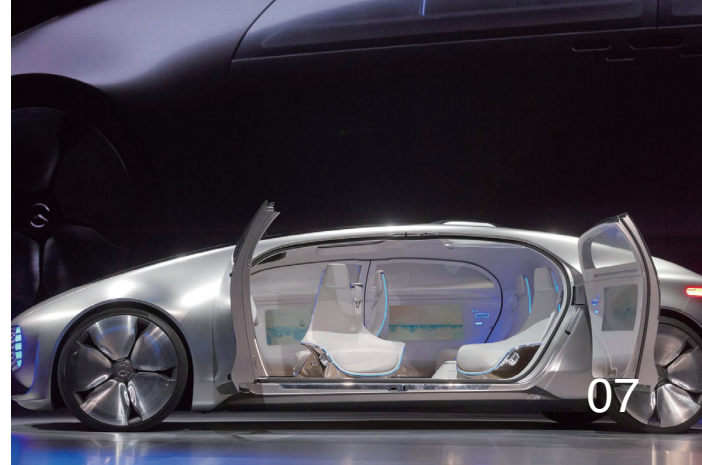


The self-driving cars will liberate people’s hands and time. With the advent of driverless technology, the mobile tools will not only have the function of moving from A to B, but will become more smart and have more functions, the interior environment and functions will be more people-centered, autonomous vehicles will better serve human, build more intimate relationships and have more interaction with human.





06



07



08



09



10

Image01: Miller, H.
Image02: Carlson, Jonathan
Image03: Unknown
Image04: Unknown
Image05: Unknown
Image06: Waymo Google's prototype
Image07: Mercedes F 015 Luxury
Image08: 'Taxi pods' at London's Heathrow Airport
Image09: 'Taxi pods' at London's Heathrow Airport
Image10: Driverless 'Rail bus' in China



Case 1

The future of moving spaces IDEO

Today and tomorrow maybe similar in many ways, however, this won't be the case for too long. IDEO's vision of tomorrow will bring us much more than we expected. In the near future, our mobility will change, altering the ways we behave and shifting our focus from 'driving' to completing other tasks. In 15 years, IDEO predicts, our self-driving vehicles will provide a new experience as we move from place to place. Those will be followed by autonomous delivery vehicles, and later on, they will provide for mobile offices providing efficiency, convenience, and a way to make use of vacant city space.

"The Future of Automobility" is a conceptual presence from IDEO, which aims to change the future of the workspace and delivery services. Their main focus is to improve life and infrastructure, striving to present greater audiences with more than one option to live or to travel. For example, they are designing methods of "inverting" commuting (the workplace will come to the person) or to optimize the way in which things are delivered.



2.3 Smart City

Over the years, artificial intelligence AI has changed our lives to a large extent. For example, not only ordinary drivers but also self-driving vehicles are driving on the roads. Housewives are no longer nannies, but are robots; Hot meals in the kitchen are not always cooked by mums, and they may also be smart thermostats. In the next 15 years, artificial intelligence will continue to infiltrate every area of people's life, from education to entertainment, from body care to personal safety. Researchers are convinced that by 2030, the professional application of AI will become more and more common convenient, thereby promoting economic development and improving people's quality of life. AI technology will produce unimaginable far-reaching influences, from employment to income, and many life issues that people care about. Social concerns will also slowly shift from developing new AI technologies to ensuring that AI benefits more people. Already in 2001, a report from the National Academy of Sciences noted that " networks comprising thousands or millions of sensors could monitor the environment, the battle field, or the factory floor; smart spaces containing hundreds of smart surfaces and intelligent appliances could provide access to computational resources." In smart cities, an ecosystem of sensors collects information from urban space, and an array of network-enabled actuators can subsequently transform that space. Data-driven feedback loops turn the city into a reflexive test-bed and workshop for connected habitation in enmeshed digital and physical space, with a common platform of ubiquitous computing. Within the field of smart cities, a plethora of

approaches to theory and practice have emerged, addressing crucial topics from civic hacking to data management to programmable architecture and even autonomous, sentient space. We can now use these data to address deep questions about how humanity lives. Citizens are empowered to think, act and transform their public space; they are creating a groundswell of urban innovation that is only just rising today.

Today's smart cities are engineered as computer chips, designed to address urgent considerations of sustainability and efficiency. Cutting-edge cities are now shaped by the advent of pervasive information technology, enabling real-time connection, interaction and communication. Society is moving from "life-logging" to "city-logging". We are all enmeshed in a distributed sensing ecosystem. The most desirable future might be one in which people have the opportunity to directly benefit from the inherent value of their daily actions. People are becoming more and more aware of the digital shadows they cast and will be empowered to take a more active role in inhabiting - and contributing to - the places where they live. We are moving from the quantified self to quantified city.

2.3.1 AI is having greatest impact on the eight domains

In the <ARTIFICIAL INTELLIGENCE AND LIFE IN 2030> report shows that, In similarly targeted applications, substantial increases in the future uses of AI technologies, including more self-driving

cars, healthcare diagnostics and targeted treatments, and physical assistance for elder care can be expected. AI and robotics will also be applied across the globe in industries struggling to attract younger workers, such as agriculture, food processing, fulfillment centers, and factories. They will facilitate delivery of online purchases through flying drones, self-driving trucks, or robots that can get up the stairs to the front door.

AI is also changing how people interact with technology. Many people have already grown accustomed to touching and talking to their smart phones. People's future relationships with machines will become ever more nuanced, fluid, and personalized as AI systems learn to adapt to individual personalities and goals.

The Study Panel further narrowed its inquiry to eight domains where AI is already having or is projected to have the greatest impact: transportation, healthcare, education, low-resource communities, public safety and security, employment and workplace, home/service robots, and entertainment. **Transportation**, In the typical North American city in 2030, physically embodied AI applications will not be limited to cars, but are likely to include trucks, flying vehicles, and personal robots. **Home/Service Robots**, Better chips, low-cost 3D sensors, cloud-based machine learning, and advances in speech understanding will enhance future robots' services and their interactions with people. Special purpose robots will deliver packages, clean offices, and enhance security. **Healthcare**, there has been an immense

forward leap in collecting useful data from personal monitoring devices and mobile apps, from electronic health records (EHR) in clinical settings and, to a lesser extent, from surgical robots designed to assist with medical procedures and service robots supporting hospital operations. **Education**, Interactive machine tutors are now being matched to students for teaching science, math, language, and other disciplines. Natural Language Processing, machine learning, and crowdsourcing have boosted online learning and enabled teachers in higher education to multiply the size of their classrooms while addressing individual students' learning needs and styles. **Low-resource Communities**, AI technologies could help address the needs of low-resource communities, and budding efforts are promising. **Public Safety and Security**, By 2030, they will rely heavily upon them, including improved cameras and drones for surveillance, algorithms to detect financial fraud, and predictive policing. Employment and Workplace, AI is poised to replace people in certain kinds of jobs, such as in the driving of taxis and trucks. However, in many realms, AI will likely replace tasks rather than jobs in the near term, and will also create new kinds of jobs. **Entertainment**, Some traditional sources of entertainment have also embraced AI to compose music, create stage performances, and even to generate 3D scenes from natural language text. AI will increasingly enable entertainment that is more interactive, personalized, and engaging.

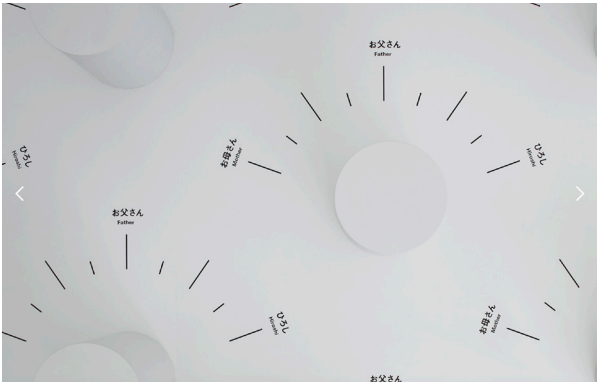
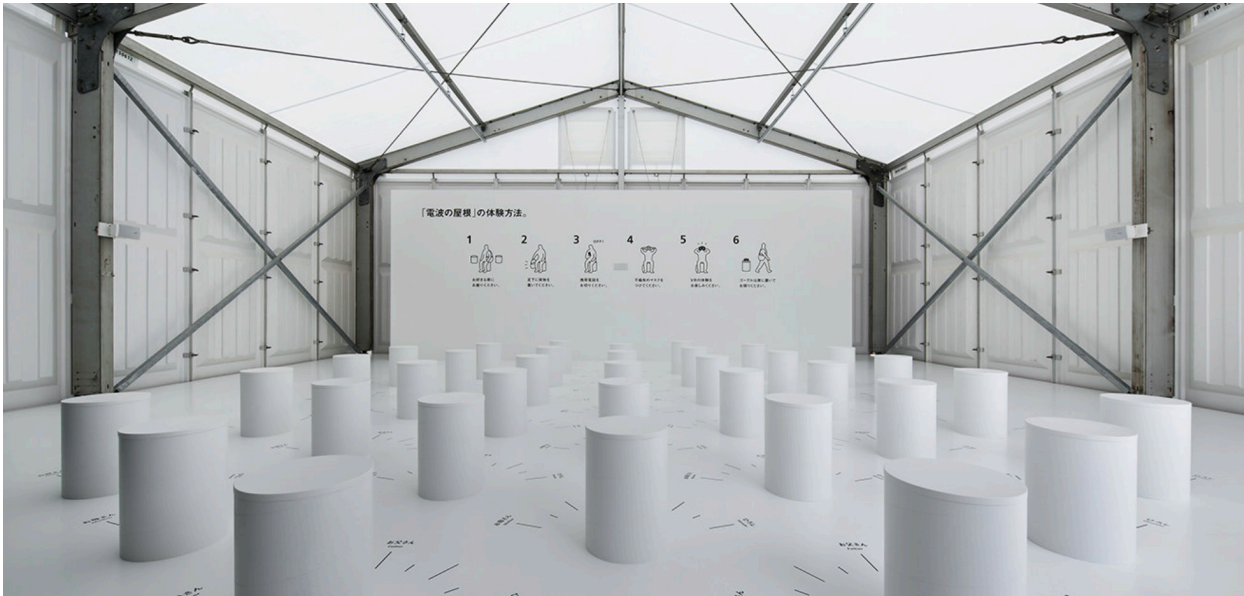
2.3.2 Future dynamic set of experiences space

Interactive spaces can use digital tools to generate a new form of complexity: experiential complexity. A shift away from elaborate structures and toward architectural dynamics entails buildings that perform as (rather than appear to be) living organisms. Architecture in the future will be free to specify a system of interrelated sensors, operations, and actions - loops that bring architecture to life based on a dynamic set of experiential and functional requirements. Grounded in communication and learning systems, sensor networks can transform buildings into intelligent agents with the capacity to learn from and coexist with their occupants. The dream of dynamic spaces can finally be fulfilled as buildings weave together humans, environment, infrastructure, and personal devices. We will shift from living in a home to living with a home. Architecture becomes a form of interface, playing an active role in the human environment, both digital and physical. The goal is to facilitate as seamless a movement as possible from fast to slow, virtual to physical, cerebral to sensual, automatic to manual, dynamic to static, mass to niche, global to local, organic to inorganic, and proprietary to common, to mention just a few extreme couplings. Architecture is an environment that can be inhabited, enjoyed and explored. Active buildings are at once an environmental life support, a social catalyst, and a dynamic set of experiences. Buildings can be simple - rather than voluptuous and shocking - but even more integrally vibrant and living.

Case 1 One Family Under a Wireless Roof

Culture Convenience Club;HARA Design Institute (exhibit design);Shinya NAKAJIMA (video)

Culture Convenience Club's newly-launched TONE smartphone service is based on the realization that instead of families being under the same physical roof, today it is wireless connections that play the same role, with being under the same 'wireless roof' being one of the factors that keeps a family together. For instance, a family of three living in Tokyo and a grandmother living alone in Fukuoka can remain close to each other through a shared TONE service. Children can persuade their father to let them borrow an app from his phone, and he can keep control of how they use it. Parents can see their child's location, or find out how far grandmother has walked today, or see how much charge is left on her device. Tapping on your screen sends a knocking sound to your family member's device, so if you agree in advance what the knock means, it's easy to keep in touch. This sort of service can shorten the distance between people who are physically apart, producing a new feeling of closeness. It can lead to a warm and caring relationship just as if they were under the same physical roof. Visitors to the exhibition site can watch a VR short story to get a feel for the ups and downs of a relationship under a wireless roof.



3. Democratization of Creativity

Creativity will be more and more a spread attitude and a shared value, starting from places constantly fertilized by technologies, people and trades, like big metropolis. Smartphones, web, digital media will help people to exchange their experience and to spread their vision, creating creative communities at a global scale. Design will be a practice in a scenario where everybody designs, an co-atorship, co-design and co-production will be the new pathways. Woman will play a more relevant role and new collective ingenuity tools, like crowdsourcing or coworking spaces will become the natural environment to grow new business and to manage transformation in a more aware and participative way.





Case 1 Fablab

Today there are some 665 Fab Labs in 65 countries. Taken as a whole, Fab Lab is a distributed international network of scientific researchers and community inventors who define, conduct, and apply new discoveries and inventions for the benefit of both researchers and the local community. Fab Labs support a global design commons where members design, code, share knowledge, and create digital instruction manuals using open-source principles. What gets designed in one lab can theoretically be fabricated in another lab, anywhere in the world.

