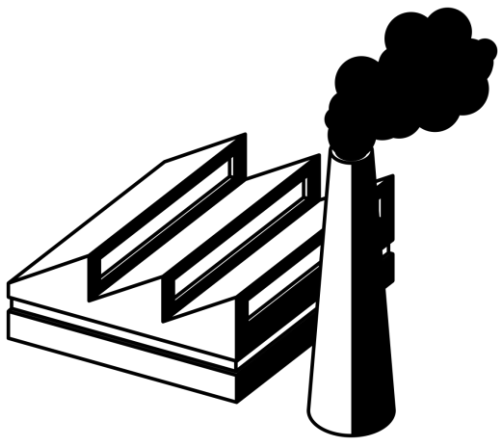
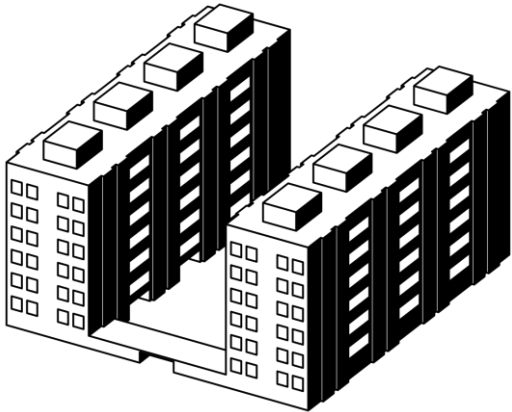
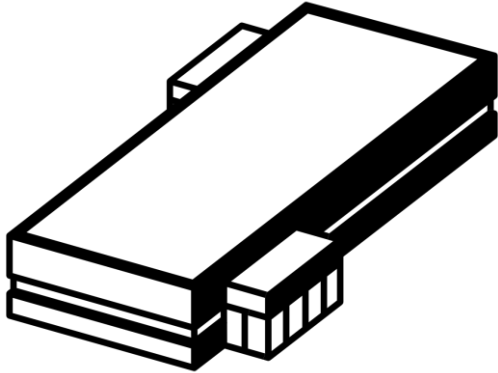
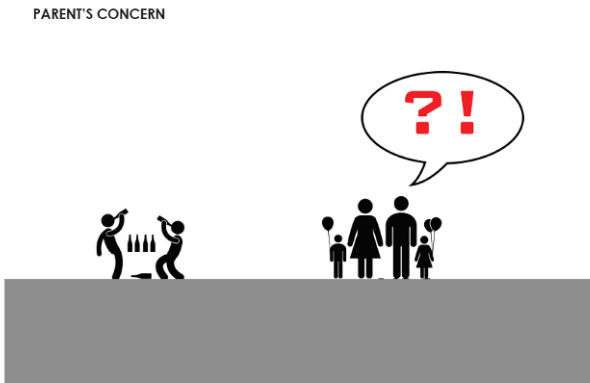


**Cities - global urban  
exploration course  
2015 coursework  
compendium**



## CHILDREN IN BUDAPEST AND LACK OF ACCESSIBLE PUBLIC SPACES<sup>1</sup>

The city of Budapest, regarded by many as an ideal city for students, we can see an evident lack in the number of children. The dropping population of the city, coupled by more frequent suburbanization of families has further triggered the drop in the population of the children in the downtown public spaces.



Among all the age groups, the youngsters aged 9 to 13 have been affected the most by this phenomenon. At the age of 9 to 13 years old, children are in a crucial intermediate phase of development. They no more welcome direct surveillance by adults, meanwhile still more prone to dangers than older teenagers. As opposed to the children younger than nine years old, who can frequently visit outdoor public spaces and take part in various activities, this particular age group would like to explore newer form of activities.

In search of solutions for this particular age group, we have begun our investigation by analysing the situation in six different cities all around the globe and comparing them with Budapest. In spite of the differing scales and cultural situation in the analysed cities, we have been able to identify certain similarities.

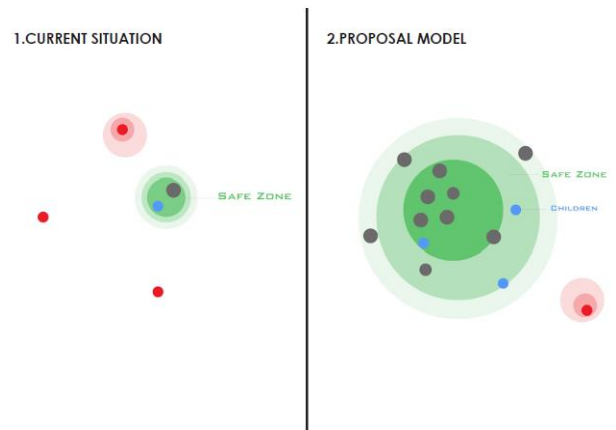
As a reference, we had a closer look at the Máltai playground project in Lajos utca<sup>2</sup>. The aim of the project was to provide safer spaces for children's

<sup>1</sup> Aryan Choroomi - Marco Fazzini - Rafail Costea - Negar Mirzayhakmati - Enora Yang - Danielle Limongello

<sup>2</sup> <http://jatszoterkereso.hu/iii-kerulet/lajos-utcai-jatszoter/>

activities through various means. Inspired by the Máltai playground project, we have proposed a new model. Our proposed model aims to provide safer, self-sustaining and more accessible public spaces for the children by minimal interaction based on the following factors:

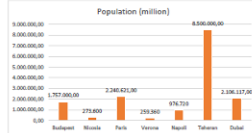
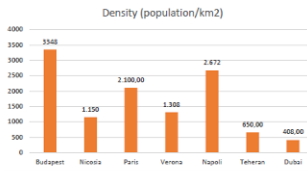
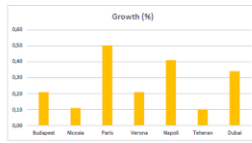
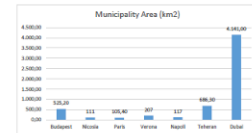
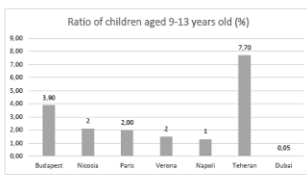
- 1) Relying on community organized activities
- 2) Utilizing background activities as a tool for providing safety and indirect surveillance
- 3) Avoiding direct surveillance on the children
- 4) Providing a sense of belonging to the public space



First and foremost, we believe that an organizational-based activity can by no means be self-sustaining. Such activities have proven to be short-lived as they rely on individual organizations and private funding. On the other hand, by encouraging the community to organize, control and develop certain activities, the project can benefit from a long-lasting and ever-expanding core.

	BUDAPEST	NICOSIA	PARIS	VERONA	TEHERAN	DUBAI
Availability of public spaces for children	MEDIUM	MEDIUM	HIGH/MEDIUM	MEDIUM	HIGH	MEDIUM
Safety of outdoor public spaces	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH
Means of accessibility public spaces	car, public transport	car, public transport	metro, public transport, walk	public transport, walk	car	car
Ease of accessibility public spaces	EASY	DIFFICULT	EASY	EASY	EASY	DIFFICULT
Most popular activities for children aged 9-13 years old	afternoon classes, additional school activities,	sports, using the parks for meeting spots	sports, music school, conservatory, cultural activities, language courses	sports, workshop activities, cultural activities	sports, playground, art and music classes	Indoor amusement parks, cinemas, sport activity in semi-public controlled outdoor parks)

## COMPARISON OF CITIES



We believe that as opposed to arranging series of activities for specific group of children, provision of background community activities can change the face of particular public spaces in the long-run. These activities can take different forms, and perhaps can be carried out by different groups of people. Needless to say that more focus need to be paid to family-based activities, considering the fact that presence of groups of families in a certain area can automatically increase the level of security in the public spaces and consequently encourage parents to allow their children to visit those spaces.

Besides providing a comfortable activity zone for children by avoiding a direct and strict control, the public space needs a strong character. The children, as well as the participants of the community activities must develop a connection with

The model can be applied in a variety of public areas, all characterized by the following similarities:

### a) Safety

- The children in the area must be well protected from the dangers of the traffic, thus direct connection with the main traffic road must be obstructed.
- Public spaces close to pubs, bars or clubs must be avoided due to the children's sensible age.
- Locations with hazardous infrastructure and equipment is not deemed suitable

### b) Healthy environment

### c) Possibility of surveillance

- Large open areas can be favorable due to ease of indirect surveillance
- Locations with hiding spots and dark areas must be avoided

### d) Close to residential zone

- Ease of access is a crucial aspect for families and children.

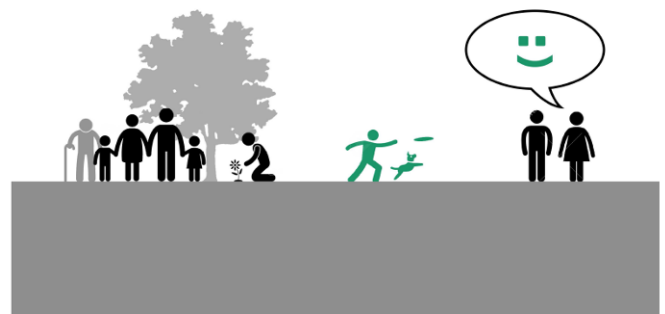
As an example,

### e) Availability of infrastructure

### f) Absence of strict regulations

As an example, creation of the so called community gardens can be a way to implement our desired model. The expected level of participation can be expected to be high in such activities, as it both promotes a healthier environment in the neighbourhood as well as providing the community with certain goods. Consequently, in addition to providing background activities, it may also provide an interesting activity for the children themselves. Most importantly, it will create a sense of pride and belonging for the community which is a crucial aspect.

## RESULT



## DEFENSIVE ARCHITECTURE<sup>3</sup>



### INTRODUCTION

Defensive architecture is a controversial urban design trend in which public spaces are constructed or altered to discourage people from using them in a way not intended by the owner. Also known as hostile architecture it is most typically associated with discrimination against the homeless. Other forms of behaviour which are commonly designed against by hostile architecture include skateboarding, littering, loitering and urination. Special public furniture design is used to fulfil purposes the defensive architecture has.



Our decision to treat defensive architecture in public spaces started with the question of security in the city. With the rising numbers of immigrants and by consequences homelessness, the topic is very relevant to nowadays day-to-day life. These changes usually bring to light the population worries about the homeless people and the images that may be associated with them.

Nowadays it is noted that the number of people who can't afford a home is increasing very quickly in most of the cities. Homeless people see

the public space as a place to live, but the conditions in which they have to do it, are very hard. What happens is that they take over stores halls, metro stations and hall entrances of the buildings. That is what other people are afraid of, people do not wish to witness poverty, make contact with homeless and beggars. This is why defensive architecture is developed step by step - to keep homeless people away from working class.



In urbanism, security, and defensive architecture by extension, is traditionally linked to the idea of fences, of the fortress. It brings to mind the idea of battlements, fortifications, but nowadays another vision of security in the city is appearing. Conceived from stadiums and airports (main spaces of gathering and temporary public concentration), this vision is conquering the rest of the city as well. This vision no longer aims to forbid the entrance to places but regulates the flow in those places. It terminates, which people can use the public space, in order to make everyone feel safe. This could be called situational prevention: the idea of preventing something from happening because of what it might be.



<sup>3</sup> A. M. Pina - A. C. Martinez - M. Kodasma - K. Tajtiova - V. Bonis



The concept of situational prevention appears in the end of the 70s in the United-Kingdom in a criminology research lab of Home Office. It's based on the idea that security should be more focused on the event (meaning the situation leading to the crime) than the criminality phenomena (social situation leading to the apparition of crime). Its three main points are: reducing the potential target of the crime, making the crime more difficult and easing the shared control of public spaces by the police and its inhabitants. This disables many functions public spaces are supposed to have: to be for everyone, and to allow meeting of its different users.

In France for instance, security is an increasing matter of importance in urbanism and design of public spaces. The Ministry of French Security is taking more and more important role in proving the relevance to security and the feeling of security. Indeed, these are two different things. A study made in the city of Saint-Denis in France have proven that people feel more safe in the centre of a city than at its fringes, whereas the reality is that most crimes are concentrated in the centre. So the feeling and actual security are different things.

Consequences of this vision are seen in public spaces. We have taken a lot of different measures into use in order to make people feel safe. Some of them are quite direct, like video surveillance (or « video protection » according to the government), some are not so obvious, like public design, that is more or less aggressive.

What solutions have architects come up in order to make people feel safe and what is their efficiency? To answer this question, we will start by talking about the most obvious and aggressive solutions in the public space design, then the less obvious but still unwelcoming ones, that we will call medium dispositives. We will also show some funny ways to solve the problem and we will finish with more original system of pulling unwanted people away.

### **AGGRESSIVE SOLUTIONS**

Now we will talk about most shocking way how “deterrent architecture” tries to solve the housing crisis that affect most of cities in the world. We can call it the aggressive way to do scare away homeless people – the aggressive solution.

The most striking example of the nowadays called “Deterrent Architecture” has placed in the entrance hall of a luxury building situated in the 118 of Southwark street in London. The decision to use that kind of architecture has been taken after most of the people who live in the neighbourhood complained that a homeless men sleep in their entrance halls. The final solution was to place spike plates of 5 centimetres in the entrance of some buildings in the zone in which the price of one room apartment is about 600.000 euros.



But why it was so important? The controversy started when a man walking on the street took a picture of the spikes and hung it on twitter (June 2014). Then, a significant number of people reacted against this photo. People started to realize about what happen in their cities. The movement against it was really shocking, in a few days 14.000 people signed online to the withdrawal of pinch rows.

More than that, the case was even listened and debated by politicians of London: the London Mayor Boris Johnson clarified it like an ugly, stupid and counterproductive idea. In the other hand, the neighbours thought that it was such a fantastic idea because it implies that they don't have to see homeless or drunk people while they are going in their homes. They also blame the government for failing with the housing crisis.



In fact the number of homeless people has been increased in a 75% since 2012 in London but is that unsightly way the best solution to solve the problem? Do the spikes remove homeless people out of the city or it is only the easiest form to postpone the real problem?



What is important in this case is that only with a photography taken by a guy while he was walking on the street blind people realized about a current issue in our cities. Because of that, some initiative started. First the change started with a demonstration: a crowd of people protested against spikes. Then, a few days later, started other initiatives, for example the movement Space not spikes which looks for places to accommodate homeless people in a humanitarian way with a mattress and some books instead of spikes.

This is not the only case in London, the same thing happened in Tesco supermarket located in Regent Street near Piccadilly Circus. Tesco put spikes in front of the supermarket to drive away homeless people after complains of some customers about how they feel "intimidated because of some antisocial behaviour in front of the Regent Street store". The protest against spikes started on a Facebook page. In that Facebook page a demonstration was organized by some people and a few days later a crowd of people went to protest in front of the supermarket. In this case they received a surprise because Tesco removed the spikes the night before. The Tesco supermarket took that decision "as a answer to the public concern that this kind of architecture caused in people."

But aggressive architecture not only appears in located and small private zones in European cities. We are going to talk about another real case which is surprising and show us how big dimensions we can achieve with this kind of solution. While in London, because of the

controversy with spikes in private halls and supermarkets entrances, spikes were removed, other countries still use a more shocking and strong method to avoid people sleep in the street. The next example is located in Guangzhou where 13 million of people live. Most of the people in that city think that homeless people sleeping in the street affects their city image. The solution in that case was to fill all possible public spaces where people could sleep with some kind of concrete pyramids forcing them to drive away. Most of these spaces are below bridges where people used to sleep and one day they placed these spikes.



Nobody in the city wanted to say why was that solution taken and, what is more, who is the responsible person of such a thing. In fact we can find this not only under one bridge in China but under most of them, for example also below the viaduct of Huangshi. There you can find 200 m<sup>2</sup> of empty land where some homeless people used to sleep. Nowadays, the municipal authorities covered this space with pointy pyramids which has forced homeless people to sleep aligned in a small and uncomfortable space of about a half a meter wide. This is a really aggressive approach against homeless.

### **MEDIUM AGGRESSIVE SOLUTIONS**

The medium way is still a direct way of fighting against those still misunderstood as „destroyers of public life“. Against those, who don't fit into a representative image, that is every city trying to build up according to ideal models that come from nowhere. For example benches in public space are an interesting indicator. They don't speak just about ingenuity and creativity of the designer. They do not only deal with the technical problem. They are an indicator of to whom the public space belongs and how we can deal with the issue of majority and minority. With the



collision of strong and weak. From medium aggressive solutions we can show an example from Slovakia, from capital city Bratislava, where they attempted to create a representative space before Main train station by removing, reconstructing and adding.



Behind the removing is the Bratislava's Adorning Association (association for prettifying Bratislava's public space). They decided to remove benches in front of train station because of homeless people, paint some concrete flower pots and walls and other adorning procedures to build up dignity of the entrance public space. It was kind of a fight against grayness. Again, a wrong connection of aesthetics with ethics, that is now as a wave of quick comfortable problem movings as Jeremy Till described in Imperfect Ethics. There wasn't a bad intention behind this action, just a thoughtless concept with bad results. This wave of prettifying activities in front of the station was a call of desperate people against long-term passivity of the city. The station is still reflecting this state.



The project was presented in media and social networks by city government as the solution for a catastrophic situation that the government actually caused. And then started a massive critic that brought a big attention to the condition of the train station. Irony is the hope and

enthusiasm of participants in a good thing later backfire on them and become a target of ridicule and critic. Every conflict is a result of accumulating in the long-term unsolved problems. In Bratislava its a neglected public space, oppressive measure of visual smog, creaky infrastructure.

Behind the reconstruction part is the municipality. The pressure of critic after above mentioned events forced the municipality to put back benches. They chose to reconstruct with the old, using the left concrete structure with addition of wooden plates with middle elbow rest. The design of middle elbow rest is an inspiration from foreign countries. It enriched a lot of benches in Bratislava to prevent privatizing the bench by one person. Meant against homeless, but when there is sunny weather there are also some not homeless people who would also like to just lay for a while.



Adding was the last thing that we got inspired by. The half bench, a temporal resting object, a kind of non-object in public space, serves for quick half rest while waiting for a tram or bus, this is paradoxically more onerous than helpful.

Some other examples of the 'medium way', from Spain. The first is in Tirso de Molina square, people used to use the planters to lie down and rest (not only homeless people) but when they do it the plants were ruined. So what was the solution? They put a lot of small stones embed on the top of the planters trying with this to avoid people to lie down and only permitting to sit down in it. But what happen then? At first people tried stay in the square like it nothing have happened but in fact day after day they didn't feel comfortable and nowadays the place is not considered a good meeting point of all the public spaces of the city so is only used to move from a place to the other. The idea was successful

because it drove away homeless people and maintained the beauty of the gardens which young people “tried to destroy”. But, Is it a really great idea? The space is keeping beauty and secure but it really lost the purpose for what it was built.

The second example is located in the Ruiz Jiménez roundabout where we can find a building called Principado de Asturias. That building was the place where numerous exhibitions and book presentations have happened and it works also like a meeting point where spread culture, tourism and economy of Asturias. Nowadays it is closed trying to be sold and while it happens, homeless people took advantage of the situation and find in the building a place to live. Step by step the building was becoming a homeless settlement where that people cook, eat, sleep and live. Because of the sale of the building and the complaints of the neighbours, people were evacuated out of the building and not permit to go inside again. The final solution was a chainmail placed in the trench of the building. With this easy structure they avoid people to stay inside the building.

The third example is again about a public space, it is located in the zero kilometre of Madrid and one of the most well-known places of that city, Puerta del sol. In the middle of that square we find a fountain which nowadays is not a fountain in fact. That mentioned fountain was designed as a round bench on which you can sit facing both sides because it has a trench empty of water. Firstly, be a great meeting and social point was the main function of the fountain in the square. What happen then? Someone thought later that this social point was not necessary and that people sitting in that fountain was not well seen so they thought in a solution. Finally they covered the trench with a kind of garden and they put two spike crowns on the top of the bench. With that two actions they thought that the problem was solved but it doesn't happen. What really happens is that people still sitting in that place but not in the bench. Instead of that they sit down on the floor next to what was a bench.

We can find a lot of examples like this in the city but in fact these do not solve the problem. In Jacinto Benavente square we can't find any benches because is considered that if people want to sit they must pay for a terrace. People didn't want to pay for sitting and they used to sit

in the tree planters so they put little arcs to avoid it. What happen nowadays? People still sit in those planters, they bring with them cartons or cushions to do it. In the same way, in some streets characterized by being streets with prostitution, the same solution was thought. They put the same or more aggressive kind of spikes to avoid prostitutes can sit and try with this solve the problem of prostitution but it happen the same again, prostitutes and homeless people find the way to rest in such a difficult kind of seat.

## FUNNY SOLUTIONS

Hidden ways of avoiding people to sleep on the ground or protect themselves of the rain, cause a subliminal irritation towards this hostile environment. This led us to a third way of what we call “defensive architecture”, the funny one. For illustrating this method with an example we have chosen the Mediterranean city of Alicante, Spain.





This small coastal city is well known for its beaches and benevolent weather, what bring tons of tourists throughout the year. In this context, a street in the down town was in the front sight year after year for being a node for drug dealers, immigrants and prostitution. San Francisco Street was pedestrian until 2002 when the City Council decided to open it to cars in order to avoid Maghreb people. This move had no repercussion at all; the street remained the same, but with traffic. The street was full of call rooms and bazars. There was no other kind of stores and the pedestrians stayed away from the area. Even people that have lived there all their lives, moved to more gentle places.



Later on, on 2013 a new government enter in the city and (besides the act of putting gigantic flowerpots everywhere) they started to pedestrianize the street again and some paint appear in the floor. It was the start of what in Spanish we call “La calle de las setas”, “the mushrooms street”.