The Fab Foundation: fabfoundation.org



Case 2 COACH HOUSE TRUST

People who have experienced addiction or mental illness are regularly ignored in everyday society. They find they can be understood and welcomed in the Coach House which gives many opportunities to learn new skills, meet new and similar people and help society in the training and participation of sustainable practices; woodwork, mosaic, metalwork, slab-making, furniture-making, gardening and horticulture, and recycling. Much of this work benefits the neighbouring society. The team works in public spaces, renovating them to create new zones in which to enjoy. Locals have their gardens landscaped by the Coach House, helping the income of the Trust. Much of the crafts work is also sold in their shop or through exhibitions in Glasgow.

Image resource: understandingglasgow.com



Case 3 LBERTE

The project targets a specific local need of cultural activities. The Kallio district in Helsinki has been lacking proper cultural activity for some time. The aim of this solution is to enrich local culture and to give local artists a place to create happenings and new connections. The solution came to life when a group of young people decided to take action and started to work for a mutual target. By connecting the right people together, the solution came possible. The innovation is interesting because a group of non-professionals are working together to create a professional outcome. This solution emphasizes the term “street democracy” in a new way and affects the local environment. The solution promotes grassroots culture. The club offers activities seven days per week, and its societal and personal value is already high for many.



Case 4 BLOCK by BLOCK

In 2012, UN-Habitat entered into an innovative partnership with Mojang, the makers of the popular computer game Minecraft. Through the partnership, named Block by Block, UN-Habitat uses Minecraft to involve citizens, particularly young people, in the design of public spaces. During five-day participatory design workshops, UN-Habitat and partners bring people together to visualize their public space ideas in Minecraft, and present these to city authorities and local government officials. Experiences from projects in Africa, Latin America and Asia show that Minecraft is a useful tool for increasing community participation in public space design. It is easy to learn in comparison to traditional 3D modeling tools and quickly enables participants to become involved in the designing process, even if they previously have limited or no previous computer skills. The design of the game also encourages participants to focus on the use of the space, rather than getting bogged down in discussions around technical architectural detail.

Image resource: blockbyblock.org

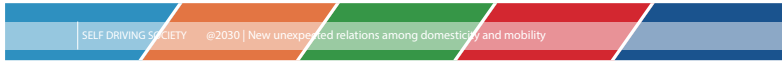
PART 2

MINDSET



PET FACTORS

		1950>>	1980>>	2010>>	Future
		Industrial economy	Experience economy	Knowledge economy	Transformation economy
People	Captivating idea	Product ownership	Experience	Self actualization	Meaningful living
	View	Local	Global	Contextual	Systemic
	Quest	Modernizing one's life	Explore lifestyle identities	Individual empowerment	Address collective issues
	Effect	Productivity & family life	Work hard play hard	Develop your potential	Meaningful contribution
	Approach	Follow cultural codes	Break social taboos	Pursue Aspirations	Empathy & cooperation
Environment	Approach	Profit	Growth	Development	Blue economy
	Policy	Planet protection	Politics awareness	Biodiversity	Biomimetics
	Resources	Oil fuel	Nuclear challenge	Renewable energy	Biotechnology
	Value proposition	Hydrocarbon economy	Environmentalism	Green economy	Circular economy
	Finance	Bank finance	Stock exchange	Digital blows	Crowd sourcing
Technology	Economic driver	Mass production	Marketing & branding	Knowledge platforms	Value networks
	Focus	Product function	Brand experience	Enabling creativity	Enhancing meaning
	Qualities	Products	Product-service mix	Enabling open-tools	Inclusive value networks
	Value proposition	Commodities	Targeted experiences	Enable self-development	Ethical value exchange
	Approach	Persuade to purchase	Promote brand lifestyle	Enable to participation	Sharing economy



Being a 'Culture Protector and Communicator' in a city 2030



MINDSET



MEGATRENDS



-  Capitalism at Crossroads
-  Digital Disruption
-  Democratization of Creativity

PET FACTORS



-  **PEOPLE**
Systemic
Empathy & Cooperation
-  **ENVIRONMENT**
Circular economy
-  **TECHNOLOGY**
Enhancing meaning
Ethical value exchange

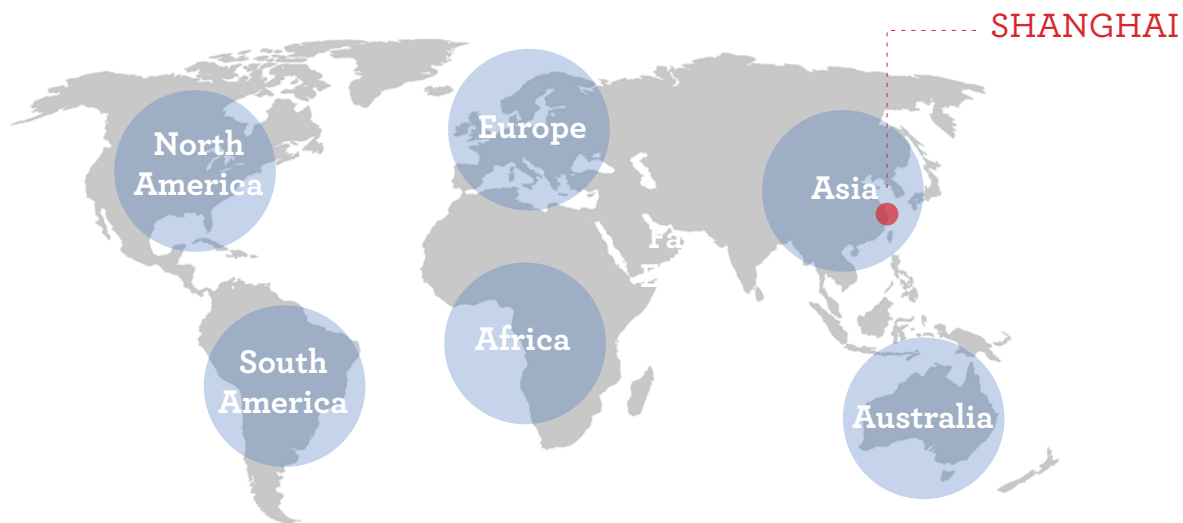


POLITECNICO DI MILANO

PART 3

GLOCAL FILTER

GEOGRAPHY



1. A Multicultural City

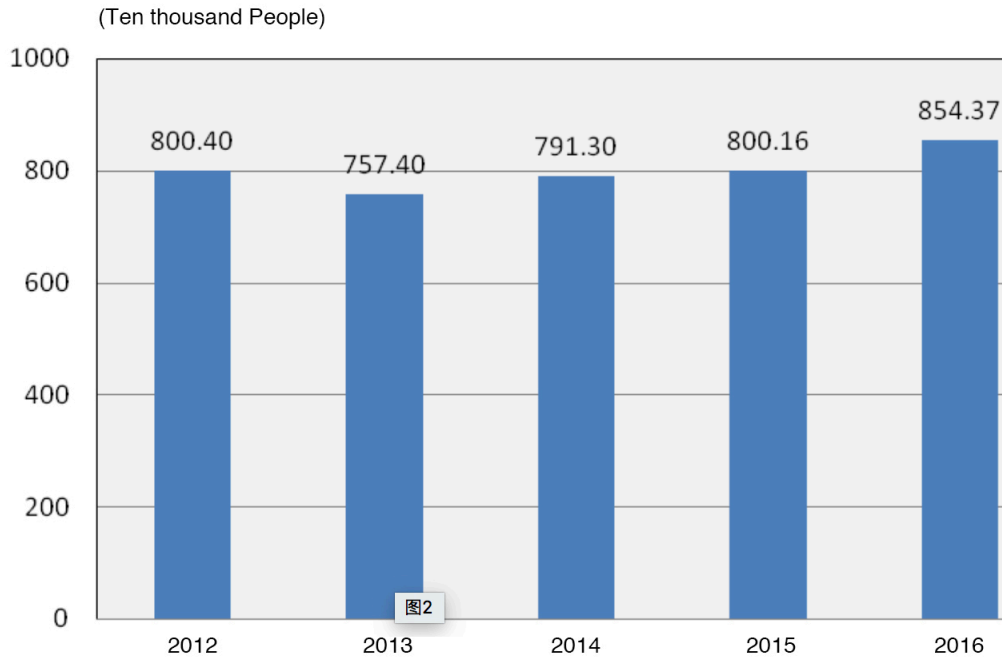
Shanghai is the center of economy, finance, commerce and shipping in China. Situated in the Yangtze River Delta, Shanghai is the largest industrial and foreign-trade port. Its population is more than 20 million. As a city of greater and greater interest to tourists, it has a thriving contemporary city culture and many places of historical interests. Today Shanghai is a highly developed cosmopolitan city. Shanghai has preserved its Chinese traditional culture while embracing with open arms modern cultures from all over the world. Shanghai culture is known as **“Haipai Culture”**. Based on the traditional culture of Jiangnan (the southern region to the Yangtze River), it blended with European and American cultures which greatly influenced Shanghai after its opening as a trading port. Thus Haipai became a blending of old and modern, traditional and fashionable, open and unique.

Cultural diversity is an important driving force for the development of urban civilization. Taking London as an example, as an irreplaceable cultural center in the UK, London is a multicultural symbiosis. Local residents use more than 500 languages in various languages, gathering ideas, beliefs, art, fashion, music and ideas from around the world. The diversified social structure and ethnic composition make the society more open and culturally inclusive, which is conducive to the development of creative economy. At present, Shanghai’s cultural diversity, openness, and other aspects have yet to be strengthened. It is necessary to strengthen the degree of openness and diversification of Shanghai’s culture through institutional and mechanism

construction, and create a favorable cultural environment that is diverse, flexible, inclusive, and eclectic. Only in this way can multiple cultures collide and blend into each other and become the driving force and source of Shanghai’s cultural creation. The size of the cultural influence and the range of radiation power directly determine the energy level of the city. It is also an intuitive manifestation of urban soft power. In this respect, Shanghai and New York, London, Paris, and Tokyo still have a certain distance. Shanghai should also vigorously build a global innovation platform for the cultural and creative industries. Relying on the protection of cultural heritage, it should focus on cultural and cultural venues, cultural and creative parks, featured towns, virtual cultural exchange networks and other spaces and venues, through brand promotion, professional management, and taxation support. Provide a tangible and intangible platform for cultural development, extending upstream through the design capital (cultural and artistic teaching research and development) and downstream (park product, industry, construction) extensions, and tributary to the basin (referring to a large number of application design fields outside the art design) The proliferation and polymerization will strengthen the overall strength of Shanghai’s culture.

RESIDENT FOREIGNERS IN SHANGHAI IN MAIN YEARS

	person			
Types	2005	2010	2015	2016
Total	100 011	162 481	178 335	175 674
Residence Permitted Foreigners	95 384	159 303	175 931	172 647
By Country and Region				
# Japan	27 812	35 075	33 440	31 230
Republic of Korea	14 047	21 073	21 178	21 497
Singapore	5 547	7 545	6 421	6 134
Germany	4 591	8 023	8 446	8 111
United Kingdom	2 904	5 591	6 543	6 446
Canada	4 279	7 306	8 012	7 880
United States	14 329	24 358	25 537	23 974
Australia	3 729	6 165	7 444	7 400
France	4 181	8 238	9 993	9 453
By Types				
Work			91 372	88 933
Study			16 030	17 588
Reunit			17 112	16 505
Private Transaction			48 915	46 497
Journalists			98	97
Long-term Visa Foreigners Above Half Year		948	2 404	3 027



International tourist arrivals in 2012-2016

It can be seen from the table that the number of Shanghai tourists is increasing year by year, but the proportion of foreign residents living in Shanghai is very small, it's only 0.73%. Most of them come from Asia and the main purpose is to work.

2. Cultral Needs of The People In Shanghai

Cultural construction is an important part in the development of an international metropolis.

I. Basic Features of The Cultural Needs of The People In Shanghai

1. From the point of view of the **content** of cultural needs, presenting diverse and individual characteristics.
2. From the point of view of the **carrier of cultural demand**, it shows the characteristics of the combination of traditional means and modern technology.
3. From the perspective of the **value preferences** of cultural needs, the characteristics of the coexistence of multiple values and Shanghai's characteristic preferences are presented.
4. From the perspective of **consumer demand** for cultural needs, citizens have higher willingness to spend on various cultural products.

II. Obstacles and Problems in Shanghai Citizens' Realization of Cultural Needs

1. Poor access to cultural information and insufficient public awareness of cultural activities.
The completeness and smoothness of information is an important condition that facilitates both the supply and demand of products to adjust their production and consumption trends and achieve a balance between supply and demand. However,

the survey found that the current channels for residents to obtain cultural products or services are not unimpeded, creating obstacles for residents to meet their own cultural needs. This is particularly evident in the government's public cultural services. Taking the cultural services of communities around residents as an example, the current residents get information on cultural activities and cultural service projects in the community, mainly from the traditional "neighborhood committees" (39.6%) and "poster flyers" (11.8%).

2. The public lacks time for leisure. More than half of the citizens do not use public cultural facilities.
3. Lack of quality cultural products, and citizens' satisfaction with cultural products is not high.
4. Higher cultural product prices than the economic affordability and psychological expectations of the public.