“Mushroom needs humidity and enough hot to develop itself”. Maybe this was the technical criteria that the mayor of city followed for that in the time of one week gigantic mushrooms appear in the street, followed by some playgrounds and huge worms and ants. The specific name of this kind of mushroom is Amanita Muscaria, which happens to be a hallucinogenic mushroom. We do not know if this was what inspired the artist, but

is obvious that its urban ingest has produced a collective hallucinogenic effect with consequences yet not determined.

Avoiding the fact of the grotesque choice of the figures, we are going to balance the results of the action regarding The social, The cultural, and The economy. Concerning the social factors, the mushrooms have been an activator of life in the street. Not just that the dealers didn't want to make business there anymore, but plenty of children, tourists and curious neighbours went to the street to see the unreal scenery. On the other hand, the small mushrooms are the perfect shelter for kids, dogs, and youth in state of alcohol poisoning, which maybe is not the best combination.



After some months, these mushrooms were closed with a grille, which funnily remain us the medium aggressive ways for avoiding homeless people in parks at night. With reference to the cultural subject, the look of these figures might remain Spanish people to the “fallas”. Fallas are a traditional festivity held in Valencia in commemoration of Saint Joseph. It consists in building cardboard and wood figures to eventually fire them. In Alicante the same applies every June 24th, but in a smaller scale. It follows that this sculptures create a relation between a cultural fact in the city and the people who live it. Something to point out is that fallas are meant to, first, be burnt, but also to express in a satirical way the political or social situation of the moment.

Regarding the economic factor, the first thing to be said is that this proceeding cost around 70.000€to the city (nothing special if we know that every big falla costs around 90.000€ every year). Nevertheless, the street counts now with a 100% of stores occupation. This linear action has had a global repercussion, acting as an activator for adjacent streets.



## CONCLUSION

We have now explained and examined three different ways, how architects and planners have tried to change public space. The main idea behind it was to make public areas more welcoming and more inviting by designing furniture that somehow would scare away homeless people and beggars, who were disturbing families, workers, tourists etc. The first one of them was very radical and aggressive, really against people. The medium one was a bit more gentle, but still quite uninviting. The third solution was the funny one, where the image and the purpose of public space was changed.



We have come to an understanding, that yes, all these methods do actually work. They make it impossible for homeless people to use these public areas to sleep, to find shelter and to sometimes permanently live there. But it also raises the question; it is really a good solution? Does it solve the problem? Or just moves it out of sight? Does it really make public space more inviting and enjoyable? Can't we as architects think of smarter and gentler solutions?

After seeing some examples of aggressive or medium ways to avoid this so called "anti-social"

behaviour, is clear to us that the prime effect of this kind of public furniture design is to throw people out, to scare them away. Not just homeless people or skaters or drug dealers, but also elderly, families, workers... What is not comfortable for homeless people is not comfortable for anybody.



By these anti designs they not only exterminate homeless but also the ones who like to enjoy a public space in different positions, not just sitting or standing. They exterminate some functions of public life. The main task of design is to help in everyday life, to ease. We don't say "the main task of design was" because this would mean we accept the mutation of this discipline. These changes shouldn't be seen as a natural evolution of public spaces but rather things that endanger its functions. It seems that defensive design serves only some people. These approaches implement a new notion of „disciplining architecture" to everyday life.

The funny method is in fact the one working the best. It has made public space more inviting and brought life up in this area. But is it truly a good solution? What is the end of these mushrooms in Alicante? What are their inherent consequences? Does it raise more social issues than it solves? Some people have talked about unscrewing mushrooms in the city of Alicante and placing them in different places on the city that need some revitalization. It would result in the mushrooms bay, the mushrooms square, the mushrooms garden... This has not happened (yet), but the fact is that it has been the beginning of series of funny patches appearing in the city; such as a carousel, a fake medieval boat or the new façade of the casino. Of course, funny things attract people, but this makes us think: is it the only way? Moreover, this solution works only if it is something rare and bizarre, if there are too



many grotesque things around the city, it is not unusual and inviting anymore and the method would lose its phenomena. The problem of prostitution and drugs was not solved simply moved to a new spot. These kinds of solutions are only able to revitalise a street or a place but can't be global solutions to a global problem (economic, social and cultural issues).

#### SUITABLE SOLUTION FOR EVERYONE



We have to admit, that the problem is much more complex and it has many different layers. It is far more social problem than just architectural and depending on the work of architects in public space. The only real life working solution would be to find housing for homeless people; this would get them off the streets and make public space available and enjoyable for everyone. So what can we do as architects to help to solve the problem?

We can help to create home for those in need. We found one example, where it is put into practice from Finland. VVA - Vailla Vakinaista Asuntoa is a homeless organisation founded by homeless themselves in December 1986. From the very beginning the goal of VVA was to abolish shelters and get a home to everyone. The main principle of this organisation is that housing is a human right. Lack of housing cannot be accepted under any circumstances. Everyone is capable of independent housing if only offered proper conditions and appropriate support. Homelessness can be ended completely only by working with homeless themselves on every level in society.

VVA has become an expert organisation and cooperates in Finnish Government's Programme to reduce long-term homelessness. In VVA peers, voluntary workers and professionals work together. One of the ongoing projects of VVA is 3-year project Own Keys. The aim of the project is

to create a participation model for planning housing and support services for homeless.



Participation in planning is carried out in all steps of the process. The target of the project is to make homeless people participate in planning services from the very beginning in four cooperating towns (Lahti, Kuopio, Jyväskylä, Tampere) and setting up a frame of a network of influential participants (national network of homeless people). This process can be used in similar projects for planning and producing services everywhere.

In the project both those presently experiencing homelessness and those who have experienced homelessness are involved. They are given the opportunity to influence on matters concerning housing, support, services for homeless etc. They can see that they are heard and their voice matters. Each town has a detailed plan concerning e.g. housing, support, crisis accommodation or a day centre. Pro-user patterns are considered when planning these services.

Experts by experience gather in the cooperating towns the views of homeless people. This would help to build a trust-based relationship with homeless or formerly homeless, and will hopefully create a snowball effect to peer support (e.g. community meetings, outdoor activities, a trip together to homelessness fair, eating together). And of course hopefully the housing and services planned by homeless would be in better quality, because designed by homeless themselves; it will probably better meet the need.

However, we cannot forget that not every homeless person wants to be helped. After a few years, some of them can simply not reintegrate into society and others have actually chosen to live this way.



## **THE BUDAPEST COCKTAIL - Ingredients of Specialness of Budapest<sup>4</sup>**

We created a multicultural team of six architecture students: Ana comes from Mexico, Morgane from France, Linn and Urmo from Estonia, Alicia from Russia and Charalampos from Greece. Coming from different parts of the world, we started comparing our different experiences in Budapest, the city we all live in now temporarily within educational exchange programs.



In addition to coming from different countries, all of us also have previously lived in multiple cities, either in our own countries or from a previous experience of living abroad. Although our perception of cities varies a lot because of our different backgrounds and architectural stimulus, we discovered that our points of view have a common intersection: a great interest in the city of Budapest. All of us have this constant joyful feeling about exploring it and decoding its structure. As a result we realized that there must be something special about Budapest that makes us all excited about living here and enjoying the urban palm of the city. Thus, we decided to proceed to an architectural research to find out what makes Budapest a special city. What are the ingredients that create the “cocktail” of Budapest?

### **Methodology**

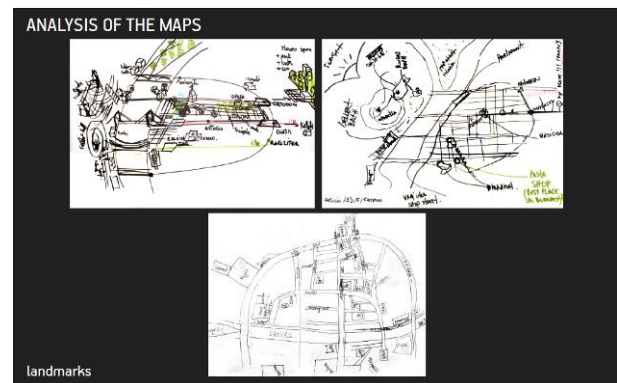
To start finding an answer we approached the subject while having in mind Kevin Lynch's theory about analysing a city to get a first impression of it. As our target group we chose expatriate/foreign students who are staying in

Budapest for one or two semesters, around ages 18-30. The aim of choosing foreign students as our target group instead of locals is that as foreign students come from different backgrounds, cultures and previous city-experiences, they might have more diverse opinions about the city.

First we ask them to freely draw a map of Budapest, accentuating that it would be a map of their OWN Budapest. Then, answer two questions:

1. “Which ingredients make Budapest special for you?”
2. “What do you like about your everyday life in Budapest?”

### **Maps**



### **Overview of maps**

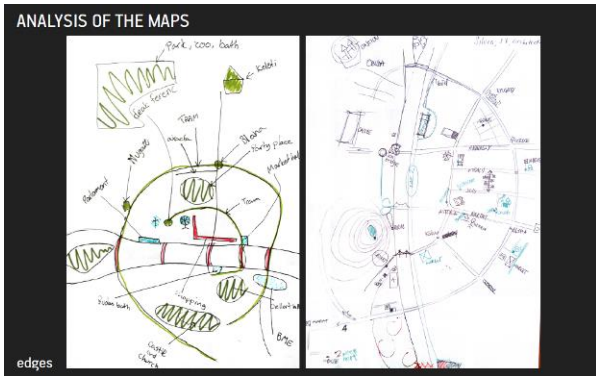
All together 26 of maps were drawn. Some of the maps were using an artistic and abstract representation of the city, while others maps used more realistic or detailed forms. The maps contained different elements of the city: buildings, landmarks, transportation infrastructure, open and closed public spaces with various functions, natural landscape objects, friend's houses, etc. Since these maps are personal and very subjective, it leaves a lot of room for interpretation, so we narrowed the results down to things that were mentioned at least three times.

Analysis of Budapest landmarks through mental maps showed that people's representation of landmarks can be divided in three categories:

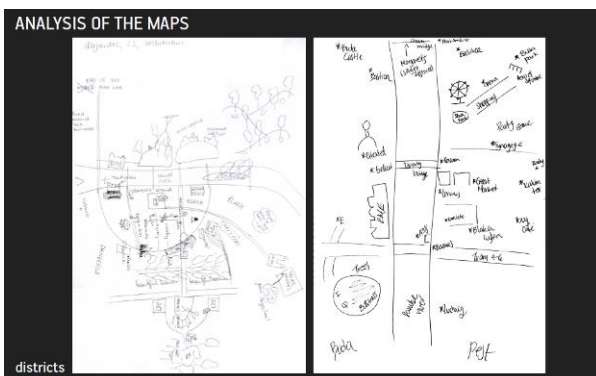
- 33% drew characteristic graphical symbols of landmarks

<sup>4</sup> Ana Russek - Morgane Marsal - Charalampos Vamvakas - Alicia Valdivia Alexeeva - Urmo Orujõe

- 33% drew landmarks as just areas on the map, without graphical illustrations. In these maps, the visualization of landmarks (like Citadella or Buda castle) is similar to visualization of traffic nodes (like Blaha Lujza or Oktogon)
- 33% drew objects as simple points, or drew only one or two symbols of landmarks (mostly Deak Ferenc wheel, green bridge, K building plan)



Many people didn't differentiate landmarks and nodes in a visual way when drawing the maps, they drew them in a similar style. But when analysing the answers to the questions, it became clear that most people still perceive them differently. Although both are important, a node is not a landmark. The question "what is special about Budapest?" was often answered with some landmarks, but never with the traffic nodes. That resonates with Lynch's idea although both landmarks and nodes are equally recognizable and important, it's the landmarks that contribute to the imageability of cities.



Statistically the most prominent element drawn is the river Danube, which was usually drawn in the center of the map. Other geological landmarks as the Margaret Island and Gellért Hill are also often represented, which makes sense because they are visually memorable. Danube, the most

important element of Budapest, was represented on the maps both horizontally and vertically. Roads are not the most identified things in Budapest, except for the tram 4-6 which is the most important transport line and the most easily recognizable. Of course, there are some big arteries which structure the city but, most of the time, people are oriented by the landmarks and the reliefs of Budapest.

### Statistics

Object	Times drawn
Danube	25
Buda Castle (view platform)	17
Margaret Island	17
BME	16
Deak Ference square	16
Gellert Hill	16
Green Liberty Bridge	16
Parliament	16
Tram 4 & 6	16
Central Market	12
Blaha Lujza Station	11
Andrassy utca	10
Astoria Station	10
Fisherman Bastion	10
Nyugaty Station	10
Citadella	8
Oktogon Station	8
City Park	7
Corvinus	7
Dohany Synagogue	7
Heroes square	7
Király utca	7
National Muzeum	7
St. Stephens Basilica	7
Szecheni Chain/Lion Bridge	7
Tram 47 & 49	7

Object	Times drawn
Vaci utca	7
Mattias church	6
Rakozi ter	6
Rakozi utca	6
Rudas bath	6
Ruin bars	6
White Elizabeth Bridge	6
Corvin Negyed Station	5
Kalvin ter	5
Opera	5
Szimpla	5
Buda side	4
Customs Hall/ Whale	4
Dob utca	4
Gellert bath	4
Kalvin station	4
Keleti station	4
Ludwig Museum	4
Margaret Yellow Bridge	4
Fovam ter	3
Instant	3
Margaret island running track	3
Museum of Ethnography	3
Normafa	3
Pest side	3
Wesseleny utca	3

#### Legend

Infrastructure	
Monument	
Public space	
Geographical element	
Building	

#### Landmarks

Here is a list of landmarks with the percentage of people that draw them. Some people were not sure about the landmark's name so they changed it or put some symbolic name.

- 89% Gellert hill or Citadella
- 9% Buda Castle, Palace, King's house
- 62% Parliament
- 50% Central market
- 46% Fishermans Bastion, Mattias church
- 42% Wheel of Deak Ferenc
- 38% Saint Istvan Basilica
- 35% Nuygati palyaudvar
- 35% Green Bridge
- 31% Synagogue
- 31% National museum
- 27% Heroe's square monument
- 23% Chain bridge
- 23% White bridge
- 23% Gellert Bath
- 19% Keleti palyaudvar
- 19% Opera
- 15% Ludwig museum, Arts
- 11% Ethnographical museum
- 8% Some church (Calvinist church)
- 8% Monument on Margit Island
- 4% Museum of Applied Arts

Gellert hill unites two important qualities of a successful landmark: navigability (it is visible in a central location and therefore reliable for orientation) and imageability (it is symbolic, noble and unique). Also it is a geographic, architectural and artistic object that creates a lot of interesting spaces with great views. The rest of the popular landmarks are mostly imageable (Buda Castle, Parliament, Fisherman's Bastion) or mostly navigable (Deak Wheel, Heroe's square Stella).



## Problems:

Some landmarks are not represented in the maps at all:

- Gresham Palace is visible from the perspective of the Chain Bridge but it has bad links with the surroundings. It has an oblong Széchenyi István square in front which interrupts direct links between the bridge and Pest, which is an inaccessible green square without use that is also impossible to cross.
- Vajdahunyad Castle and Budapest Zoo are situated beyond the limits that people draw. That might be because they are hidden from the eyes by trees of City Park.
- Vigado concert hall has a beautiful square in front; it is illuminated at night as an important landmark but still remains unnoticed because the waterfront is not a pedestrian path - at least not in an extended and well-used way.
- Assisi Szent Ferenc Plébánia Templom is left out of main lines of movement and is tightly surrounded by buildings, so even if you are near you can't see high tower.
- Soviet memorial and Szabadság tér are purely representative gala elements of the city. Lack of activities and strict paths make it not functional.

Budapest center has a great scale for pedestrians, but in some situations the infrastructure interrupts organic pedestrian flow, for example the big car roads along the Danube, tram line 2 or Széchenyi István tér which cuts off parts of the city.

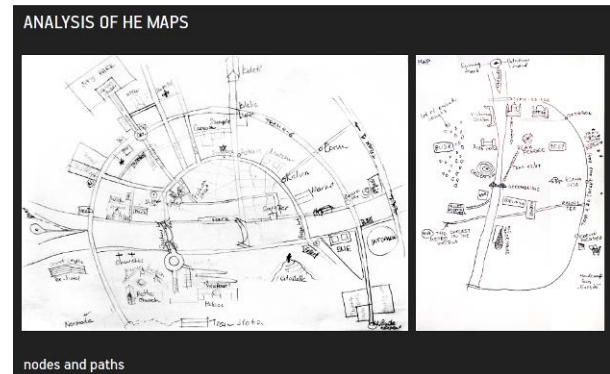
Pest side is so dense that some landmarks get lost in there, surrounded and asphyxiated by other buildings. Some squares with great location do not exploit their potential because of unsuccessful design.

## **Paths, nodes**

According to Kevin Lynch's book: "Paths are the channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, rail roads.

For many people; these are the predominant elements in their image."

«Nodes are points, the strategic spots in a city which an observer can enter, and which are the intensive foci to and from which he is travelling. [...] Some of these concentration nodes are the focus and epitome of a district, over which their influence radiates and of which they stand as a symbol. They may be called cores. »



Abstract representation can be distinguished in the drawn maps. There's no realistic connection between places. It's more a juxtaposition of places, restaurants, apartments of friends, bars, etc, with the important points of the city like Margit island or the Parliament. These landmarks are the way to orient in the city, not streets. Even if we are lost wandering in Budapest, we can always eventually find a reference point while walking and then find our way. Several people have shown that they love places frequented by points, as places that structure and allow the city to represent the city. «in this street, there is the pasta restaurant, where the famous ruin-pub etc. When thoughtful, Budapest include many small cafes, restaurants, bars that means it is a part of the Budapest's identity.

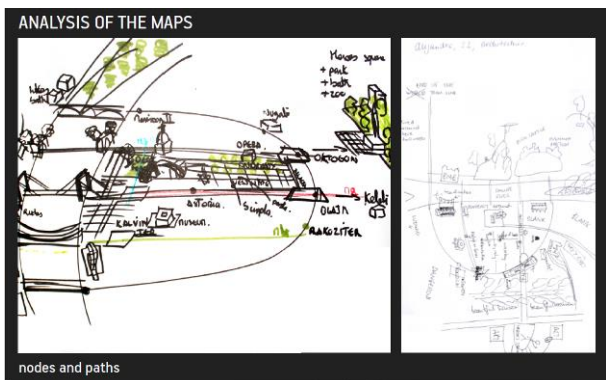
As in paths, we can sense the importance of the 4-6 tram because almost everyone drew it. It is a structural element for the city. Places along the line 4-6 could be interpreted as points like on a transport map. This suggests that they are just places of passage and transition. Maybe there is something to do with this place to see these places like a real place and not just a crossroad.

Rákóczi and Andrassy út are the road the most often represented. We can understand that for Rákóczi út because we can visualize its position perpendicular to the river and connecting the Erzebet bridge and Blaha Lujza tér. But Andrassy út have its connection with the city less identified

because many people connect Oktogon ter with Szechenyi Bridge even moves away from Oktogon ter. Andrassy is almost always drawn. Might be because of the luxury of this it - the huge trees, the luxury shops, the big size of the street and the Opera. This street look like «les Champs Elysées» in Paris.

Deak Ferenc is, most of the time, represented by a square or a circle with the written name on it and the wheel. We can interpret it as a real place used by people. We can see people play music, do shopping, dancing, drink a beer in the grass or in a bar... It's a place with a lot of activities for tourists, inhabitants. Therefore, this place is a major place of Budapest because of its central situation (3 metros lines and tram node, space to sit, space to drink in a bar, shops, restaurants...) and different activities during days and nights.

We can conclude the tram 4-6, the tram line 47-49, the 5 bridges, Rákóczi and Andrassy út are the main structural paths of the center to orient us in the city. It's more the places and the landmarks who define Budapest.



## Limits

Borders of the maps seem to be strongly affected by geographical landscape elements and public transport network, mainly the transport that operates on the ground (trams) and not under it (metro). Details usually decrease from the center towards the limits of the maps, except in some important intersection points.

Most of the maps are defined by the tram line 4-6, probably because it is one the busiest lines that has an easily recognizable circular route and it operates 24/7. Details rarely appear beyond the tram line. If they do it's usually significant landmarks of Budapest like Heroe's square, Keleti pályaudvar or Ludwig Museum, or personal points of interest like a specific shop or a friends'

house. Margit island usually appears as well, but only its first part near the Margit bridge. This is the case for the Pest side.

On Buda side the limit is almost always the Buda castle, the Gellért hill and sometimes again locations of personal interest. On this side of the city the main geographical elements that define the field of view seem to work as the limits of the perception of the city, as it is not busy enough to be defined by the usually visited places and spots.

Between these borders various details are usually drawn. Mainly these details are the main tourist landmarks and places visited by the user. Usually not all of the touristic landmarks appear to all of the maps but still the most common ones are the Parliament and the Sziget Eye on Pest side, the Palace and the Matthias Church on Buda side and the bridges between Margit and Petőfi bridge. All of these are easy to be seen from various spots of the city.

## Districts

People didn't really draw districts on the maps, but they did refer to some type of zones. One of the most mentioned zones was the western part of the seventh district, also known as the Jewish district. The area is more characterized by the parties and great nightlife (ruin bars, pubs and restaurants), although there are people that also highlighted the Great Synagogue. Next to this district is the eights district, in which there were some further parts that were described as a "dangerous" zone. Apart from these zones, there was not any mention of other districts apart from important landmarks found in there.