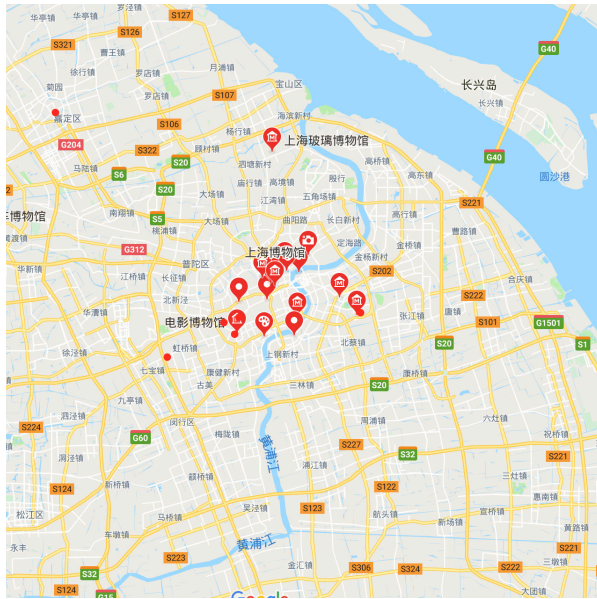
III. Countermeasures and Suggestions

Further promote the development of cultural and creative industries. The creative industries have the function of enhancing cultural vitality and enriching the types of cultural products, and are helpful to satisfy Shanghai people's cultural needs for excellence, innovation and diversification. Therefore, Shanghai should further develop new and advantageous cultural industries such as modern media and animation games to form a cluster of cultural and creative industries with distinct characteristics. Strengthen the construction of public cultural content, establish

and improve the public cultural service distribution mechanism oriented to the needs of the people. Improve the layout of public cultural space and strengthen the construction of community cultural resources distribution network. In response to the problem of poor access to information on public cultural products discovered by the survey, it is recommended that:

1. To improve public cultural information dissemination methods. To learn from the useful experience of cultural construction in foreign communities, we regularly send community cultural service “menus” to community residents, and participate in consultation and reply cards to expand access to cultural information for residents. Using information media, through e-mail, BBS, site announcements, etc., to expand the coverage of information and improve the efficiency of information transmission.
2. To optimize the transfer of cultural products. We will promote the construction of cultural infrastructure with a focus on “triple play” and improve the convenience of cultural information services. Focusing on the grass-roots community, we will promote the community informationization, speed up the construction of digital libraries such as e-books, arts, knowledge lectures, and film and television programs, and shorten the space-time distance for residents to acquire cultural resources through remote technologies and digital methods.
3. To encourage and guide the public in interactive expression.

In the community public cultural activities and service design and post-assessment links, establish a long-term mechanism for public participation, enhance cultural interaction between supply and demand, and reduce barriers to information communication.



Museums in Shanghai

At present, there are 126 museums, memorial halls and exhibition halls in the city. With a permanent population of 24 million, Shanghai has a museum for every 190,000 people, which is higher than the average level of one museum for every 400,000 people in the country. From the point of view of composition, there are 45 state-owned museums, 52 industrial museums, and 29 privately-run museums. City-level and district-level museums have developed in tandem. Shanghai's museums will continue to expand service space, enrich service content, and achieve more balanced, smarter, more collaborative, and more diversified development.”



Museums in Amsterdam

The uneven regional layout is also a fact. The newly released “Shanghai Museum Annual Report 2017” shows that the city’s museum facilities are mainly concentrated in the center of the city. The number of museums in Huangpu, Xuhui, Hongkou and Jing’an 4 districts is 55, accounting for 44%; the total number of museums in the outer suburbs of the outer ring is 41. The total is a lot, but the layout of scattered is low coverage. The museum coverage on the east bank of the Huangpu River and on Chongming Island is significantly lower than that in the Puxi area, of which there is only one museum in Chongming.



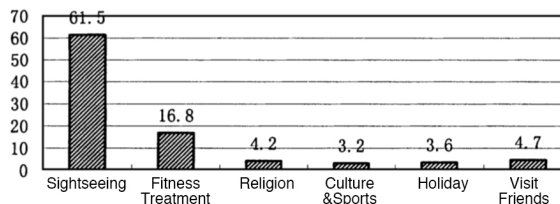
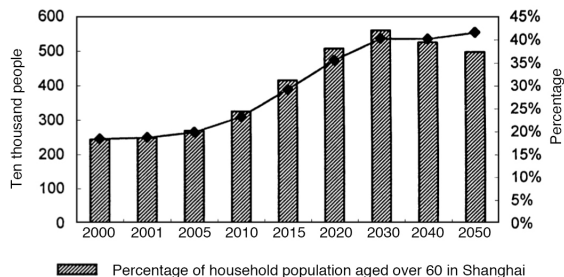
'International Museum Day' Metro

At the old Ximen station of Metro Line 10, the reporter saw a new "International Museum Day" train. This special train is a vibrant orange. Inside and outside of the car body, on the top, on the ground, including the handles are designed the city's museum LOGO and two-dimensional code. Passengers pick up the mobile phone and scan it with WeChat to get information about the museum. The theme of "International Museum Day: The Newly Connected Museum: New Approaches, New Public" in 2018 can be seen everywhere on the special train line and intuitively reflects the museum's strong willingness to intervene deeply in public life. "Metro Line 10 passes by Shanghai City Landmarks such as Xintiandi, Yuyuan Garden, Nanjing Road, Huaihai Road, Sichuan Road, and Wujiaochang along the way. It has rich cultural heritage and coincides with the theme of 'Museum and Good Life.'" Municipal Bureau of Cultural Relics Secretary Yu Xiufen said that the opening of this "International Museum Day" train will hopefully use the subway as a carrier to carry out propaganda and highlight the role of museums in the lives of ordinary citizens so that more people will feel that the museum will connect you and him and connect to the past. The present and future significance. In front of the orange line of "dynamic" special train, let the passengers happy. They said that when traveling in Shanghai, the subway is the best choice. This special train allows everyone to have a deeper understanding of the characteristics of Shanghai.

AGE STRUCTURE OF REGISTERED POPULATION IN DISTRICTS (2016)

10 000 persons

District	Total	17 and below	18~34	35~59	60 and above
Total	1 450.00	168.37	275.59	548.24	457.80



By 2030, the proportion of the elderly population in Shanghai is expected to exceed 40%. With the rapid development of science and technology, we must pay special attention to the living and spiritual needs of these elderly people and avoid the derailment of the elderly and the times.

3. Shanghai Smart City Development

Smart cities mainly include three aspects: First, **smart management**. For city managers, smart cities mean smart government affairs, smart urban management, and so on, that is, the use of increasingly developed information technologies such as big data, cloud computing, and the Internet of Things, to achieve e-government management and informationization, and improve the efficiency of urban management; The second is the **smart life**. For citizens, smart cities mean smart transportation, smart education, smart medical care, smart communities, smart pension, smart culture, smart sports, etc. All kinds of needs in people's lives can be achieved through information technology means "intelligent", let people get the maximum convenience; Third, **smart development**. From the city's current industrial and economic development to the long-term development of the city, smart cities mean that the city itself needs to rely on information, continuously expands and develops smart economy and smart industries, and at the same time, it must also seek urban survival, ecological environment and urban development. The balance between them is to maintain the continuous development of the city while maintaining a virtuous cycle of ecological environment and achieve sustainable development.

As an international metropolis, the construction of smart cities in Shanghai can be said to be at the forefront of other cities in China. The achievements are obvious to all. However, from the perspective of global perspectives, smart economy, and smart life, there are still deficiencies in the construction of smart cities

in Shanghai and still face greater challenges. Shanghai should embrace the Internet and emerging information technologies with a more open and inclusive attitude, encourage and support Internet innovation and entrepreneurship, and create a favorable environment for the development of the Internet industry.



Shanghai Smart City Development Index First-class Index



PART 4

SCENARIOS

1. The Profession Orientation in 2030

Cultural diversity provides people with more choices of lifestyle and satisfies people's different cultural needs. Also with the arrivals of the new advanced technology era, people will get more different cultural experiences in different ways and sharing knowledge and experiences in rich kinds of sharing platforms. In the dynamic future, people will move all around the world more frequently, they want to go to different places to seek different cultural experience. The idea of nations will become weaker, cultural structures of everywhere may be slowly becoming similar. Also, the urban population growth results the complex cultural structures of each area, it enriches the diversity of local cultures, at the same time it brings more possibilities for the development of local cultures. Under the context, the city should build a social and cultural sustainability strategy, on one hand, the city should protect and develop the local culture especially pay more attention to the traditional culture to present the city's own identity, on the other hand, the city should have a more inclusive attitude to those foreign cultures. At the same time, to create the cultural innovation in new more interesting and interactive ways to enrich people's cultural experience and build an emotional lifestyle.

Urban Cultural Cluster Ambassadors

Profession's task

Urban Cultural Cluster Ambassadors should love their own culture and have a wealth of cultural knowledge to promote and develop the essence of the local traditional culture; They can fully understand the cultural needs of different groups of people and have ability to create different cultural experience for people; They can make a better balance between the local culture and the foreign culture to promote the local cultural innovation and development; They have excellent organizational capability to create a good platform for democratic creativity and to provide everyone with different opportunities; They have excellent communication and collaboration skills, urban cultural cluster ambassadors from each area will exchange views and results promptly to create better cities.

Profession's value

Cities will be more inclusive of foreign cultures and the local traditional cultures get well protected and promoted; the urban diverse cultures will get good communication and interaction, the urban culture will be innovative and sustainable; the urban cultural forms become more dynamic and have own identities. Every citizen can have a rich cultural experience and actively participate in urban cultural innovation.

SELF DRIVING SOCIETY@2030 | New unexpected relations among domesticity and mobility

Urban Cultural Cluster Ambassador 2030

The urban cultural cluster ambassador can fully understand the cultural needs of different groups of people and have the ability to create different cultural experience for people; They can make a balance between the local culture and the foreign culture to promote the local cultural innovation and development.

LIVING



More public spaces where supply more cultural events, activities and mix different cultural background.



Autonomous vehicles liberate human hands and time, supply more possibilities for moving space.



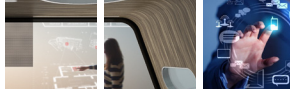
TRANSPORTATION



CULTURE



Diverse cultures keep their own features and communicate with each other.



Smart city make the lifestyle more convenient and emotional, people live in a more interactive space.

COMMUNICATION



SCENARIOS



GEOGRAPHY



TECHNOLOGY



SOCIETY



2. Movable Expo In The City

| SELF DRIVING SOCIETY @ 2030 | New unexpected relations among domesticity and mobility

Movable EXPO In The City

1. Scenario and utilization



With the urban growth and the moving dynamic world, there are different social groups in the city such as tourists, immigrants, temporary workers and learners. They understand and experience the local culture, at the same time, they also bring their own culture in the city. Living in the social background of diverse cultures, people have more choices of lifestyle. The local should maintain and carry forward their own cultural identity. Facing the foreign culture the local should maintain a respect, appreciate and inclusive attitude. With the fast development of advanced technology, the smart city is being formed, people will

2. Cultural and social sustainability



live in a more interactive and emotional space. The physical space and time will be shortened. People will have much more time to relax and entertain in a AI era, their spiritual needs will be increased. The purpose of this project is to build a culture and social sustainability of the city, on the one hand to promote and develop the local traditional culture, to maintain their own cultural identities, on the other hand to understand and appreciate the foreign cultures. To meet different social group's cultural needs and provide them with interesting and emotional cultural experiences. Especially to pay attention to the elderly. To

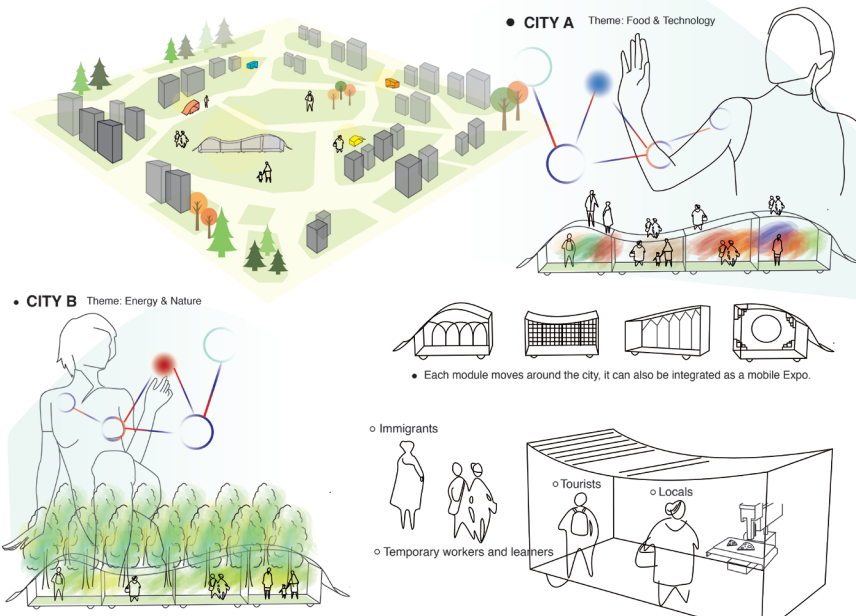
3. Technology, structure and mechanism.



make the exhibition penetrate every corner of the city and let each social group get the cultural experience, exchange and share their knowledge and experience.

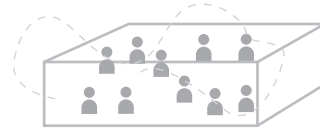
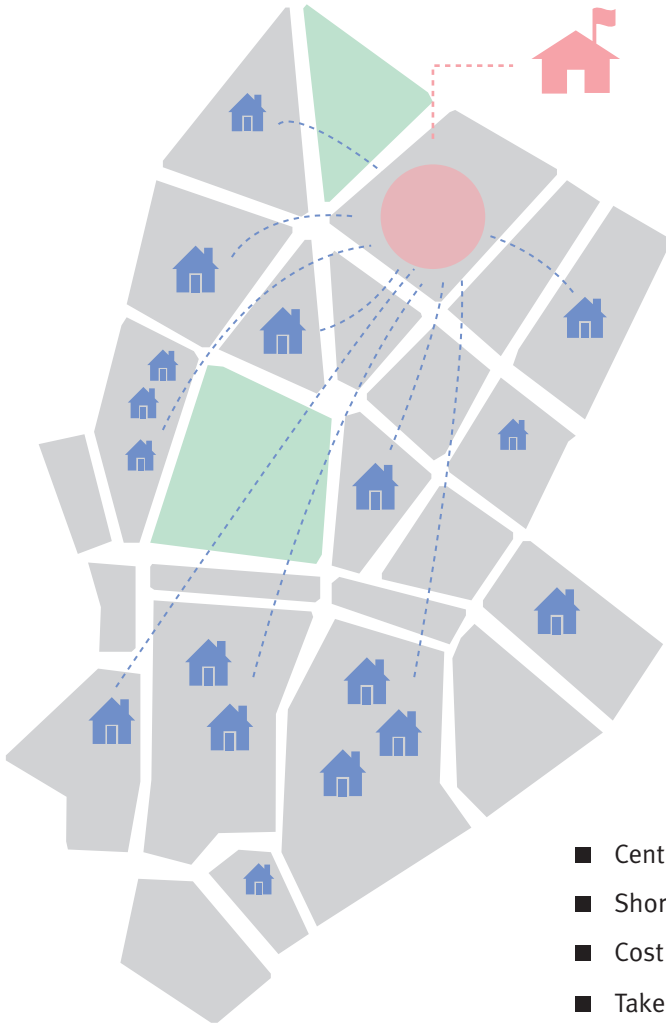
REFERENCES: Links images and quotations with APA

Movable EXPO In The City



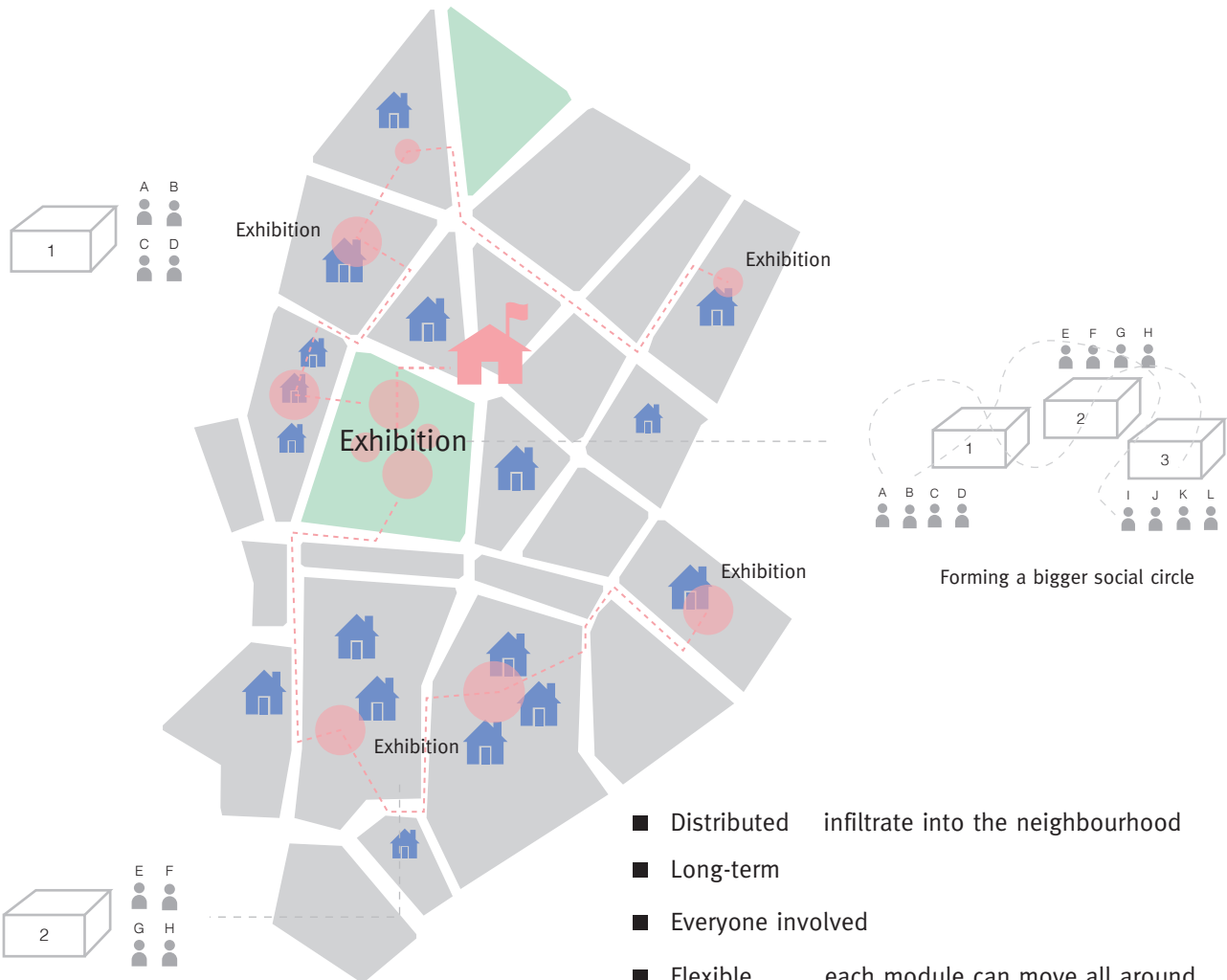
Static Expo

Exhibition



- Centralized
- Short-term Need to be removed
- Cost a lot
- Take time to arrive

Movable Expo in 2030



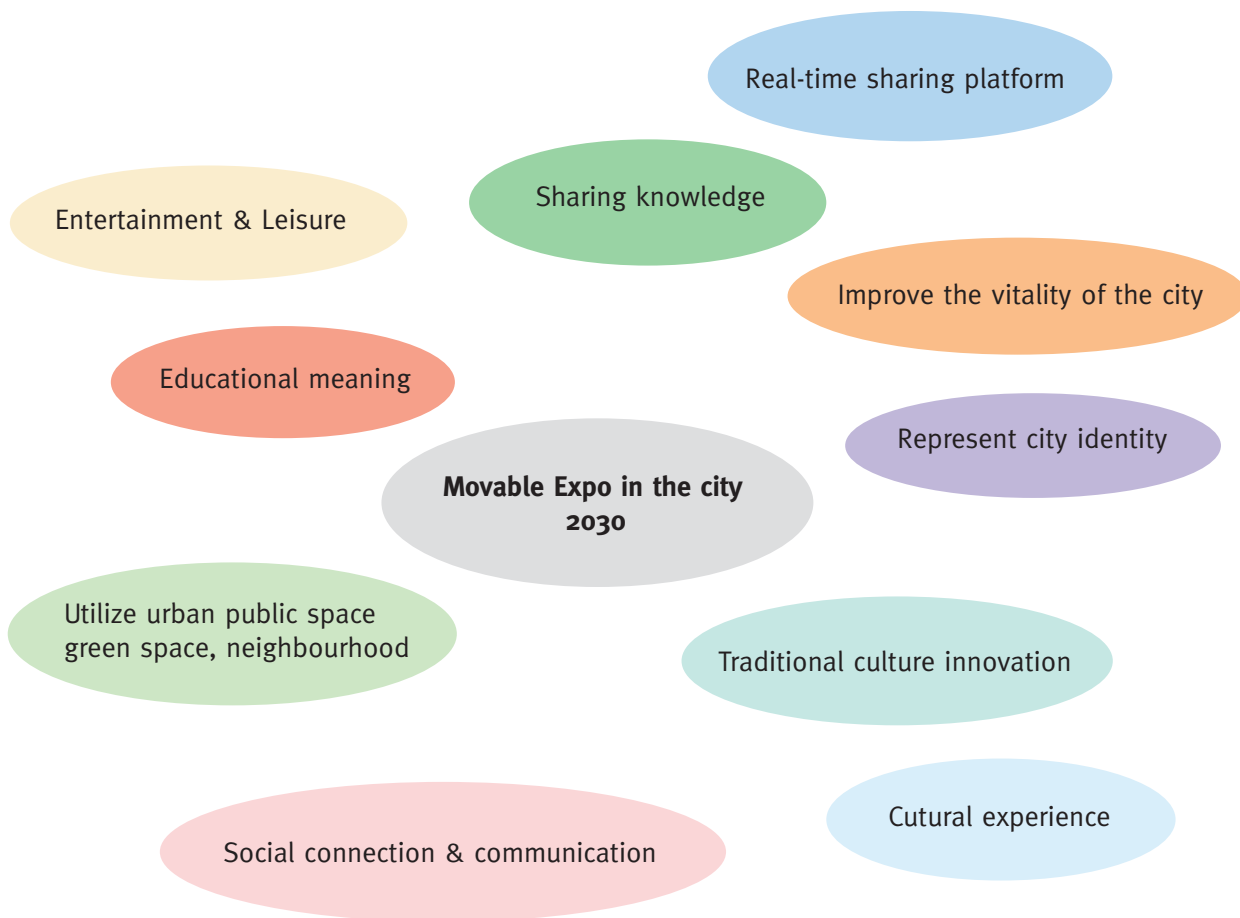
■ Distributed infiltrate into the neighbourhood

■ Long-term

■ Everyone involved

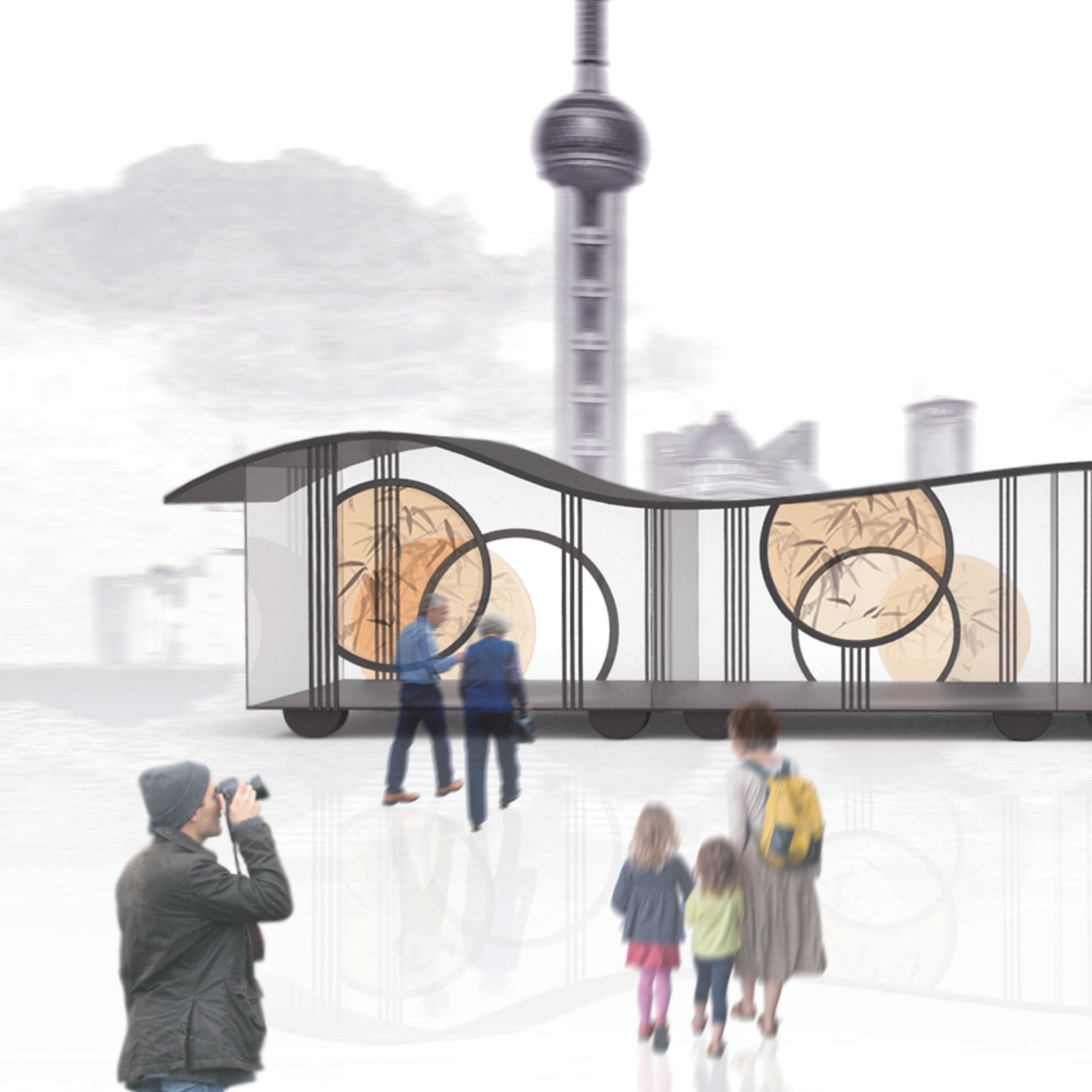
■ Flexible each module can move all around the city and also can be integrated as a large scale exhibition (scale, location, time, theme)

2.1 The meaning of Movable Expo In The City



PART 5

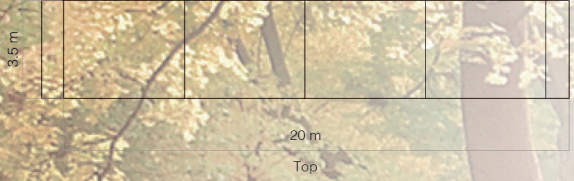
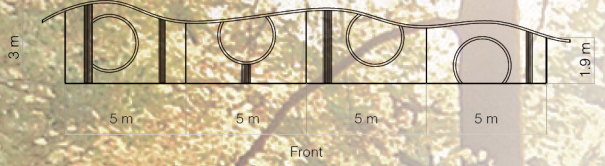
CONCEPT



‘MOVEXPO’ In SHANGHAI

‘**Movexpo**’ is a movable exhibition. Each module can move all around in the city even infiltrate in your neighbourhood, you will get an interesting and emotional experience in the process of your move or at a certain time it stops at the downstairs of your home. Also these modules can be integrated as a much bigger exhibition to welcome all social groups to communicate and share experiences.