The separation of Buda and Pest was also sometimes mentioned, because the different qualities of each side make them quite different from each other. That brings the city a unique atmosphere and value, because each side has its own things and doesn't feel like is the same city just split into two. Buda is a more antique and traditional side with a more calm atmosphere and the Buda Hill which contains the Royal Palace, Fisherman's Bastion. Pest is more chaotic in a good way. Pest is the side of the student life and night life, it is more modern but still has beautiful antique architecture.

## Interviews

Interviewing people, two questions were asked:

1. What is special about Budapest?
2. What do you like about everyday life in Budapest?

As in drawing the maps so in answering the questions, the most outstanding and – referred ingredient of the city is indisputably the river Danube. The respondents behold it as a powerful landmark which divides the city into two – the greener, hillier Buda - and the geologically more plain and more urban Pest side. The cut doesn't only exist as a physical divider between the two, somewhat different geological situations, but it also creates a sense of two different city situations with their own personal qualities offering diversity in a geological and city scale. Although geologically and historically the river has a dividing function it has also a connecting one, providing access through many remarkable bridges and great views to both sides whether routing along or across the fast streaming waters.

The diversity doesn't dissolve as the scale shrinks. As can be concluded from the maps drawn, majority of respondents concentrate to the Pest side of the city, so it's safe to assume that their answers are more about Pest as well. The city is seen as a dense and compact structure which allows fast commuting between the diverse and rich mixture of spaces, services and activities it has to offer to its inhabitants. The diverse sociological cross-section of people with different nationalities, cultures and ages residing here is provided with the wide selection of activities and services as museums, thermal baths, art centres, 24hr shops, supermarkets and shopping centres.

One of the most referred is the packed and non-stop nightlife with plenty of bars, pubs and clubs. All this is supported by well-functioning infrastructure that also involves usable public spaces with monuments, street art, viewpoints, parks, avenues and greenery. Fundamental needs like food is also covered with a diverse selection of restaurants and fast food shops. There is nothing missing.

Diversity is also continued in architecture which often is a mix of glorious classical, imperial form

with its courtyards and modern functions. There is a significant amount of contemporary involved.

As aforementioned, the city and its two sides are connected and also geographically defined by its well-functioning public transportation system, which includes trams, metro, (night)buses and even boat.

There is some attention drawn to the green areas which are not in the centre, but due to compactness and an effective public transportation system easily reached so it is an enriching part of the dense and busy city life.

Although the overall opinion about the life and ingredients that makes it are positive it's not only peaches and cream for all the respondents. Besides all the greatness Budapest was also seen by some people as being a dusty, noisy, dark and cold environment with narrow streets. Homeless people and non-friendly locals were also pointed out at least once.

For a bonus to a well-functioning and rich city, it is also being repeatedly stated Budapest being relatively cheap!

## Comparisons

### 1. Budapest and Moscow

Pedestrian size of the center in Budapest almost leave no blank spaces in the maps, you never feel really lost. However in Moscow is not a city for pedestrians, nor for drivers. The best way to move inside the city is a great metro, but it become difficult to link different parts together in your head. You feel orientated only if you are near the metro station, the rest can be blank.

Boulevard Ring in Moscow is full of green spaces and open squares with fountains which attract young people and families in the center of Moscow. It feels like a safe path surrounded by trees which separates you from cars and hustle and bustle of the city. It is also less controlled by police so young people go there to drink beer, chat and play a guitar. Families with children and young people try to concentrate in benches as further from each other as it possible, but it ends as a mix. Budapest lack of systematic green areas, fenced rare playgrounds make it less comfortable for determinate part of inhabitants as young people under 18 and families with children.



## **2. Budapest and Lyon, France**

The river bank of Budapest is not really used and not designed to stay in a bank and enjoy the river. There are few restaurants but not a lot compared to the beautiful view we have, only boat but i think it's not the only way to use the bank. In 2002, in Lyon in France, architects and landscapes worked on the banks of Saône and Rhône. They created various activities and different landscapes along the rivers. Inhabitants can enjoy the river during the summer and appropriate the river.

## **3. Budapest and Tours, France**

Tours is a very small city compared to Budapest but it is located near the river Loire and from May to October, there is a bar in the bank and a lot of animations (dance shows, dance courses, concerts, music etc...) Near this bar, people can sit in the bank and drink their beers very freely, play music... it's a crowded place during the summer and particularly after the exams. This bar give animation, music and this place is safer, there is always a lot of people and the atmosphere is very friendly. Maybe for Budapest, a temporary bar like this one can activate some places and bring people to enjoy the bank?

The only place where there is a lot of bar in Tours is a little place (40mx40m) in the middle of city center. This is always full of people, during summer and winter. It's a place very friendly because the terrace of each bar are very close so the atmosphere is warm even when it's rain. I don't find this kind of places in Budapest or at least, not so crowded maybe it is a way of thinking to improve some places.

## **4. Budapest and Torreón, Mexico**

Compared to Torreón, where there is no metro or even a good public transport and is not a good city for pedestrians, it is a different experience to move around without having to own a car. It's good at some point but also not great for people who only know the metro routes but not the actual directions or even the distribution of the city.

Torreón had recently brought back it's centre back to life with a lot of new proposals; such as restaurants, bars, pedestrian areas and parks. So as Budapest, the centre is one of the most

occupied places and where people enjoy to go the most.

## **5. Budapest and Athens, Greece**

Although Athens is a city that life never stops as well there is a big difference in the structure of the two cities. Unlike Budapest the city center of Athens has a lot of blank areas that are semi-abandoned urban areas or physical obstacles like hills. That creates a lot of different cores in the city center which are not efficiently connected leading to the chaotic spread of Athens, creating a feeling of estrangement. Moreover landmarks are distributed in an irregular way through the city. This fact in combination with the narrow streets organized in various different angles leads to a constant disorientation when walking in the city. Nevertheless sometimes the chaotic development creates some interesting and unexpected urban spaces throughout the city.

## **6. Budapest and Tallinn, Estonia**

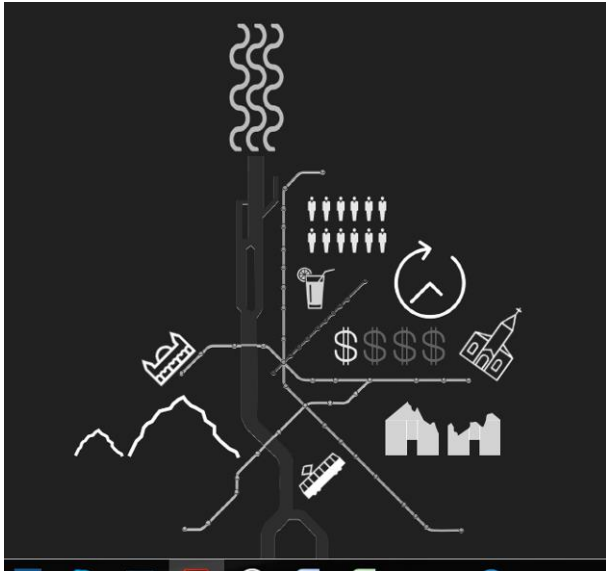
Budapest lays on an area around 3 times bigger than Tallinn. The population density according to different sources is approx.. 3.5 in Budapest comparing to 2.7 thousand people per km<sup>2</sup> in Tallinn. The difference in total might not seem remarkable, but it's definitely perceptible when it comes to concentration. Tallinn doesn't have the residential density that Budapest has in the very centre of the city. Most of the people reside in the suburbs and outskirts of Tallinn and travel daily to the city centre to work or other reasons. It also seems that the average housing typology in the centre of Tallinn is lower and more spread out than it is in Budapest. There is at least one positive result in more spacious city arrangement including more and bigger green areas, etc.

On the other hand it means more commuting for the people of Tallinn. That brings us to the transportation system, which is far behind the well-functioning one in Budapest. Most of the city is covered by bus service. Closer to centre we also have trams and trolleybuses. The whole system is not really up to date, as in infrastructure, hardware and routes. Most of the routes were planned a long time ago and they are not up to date with the actual movements of people. For example the lines take people to places where a lot of people used to work, but the industry moved away from the area, so it is not that relevant any more. People often have to make a

big circle to get from point A to B because the transit routes don't connect things that should be connected. There has been some improvements in the last couple of years, but we are far from well functioning commuting service.

## Conclusion

### *Ingredients of the Budapest cocktail*



## RIVER

Although it is big and wide, it is not very separating. It creates visual connections and a lot of beautiful views to both sides of Budapest and is also an easy way to orient yourself. It also has many beautiful bridges that a lot of people enjoy. The two cities of Buda and Pest operate simultaneously creating the feeling that Danube works more like a link than a barrier as it offers a constant view from one side to another.

## TRAM & PUBLIC TRANSPORT

Budapest has very well-connected and easy transport system. The tram line network all over Budapest is dense and heavily used, because it is pretty frequent and covers a lot of important routes. Unlike other major cities like Athens, tram seems to be one of the dominant means of transport, equally significant with the metro. On controversy with the underground metro, the tram gives the chance to the users to observe the surroundings during the route, leading to a better and more complete perception of the city and the connections between the significant nodes.

## NIGHTLIFE

The nightlife here is dense, lively, extensive and easily reachable. It is very easy to go out and to go to many different places, because they are mostly located in a nearby area.

## DIVERSITY

Diversity was a special characteristic of Budapest observed by many of the people interviewed. The diversity is offered by many different types of areas, places, spaces; the differentiation of a more calm Buda and urban Pest. Great variety of architecture, food, events and public spaces.

## CHEAPNESS

Many people pointed out cheapness as an important characteristic of the city. It might also be because many of the foreign students come from a more expensive country, but it is also visible from the daily life. Life is cheap enough that there are a lot of people going out to eat, which means there are a lot of possibilities and things to choose from.

## 24H LIFE/SHOPS

Budapest has a lot of 24 hour services especially in the city center. A big amount of buses and the tram 4-6 operate 24 hours every day. Moreover enough shops and small restaurants are open for 24 hours throughout the city. As a result the movement in the city never stops and users do not hesitate to enjoy the various opportunities of the city until the desirable time.

## DENSE CITY CENTER

The city center is really concentrated between mainly the 4-6 tramline. As it is also quite dense and has no many interruptions of the main urban tissue, it concentrates every kind of function like residential, commercial, recreational and educational giving the opportunity to easily access any of these functions in a really short time on foot or using the public transport. This contributes to the rich vividness of the city center of Budapest mainly expressed through its nightlife as everyone can easily access the zone of entertainment. Moreover meeting friends and attending events and enjoying the public urban areas usually is encouraged due to the small distances.

## HABITATION OF THE "RUINS"

The atmosphere of the city is considered charming by most of the people interviewed because of its unique architecture and the half decayed but still fully habitable buildings in the very rigid urban tissue of Budapest that give the feeling of the strong liveliness and create a warm and more familiar environment. Ruin pubs strongly contribute to this feeling of reusing and living among the decayed façades, unlike most other cities that semi-ruined buildings are usually neglected or abandoned.

## LANDMARKS

Significant landmarks like historic buildings and squares are very well distributed throughout the city allowing the users to identify their location and navigate easily almost constantly. A lot of them can be seen from a big distance contributing again to creating a familiar environment around them as the user can memorize them and then recognize them easily.

## COURTYARDS

Apartment buildings with courtyards are the dominant typology of residential buildings in the center of Budapest. The courtyards surrounded by a relatively high number of flats create a unique, cut off from the busy urban life, environment. Each one of them differ in shape and form but all of them offer a calm and peaceful environment, controversial to the full of life, activities and noise city.

## PEDESTRIAN FRIENDLY INFRASTRUCTURE

In the centre of the city the relatively dense network of public spaces is connected with many pedestrian streets. There are some, but few roads that have a lot of traffic on it (e.g. 2+2 car lanes etc.) which makes the network pedestrian friendly.

## EASY STRUCTURE OF THE CITY

The hole structure of the city center is mainly based in two simple geometries. Most of it is developed according to the typical vertical and horizontal order of the streets. The second geometry we can distinguish is that of the two semi circular streets running through the city making the connection of various cores of the center really efficient and fast. Nevertheless these geometries are not strictly followed resulting in

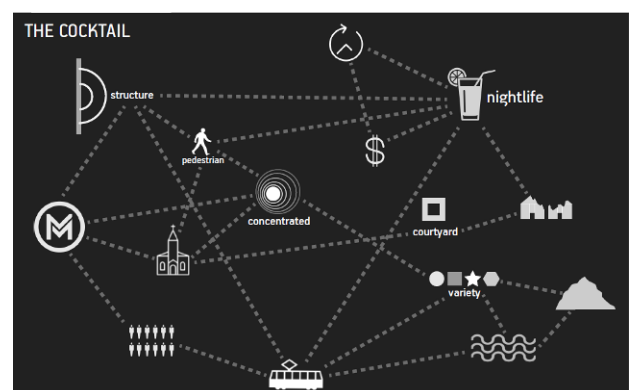
creation of some unexpected spaces that make the hole city structure more interesting and not boring or dull.

## HILLS

Hills play a role of a viewpoint and a visual limit when you are on the ground, and also create interesting viewpoints or hidden nooks when you go up to discover them. Hills help to understand the structure and compensate lack of green areas.

## *The Budapest cocktail*

In the end we realized that all the elements work together as a mechanism that makes Budapest unique. Removal of any of these components would tear a lot of connections and make the city different. Nightlife would be different without presence of reliable day-and-night tram, pedestrian friendly infrastructure, cheapness, special atmosphere in the "ruins" and 24h services. Geometrical clear structure of the city is a base for tram, nightlife, pedestrians, and well-connected public transport. Variety between areas is only possible thanks to the hilly, green Buda, concentrated and high-dense Pest, tram as a connection and Danube as a division. All of these elements really work together because of the city density created by courtyards. If there weren't that many people, the urban life wouldn't work as it is working now. There are many elements that make up the wonderful Budapest cocktail and they are all important in achieving such a great and lively city.





## WHEN BUDA MEETS PEST: Bridging the Community Gap<sup>5</sup>

We would like to provide walkers, runners, and cyclists a safe route across the Danube River, alleviating the hazard of vehicle and pedestrian accidents. What began in a quest for public safety has transformed into a community gathering point.

"This bridge is a confluence of runners, dog walkers, families of various ethnicities and tourists. On any given day there are spontaneous drum circles whose beats echo over the water, chalk messages of love or advertising on the ground, and more permanent graffiti, often expressing inspiration or humour.

## BUDA PEST

On this bridge personal expression becomes a public conversation, much like social media but on a smaller, more localised scale. As interpersonal communications have increasingly become relegated to electronic devices and the Internet, face-to-face public discourse is dwindling. However, the need for public space to encourage it remains.

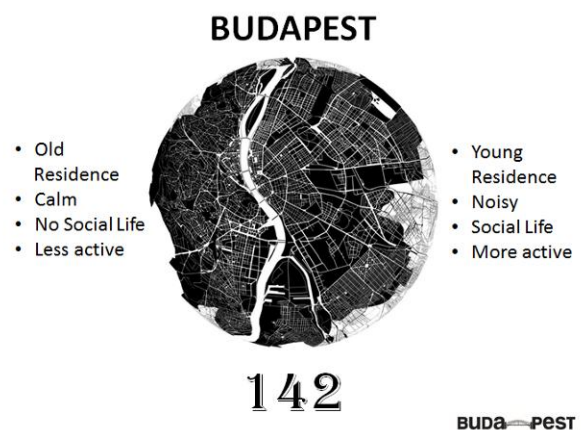
Historically, public space has been a town square where community gathered to celebrate, grieve or hold political rallies. Traced back to the agora in ancient Greece, public spaces accommodated a marketplace of ideas as well as goods, providing an area for the unmediated interaction of strangers (Hartley, 1992). It is where, "one should expect to encounter and hear from those who are different, whose social perspectives, experience and affiliations are different" (Young, 2011, p. 119).

Jürgen Habermas states, "citizens behave as a public body when they confer in an unrestricted fashion" (2006, p. 73). He applies this principle to his concept of a public sphere, an idealised free exchange of ideas that is essential for a thriving democracy.

While social media functions much like a public sphere, it eliminates nonverbal cues, such as facial expressions or vocal inflections. This

weakens the effectiveness of the communication. Also, by enabling users to choose whom they want to "friend" on Facebook or "follow" on Twitter, for example, messages are pre-emptively filtered out, inhibiting a true open exchange. For this reason, physical public space is still important for people who might not otherwise be exposed to each other's ideas – whether they are spoken, played on a piano, written in chalk or spray paint or expressed in the form of a flower on a railing.

This Bridge is a societal intersection accessible to all, regardless of race, culture, status or anything else that divides a community. It provides a literal pathway across the water, as well as a symbolic bridge between people and their ideas. It is a gathering point where the unmediated exchange of opinions and beliefs essential for a healthy society is embraced." (1)



Now let's talk more specific and detailed about Budapest:

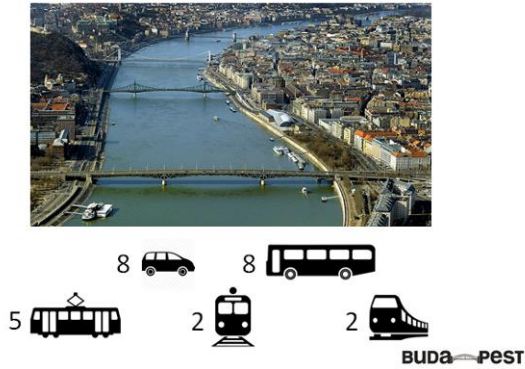
- There are some differences between Buda and Pest, such as age, culture, activity, etc.
- From the age point of view, Pest is younger than Buda. By young, we do not mean the age of the area or district, but what we mean is the age of people who are living in this part of the city.
- The other aspect is the culture of these two parts; Buda is calmer than Pest. Most of the pubs and clubs (night life) are located in Pest and Buda seems to be just a residential area.

And now because of the mentioned aspects, Pest is more active than Buda. It is in motion every day and night, unlike Buda.

<sup>5</sup> Nazli Salehi Nejad - Claudio Raúl Zamora Rosales - Arash Kiabayan - Chloé Monchalín - Rick Uilkema

So due to the reasons we have mentioned above, we think we need to connect these two former independent cities again after 142 years. Therefore this bridge can be a new meeting point between Buda and Pest; these two parts of the city which are totally different from each other.

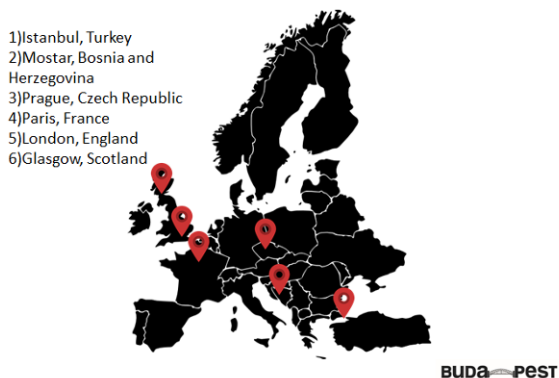
### HOW IS BUDA-PEST CONNECTED?



There are different ways of connection between Buda and Pest. The most visible one are the bridges. There are 8 vehicle bridges with such an important role between these two parts. Five out of eight bridges have tram line connections which are operating properly. There are also two train bridges in North and South of Budapest which connect the capital city to other Hungarian cities and other countries.

The other way of connection between Buda and Pest is the two metro lines: metro line 2 and 4. These metro lines connect two sectors of the city via tunnels which are constructed under the Danube River.

#### THE CITIES, THE WHOLE CITIES, AND NOTHING BUT THE CITIES



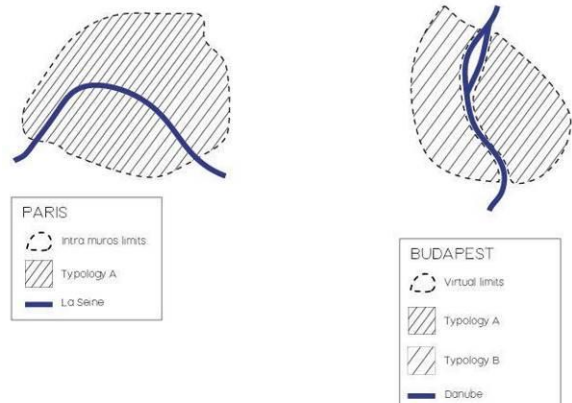
Some examples of foreign cities divided by rivers

City. Country (division)	Reasons
Mostar. Bosnia and Herzegovina (Neretva)	<u>Religion</u> East/West
Istanbul. Turkey (Black Sea-Sea of Marmara)	<u>Two continents</u> Europe/Asia
Prague. Czech Republic (Vltava)	<u>History, landscape</u> Old/New Town
Shanghai. China (Huangpu)	<u>Economic</u> Very High/High buildings and activities
Glasgow. Scotland (Clyde)	<u>Economic</u> Downtown/Factory side
London. England (Thames)	<u>Social</u> North/South
Paris. France (Seine)	<u>Social</u> Right/Left Bank

#### Paris and Budapest / La Seine vs Danube

Why do we feel more separated by the water in Budapest than for example in Paris? As Paris always has been united as one city, Budapest used to be two different cities. Back in the days, Buda and Pest were two different cities but we can still see that there are roots.

Also as we said earlier Buda and Pest are two very different neighbourhoods, one more residential and the other more of the day and night life. Those functions are also given by the density and the type of construction of the city. Those things are not visible in Paris because the whole (inside the periphery road) city is the same typology of buildings. The shape of the Danube when it crosses Budapest also may influence the way we feel in the city: a dividing shape.



## WHAT IS MISSING?



The most important thing which is missing from the Danube River, is visible at first sight. Namely the lack of green areas next to the Danube. It is a pity that no tree has been planted along the river bank. Let's just imagine some green trees and plants next to the roads along the river, what a great view it would be, don't you agree?

The other missing element is the activity of the society near the river, due to lack of public space next to the Danube; most of the people are not spending their free time next to the river, that's why we believe that with the creation of such a public space, we can invite people to come and be a member of this part of the city. And restore the relation between Buda and Pest.

An easy connection near the parliament is missing as well. People are actually forced to go either via the Margaret Bridge or via the Chain Bridge in order to cross the Danube. This is what we experienced ourselves.

### Our Solution

When combining the missing elements above, there can be concluded that a proper solution for the community gap and the missing element might be a green public space in the shape of a bridge.

We have checked the location of our Nature Bridge from two different points of view: for tourists and for residences of the city.

We figured out that the best location for a bridge for tourists is between Chain Bridge and Elizabeth Bridge, because it connects the green part of the city (Buda hill and Gellert hill) to the historical part of the city. However the point is, that we would like to design this Nature Bridge for the permanent residence of the city.

By providing a bridge for the tourist wouldn't solve the community gap and this pressing problem will still exist. Due to the big empty space between the Chain Bridge and the Margaret

Bridge, we found that this spot of the Danube would be an interesting location for our idea.

## LOCATION?



Another advantage of this spot is a connection which will be accessible directly between the Buda side and the Parliament, which is obviously missing nowadays.



By the way, we should mention that there used to be a temporary bridge here at this location, next to the Parliament. This temporary bridge was constructed after the WWII (since Germans destroyed all the bridges of the city at the end of the war).

Based on all the reasons we have mentioned above, we believe that the best spot for the Nature Bridge is between the Chain bridge and the Margaret Bridge.

### Green pedestrian bridge examples as inspiration

After looking for green areas combined with the ability to cross roads or rivers, a couple of pedestrian bridges showed up which fits this image.



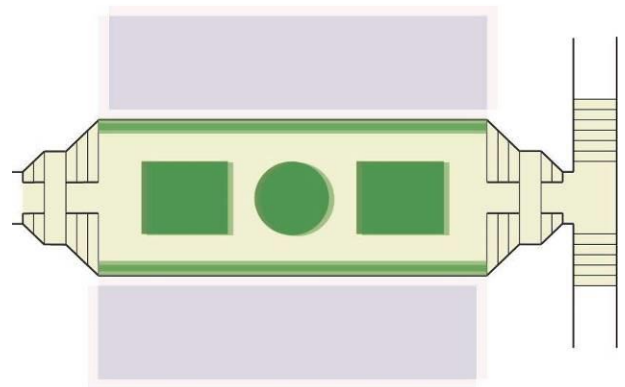


Den bosch—Green bridge

BUDA PEST



Concept Amstetdam



Green bridge in Philadelphia

Tehran - Iran

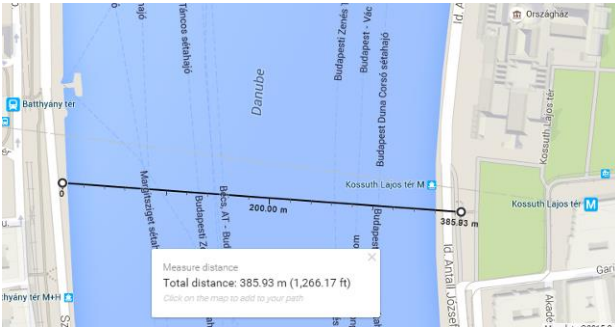


## Design

Our bridge needs to unite Buda and Pest, but also it needs to be intergenerational in order to bridge the community gap. That's why we have chosen a design both modern and traditional. The bridge has to perfectly fits in its surroundings, otherwise people might start complaining about its presence.

To please both sides of the community gap, both classical and modern style is implemented is our design.

Some aspects of the parliament are taken into account as well as some modernistic styled benches and trash bins.



## Conclusion

By realizing this bridge, some elements of high importance that are missing nowadays can be part of Budapest. By connecting the two sides of the Danube with this bridge maybe even the community gap can, not entirely be wiped away, but it could be a very good point to start with.



## References

(1)

[Http://www.racheltanurmemorialprize.org/bridging-the-community-gap/](http://www.racheltanurmemorialprize.org/bridging-the-community-gap/) We have used this article as a reference because first of all, it is so close to our idea and secondly, the way how it explains the idea gives a clear vision that can't be told in any other better way.

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## Typologies of universities and their influence on the city<sup>6</sup>

### Defining the different university typologies

In today's society the demand for well educated people is growing and with the rising number of students every year, universities are growing as well. Besides providing education universities also generate economic growth and employment thus also attracting talent, culture, ideas and innovation to the cities. When it comes to choose a university for studying a lot of factors influence the decision. You not only choose a place to study but also a place to live, so the offered fields of study, living costs, housing, nightlife and many more factors have to be considered.

The relation between the size of the university and the city is an important factor to distinguish different university types. Defining university styles helps to distinguish the different influence they have on the city they are located in. We can divide them into two big groups, Big-city university types located in cities with more than 200.000 inhabitants and Small-City university types with less than 200.000 inhabitants.

There are three types of Big-city universities which can be defined as the following:

- The city-campus university is located centrally in the city and is providing students with the possibility to spend time on the campus or in the city.
- The metropolitan university is spread across the city and is usually more integrated into the city and less focused on university activities.
- The suburban-campus university is not located in the inner city and is not reachable within the comfortable walking distance.

There are also three types Small-city universities defined as the following:

- A small-city university is in the center of a small city and dominates student life.
- The collegiate university is usually spread to residential halls and colleges, resulting in students retaining close with their halls and colleges.

- A regional campus university is located remotely and is self-contained. Facilities and services are supplied on campus and students usually live in the city next to the campus.

### Mexico City University

We will start with the mexican university which will be the example for the research on the issues universities generate in Mexico City. ITESM or Technological Institute of Higher Educations Monterrey is one of the most important universities, not only in Mexico City but also in Mexico itself and that's because the first campus was built in Monterrey. In total this university has 31 campus all over Mexico and as depicted in image 3, where you can see that all the campus were built in the most important and big states of Mexico.

#### Mexico City

- 8,100,000 Inhabitants
- 1485 km<sup>2</sup>
- 339 Universities
- One of the most biggest cities in the world



We will talk about the oldest campus in Mexico City of ITESM which received the name Mexico City Campus for being the first one. It was built in 1972 and it's located in the south of Mexico City. The purpose of being in the south was because at the beginning this part of Mexico was not populated, so it was the perfect location to build a big university with many facilities and enough space for all the students. The main problems began in the past 15 years where the population of Mexico started growing exponentially and without restriction. As a result of the missing regulation, the population in Mexico started building houses with no parameters and by now the university is surrounded by small houses, small streets and also enterprises.

#### Monterrey Institute of Technology and Higher Education in Mexico City

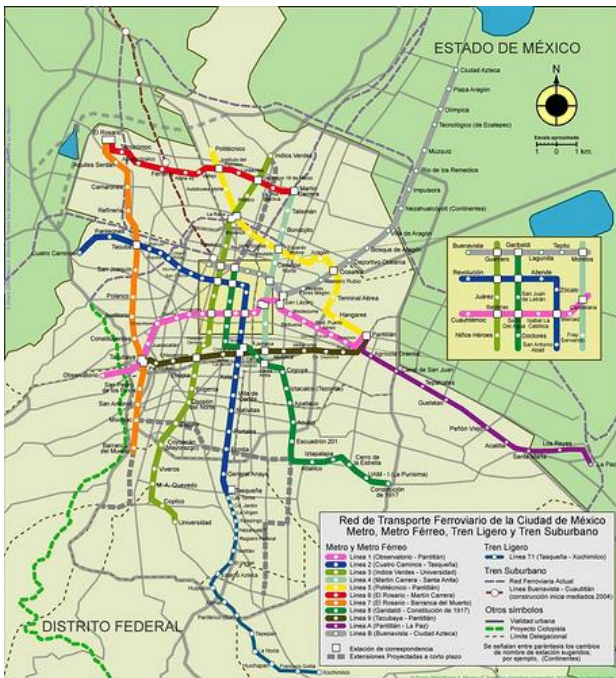
- Founded in 1972
- 8000 Students
- 4000 cars in campus
- Located in the south of Mexico City
- One of the 5 biggest campus
- 25 Km from the centre



<sup>6</sup> Jorge Luis Bonilla Peralta - Mercedes Droz - Martin Rolf  
Simon Trawinski - Miklos Doma



With Mexico City's surface of 1495 km<sup>2</sup> and 9 million of inhabitants, traffic in the small streets surrounding the university is a huge problem to solve. The university has roughly 8000 students this semester and there are approximately 3500 cars in the school, so we're contributing a huge part to the traffic of the city. If you are wondering about why we are not using public transport it's because the metro network is not going to places that are so far from the centrum of the city. There are not enough buses to provide sufficient frequency to transport all passenger and it as well can be dangerous and sometimes you will have to wait too long to get into it. For example, a distance that a car will take about 35 minutes with normal traffic will take public transport 2 hours or more, so private transportation is preferred.



Consequences brought by all traffic is pollution at first, second that people can't be as productive as they could be in another scenario due to the time wasted by driving and the quality of life is influenced as it supports obesity. We can see the result in the fact that Mexico won the first place in obesity, surpassing the obesity in the U.S.A.

For the part of security and accommodation we can relate them in the same subtopic. In this campus there is only a small part of foreign student, so there is no student accommodation or good housing for students close to the university. Due to that, people need to take public transport to go to their accommodation after school, because normally classes end in the late afternoon and it's dangerous to walk home during the night. As there is no student accommodation the average rental fee in

the surroundings of the university is really high for a low quality place to live. The prices are high because of they are close to the university. Below you can see some images of the surroundings and of some of the residences near the university.

### Aachen - University City: Confrontation, cooperation, tolerance

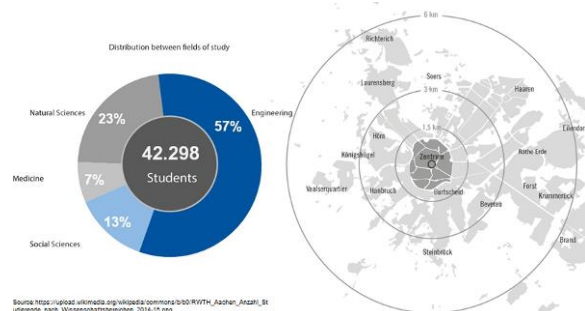
#### Facts about Aachen

- ~ 253.000 inhabitants
- ~ 22,2% between age 20-30
- ~ 56.000 students at 6 Universities
- Close to the Netherlands, Belgium
- Aachen Christmas market has been voted 2nd most beautiful in Europe!

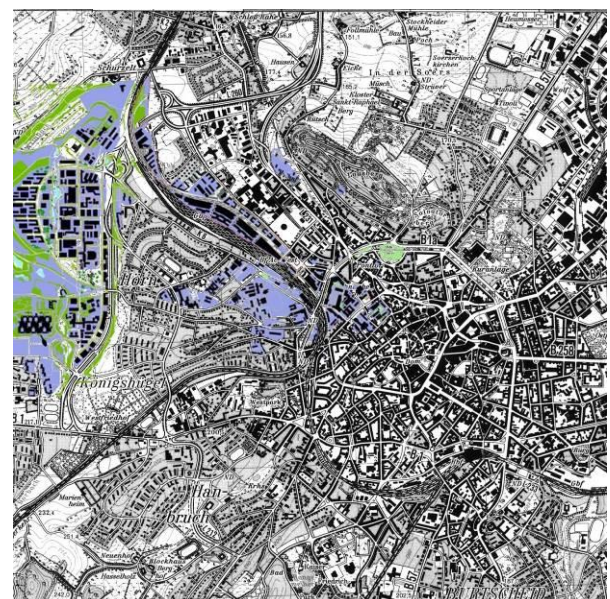


Source: private

In accordance to the mentioned typologies of university cities, Aachen can be considered a big-city or rather a city-campus university. With 251.500 inhabitants and roughly 56.000 students, Aachen has a huge human capital of well-educated young people. The high importance of this will be explained by the example of collaboration between the City Government and the RWTH Aachen University.

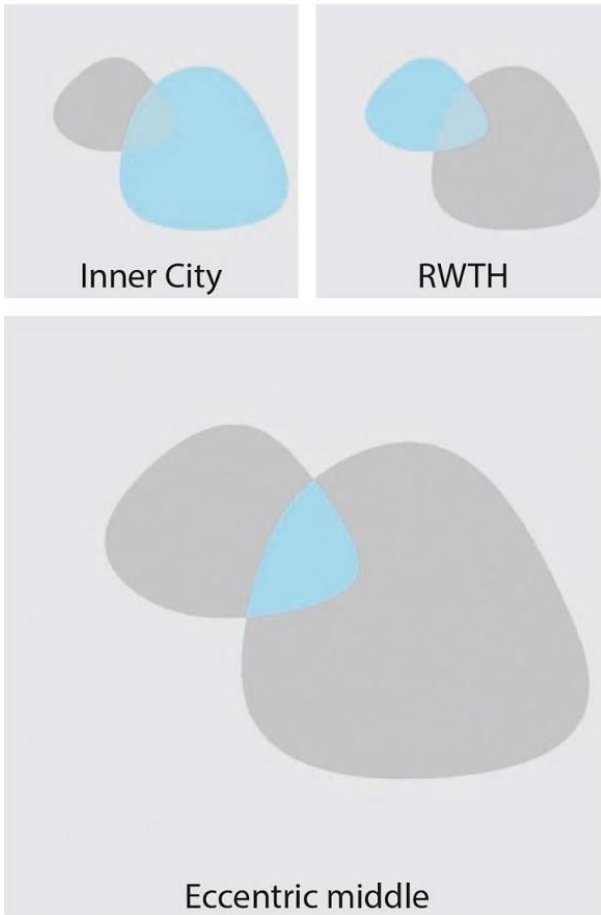


Source: [https://upload.wikimedia.org/wikipedia/commons/0/0d/RWTH\\_Aachen\\_Aachen\\_01.jpg](https://upload.wikimedia.org/wikipedia/commons/0/0d/RWTH_Aachen_Aachen_01.jpg)





With 42.298 Students and 9.191 employed people the University is the biggest employer in the whole region of Aachen. With its distribution in the inner city the University provides the possibility to spend time on the campus or in the city itself.

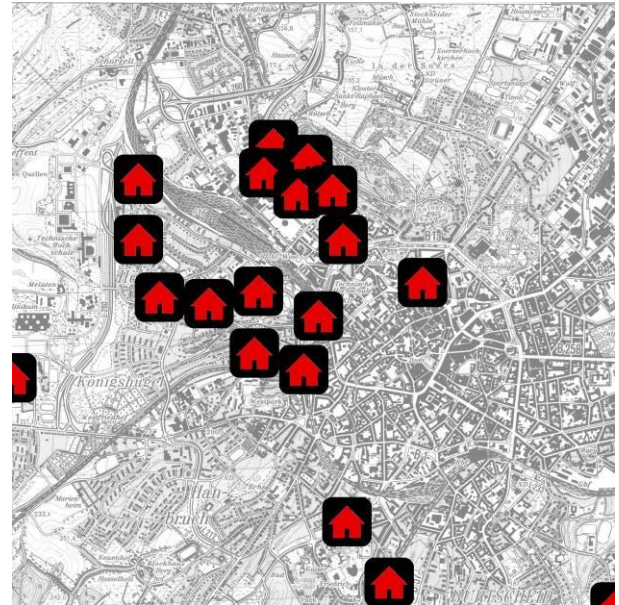


On the map you can see the new planned campus and its connecting parts to the inner city. As the city center is not offering more space for densification, so growth on the outskirts is unavoidable. The estimated area will be around 800.000m<sup>2</sup> in total and will have a huge impact on Aachen. Due to this development it's facing serious challenges but also great opportunities concerning its future.

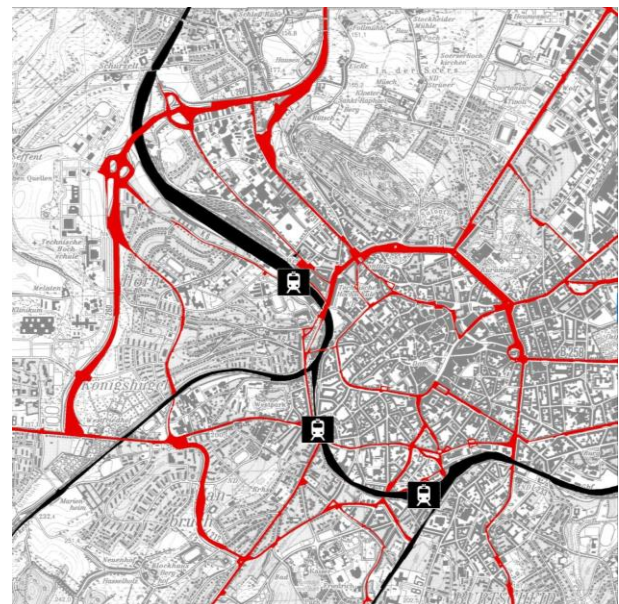
The development of this new university campus will lead to an eccentric center between the campus and the city itself. The connection between those two is of essential interest for both the RWTH University and the Government. Since there will be more people working and studying than before the need for more housing goes hand in hand with these changes. By now, there already is a shortage of housing and the next residential areas will be build around the new campus to the west and thus will also contribute to the eccentric center.

In the new district there only will be offices, laboratories, manufacturing facilities and

residential buildings so the campus area will only be used during the daytime and thus security concerns apply during the night.



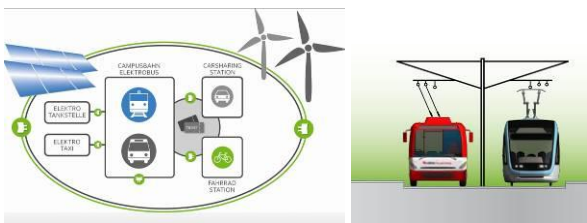
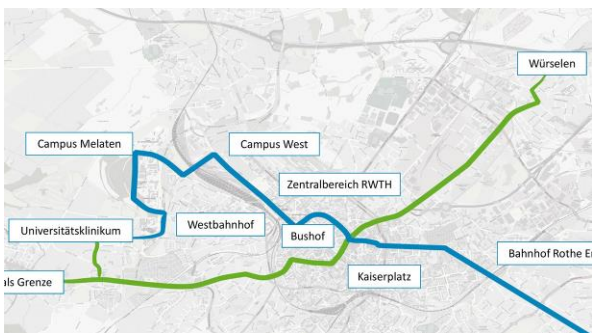
More people living far from the center will lead to a heavy need of public transport which has to have sufficient capacity to connect the respective parts in both ways during the day and the night. At the moment busses cover most of the transport but due to mostly two-way streets in the city there already are many traffic jams during high peak traffic.



Well aware of these problems RWTH Aachen University and the City Government work together to tackle these problems and try to provide solutions. A good example of the collaboration is the Campusbahn (Campus Tram). It's a concept to connect not only the new development with the city but to extend the connectivity to the whole region of Aachen.



The public transport system is in desperate need of improvement and with this new development a whole lot of things will change. Busses will be transformed into electric powered vehicles, new bicycle lanes and electric powered cars and bicycles will be provided. Green power and sustainable public transport is an essential factor for these ideas.



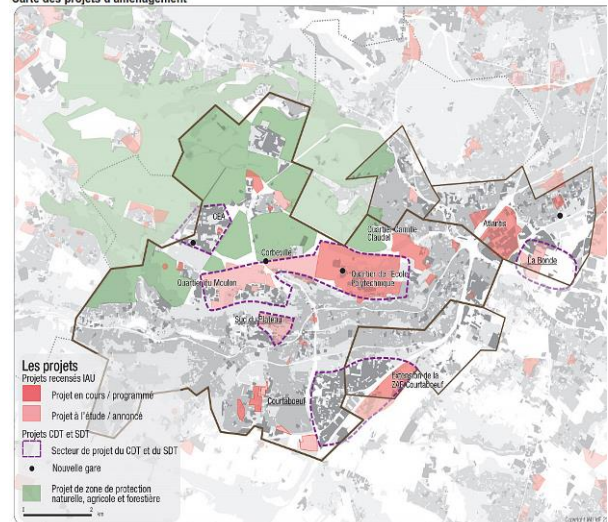
In conclusion RWTH Aachen University and the City Government of Aachen are working on a future together because both parties are aware of the benefits resulting from this. Being a major power in Aachen the University is well aware the influence it's project has and is trying to provide a future solution to make the city grow together with the university

### Paris-Saclay - Suburban and regional campus for innovation

This project of this city-campus is very particular example because it has a national scale interest. The aim of the Paris-Saclay scientific center is to develop education, research and innovation by gathering prestigious universities, firms and research labs in a same area. This huge scientific pole 20 km away from Paris is growing every day and will, around 2020, occupy more than 7000 hectares. It

represents about 3 times Paris' surface and will cover more than 49 municipalities. This location was chosen because it is an almost unoccupied area full of fields nearby Paris. Moreover a lot of Universities and firms decided to settle there one after each other since 1950. The project was launched in 2006 and is likely to end in 2020. At the end it should gather 25% of French scientific research capacity. For this project the government funding is about 3.2 billion dollars. Paris-Saclay projects are centered on key objectives: the implantation of higher education and research institutions, economic development with firms of all size, transports improvements, creation of housing and facilities, to benefit residents, students, researchers and workers alike. That is why we can say that the Paris-Saclay campus is at the same time a scientific, economic and urban project.