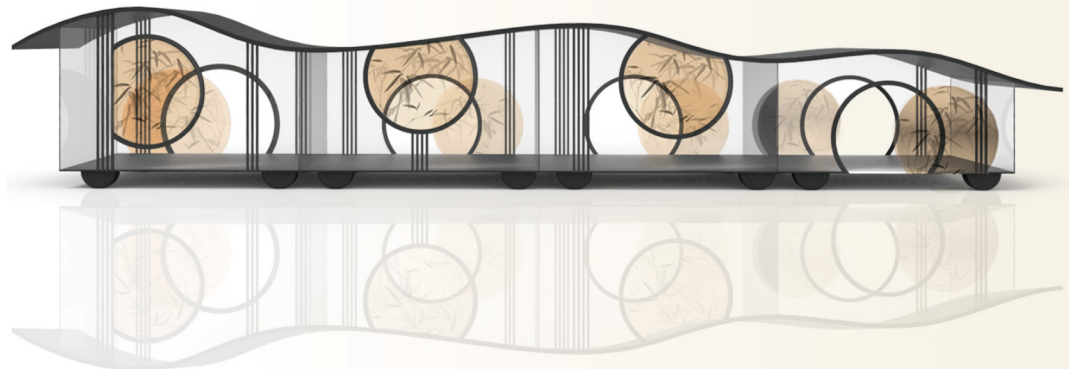
When people close to the window, the leaves will sway to produce an interactive effect.



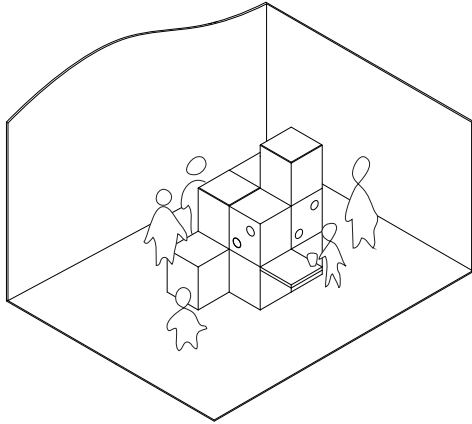
The exterior of 'Movexpo' is inspired by the 'moon gate' of Chinese classical gardens, that is for people to explore the views and pass through, to give people a new and beautiful feeling.



The modules of 'Movexpo' moves all around the city such as the commuting routes, squares, parks even neighbourhoods to make everyone have the opportunity to get a different cultural experience.



Cultural experience in each module



 Tea House



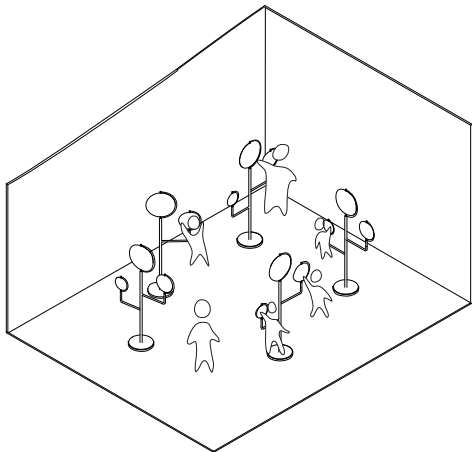
smell



touch



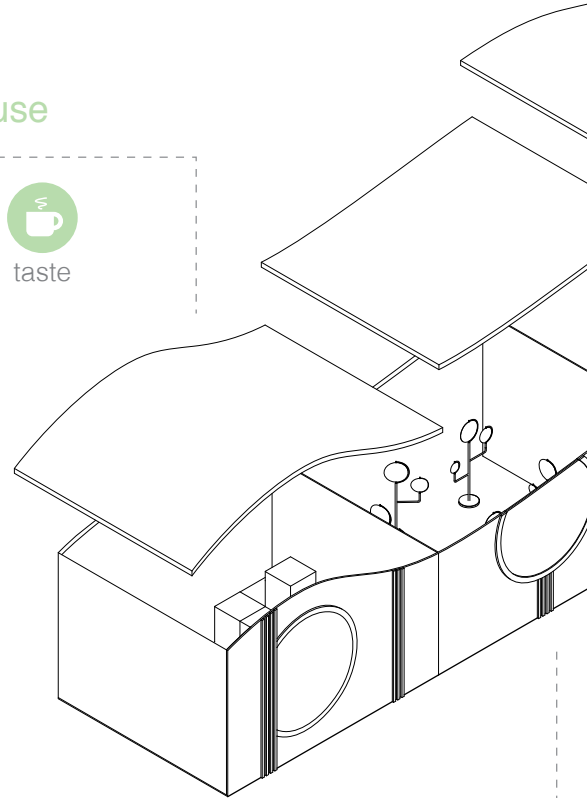
taste

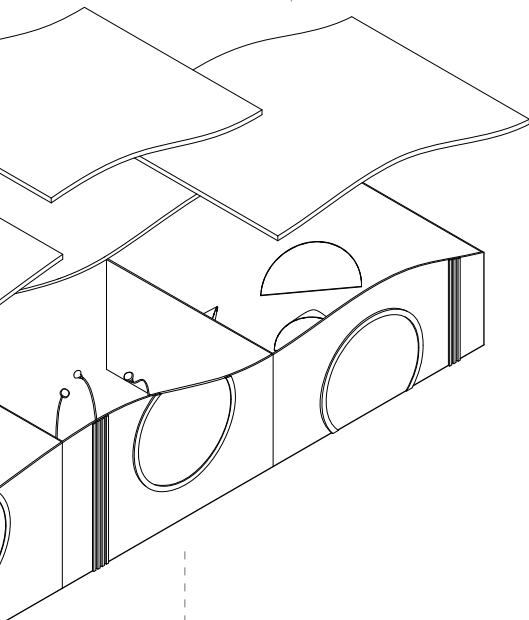


Mask House



Pecking Opera





Sound House



music



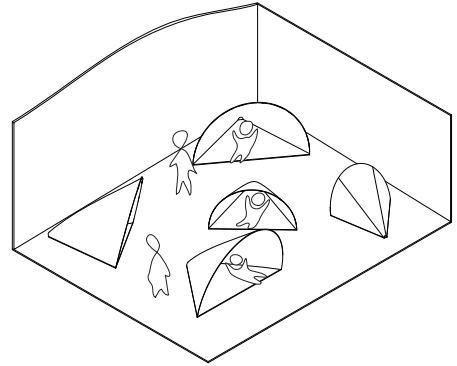
poem



nature



physical space
connection



Shadow House



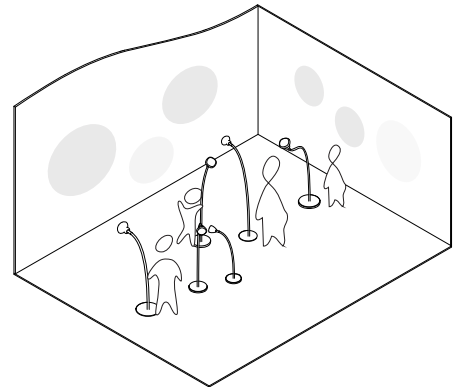
shadow
play



sound



odor

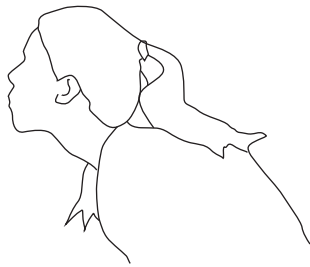
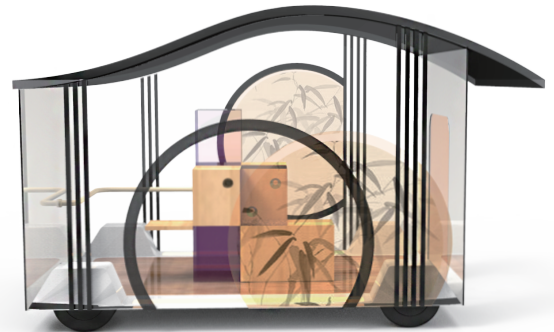


TEA HOUSE





Hold some tea to feel
and smell.



Smell the tea from the
holes of cubes.



Have a rest and take a
cup of tea.



Connect the APP on
your smart phone to
choose one tea to
smell and get more
information.

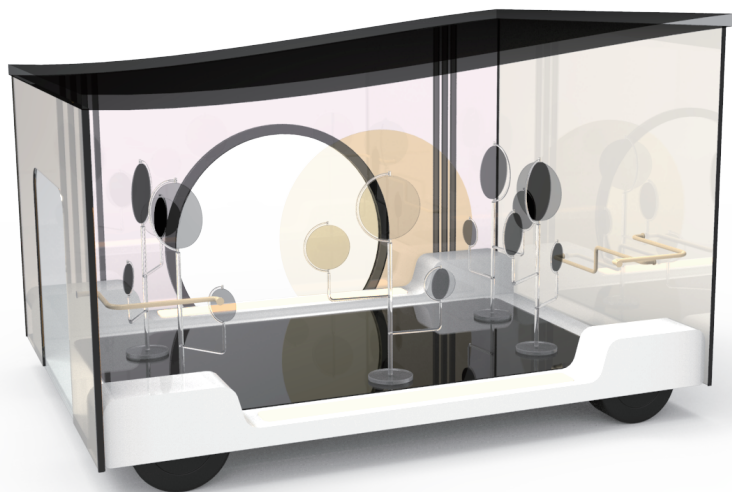
Tea House

In the moving tea house, you will get a full experience of tea from touch, smell to taste. From the cubes with holes choosing one tea to smell by connecting APP on your smart phone. Stop and take a rest, you will get a very fresh experience here!

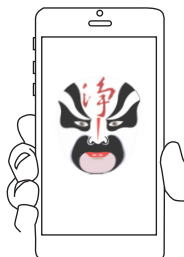




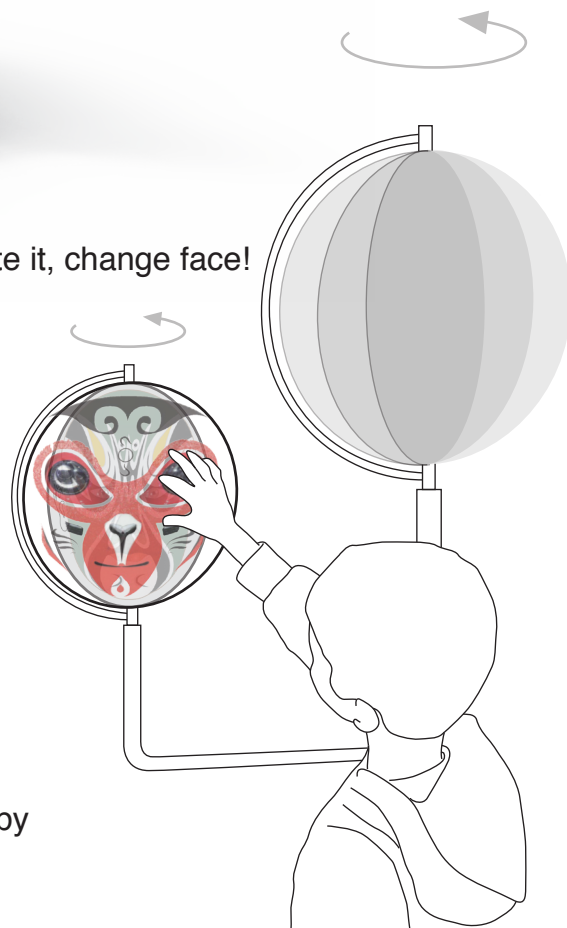
MASK HOUSE

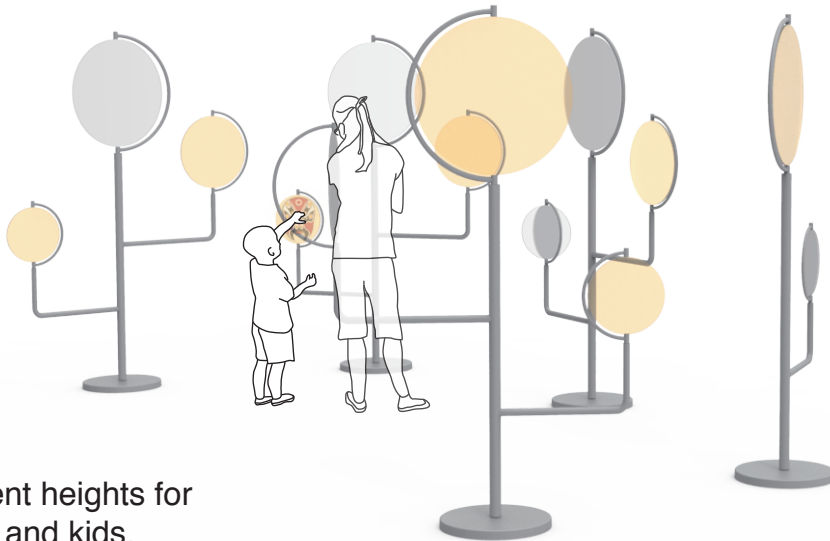
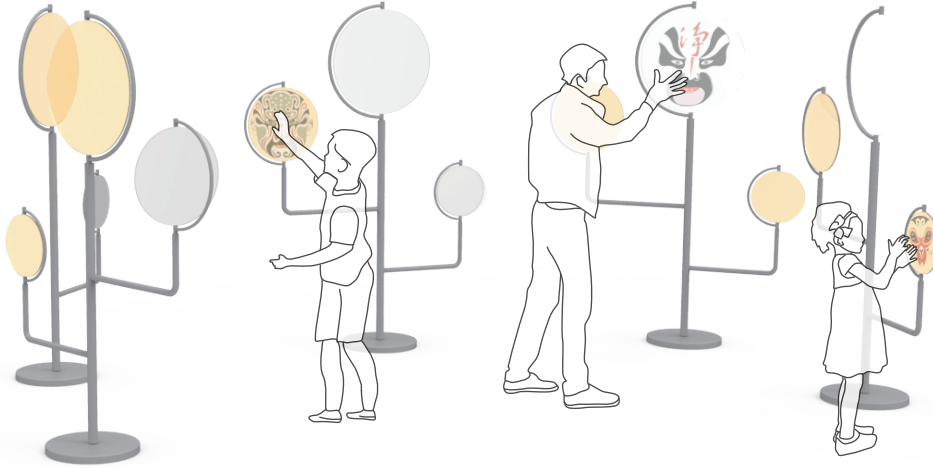


Rotate it, change face!