Carte des projets d'aménagement



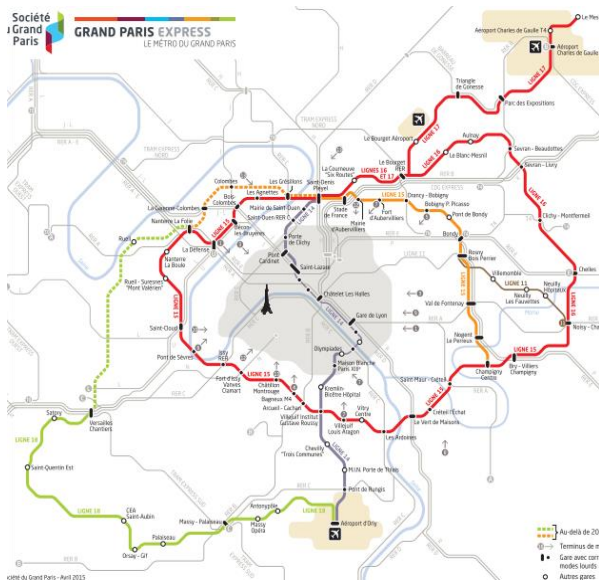
Because the campus is not that close to Paris it needs a really good public transportation system. The main problem is that nowadays the transportation system is really inefficient and inconvenient. Indeed it takes around 1h30 to reach the capital city and you have to combine buses and suburbs trains. The good point is that the "Grand Paris" project is on the way. The realization of this public transportation project will allow the students and employees to reach Paris in less than 30 min. It will take the me time to reach the business center "La Défence", the Orly airport, and national train stations.

Unfortunately this great transportation project will be achieved only around 2030. Thus it is a really uncomfortable situation for the current students which are really bad related to Paris or the suburbs. Moreover nowadays they have access to very few services. (supermarkets, doctors...).

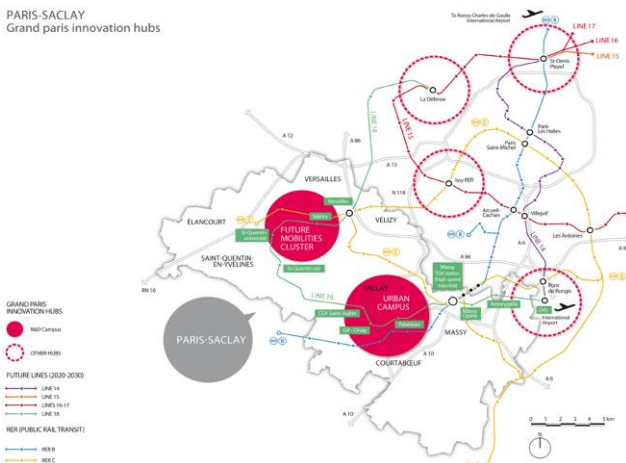


The development of accommodation and services is really important in this kind of campus. Especially because they benefit of a lot of space for this infrastructures and because they are far from existing services and housing. That is why for this project they decided to dedicate 60 hectares to living areas such as habitation and services. The goal is to create a city-campus; a friendly microcosm open on the society which can host more than 15 000 students (against 5000 today).

This “city” should be available for everybody, meaning students, teachers, employees and researchers. It should be able to provide more than 20 000 meals per day. The campus provides as well sports complexes with a variety of disciplines. Finally the project also includes a natural, agricultural and forest protection area.



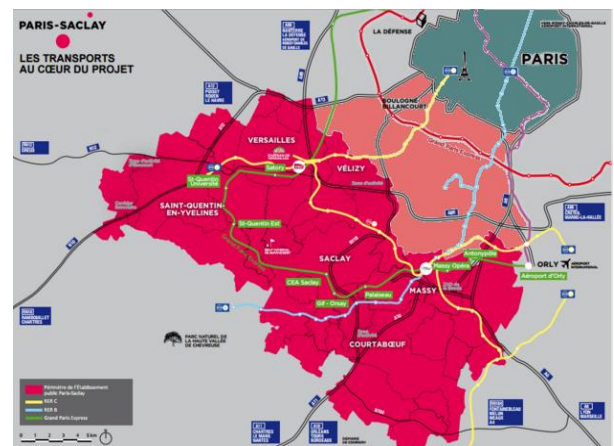
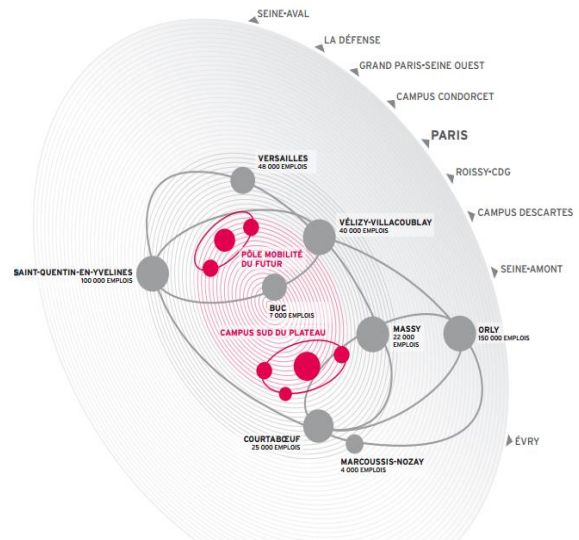
PARIS-SACLAY  
Grand paris innovation hubs



This project has a huge impact on the area, the region and even the country. The expectation for France is to create an international attractive innovation center. First it will allow a very important creation of jobs in area. I also think that it will encourage the decentralization.

Indeed Paris is still one of the very attractive area in France to the detriment of the rest of the region. Basically for a very long time now the activities are growing around Paris, but in a circle shape, everywhere around the capital city. I think that the creation of this attractive area will break this circle-shaped attraction and it is, in my point of view a really good point.

I think that the suburbs between Paris and the campus will probably take advantage of this situation. So it is also a good way to dynamize the southern Paris suburbs. A lot of firms and schools are indeed leaving the center of Paris to join this innovation center. However this project will for sure reduce the area committed to agriculture in the region, and we can hear a lot of appropriate critics about it, even with the project of natural protection area.



## Catholic University Eichstätt - Ingolstadt

Eichstätt<sup>7</sup> is a town in Bavaria, Germany. It has about 13,100 inhabitants, and approximately one third of the population are students from the The Catholic University Eichstätt-Ingolstadt.



If you classify this University it is a small-city university. The main campus and the almost all faculties are well integrated in the center of the city and and the life of students and inhabitants are strongly entangled.

The Catholic University Eichstätt-Ingolstadt is the only Roman Catholic university in Germany. Compared to other German universities it is a rather small (institution with 4,800 students in summer 2005); nevertheless, it is the largest private university in Germany. The university has one campus in Eichstätt situated in the Altmühltal Nature Park and another campus in Ingolstadt, one of Germany's economically most successful cities. The university has the following faculties:<sup>8</sup>

- Faculty of Catholic Theology
- Faculty of Philosophy and Education
- Faculty of Languages and Literatures
- Faculty of History and Social Sciences
- Faculty of Mathematics and Geography
- Faculty of Business Administration and Economics (in Ingolstadt)

<sup>7</sup> <https://de.wikipedia.org/wiki/Eichst%C3%A4tt>

<sup>8</sup> [https://de.wikipedia.org/wiki/Katholische\\_Universit%C3%A4t\\_Eichst%C3%A4tt-Ingolstadt](https://de.wikipedia.org/wiki/Katholische_Universit%C3%A4t_Eichst%C3%A4tt-Ingolstadt)

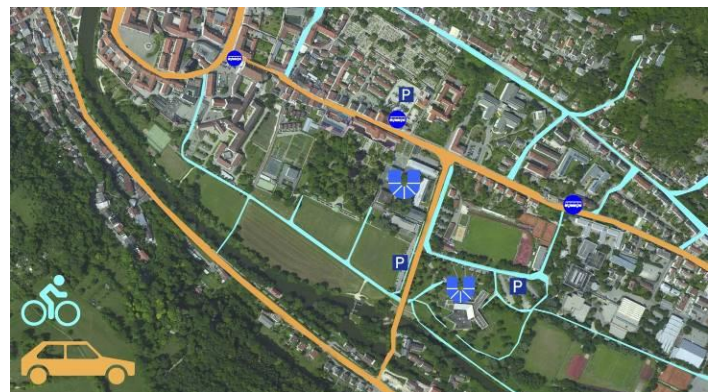
The Main Campus is situated in Eichstätt, the university buildings being within walking distance (about 10 minutes) from the town center. The Faculty of Economics is located in Ingolstadt

Most of the Students are living in shared flat all across the town. Since most rents are relatively cheap compared to other German University Cities this is the most common way for students to live in Eichstätt. There are a lot of very good located houses which are mainly or only used by students.



But there are also some student dormitories. The locations of these student accommodations is not the best but since the town is so small it takes the students less than ten minutes to go to university by bike. And because the number of students is increasing every year, the city and the catholic church are working together and they started to build a big housing estate for about 300 students last year.

Since Eichstätt is such a small town, the best way to go anywhere is by bike. You can cross the complete city by bike in 20 minutes. That is why most of the students use their bikes or just go to university by foot.<sup>9</sup>



<sup>9</sup> <http://www.jaegle-bus.de/uploads/pics/Eichstaett.png>



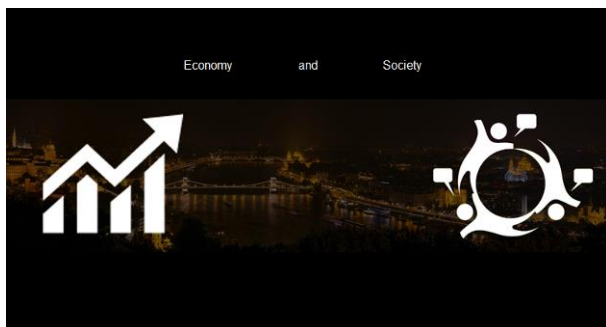
But there is also a small but very well working public bus system which also reaches some regions more outside the city. And since 2008 they started to increase the area and they introduced a new shuttlebus that connects Eichstätt with Ingolstadt. What originally started as a bus line especially for the students that have some lectures in Ingolstadt as well is now one of the most used lines and also used by many non-students. The city offers a cheap semester ticket for all students of the University.

You can see the influence of the university and the students themselves on the city Eichstätt in almost every part of the city. Because such a high percentage of the citizens are students, the city and the university have to work together very close. For example the public transportation system, the offered sparetime activities (cinema, museum, open air swimming pool) and also the local offices have reduced prices and different opening hours for students.

There are also many shops, cafeterias, bars and sport facilities which can only exist because of the students. During the semester break, when many students leave the town to visit their home city, Eichstätt is remarkable empty and quiet. All the small meeting points and bars, which are normally totally crowded are empty or even completely closed.

All these aspects show how important the impact of the university on the city is. And this is also the cause why Eichstätt and the growing University are working together on their common future because both parties are benefiting from the strong collaboration. The city gets more and more attendance because the university's great reputation and on the other hand the city helps the university to push its limits and get bigger and bigger.

## Conclusion

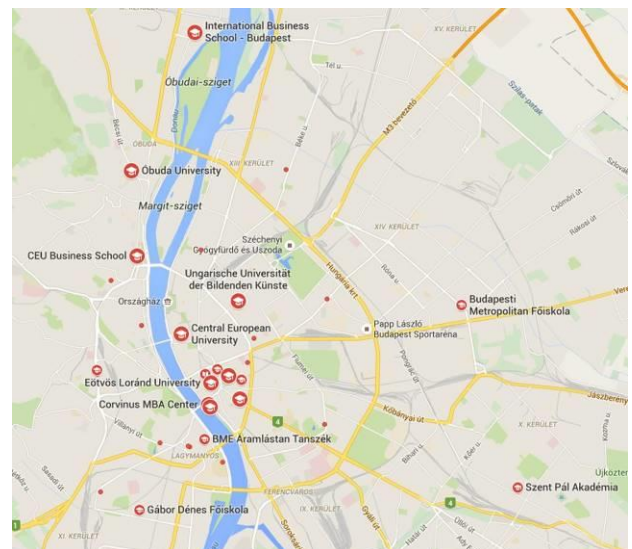


In conclusion, big city campus have a main common problem or at least we can see the same one in a mexican university than in a german university than in french one and is that communication between

the university and centre or the main regions of the city is getting worse due to the efficiency of public transport.

To solve this problem the main needs have to be improved as we said previously public transport or housing; these main problems are proportionally so if one is improved we could see and improvement in the other one; the problem of transport is decreased then less housing buildings will be needed and with this we don't want only to focus in one problem but for the beginning it's a good way to start. For both, Mexican university and Aachen when problem with transport will be to amplify the network but no creating new ones because there's no space left in the cities to start a project from zero.

In the case of Mexico every time they create a new transport route, when its finish there is more and more people so again, transport is not enough. Universities generate growth and thus challenge the cities to integrate the fast growing developments into a good urban environment. The most common problem is the expansion of an existing public transport in order to connect the growing parts. To guarantee a good urban environment good interconnection has to be guaranteed.

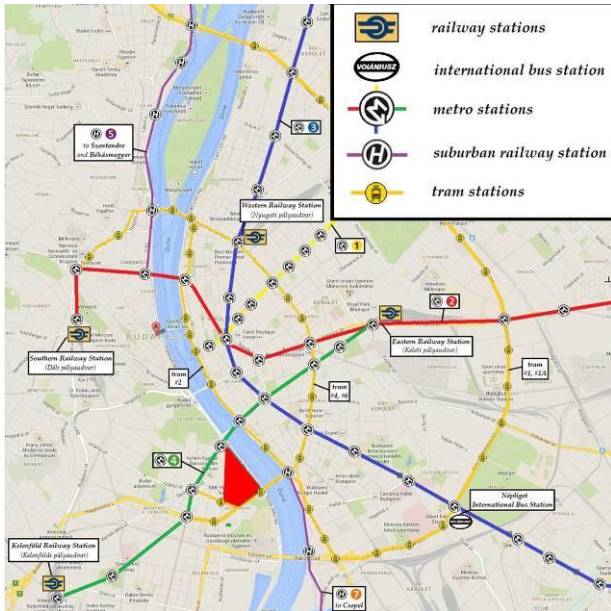


To summarize, the best university topology depends first on topology of the hosting city and on the territory organization. In fact when little cities are looking for attractivity and also provide a lot of space, the settlement of universities in its very center will be a perfect situation for students if the city is not too expensive, and it will as well dynamize the city.

However it is not always possible because of space or price problems. Moreover in the case of really attractive city the settlement of universities in the suburbs of the city could help the decentralization



and will dynamize the surrounding. However in this case they two really important conditions to fulfil. First the campus should be really good related to the city center and then it should also provide the needed accommodations to the students, so they can follow fulfilling studies.



### What made us choose Budapest?

- Plenty of Universities
- A range of study options
- Relatively low cost of living
- Great student life (nightlife, activities, events)
- Easy to find and cheap accommodation
- Plenty of support networks
- It's the capital of Hungary and is in Central Europe
- English is spoken (mostly) everywhere
- Mild climate
- The reputation among students



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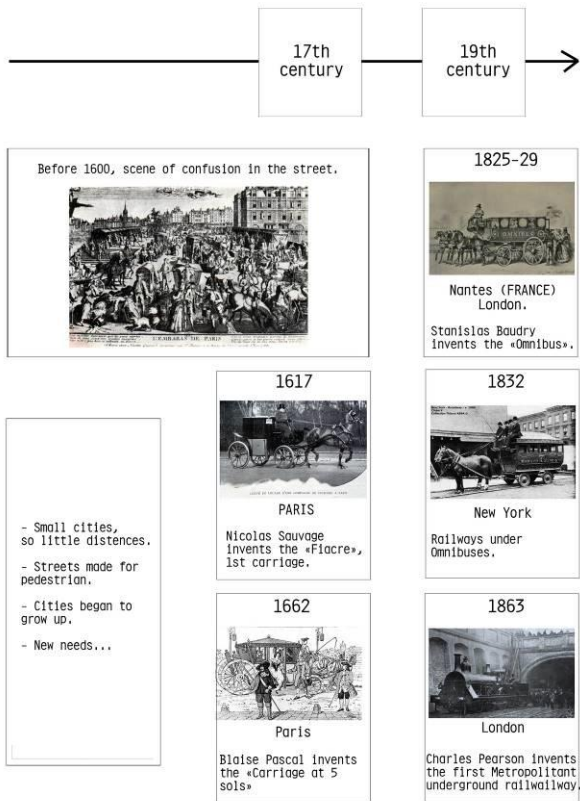
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# Public Transport Around the World

## History of Public Transport

Public transport in big cities appeared quite late in history, the reason for this is that cities around the world remained small for very long, and therefore most distances could easily be travelled by foot or by horse.



- Small cities, so little distances.
- Streets made for pedestrian.
- Cities began to grow up.
- New needs...

In 1617, Nicolas Sauvage invented the first carriage, named "Fiacre". It was the first time that we could transport more than two people in a vehicle at the same time. The Fiacre is the ancestor of public transport.

The first public transport service was invented in Paris by Blaise Pascal : the "Carriage at 5 sols". In 1662, five "sols" was the quarter of the price of a book, which was very expensive at that time. It used 5 roads, some of them in Paris, the others reaching as far as Luxembourg. Most of the users were rich and powerful, that's why they tried to banish poor peoples by making the use expensive. Because of this high price, the service became unpopular and stopped in 1677.

The concept was reintroduced in Nantes in 1825 thanks to Stanislas Baudry, it was also introduced in London in 1829. It was supposed to get people to his new baths which were far from the center. But he realized that they didn't use it to get to his

building, but they used it to be transported all around the city. We don't know exactly when Tramways appeared. But we know that the circulation of Omnibuses (a big carriage pulled by horses) became more and more difficult because the roads were crowded. That's why in 1832, they put rails underneath the Omnibus in New York. The system became more regular, the "street car" had been invented. But the relief railway on the street was not so safe, so, Alphonse Loubat who lived in United States created the railways in the street : the tramway as we know it nowadays. In 1863, the first "metropolitan railway" was built in London, imagined by Charles Pearson. All the metro lines were electrified between 1800 and 1900.

## Current Public Transportation Methods

<p>Public transportation of the world <b>London</b> Underground</p> <p>Environmental: ●●●○ Comfort: ●●●○ Flexibility: ●●●○ Economy: ●●●○ Safety: ●●●○ Practicability: ●●●○</p>	<p>Public transportation of the world <b>Wuppertal</b> Teleferic</p> <p>Environmental: ●●●○ Comfort: ●●●○ Flexibility: ●●●○ Economy: ●●●○ Safety: ●●●○ Practicability: ●●●○</p>	<p>Public transportation of the world <b>Bangkok</b> TuckTuck</p> <p>Environmental: ●●●○ Comfort: ●●●○ Flexibility: ●●●○ Economy: ●●●○ Safety: ●●●○ Practicability: ●●●○</p>
<p>Public transportation of the world <b>Hanoi</b> Scooter</p> <p>Environmental: ○○○○○ Comfort: ●●○○○ Flexibility: ●●●●● Economy: ○○○○○ Safety: ○○○○○ Practicability: ●●●●●</p>	<p>Public transportation of the world <b>Venice</b> Water taxi</p> <p>Environmental: ●●○○○ Comfort: ●●○○○ Flexibility: ●●○○○ Economy: ●●○○○ Safety: ●●○○○ Practicability: ○○○○○</p>	<p>Public transportation of the world <b>Dhaka</b> Rickshaw</p> <p>Environmental: ●●●●● Comfort: ●●●●● Flexibility: ●●●●● Economy: ●●●●● Safety: ●●●●● Practicability: ●●●●●</p>
<p>Public transportation of the world <b>Hong Kong</b> Escalator</p> <p>Environmental: ●●●○ Comfort: ●●○○○ Flexibility: ●●●●● Economy: ●●○○○ Safety: ●●●●● Practicability: ●●○○○</p>	<p>Public transportation of the world <b>New York</b> yellow Cab</p> <p>Environmental: ○○○○○ Comfort: ●●●●● Flexibility: ●●●●● Economy: ●●●●● Safety: ●●●●● Practicability: ●●●●●</p>	<p>Public transportation of the world <b>Vancouver</b> Bus</p> <p>Environmental: ●●●○○ Comfort: ●●●○○ Flexibility: ●●●○○ Economy: ●●●○○ Safety: ●●●○○ Practicability: ●●●○○</p>

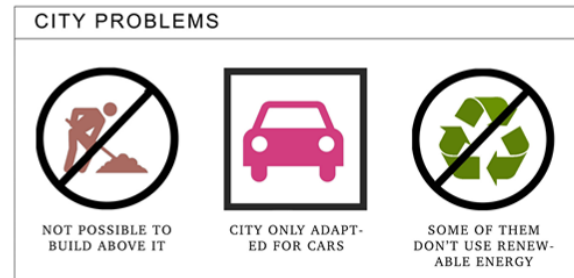
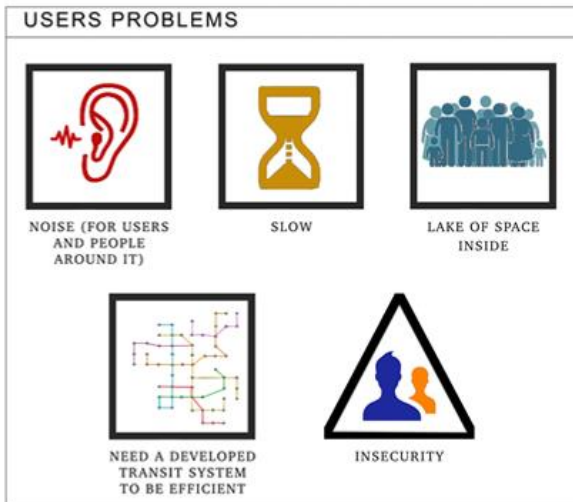
## Problems of Public Transportation

We can make a difference between several kinds of problems, in this case the problems are divided into two parts: the troubles linked to the users, and those linked to the city.

### Problems for Users

First, the speed is one of the biggest problems of the public transportation. It is not fast enough. It is often because it stops at every stations, even if nobody comes in or goes out.

Technical troubles can also slow down the traffic.



There is also another problem in the public transportation, it is the lack of space. This is usually caused by the high occupancy desired by the public transportation companies to reach a higher profit or even just to be cost-effective.

The insecurity can also be a problem in the public transportation. People are scared for pick pockets, homeless or drunk people. They also worry about delays or the transportation being totally out of order.

The transit system has to be really well developed to be efficient. Public transportation is practical when you have some stations everywhere, and not only in the center.

We have seen something in our site of project, in Ujpest : some people from the suburbs come there to park their car, they then take the metro to go into the center of the capital.

There is also the need of the adaptability. In fact, if you don't want to have a car, it is possible to use the public transportation in the city. So if you don't live in a place with a high density, it doesn't work. It also has to be extended and it has to be cheap on the whole territory. (In France for example the train is really more expensive than the car)

So we can see that these first problems can give people a bad impression of the public transport. Some improvements could be done to ameliorate this impression, and make the public transportation a pleasant place.

### ***Problems for the City***

Some of the public transports are noisy, for example the buses and the metro. However it is possible to put the metro underground although this might then cause problems related to vibrations.

If it seems to be a good solution to put it underground, some problems persist. It is impossible to build above it because of the foundations and problems with vibration like mentioned before. Most of the time the metro is built under the roads to avoid this problem.

Sometimes the city is not really adapted to the public transportation, and it is more practical for the users to use their cars. It happens generally in the cities from after the WW2, which have been built for cars (large avenues etc.)

Some of the public transportation doesn't use green energy to go on. That is a problem, but a lot of public transport methods are now powered by electricity or they will be in the near future. This will create a greener system or it will at least take the contamination from fossil fuels out of the city.

### **A City Without Traffic**

Nowadays, our cities are full of traffic, mainly because of the car-oriented urban planning. Traffic jams, pollution, insecurity... Is there a way to avoid these problems? Even though a city without traffic may be a utopia, there are many ways to reduce the car usage. Creating a really effective public transport network could be a possible solution for dense automobile traffic. How should public transport develop? Firstly, it should be efficient, fast, accessible and affordable. Secondly, citizens have to be encouraged to use it. There are many ways that can be used to promote the usage of public transport, not only improving the public transport network, but also restricting parking, for example.

Is a city connected only and exclusively by public transport possible? Not now, but maybe it would be possible in the future. However, there are examples of modern cities that function without cars: Venice, for example. Although its car free design was unintentional, the main method of transportation is still by foot or by Vaporetti.



We can also find other examples, since car-free neighbourhoods already exist in some European cities:

### Freiburg, Germany

The neighbourhood of Vauban, where 5000 people live, is one of the biggest car-free areas in Europe. In this neighbourhood, people are not allowed to use their cars and those who own one are obligated to keep it in a special car park provided by the city.

### Groningen, the Netherlands

In this city, 57% of its inhabitants travel by bike. Thanks to a new urban planning vision and an integrated transport system, Groningen has got a car-free city centre. Nowadays, it is only possible to travel between sectors by public transport, by foot or by bicycle.

### Ghent, Belgium

Ghent is one of the most walkable cities in Europe, thanks to its easily accessible centre without car and thanks to the optimization of public transport. The car free zone is 35 hectares in size.

Cities without traffic		Cities without traffic		Cities without traffic	
Freiburg Vauban neighbourhood		Groningen City centre		Ghent City centre	
Country	Germany	Country	The Netherlands	Country	Belgium
Area	41 ha	Area	approx. 60 ha	Area	35 ha
Inhabitants	220000	Inhabitants	200000	Inhabitants	250000
Car ownership	●○○○○○	Car ownership	●●○○○○	Car ownership	●●●○○○
Bike usage	●●●●●○	Bike usage	●●●●●○	Bike usage	●●●●○○
Alternatives	●●●○○○	Alternatives	●●●○○○	Alternatives	●●●○○○

Finally, this is another interesting project with the goal to reduce traffic by making public transport as convenient as driving a car (see next column).

### Park and Ride

The initiative of park-and-ride is a good way of keeping dense traffic away from city centres. Park-and-ride facilities consist of car parking spaces connected with the public transport network that allow people to reach the city centre without driving their cars.

The park-and-ride idea is also used with bicycles instead of cars. Some cities provide secure bike lockers (this service is free) where the bikes can be kept before using the public transport. It is known as “bike-and-ride”.

In addition, there are some cities that include special systems on or in public transportation vehicles (in the buses, for example) where a bike can be kept and carried easily.



Bike lockers in a bike-and-ride facility in Canberra



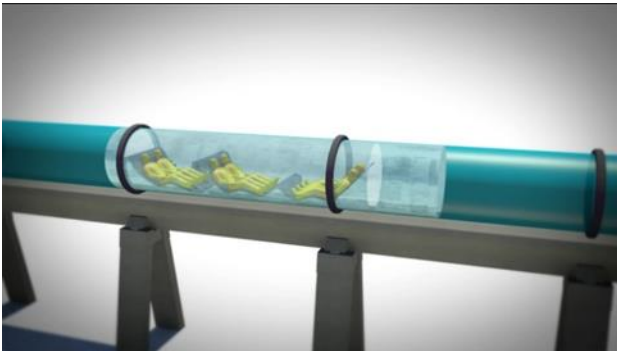
Bike rack integrated in a bus, Canberra



## Future public transportation methods

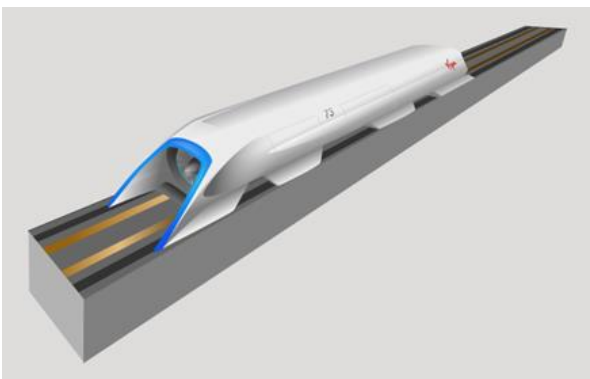
### *The Hyperloop*

The Hyperloop is a concept developed under the supervision of Tesla and Space-X owner Elon Musk. The concept consists of a tubing system with capsules that travel inside the tube, floating on a thin layer of air between the capsule and the tube. The capsules will be driven by linear induction motors placed across the total length of the tube. Inside the tubes there will be an atmosphere of reduced-pressure rather than total vacuum. This means that the air that builds up in front of a capsule will have to be actively transferred to the back, as a build-up would cause an blocking pressure for the capsule. This transferring will be taken care of by an electrically driven inlet fan and compressor on the nose of every capsule.



Advantages of this concept are:

High speeds: it can reach very high speeds due to the fact that its speed is not restricted by the use of wheels (which have a limited speed), and due to the fact that the resistance of the capsules is very low as a result of the thin layer of air the capsules float on. It is expected that maximum speeds of 1200 km/h can be reached with this system.



The relatively low expected operating costs: due to the low resistance on the capsules, high speeds can be reached without the need of constantly applying high forces. It is expected that the capsules can glide without propulsion for a large part of their journey.

This reduces the amount of energy needed for transferring a passenger which reduces the costs for energy compared to existing systems. Although the opinions on the actual cost of the system differ, some critics say that the development costs of the system would be so high that there is no possibility of creating a system like this with lower operating costs than regular transport options. Some even say that it is not possible to turn this concept into a feasible system.

The expected low environmental impact and the possibility to reduce car traffic on crowded commuter routes: the concept describes a train that uses less energy than existing methods of transportation it also describes the possibility of placing solar panels on the outside of the tubes to make it possible to let the system run on solar energy. Although this would mean a decrease in direct environmental pollution, at this point nothing substantial can be said about the environmental impact considering the materials used for construction of the line and the aesthetic pollution the transportation system might do to its environment. The possibility to reduce traffic on crowded routes is very likely because the system can offer a faster and easier way to travel compared to travelling by car. In comparison to existing public transport systems which are often a somewhat slower way to travel than by car, the Hyperloop could be around 10 times faster.

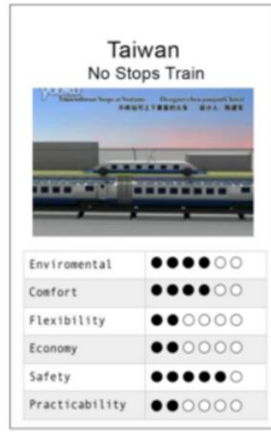
### *Nonstop trains*

Although concepts for a train that doesn't stop have been around since the 1960's none of them has been developed yet. The idea is to create a way to let passengers get in and out of a train while it's moving. In this way saving the time it takes to stop, wait and start again; saving energy, because accelerating in particular costs much more energy than general transit; saving costs, both from the energy that is saved, and from a reduction in wear that occurs from braking and accelerating on both the machines and the tracks.





One of these concepts for a nonstop train that hasn't changed much over time is the concept of a second "exchange train" that will link itself to the moving train, allowing passenger to get in or out of the actual train, the exchange unit then decouples itself and returns to the station.



Another relatively new concept is that of a Taiwanese designer called Peng Yu-lun. He proposes a train that has a similar exchange unit that couples and decouples from the main train. Only this exchange unit consists of a cabin that attaches itself to the top of the train in the front when the train passes the station. The cabin will then gradually move itself to the back of the train, making it possible for the system at the station to pick it up again at the next station, while a new cabin gets attached to the front of the train again.

A major problem of these concepts, apart from the actual development of the new mechanism, is that although the general idea may suggest that it will use existing infrastructure, the infrastructure has to go through drastic changes in order to create a functioning system. These changes may include: position of rails, position of switches, position of

power supply, position of station platforms, timing schedules, protocols for the handling of delays etc.

**Special bike lanes**

Several cities are currently improving their facilities for bikers, with the Netherlands as an example of a country that has had largely bike oriented cities for decades already, and cities like Copenhagen being an example of a city that been steadily improving its bicycle friendly environment. In Copenhagen they've actually reached a point where the regular traffic jams are being replaced by bike jams because so many people prefer the bike over the car. Several innovative concepts for bike lanes exist as well. The picture shows one of these concepts, a high-speed bicycle lane that is not influenced by the weather, meant as a project for the city of Toronto, Canada. An elevated tube system would provide several bike lanes for fast and easy transport by bicycle, but the project was never realized due to lack of funding.



**Conclusion**

Having seen the different problems that are connected to the use and the existence of public transport; several existing public transport systems; several innovative ways of handling transport in cities; and several concepts for future public transport, this information can be combined to create a global conclusion on how to improve public transport in the future.

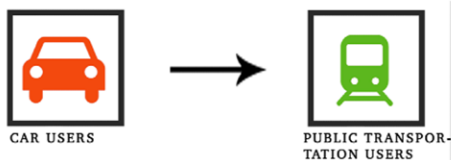
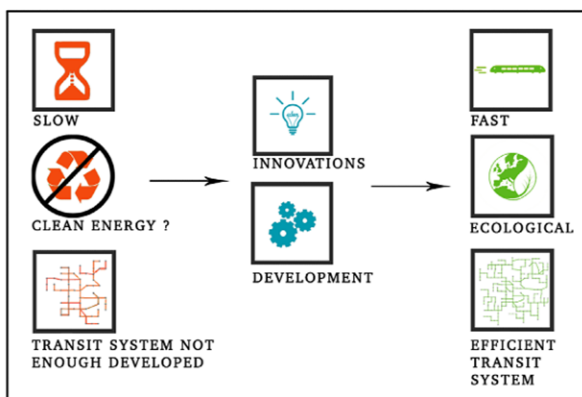
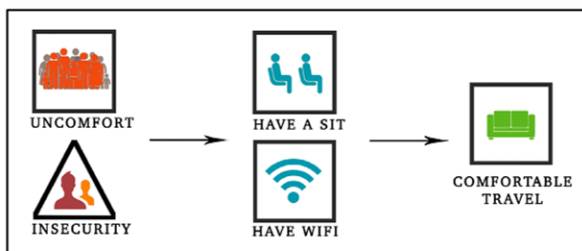
While problems related to infrastructure are not easily solved, some problems like lack of comfort, and insecurity can be quite easily solved. More comfort can be created by a lower occupancy of the vehicles, this can be realized by more funding for public transport from the government.

A place to sit for everybody in the vehicle would be the ultimate scenario for a comfortable ride. But little things like providing a Wi-Fi connection for the passengers could already make a big difference for the experienced comfort as well. A place to sit and a Wi-Fi connection would turn the public transport



into a workplace instead of a way to travel, this provide the public transport with a large advantage over the car.

A faster public transport systems depends greatly on new infrastructures. While several concepts for new/faster systems have been presented, the implementation of these systems would cost large amounts of money of would take a long time to realize. This is therefore an element that needs to be kept in mind while planning the future of a city of area.



More security when considering the fear pick pockets can be quite easily solved by diminishing over occupied vehicles. Security of timing of public transport is closely related to planning and logistics and the use of high quality vehicles.

Overall it can be seen that the improvement of the public transport systems will cost money and time. Although some things can be easily improved, systems can be improved only step by step over a longer period. Nevertheless, to create an ideal public transportation system, radical changes in the existing systems and ways of thinking about public transport are necessary.

## **FUTURE CITIES FROM THE XXth CENTURY AND FROM NOWADAYS - Looking back at the past and looking forward to the future cities.<sup>10</sup>**

How our vision of “future cities” have changed over the years? Predictions about how urban life was going to be in the following years have been changing since the early 20th century due to the rapid development of technologies that we are continuously experienced.

Our imaginations for future cities from the past were more about creating new infrastructures, machinery and systems in order to achieve cities that would potentially make the 21st century person’s life easier. Archigram group’s hypothetical projects or Sant’Elia “Citta Nuova” project are some examples that show the importance of mega structures in architecture and circulation of future cities.

On the other hand future vision from nowadays is connected with the necessities of the present. Future is really influence by today and the last predictions invite researchers to develop technologies that will help us to face up urban city problems.

Technological development has been our main tool to imagine future cities; new technologies make our lifes easier. We are creating smart cities. Information is the main demand of nowadays so the development of network systems, applications to get data or to connect people are ones of the main goals of these days.

We will see how technologies have influenced in architecture, housing, urban planning, mobility, means of transport and circulation over the years until achieve the actual “Global cities”.

### **01 Architecture**

We could find many examples of futuristic ideas of the cities in the last century. These ideas are fantastic, manufacturable, brave. Many architects thought about huge machinery, constructions and systems. They thought about an advent of new development of the cities more or less in constructive way. But what we see now? Construction is appeared. It is still necessary for development. But the main changes are that machinery and systems are converted to computing

programs. Information is the biggest demand of the present.

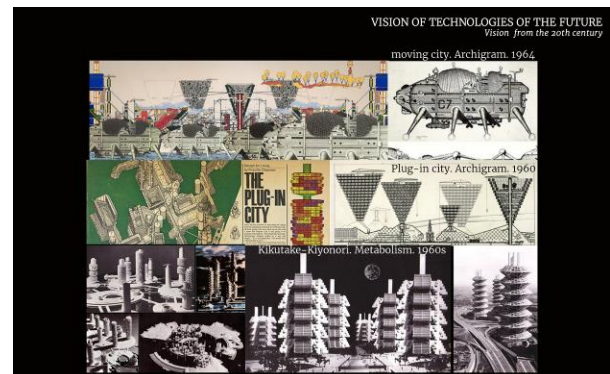
### **Past**

“It was then inevitable that we should investigate what happens if the whole urban environment can be programmed and structured for change.” wrote Peter Cook.

Archigram group formed in the early 1960s created some new sort of reality through hypothetical projects. “Plug-in city” mentioned new perception of infrastructure in the city. There are no buildings. There are a huge mega-structure, a massive framework into which components of living could be slotted. The machine had taken over. This is the debates on technology and society. Archigram envisioned an architecture at the “dawn of the digital information revolution” decades before technological innovation could build it. They called it a computer-controlled city designed for change.

The important feature of the city is that it can continually build and re-build itself. This is allowed by a monorail that runs along the top of the grid. The monorail, besides carrying passengers, also carries cranes, which can, in their turn, carry sections of the grid vertical, horizontal and oblique directions. The flexibility of the structure allows the city to function over a number of years and adapt to continuously changing technology. Archigram conceive a design that would potentially make the 21st century person’s life easier.

The inspiration of future technologies strongly was showed in “Moving city” 1964. Ron Herron proposed building massive mobile robotic structures, with their own intelligence, that could freely roam the world, moving to whatever their resources of manufacturing abilities were needed. Various walking cities could combine with each other to form larger “walking metropolises”.

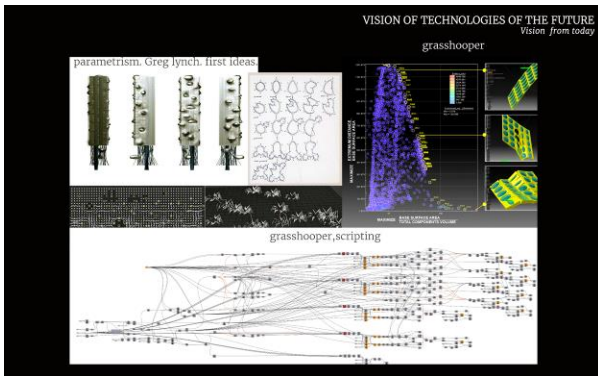


<sup>10</sup> Natalia Álvarez Alonso – Carlos Clemente – Victoire Coizy – Jonathan Ralph de Jong – Nastia Tsurkouskaya

Changing, infrastructure, mega-structures, technologies, flexibility are main key-words of projects Archigram group. "We regard human society as a vital process - a continuous development from atom to nebula". The biological concept was clearly seen in Japanese "Metabolism". An image of the city was taken from the ability of living organisms to keep growing, reproducing and transforming in response to their environments. Metabolists thought that creating ideal cities would be a way to build better community.

### **Present**

The information age began. "Searching a new architecture", new approaches, rapid development of microelectronics and computer technology are appeared. The main change is interdisciplinary relationships between programmers, architects, Scientifics.



Computer software called CAD/CAM technologies, which transfer the designs to drawings, making use of 3-D digital modelling and rendering, enable new design forms. These forms have complex types of geometry determined by mathematical functions and parametric algorithms and have a new vector geometry. Different forms which haven't been designed can be produced from different mathematical functions. Plug in Grasshopper in Rhinoceros program changed mind of contemporary architecture. Parametrisation began popular.

Embryological houses of Greg Lynn suggest diversity, continuity, flexibility, and propriety for users. This is a prototype parental houses which have different genetic characteristics from one another. Thousands of different houses can be produced by means of mutation and natural selection from these prototypes. The production principles are equal with nature's in this process: gene transfer from parents to their children, natural selection, and adoption of the genes from the gene pool.

Another project of Lynn, UN Plug Office, proposes a building with an external facade that can change and constitute its own living units according to various effects, instead of the usual spatial organization consisting of walls and floors. It is covered with sunlight-sensitive receptors, photovoltaic cells, vacuum tubes, canals, and cables. It works like a network

Nano Vent Skin, designed by Agustin Otegu, uses nano-scale wind turbines. This concept wall consists of different kinds of microorganisms that work together to absorb and transform natural energy from the environment. These bio-engineered organisms could convert sunlight and wind power into renewable energy and they could absorb CO2 from the air. These microorganisms have not been genetically altered. They work as a trained colony where each member has a specific task in this symbiotic process.

### **Conclusion**

Nowadays architects use technologies in order of helping to project. This is a prediction. Architects can calculate what will happens with their project if one the parameters of environment would change. They can manage, influence. Technology is a process. It is not only a mega-structure of living. It is thinking and real vision of the future which will be here. In the last century architects used technologies in the physical meaning of environment. Now technologies are an approach to achieve better, cheaper, sustainable architecture. It is a way of thinking. Parcel part of projecting future.

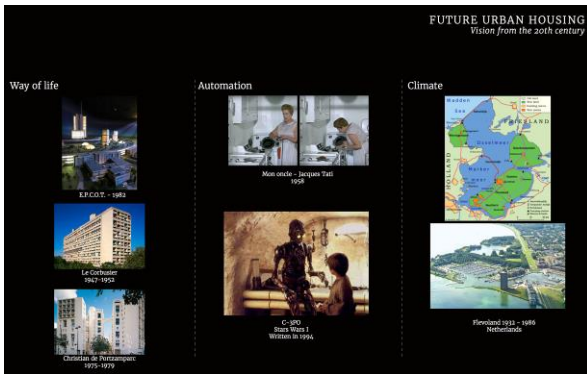
### **02 Urban housing, blocks and city scale**

That's also interesting to think about future in the housing, because it really influence your way of life. Those reflections aren't only about the house itself, this concerns block and city scale as well.

### **Way of life**

In the XXth century, many architects were thinking about the way to build a urban dwelling, and how to organize the functions around it. That's funny to observe that people really hadn't the same vision of the perfect building. For example, Le Corbusier built in middle of the century big buildings, like in Marseille in France. This building is really huge: 137 by 24 meters, and 56 meters high. This way, the building can receive 1600 inhabitants and a lot of function: a school, an hotel, shops... All around you can create green areas on 300 meters. The type of flat are really innovative, particularly the room's organization (in length).