Get more information by connecting APP.





Different heights for adults and kids.

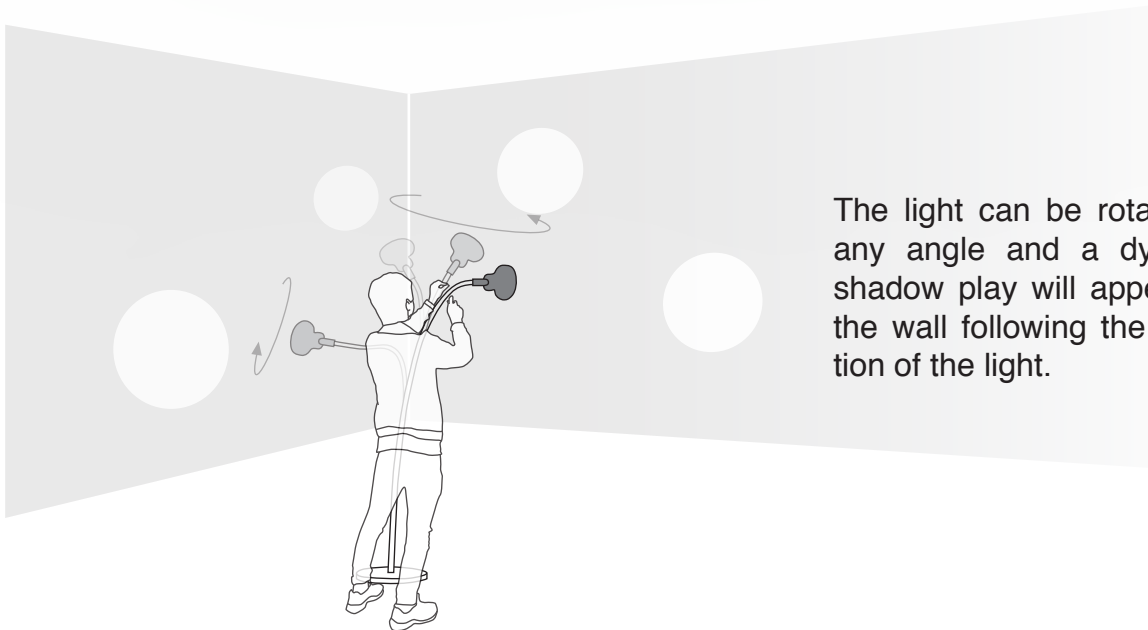


MASK HOUSE

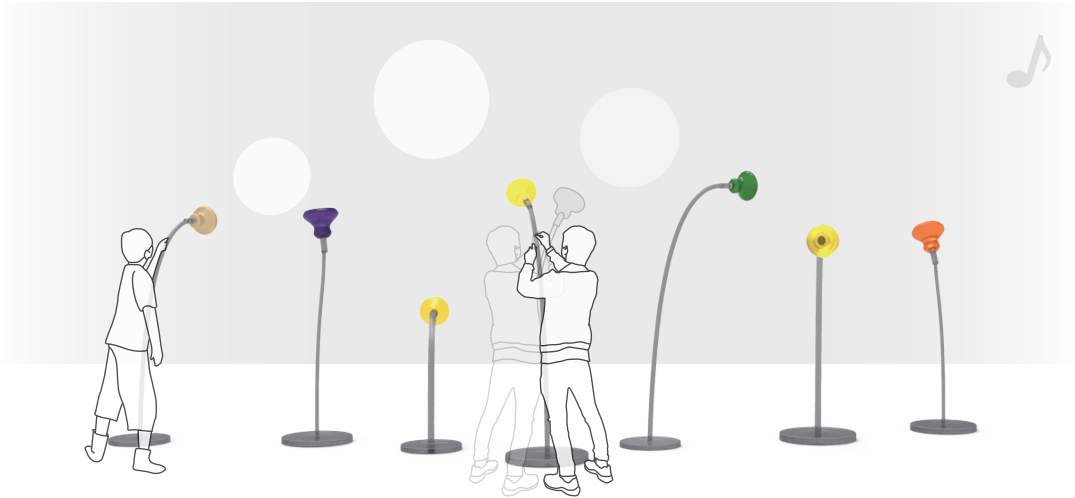
Pecking Opera is one of the most famous traditional culture of China, in the moving mask house, you can interact with the round screens and rotate it, the mask will be changed,, know about each mask's role and it's characteristics by connecting the APP. You will get a very interesting cultural experience here.



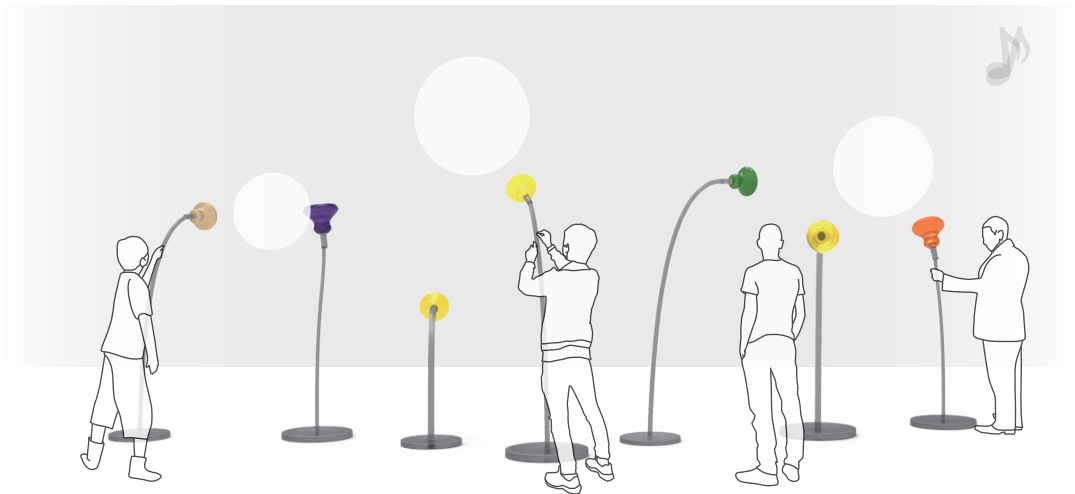
SHADOW HOUSE



The light can be rotated to any angle and a dynamic shadow play will appear on the wall following the direction of the light.



Only one person can play a whole story by changing the direction of the light, at the same time you can get the sound experience.



It will be much more interesting to play a story with more people together.

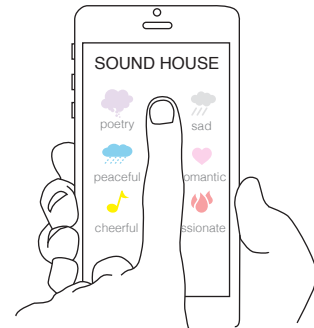
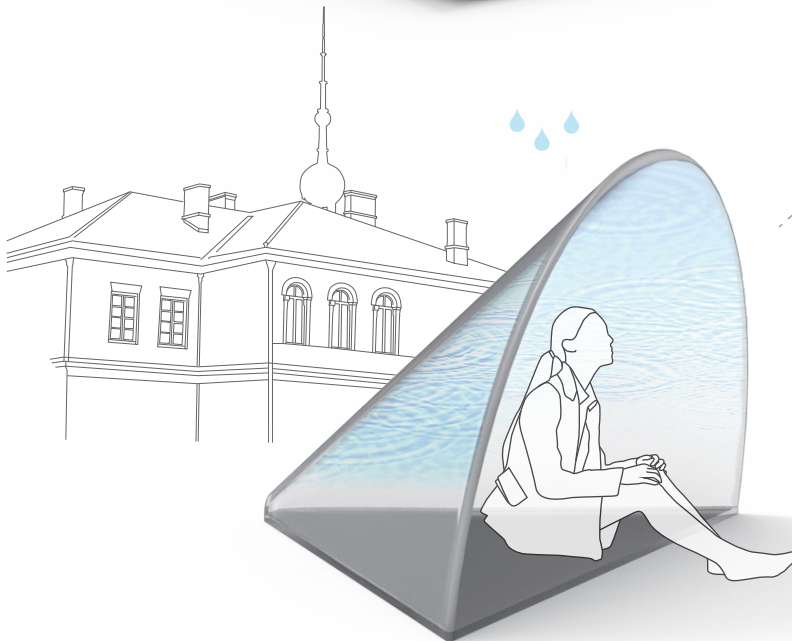
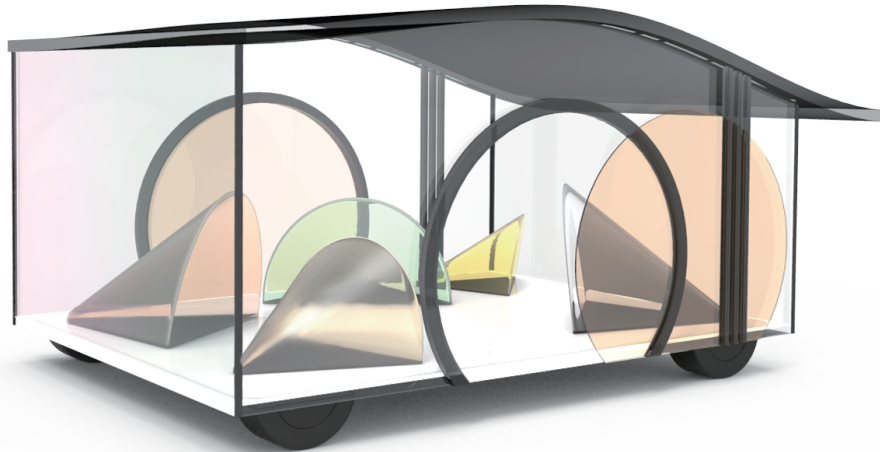


SHADOW HOUSE

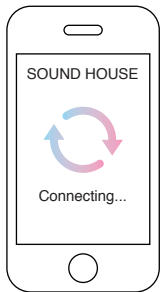
In the moving shadow house you can play a fantasy shadow story with others, just rotate the light in front of you, you will see the dynamic play on the wall accompanying the sound experience. Invite your friends to complete a shadow story together!



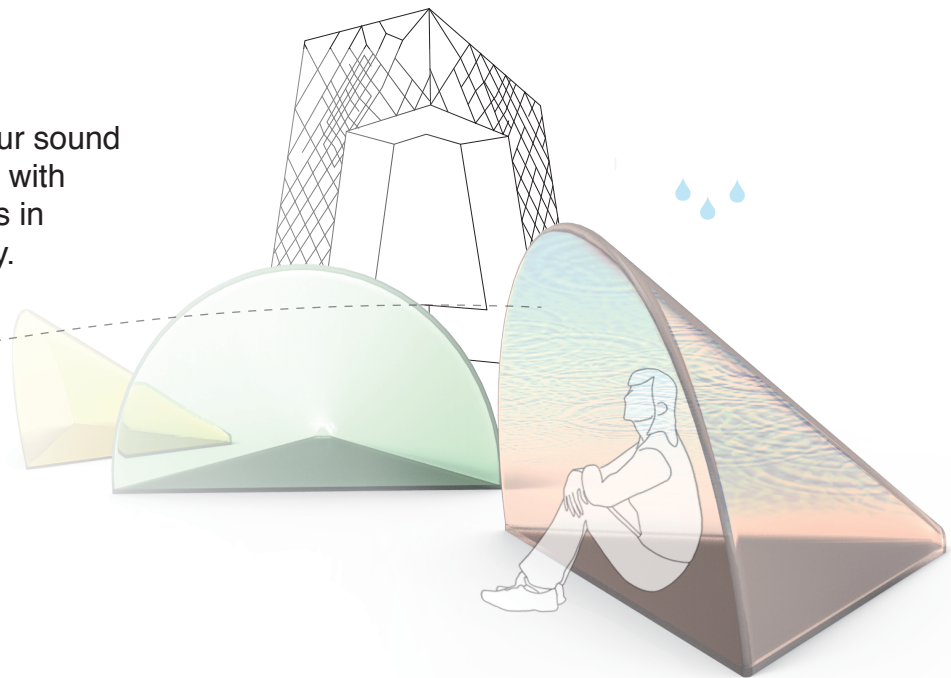
SOUND HOUSE



Connect the APP on your smart phone to choose an emotional atmosphere of poetry to listen.



Sharing your sound
and feeling with
your friends in
another city.

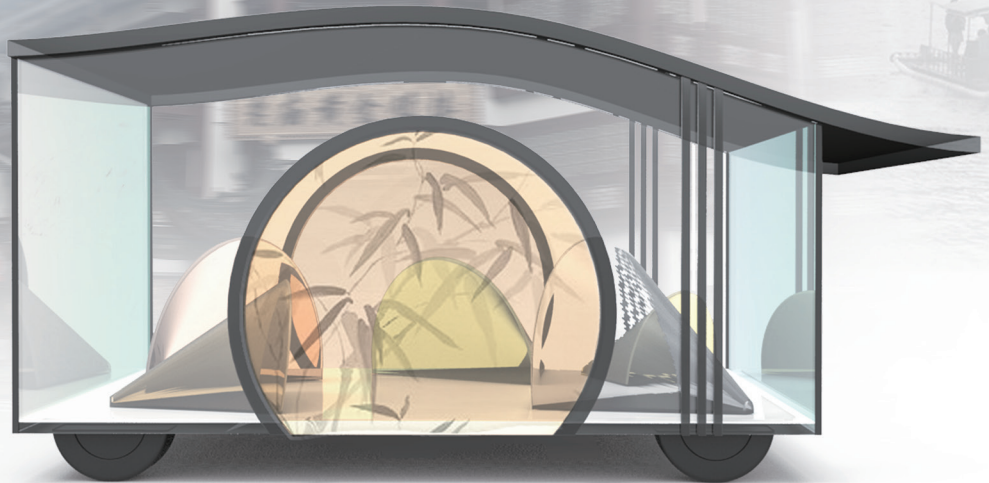


Having your own sound
experience, but in a
semi-closed space with
others.



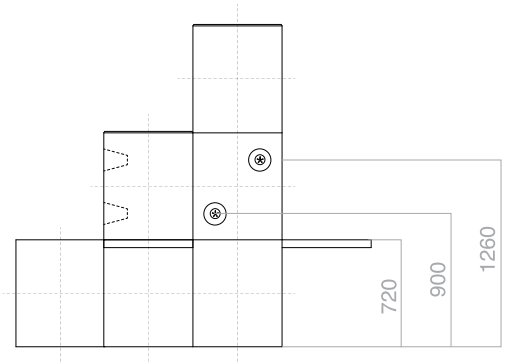
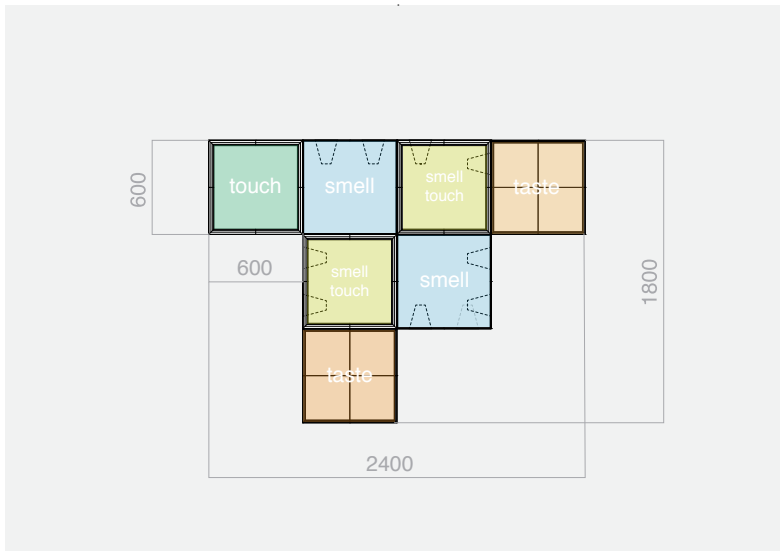
SOUND HOUSE

In the moving sound house, you can go inside your own tent, sit down and select an emotional atmosphere poetry, romantic, cheerful, sad, passionate or peaceful. Relax yourself and imagine and share the emotion with your friend in another physical space.