But everybody doesn't think the same as him. ECOP is a project created by Walt Disney himself in 1982, to make the perfect future city. After the death of M. Disney, this project wasn't built. But he planned to create big building, but to separate the functions: he separated the housing building and the commercial functions in different districts.

Later, people stop to think that build big and massive was a good idea to make a better city. Christian de Porzamparc drawn a really futuristic residential complex. He stopped to build big, and start to play with some volumes, different higher, and created a completely new life inside.

Today, the reflections are really turn to others topics. The predictions about 2050 are the following: 75% of the population will live in cities. More and more people will live alone, and we are going to live longer than before. So the main goal here is to find a way to be able to housing everybody. First, the surface's average is going to cut down. But new way of live is envisage. First, people would probably share a house, a flat, even if they don't know each-other. In the same way, they can think about create a new project together, even if they're not friend or family.

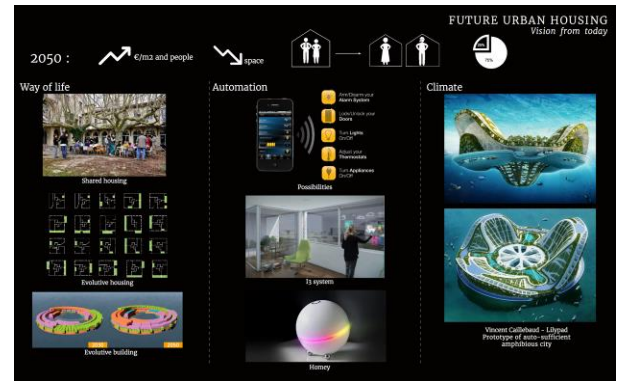
The family's size will change a lot too: sometimes 3 or 4 generations will live together, and the divorce will be more usual. So the housing should be more flexible. Creating a flat where it's possible to add or remove a room, to customize the flat, according to the family.

Finally, the durability of building is also something important for the future, because most of them won't be remove. They should be evolutive, to adapt them according to the usage.

**Technology, automation**

The technology took a big part into the flat in the vision of the future. They really tried to imagine how can be the life using technology, and finally they especially think about some gadgets (most of the time, not essential). In the french movie «Mon

oncle », created by Jacques Tati in 1958, we can see the perfect future house. Its contain a lot of technology inside, like a button which allows to turn a steak in the pan, or another machine able to create a dinner just if you insert a coin inside. Most of these fictions are, in fact, never created, maybe just because they didn't really think about something really useful.



Today, the technology's progress allows to researchers to be more precise about what is possible in the future. They combine their knowledge and the prediction to create something useful. For example, the home's automation will be probably really helpful for old people which want to stay in their house even if it's complicated. In this case, automation won't be just a gadget, but a need. This way, it will be easy for people couldn't moving to close the house, turn off the lights, arm the alarm, and sometimes, something really appropriate for some disease or problems.

Automation has to be useful for his user, but not only: it will help to carry about our planet. This is the project of Eiffage, a french construction company. They want to create a system which allows to know online the building's consumption and to give advices to make it better. It also adapt the temperature, que acoustic, and the light to create a better air quality inside, or detect a leak. The house will become very smart.

**Climate, environment**

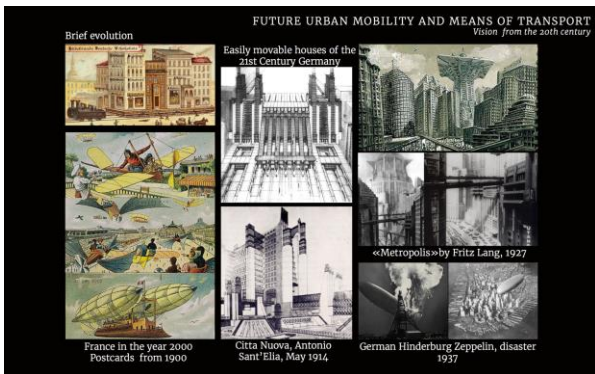
At the beginning of the XXth century, Netherlands needed more lands for its agriculture. Politics just decided to create new lands. How? "Building on the sea". This crazy project took a long time to be realized, but in 1987, the project is done. That's really impressive to see how they were imaginative, and how they finally did it. Because to reach their goal they must complete so many steps (build dam, drying the lands...). But why this gigantic project has something in common with the cities? Because first, it was only for agriculture, but after few years, few decades, people moved on this land, and cities

were built. Then, the project became not only create new lands, but life and cities on the sea.

Today, the idea evolves: it's not only be able to bring life on the water, it's a need for the future, because of the global warming. Vincent Callebaut drawn a project of a nomadic city on the water. This project, called «Lilypad» is auto-sufficient, and its can accommodate 50 000 climatic refugees. This city is a half aquatic, a half terrestrial, and on it you can find a flora and fauna which collecting and purifying water for the city. Its principal composed by three lagoons and three mountain, accommodate housing, offices... It is inspired by a type of plant, called «Amazonia Victoria Regia». Finally this city travels around the sea and the oceans, following the marine streams.

The principal difference between the vision of the future in the past and the future of today, is finally that yesterday was more about discover news things, always trying to invent something we never saw before, to cause kind of admiration. But today, the future is really influence by today: the scientific prediction about the next generations incite researchers to find solutions, to create a better life with these conditions.

### 03 Urban mobility and means of transport



Our vision of the future is always changing according to the necessities of the moment, the prediction of the future ones and the quickly development of technologies that we are suffering. Over the years some early imaginations about mobility and travelling have become true although in different ways that we had predicted but some of them, such as travelling through time or travelling faster than the speed of light, are almost impossible to become real in the future. We will see how future predictions have been changing from the 20th century until nowadays.

### Past

Brief evolution during the XXth century.

In 1900, civil engineer working for American railroads John Elfreth Watkins wrote the article "What May Happen in the Next Hundred Years," which showed 'retro-futurism' ideas for its accurate predictions and inaccurate ones. Aerial travel was part of his future vision, but by airship rather than airplane and on the other hand he correctly predicted elevated and underground roads in cities: "All hurry traffic will be below or above ground when brought within city limits."

Nowadays, the National Library of France welcomes an amazing collection of prints from 1910 made by the french artist Villemard who revealed some of his predictions about transportation and media. The most accurate ones: electric trains, motorcycles, helicopters and cyclistscouts. The postcards also show cities full of airships even for private uses.

In 1909 Marinetti had claimed in The Founding and Manifesto of Futurism : "We affirm that the world's magnificence has been enriched by a new beauty: the beauty of speed. A roaring car that seems to ride on grapeshot is more beautiful than the Victory of Samothrace" and some years later at the exhibition "Nuove Tendenze" of May 1914, Sant'Elia proposed a vision of a modern city that took the form of a "gigantic machine" while embracing the ideal of motion and activity.

"Citta Nouva" design promoted the unfettered circulation of objectspeople,automobiles,trains and the creation of a "network of multilevel circulation at their feet" which connected structures. The concept was explained by converging various channels of transportation that penetrate everywhere at different heights near the base of the structure. They dreamed with walkways made of glass and metal, highways and railways.

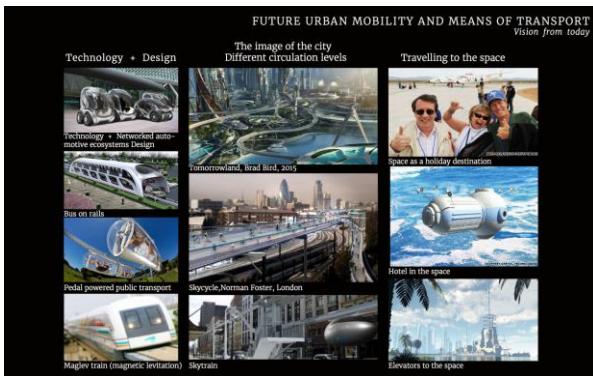
As far as means of transport are concerned, the Hindenburg explosion in 1937 was the end of the era of the great zeppelins and in the years leading up to World War II, airplanes were already beginning to replace the giant airships as a much more efficient and economical way to cross oceans.

We were not only thought about exploring the sky by travelling since over the last century travelling to the space has been one of the most exciting ideas for us. The first man to journey in outer space was Yuri Gagarin when his Vostok spacecraft completed an orbit of the Earth on 12 April 1961. In the late 70s our dreams were quite optimistic when NASA predicted we might have space colonies by the end

of the century. Life in the cities was constantly changing due to the development of breakthrough technologies.

### **Present**

Although some predictions from the previous century seem nowadays to have more possibilities to become true in the future, others have changed from the early decades due to the emerging problems we are facing in future cities such as the growth of the world's urban population and the pollution chaos. It is said that the future world will be "the world of cities" since between 2010 and 2050, the number of people living in the world's urban areas is expected to grow by 80 percent - from 3.5 billion to 6.3 billion .



This growth will pose great challenges for urban mobility, for the networks of transportation facilities and services in order to keep people flow. Automotive technology, design and connectivity are main tools to reach this goal.

To improve urban mobility it would be interesting to create networked ecosystems where automobiles could operate as part of a highly connected network. This is already in progress thanks to the huge range of applications we enjoy nowadays, GPS navigation systems and sensor-based driver assist technologies. It is thought that future networks could include communications systems between vehicles, between vehicles and infrastructures, sources that provide information about weather, road conditions, the availability of parking in downtown areas, computer facilities to analyse quickly huge amounts of information in order to achieve a pleasant, comfortable and efficient urban mobility.

Some future ideas which would help us to combat polluting chaos are the general electrification of automobiles, vehicle sharing programs, self-drive vehicles and the increase of the usage of low-energy transportation options such as bicycle sharing, bus rapid transit systems and "On-demand buses"

developed by the University of Tokyo, which replace fixed-route bus lines, by dynamically routing pick-ups and drop-offs based on user demand.

Other means of transport we predict to use in future cities are "bus on rails", "pedal powered public transport", "Green scooters" which could replace petrol-burning ones and "City-car" a foldable, electric, and shareable two-passenger vehicle designed for on-demand use by the MIT media Lab.

And what about travelling to the space? Frictionless engines will form the basis of new propulsion systems for space travel and by 2050 we will have fully functioning space elevators.

By 2050 over one million people will have visited the moon, even for spending some holiday days since some space hotels will have offered "sleeping with the stars" vacation package.

As in the "Citta Nouva" design of Sant'Elia, we imagined future cities with circulation channels at different levels as is showed in a recent Norman Foster design in London who has create a "Skycycle" above the train of the city. Something similar happens with "skytran" and Maglev train which comes from magnetic levitation. It is a way of taking advantage of the urban air space.

While in the early 20th we dreamed about creating huge infrastructures to improve urban mobility now we realise that technology, the develop of data applications and a good network system will be our main tools in future cities. Futurists continued to make predictions about means of transport and changes in future urban mobility as we see in Ray Kurzweil's 1990 book "The Age of Intelligent Machines".

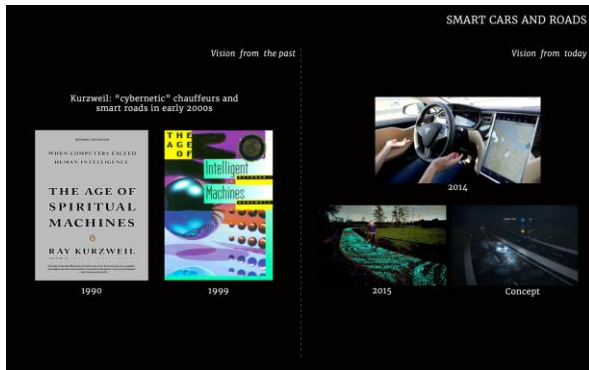
### **04 Smart mobility**

In The Age of Intelligent Machines (1990) Ray Kurzweil predicted that in the early 2000s chauffeurs do not have to drive their own cars anymore, since "Cybernetic chauffeurs" will take over this function. Besides, this function, this artificial behaviour, will be able to apply to existing cars. The cars will be able to communicate with each other and with the roads, which will have sensors and/or actors in them. In this way the car knows where to go, or knows how to adjust to specific conditions on the road, like weather and traffic.

In 1999 he changed his mind, during technical developments et cetera, in his book The Age of Spiritual Machines. He nuanced the idea of that cars will have cybernetic chauffeurs in it and that roads



will be that intelligent in the early 2000s. At this time he still thinks that road will become intelligent, but that they will not communicate with cars. Besides he predicts that cars will be able to drive themselves, but in this case as well, cars will not communicate with each other. They will be able to drive themselves by having sensors themselves, and thus be able to see what is happening around. He mainly thinks that this will be introduced first on highways since traffic is more predictable here, than in crowded cities.



Most of the predictions did not happen yet, and are not going to happen in the near future, because for example every car has to have the technology to be able to communicate with each other to let this work. There have been experiments with self-driven cars all the time, but in 2009 they were not open for public yet. And besides they don't communicate with each other and/or with sensors along the road.

But since 2013 there have been tests with a self-driven car on the public road, which was open for public (vislab). And of course, Tesla just updated their Model S with the latest software, which takes the autonomously of the car to level 2 out of 4, what means that the car is able to control to main function at the same time, for example adapt cruise control and keeping in the same lane.

Besides there do exist plans to make the road 'smart' with sensors, like thermometers and proximity sensors, which communicate cognitively with drivers (instead of with the cars) by lights to warn for a slippery road. Also there are concepts wherein lights on roads will fade in when a car is coming closeby.

In the early days when a road was crowded, one easily added another lane to a road, and probably this method is still used and sometimes this will be the solution actually. However from that moment it is more likable to take this road, since it should be 'less crowded' now, but obviously this will cause a paradox because even more people will take this

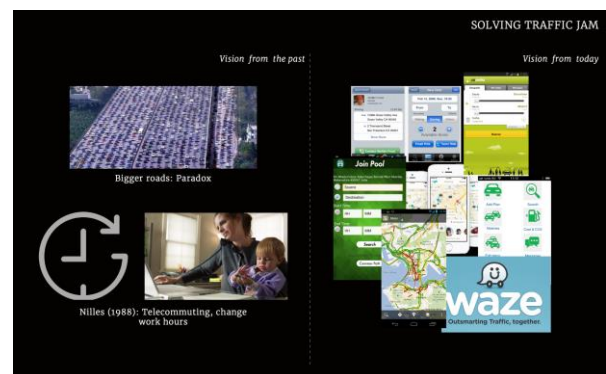
same road. Anthony Downs stated this in 1992 in his book *Stuck in Traffic*, where he gave some possible solutions to this problem.

One of his solutions contains the change of for example work and school hours, causing a diffuse of rush hours in traffic. Some other solutions he stated were award people for not using crowded roads during rush hours, for example by going to office by bike or by public transport, and even 'punish' people by charging them a fee when using roads in these hours.

Another solution Nilles (1988) stated, was that people should work at home more often, which can reduce traffic in rush hours. People can go to their office shortly outside rush hours, or even completely substitute their workspace for a whole day once in a while. In 1973 carpooling was introduced as well, to use cars (and roads) in a more efficient way.

Nowadays it is even easier to carpool to work, since almost everyone has a smartphone with mobile apps, which can set up and organise carpooling easily. Besides, this developing technology and things like big data (in this case saving statistics about traffic, public transport et cetera) allows us to use more smart applications which can take us from starting point to our destination.

For example, Google Maps can give us several options to come for A to B by car, but as well by public transport. It shows options very quick and easy, whereby it becomes attractive to use public transport. Also Maps can show on the map where crowded roads are at what time, using historical big data and, perhaps quite controversial, by live-tracking Android devices using their gps to track where people are stuck in traffic.



Besides Maps, people can use apps like Waze as well, in which users can warn other users if they are stuck in traffic. In this way one can choose to take an alternative route or an alternative way of travel, by public transport for instance. The solution Nilles

mentioned in 1988, really became a trend which is still going on. This is mainly due to technological development; new technologies make it more easy to work at home and communicate with their office.

## 05 The Global City

There are too many cities in the world, but not all fall within the range of "global city" to be a global city certain features are needed. A global city is characterized by existing capital flow in and out of it, which is why it takes more than one city to create a global city.

A global city generates links with other global cities and its advanced business companies. That is why it is said that the borders now are not on the edges of the world we know, but at the heart of global cities, called frontier zone which is defined as a space where two actors from different "worlds" encounter with no established rules. Every part of this elusive city creates more nodes in the interconnected systems of information and money, using urban systems and comprehensive networks to gain a new flow of capital. Integrating global companies, it is a platform for management and operations service for investors called encounters bridges.



The Global Cities have more elements than just the economy, people, culture, technology, telecommunications and government. And in all this architecture it is created due to the demand for production space in the city center (frontier zone) begins. This is what makes each global city unique, differences in architectural tendencies do not affect communication between cities as well as the social and economic differences between citizens doesn't mean a spacial difference, they all live the same space.

Global city attracts people from all types and all countries, this creates a mix of cultures and a specific identity within the city, also takes social risks because the economic level of the people is not the same. At this point it is where the government should step in, helping to create more employment

opportunities and housing for people, thus creating a social Equality.

The government takes a big role in these cities because it is the link between the networking of global cities, and if so should create exchange facilities.

Thus, talking about the link formed by the network of global cities, we can say that it's a space with great economic and political opportunities, a strategic point for the formation of new types of identities and communities, transnational because it connects points that are geographically apart and yet they are deeply interconnected. The global city emerged due to the globalized capital that uses the city as "organizational commodity," and also by disadvantaged sectors of the urban population. Per se, the denationalization of the urban space and the centralization of transnational actors constitute a global city as a frontier zone for a new kind of commitment.



## **DELIRIOUS NEW YORK<sup>11</sup>**

The book tells the developments that have taken Manhattan since 1626 until around the middle of S.XX. This is a retroactive manifest, as Koolhaas calls it, which is spoken of Manhattan as a test lab, especially between 1890 and 1940 thanks to advances in technological systems. All this testing mode Metropolitan Life seeking the artificial and the natural neglects called "Manhattanism".



Throughout the manifest explains some of the most important and more transcendence experiments performed in Manhattan starting at Coney Island, home of the experiments. This tour of the main projects carried out in the island helps to explain the evolution of an unconscious to a conscious and planned architecture.

### **The double life of utopia: the skyscraper.**

With the return of attention Manhattan skyscraper construction begins with the development of the elevator and other technological advances, and because of the size and price of apples and population growth. Skyscrapers begin as a simple

extrusion with the shape of the block where they are situated, and evolving in different ways.

In 1916 when the height of skyscrapers merely a phenomenon of congestion so it's time theorists begin to speculate on how to end the congestion by a number of theories as Corbett and New Venetian York he proposes separating occurs pedestrian circulation by bridges connecting buildings. After this stage of theoretical it becomes building and focuses on the construction of the Waldorf-Astoria, Downtown Athletic Club and Empire State, highlighting the latter as a good example of planned and constructed building. Which can be perfect perfection: the creation of Rockefeller Center.

"Architecture is the art of making adequate shelter for human activities" (Raymond Hood, Rave New York, page 162) Hood has a theory as to skyscrapers is not a simple extrusion but aims to bring together in one building block and an empty space that surrounds it, allowing some degree of isolation. With this theory begins to raise a definitive Manhattan that combines maximum congestion with maximum free space and this is what it purports Hood with the Rockefeller Center, the mixture of different programs linked by common elements.

### **Conclusions**

Ultimately OMA's Rem Koolhaas in his study combines the disciplines of architecture, urbanism and cultural analysis that can offer the world an architectural and urban response to cultural and social conditions of the time, conditions that currently focus on culture congestion, main topic of Delusion New York.

It can be noted that congestion and urban density is the main thread within their projects and theoretical literature, a subject which, as we noted earlier proved prescient as cities have experienced growth at a rapid pace during the second half of the twentieth century and will do so in the future.

You could say that no architect, after Le Corbusier had written and studied so much about the city, in the case of Koolhaas on the evolution of the contemporary metropolis, that is why also you could take one of the most, but the most influential and important in the current landscape architect.

The architecture that performs, is somewhat unusual, different and looking at the great virtue of his works believe that focus on the big picture of the whole, the vision of a cultural and social circumstances of today. Perhaps this is the feature

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<sup>11</sup> Fatima Astolfi Candau - Patricia Perez Merino - Elena Jimenez Castro - Juan Carlos Arias Garnelo - Mahnaz Valizadeh Farid - Faranak Bozorgmehri



that sets it apart from all the major architects of the current scene.

In addition to this cultural vision that includes in their projects one could say that the other aspect that can differentiate you from most architects is taking architecture as somewhat flexible, in which everything has a place without having to be determined by a program.

"There is often in architecture an obsessive relationship between the readings that are made from different sources and the consequences it produces. To evitármelo, I claim the right to be inspired by this or that without being required to record appointments." (François Chaslin, break fronts, page 27)

"Where there is nothing, everything is possible; architecture where anything can happen." (Rem Koolhaas, S, M, L, XL, page 199)

### Point to analyze on our own cities

1. History of the city, how they emerge?
2. Evolution of cities, how cities have been expanding demographically, urbanism, cities, blocks of buildings ...
3. Metropolitan density for different uses within the same city. Where is a higher population density?.
4. Technological advance. Urban traffic in each city, how does it work?
5. Analysis of the main points of connection of each city. Important buildings of higher density near these connection points.
6. Beginning in the construction of the towers in the cities.
7. Detailed analysis of blocks of building with skyscrapers.