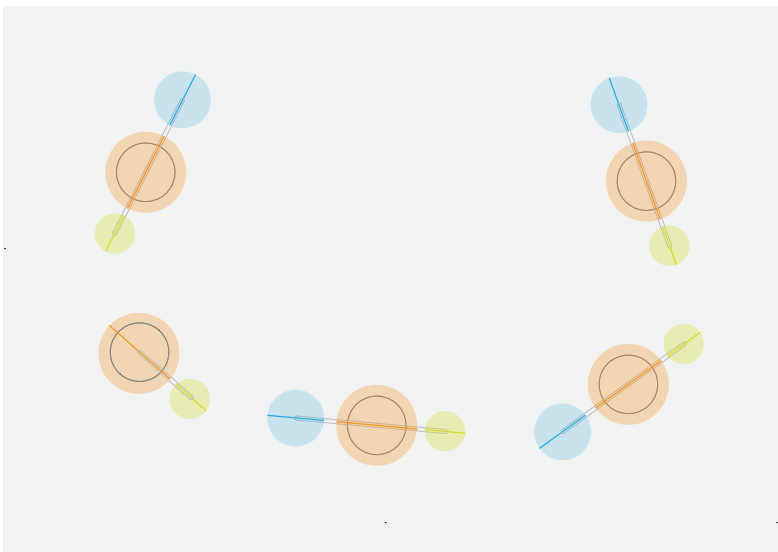




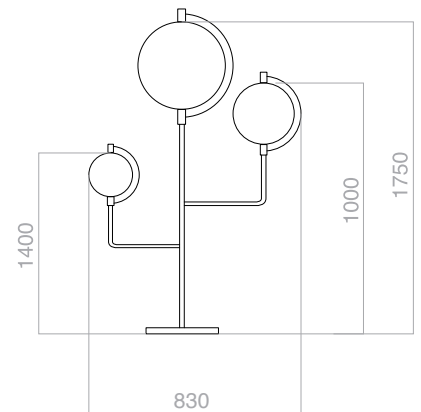
Tea House



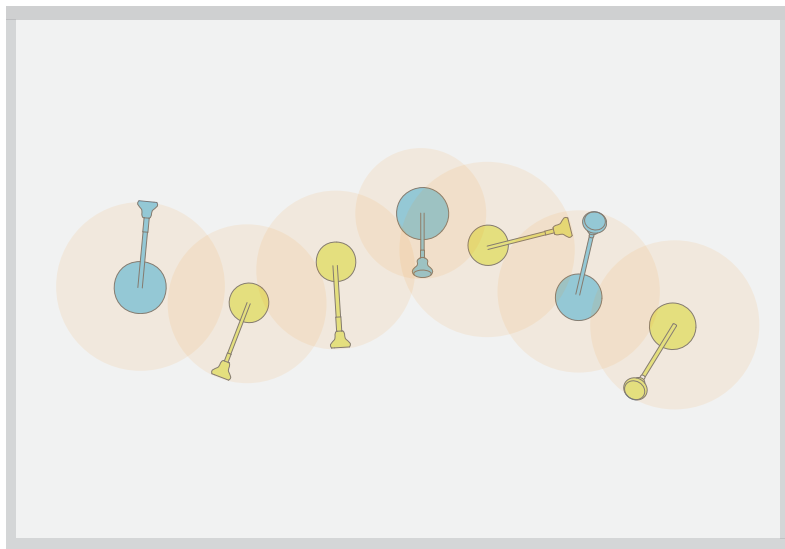
Mask House



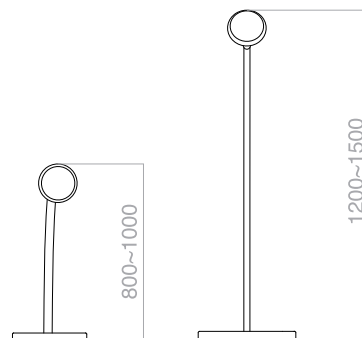
Big: D 500
 Medium: D 350
 Small: D 250



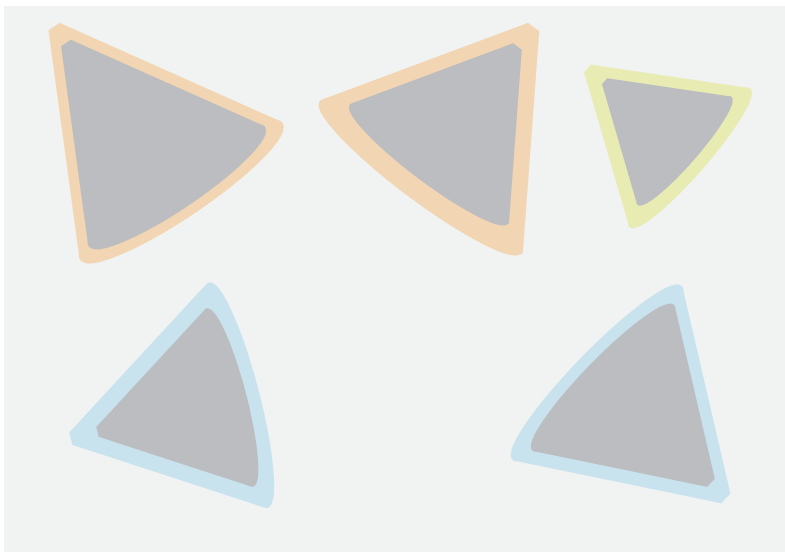
Shadow House



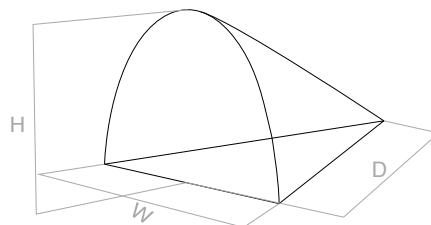
Unit: mm
Module: 5m x 3.5m

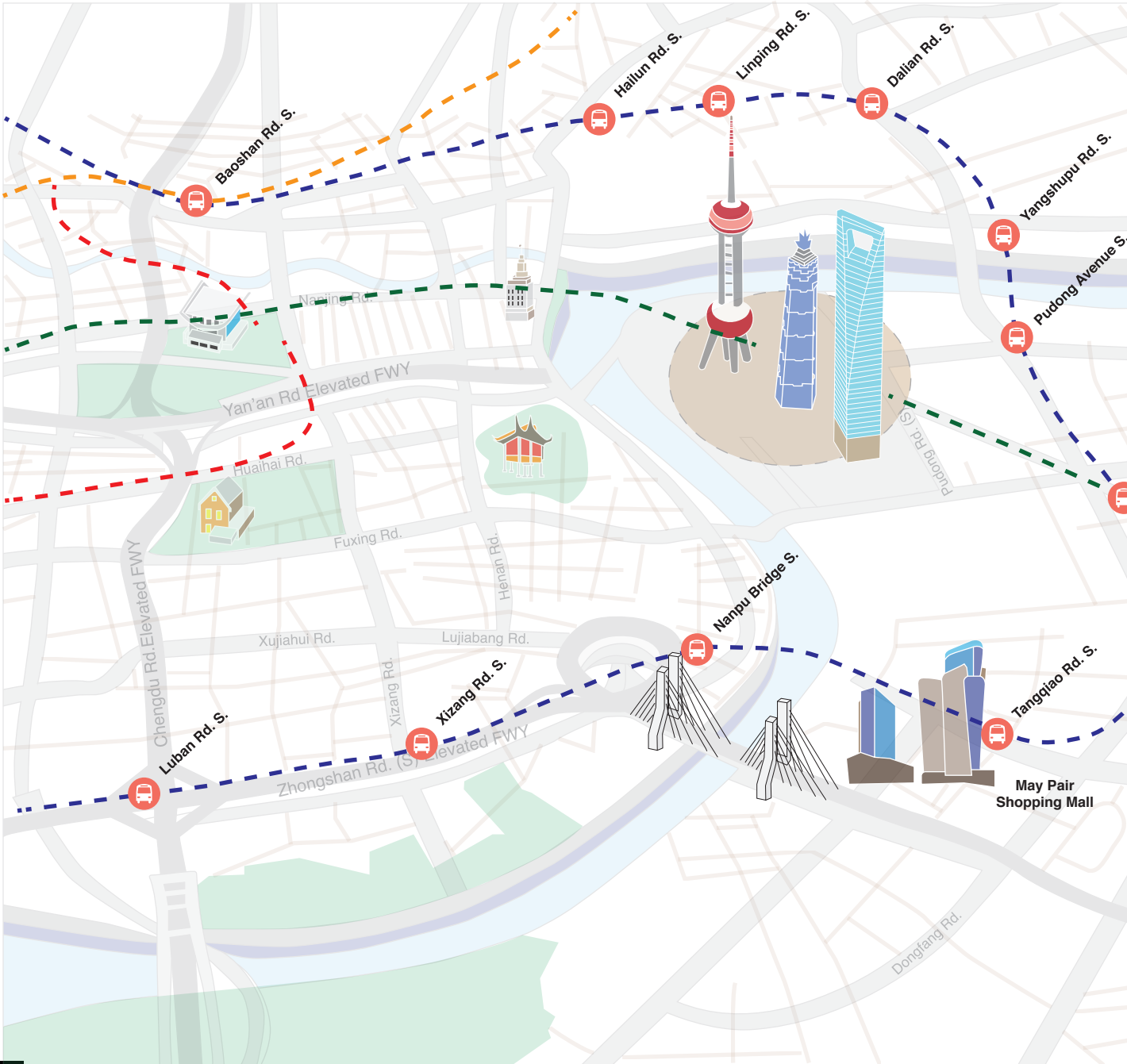


Sound House



W: 1200~1600
D: 900~1200
H: 800~1200







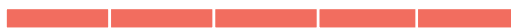
Commuter



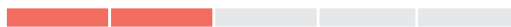
- Less time
- High pressure

Needs

Relax & Leisure



Entertainment & Education



Communication & Interaction



Movexpo schedule & spots



Commuting routes

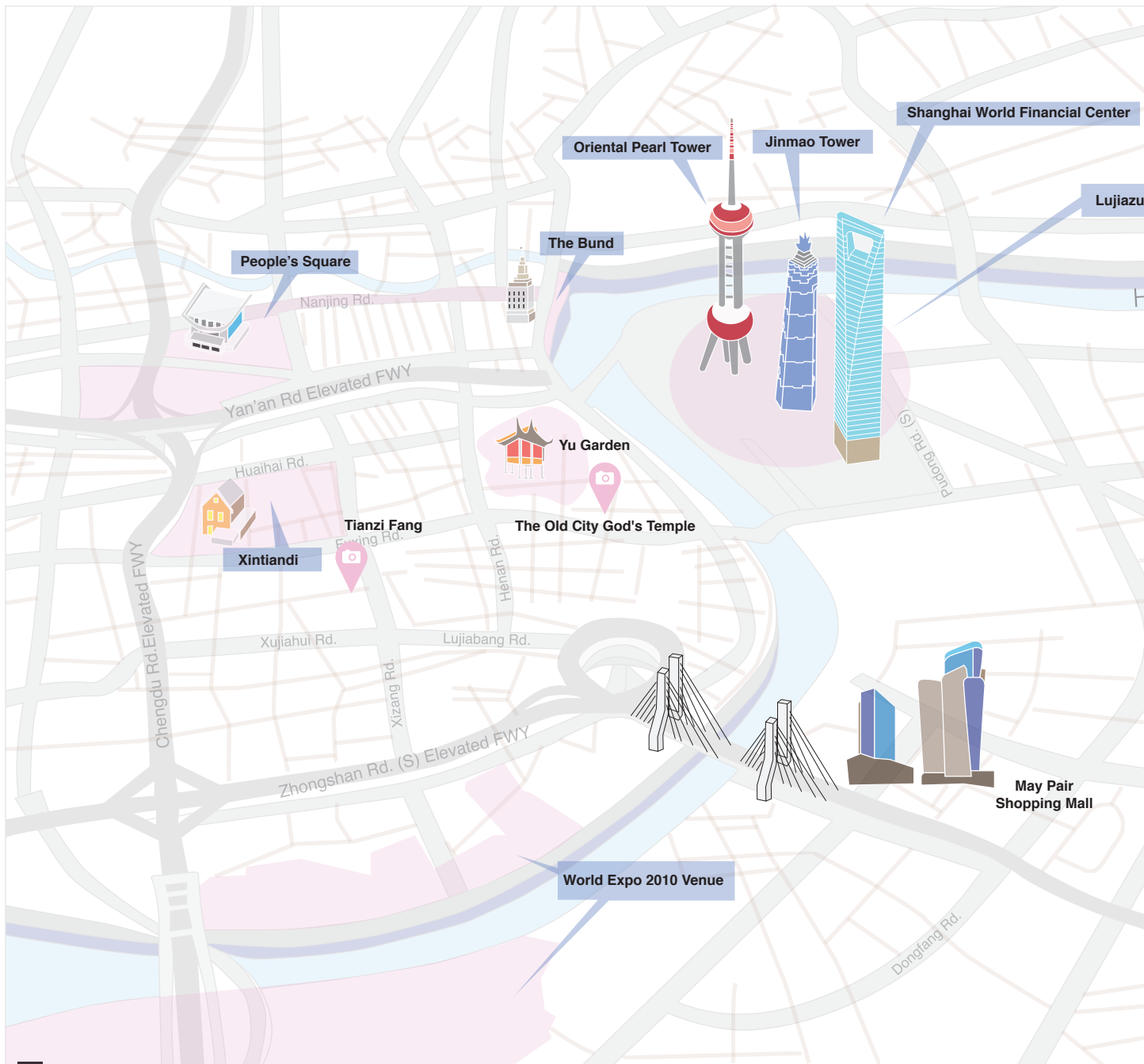


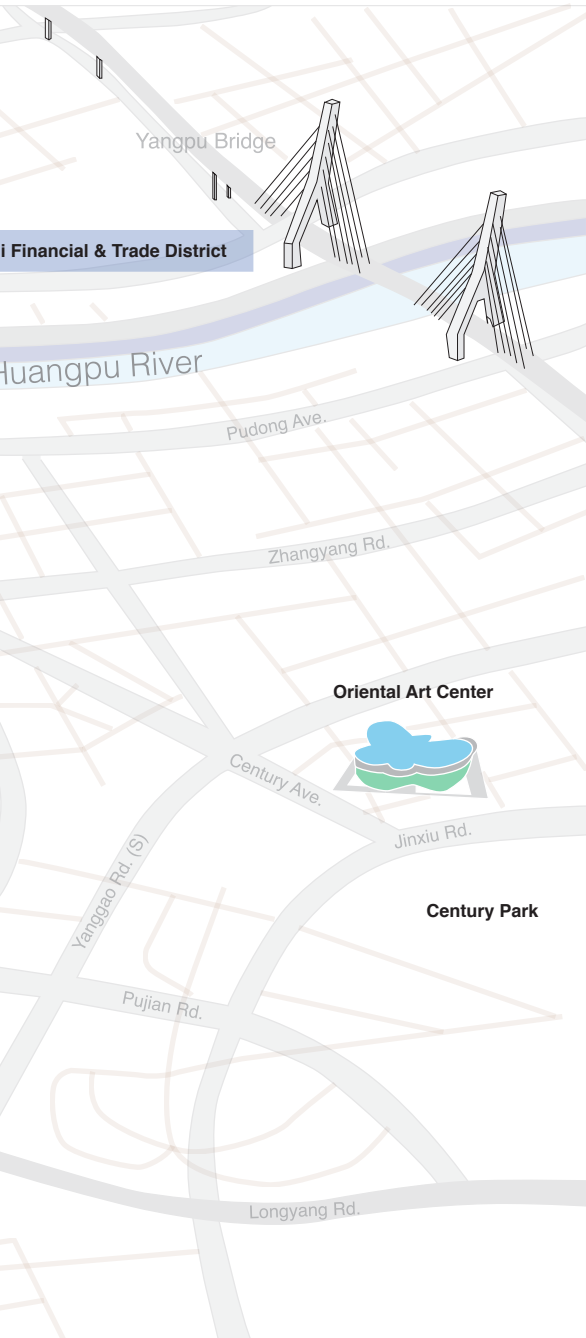
Tea House 07:00-09:00



Sound House 17:00-19:00







Tourists



- Desire to understand local culture
- Much time
- Communicate with natives

Needs

Relax & Leisure



Entertainment & Education



Communication & Interaction



Movexpo schedule & spots



Attractions



Move around attractions all day.



Tea House



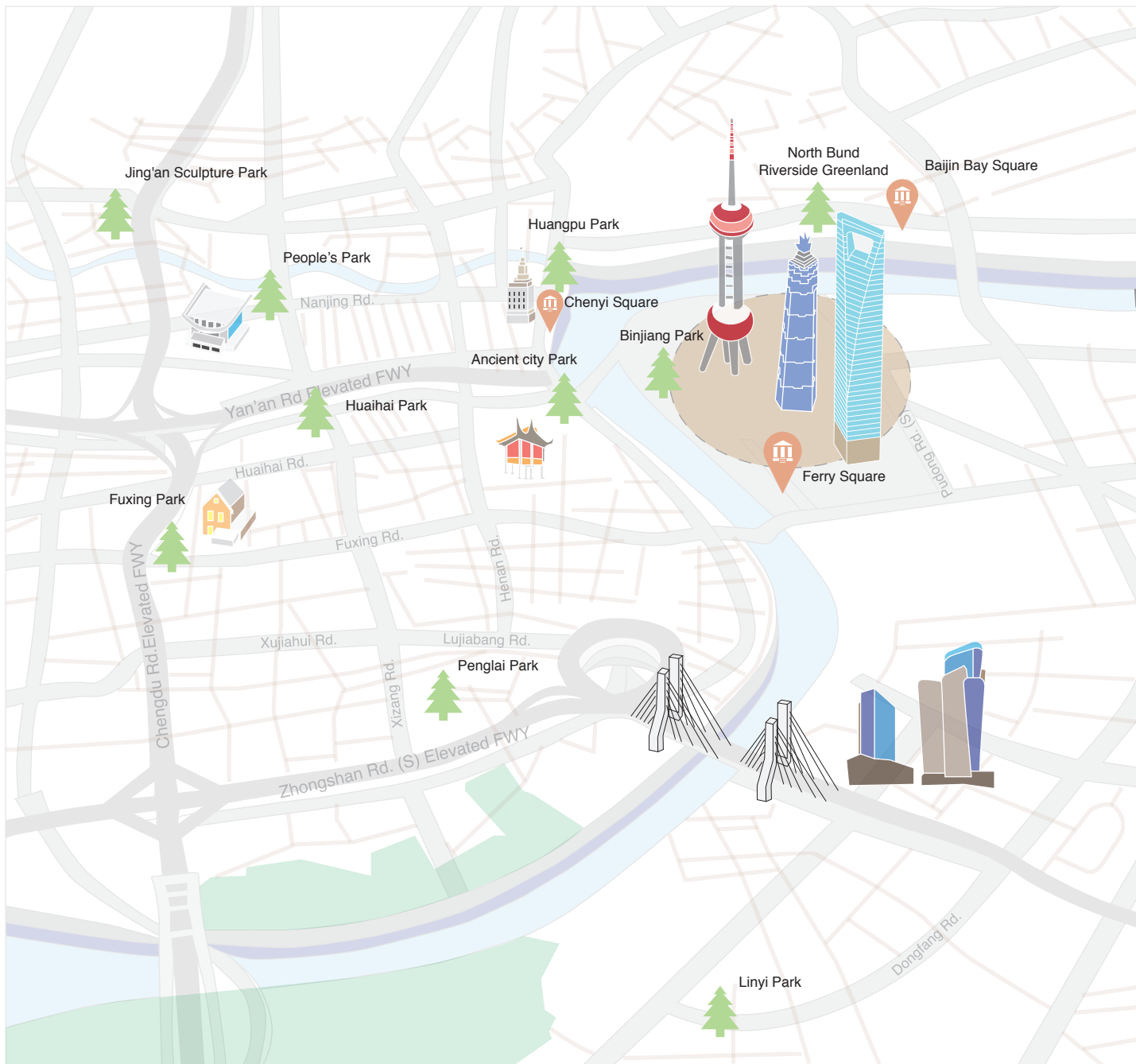
Mask House



Sound House



Shadow House



Jing'an Sculpture Park

People's Park

Nanjing Rd.

Huangpu Park

Chenyi Square

Ancient city Park

Binjiang Park

North Bund
Riverside Greenland

Baijin Bay Square

Huaihai Park

Fuxing Park

Huaihai Rd.

Fuxing Rd.

Xujiahui Rd.

Lujiabang Rd.

Penglai Park

Zhongshan Rd. (S) Elevated FWY

Linyi Park

Dongjiang Rd.

Chengdu Rd. Elevated FWY

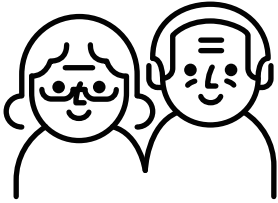
Yan'an Rd. Elevated FWY

Xizang Rd.

Henan Rd.

Pidong Rd. (S)

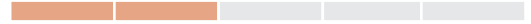
Senior



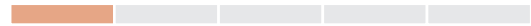
- Morning exercise

Needs

Relax & Leisure



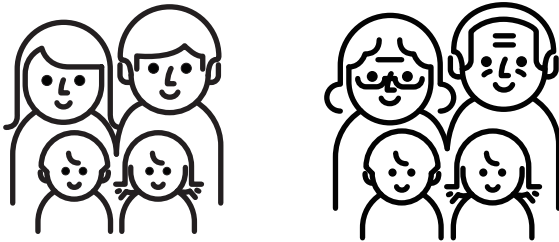
Entertainment & Education



Communication & Interaction



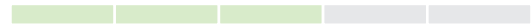
Family



- Walking after dinner

Needs

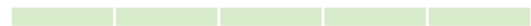
Relax & Leisure



Entertainment & Education



Communication & Interaction



Movexpo schedule & spots



Square

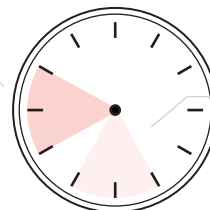
20:00-22:00



Shadow House



Mask House



05:00-07:00



Tea House



Park





Movexpo schedule & spots



Integrated exhibition



- Enough space
- Getting a lot of people
- Mix of different groups



- Weekends
- Festivals



Tea House

05:00-07:00



07:00-09:00



Mask House

20:00-22:00



Shadow House

20:00-22:00



Sound House

17:00-19:00



Other time modules infiltrate in neighbourhoods, pay special attention to areas where senior live in.

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