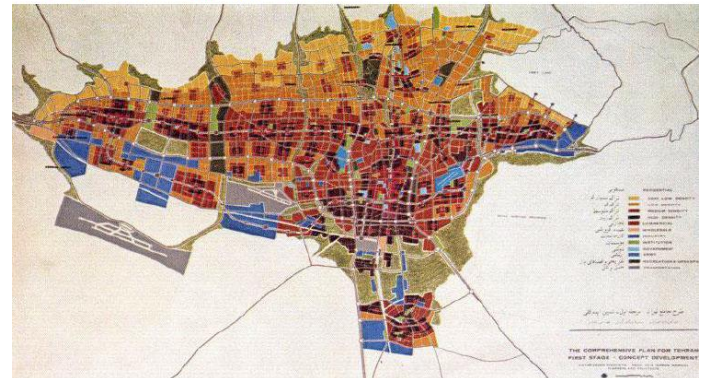
### Tehran

Tehran is the capital city of Iran, occupying some 700 Square kilometers in area with a population of around 9 million in the city and 16 million in the wider metropolitan area. Settlement of Tehran dates back over 7,000 years.

Throughout the urban development process over the last 7 decades many self-generated neighbourhoods have developed in which the majority of the low-income families. Since these neighbourhoods have many problems and incur considerable maintenance costs, the authorities

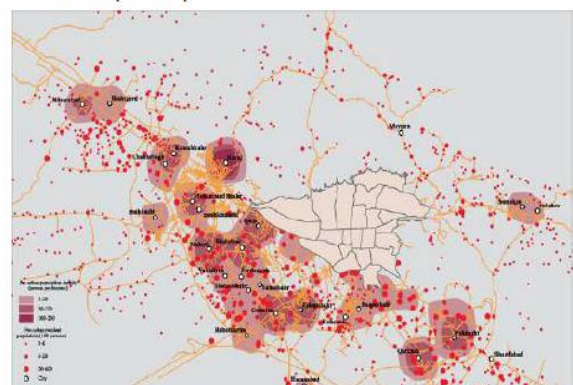
refer to them as deteriorated urban areas. The main characteristics of these low-income neighbourhood are vulnerability to earthquakes, low quality of access and thoroughfares open space, lack of green spaces, high levels of corruption and crime, high density of residents, inadequate urban infrastructure and high levels of poverty, which are barriers to private sector participation because they offer a low economic interest.

Comprehensive Master Plan for Tehran



The higher population density is in mainly in the center and western parts. The lowest density is on the east west border of city. Besides the major traffic in the city center, most of the important streets and highways are filled with traffic mainly because of poor public transportation system and increasing number cars. The routes connecting north to south and east to west are always busy during the rush hours.

Population density around the city of Tehran (2006)



### Historical development of Metro system

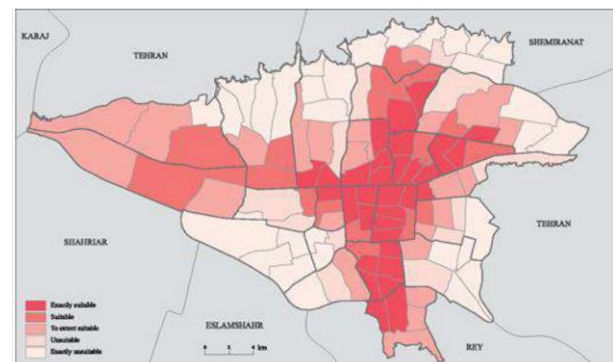
The history of Tehran's metro system goes back to more than 110 years ago. The establishment of the light rail system (tramway system) was among the concessions granted by Nasser al-Din Shah to Baron Julius De Reuter. About the same time, a railroad between Rey and Bagh Shah Sq., called "horse-drawn wagon, was constructed. An outline of the

historical developments of the metro system is as follows:

- 1971: Commencement of Social, Economic and Traffic studies for Tehran; Forecasting demands for the year 1991, by the French Sofreto and RATP companies
- 1974: submitting final report and offering selection of a mixed transportation system (consisting of a highway network with a ring road around the central districts and two highways for newly built districts and a metro network with 7 lines supplemented by a bus transport network and taxi service systems).
- 1975: approval of the law for establishing "Tehran and Suburbs Railroad Company".
- 1977: commencement of the Metro construction in Tehran.
- 1980-1986: Suspension of the construction in the wake of the imposed Iran-Iraq war
- 1995: Signing a contract for purchasing equipments for lines 1, 2 and 5
- 1998: Operating line 5 Tehran-Karaj.
- 1999: Operating western section of line 2, from Sadeghieh station to Imam Khomeini station
- 2001: Operating northern part of line 1, with stations stretching along a route of 14.6 kilometers from Mirdamad station to Aliabad station.
- 2002: Operating eastern section of line 2, with a stations stretching along a route of 2 kilometers from Imam Khomeini station to Baharestan.
- 2004: Operating Iran Khodro station (line 5) and line 5 stretching along a route of 10 kilometers from Karaj to Golshahr.

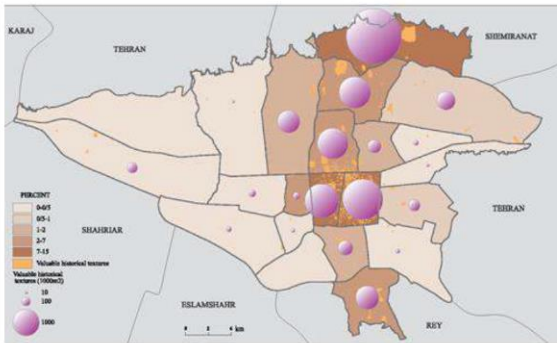
- 2005: Operating Chitgar station (line 5) and Baghershahr station (line 1). Start of Fathabad terminal and the eastern section of line 2, stretching along a route of 9 kilometers. Start of Elm va Sanat University, Sarsabz and Shahid Madani stations.
- 2006: Operating Sabalan, Darvazeh Shemiran, Nezamabad, Golbarg, Atmosphere and Imam Hossein stations.
- 2007: Operating Shohada and Ekbatan stations.
- 2008: Operating line 4, stretching along a route of 2.5 kilometers from Shemiran to Ferdowsi.

Access to transportation, especially public transportation, has an important effect on the citizens' quality of life. Due to lack of access to the information on the availability of public transportation, access to subway is very important in measuring the quality of life. The results obtained from an analysis of the data on access to subway stations showed that the central districts of the city situated in areas 3, 6, 12 and 16, have the best access and that the northern, eastern, southwestern and southeastern districts have no access to subway.



Open, green and public spaces are evenly distributed among all districts in Tehran. This is due to the historical development of the city, established patterns of available open urban spaces, and the distribution of industrial, military and services sectors in various districts of the city. Unlike central districts, the districts on the urban periphery have a better situation. Also, based on this criterion, districts of 22, 5 and 24 have the highest ranking, followed by districts 21, 2 and 9.

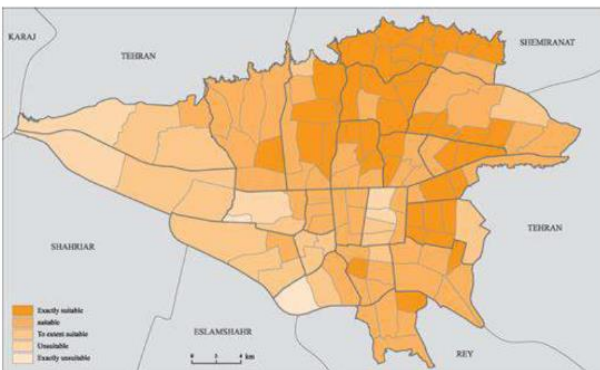
## The proportion of valuable historical texture



From the time Tehran was chosen as the capital of Iran, especially from the beginning of the 19th century (starting with Fath- ali Shah’s reign), the city has been subjected to extensive spatial transformations, which are common to most capitals. To obtain a picture of the general quality of life in Tehran, the four dimensions of the quality of life mentioned above are here measured.

It is worth mentioning that this study uses very limited objective indicators — those accessible in the 117 districts of Tehran— to measure the quality of life in Tehran, and that it was not possible to measure these data with subjective indicators. Therefore, the results obtained should be interpreted with these limitations in mind. In spite of the limitations mentioned, the picture of life in Tehran reveals a fairly good quality of life in all the districts. Northern, central north and north-eastern districts have the best conditions. Quality of life in north-western and south-eastern districts is also good.

## Quality of life



In the southwestern districts, quality of life is rather good. Only in two districts (one in area 9 and one in area 19) quality of life is very bad and in six districts (two districts in the west end of the city, two districts in the center of the city, one district in area 9 and one district in area 18), quality of life is bad. In two districts in area 9, the poor quality of life is

basically due to high environmental pollution. In one district in area 19, the poor quality of life is due to its poor social environment and its relatively high environmental pollution.

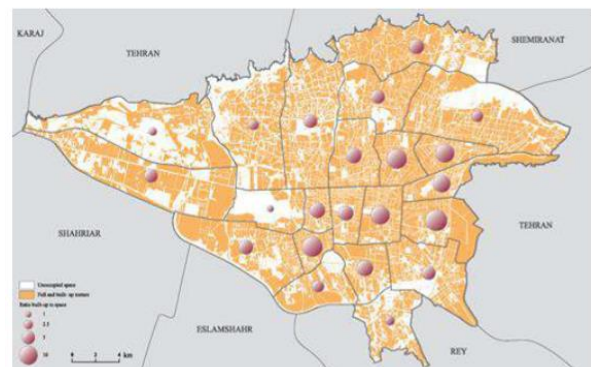
In one district in area 18, poor quality of life is basically due to its poor social environment, high environmental pollution and poor access to urban services and facilities. In two districts located in the west end of the city, and the district 21 and 22, poor quality of life is mainly due to poor access of these districts to urban services and facilities. And in two districts situated in area 12, poor quality of life is mainly due to their poor social environment and poor housing quality.

The open and public spaces of the city may be divided as follows:

- Green spaces (including urban parks, urban forest, farmlands, gardens and orchards);
- Roads and accesses (including highways, major and minor streets and road lanes);
- -Reserve lands of urban services (including old factories, warehouses and uncultivated lands).

The central part of Tehran and the southern half of the city are densely populated due to the small size of the residential units. The density in this region is almost twice as much as the average density of Tehran.

## Situation and degree of full and built-up textures



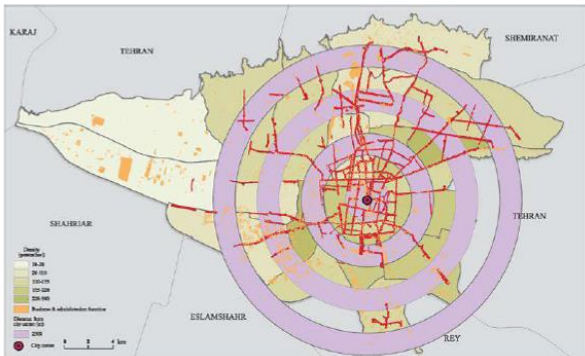
An important connection from north to south is Valie-e-asr Street. It is the longest and the most important street of Tehran, which has been changed from a two-way street that was used for both cars and public transport to a more problematic arrangement: one lane is dedicated to the busses and the other lane for cars only running from south to north. The recent transformation caused several problems such as higher traffic density in the



neighborhood, not pedestrian-friendly environment and inappropriate separation of the lanes.

One of the east-west highway connections has been facing some changes in order to distribute the high amount of traffic. As a solution, a multi-story highway and a tunnel were designed in order to more possible routes.

**The Structure of business & administration function & population density & distance from city center**



It has been more than 20 years that city of Tehran is dealing with the rapid construction of skyscrapers with out consideration of the integration between urban development and architecture. The higherquality constructions and most of the skyscrapers are built in the north of the city where the home to the high-income families. In the last decade most of the private offices moved from the city center to the northern parts which has created several urban issues such as traffic.



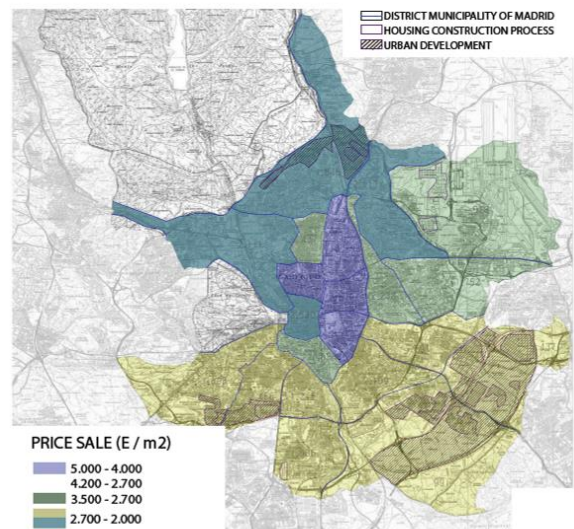
A.S.P. towers are one of the most well-known skyscrapers in Tehran, Iran. It is located in the corner of Kordestan and Hakim highways, which created a great accessibility to them. The towers were built in 1974 in a site of 112,000m<sup>2</sup> with a large green area in the south. Due to the large infrastructure and low mass density in the surrounding it can be mentioned as a good option of housing estates in Tehran. But at the same time the recent developments in that area was not following

a proper urban structure, for example it is hard to access without personal car and the lack of goos public transport is completely visible.

In conclusion, Tehran needs lots of effort on the urban and architectural planning in order to find a suitable solution that can make the city more livable, comfortable and beautiful.

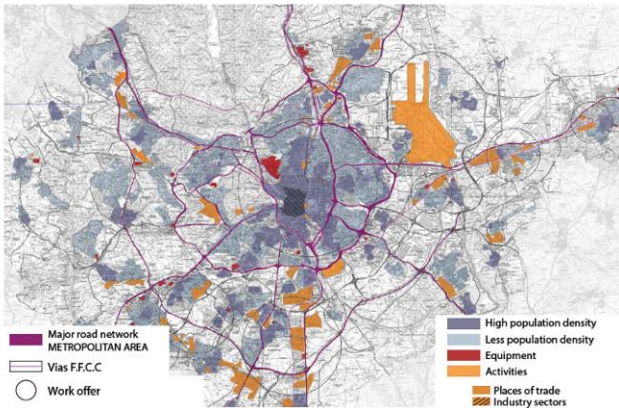
## Madrid

The historic center of Madrid, with origins in the Muslim Medina, arises from a strategic location (the control of a ford Manzanares) to determine a series of topographic limitations: the layout of the original farmhouse in elevated areas on the river and occupation Canyon Street Segovia, which will be established next to the citadel north and south of Moorish and Jewish quarters (transmuted into Moorish and Jewish with the Christian occupation of the eleventh century).



The urban extensions necessarily had to become towards the east, by the obstacle of the pending over the river. On the typical morphology of irregular layout typical narrow streets of the Mediterranean urban planning, it was added radiocéntrico path defined by the junctions of roads that appear at the gates of fences or walls and forth were being encompassed (converted into squares and roads doors converted in streets) by urban growth of the late Middle Ages and the period of the Hapsburgs, and with the capital: in the axis oriented north -after Balnadú Gate Peral, in the current theater of the operation, in the Northeast, the longest, first Guadalajara Gate, then the Puerta del Sol and the Puerta de Alcalá; in the south-eastern axis Closed Door; in the south Puerta de Moros, prolonged by the Puerta de Toledo; Western axes are cut by the river: Puerta de la Vega;

subsequently, the Iron Gate marked the northwestern axis. The journey of these fences is still detected in the layout of the streets, as in the Cava Baja (cava: pre-pit near).



The Plaza Mayor is a former open in Arrabal space (Plaza del Arrabal was called) which is organized as a market space, and rationalized with the rectangular closure, just roofing the streets with the arches of its outputs (like the typical arch Cuchilleros, in the southeast corner), and in the eighteenth century.

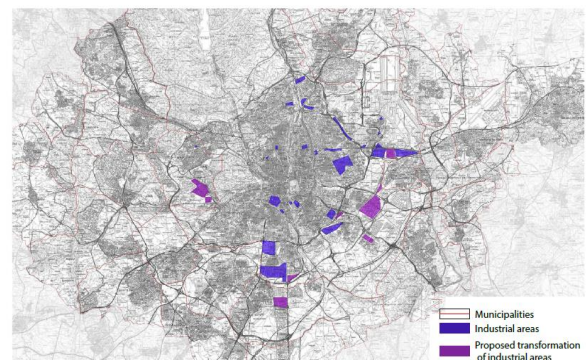
Teixeira Felipe IV instructs a new plane. This, which was recorded in Antwerp in 1656 can be considered the most important of those made by the detail with which represents, in cavalier perspective, the streets and houses of Madrid, including details such as facades and roofs. Texeira represents 18 churches, 55 convents and 14 religious schools and hospitals.

An important fact for the urban development of the city came after the fire of the Alcazar in 1734. The king Felipe V was installed in the Palacio del Buen Retiro, which made many noble palaces built in the vicinity (Paseo del Prado, Paseo Fuente de la Castellana, ...), timidly beginning an extension of the urban area established from the time of Philip II. Madrid de Pedro Teixeira (1656) 1762. The plane near the time of Philip IV had not been passed, and it was not until the mid-nineteenth century.

At present the construction in Spain this stop, especially if we compare the current activity with which he had seven years ago. It was the halt in construction developments that still remain unbuilt whole remains in the pavement of the streets and public waiting to be re- money to start building new facilities. These large developments are located in adjacent areas to nearby towns as the center is already built and intended to solve the problem of housing in the center of Madrid.

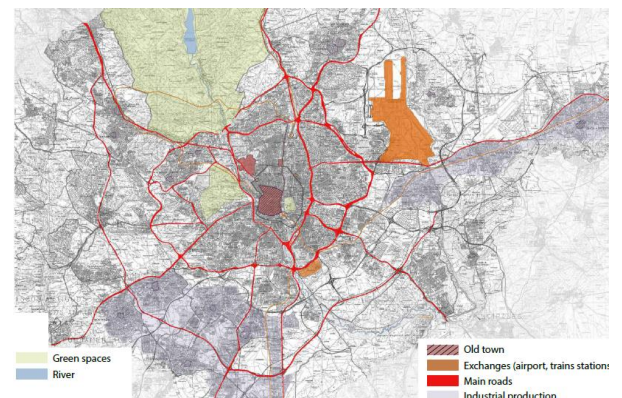
The price of housing in the city of Madrid is outrageously high, not only comparing it with the rest of Spain, but with Europe. The price increases as you approach the Castellana and the old town. Funny how drastically decreases the price of land according casualties south of Madrid, it is that these salaries are clay and therefore bad stall.

Paus projects are the new neighborhoods, usually on the outskirts of the city (more depopulated space). Currently projects are underway or Sanchinarro and Las Tablas. The initiative has produced inmobiliaria these projects remain unemployed.



We found that the municipality with the highest population densidad are located in Madrid and the industrial centers of southern belt of Madrid and the Henares corridor. The more labor supply more housing agglomeration presents the municipality. In the east of the metropolis homes are more spread on the ground. Residential townships are: Pozuelo, Las Rozas, Majadahonda (the percentage of labor supply is less in these municipalities) northern Peninsular with the capital of Spain.

Another reason that Madrid is the center of the metropolitan area is the old town, whose history dates back to the seventh century when the peninsula was occupied by the Arabs, and in the activity concentrated an important economic activity. Areas where activity is generated: Barajas airport exchangers or economic centers as AZCA.





RIVERFRONT URBANISM<sup>12</sup>

1.



THE IDEA IS TO PROVIDE FLOATING SURFACES ALONG THE RIVER WHICH ARE CONNECTED TO EACH OTHERS BY ELECTRICITY PRODUCING WALKING AND BICYCLE PATHS (FOOT STEP POWER GENERATOR SYSTEM). THERE ARE DIFFERENT FUNCTIONS AND OBJECTS PLACED ON EACH UNIT. THE WHOLE PROJECT PRODUCES ITS OWN NECESSARY ELECTRICITY WHILE PEOPLE ARE ENJOYING WALKING ON THE RIVER.



-WiFi SPOT



-RECYCLING CANS

2.

COLFOST ISLAND

"WE SHUD TRUCKS LITTIIOUS OI LIITS tVRY YIAR, CRtATIUG TRALIIC, UOIS: FOUtUIOU, AUD GRtUHOUSt GAS tLISSIOUS, At OI THIS SO THt OUR WASTt CAU Bt tAUDItttt, WHtRt IT THtU ROTS AUD CRtAtS tVtU LORt GRtUHOUSt GAS" THt FROFOSt: IS IOR KttFIUG THt TRASH—SOLt OI IT, At tLAST—CtOSTR TO THt CITY. TRUCKS WOUtD FICK UP THt ORGAUIC WASTt, JUST AS THtY DO UORLA: TRASH, BUT RATHr THAU HAUIUG IT OUT TO tAUDItttt THtY WOUtD DtFOSIT IT



THIS HUGt UItWORK OI ARTIItICIAL IStAUDS WOUtD TAKt OVRtR At tLAST 30 FtRCtUT OI THt CITY'S GARBAGt. WHtU THt WASTt ARRIVtS At THt IStAUD It'S FUSHtD THROUGH THt StAUDtARD StAGtS OI COLFOStIUG, At BUT At AHUGt SCAIt, AUD FUt BACKIUtO THt WORLd AS UUtRIItUt ~RICH SOIt. THt UFFtRt tVt OI THtSt IStAUDS WOUtD Bt OCCUFItd BY FUBtIC FARKtAUD, SOLt IS ACRtS IOR tACH SItt, DRAWIUG THt CITY OUT OUtO THt WAtRtR AUD IUCRtASIUG THt CITY'S GRtttU SFACtS tFOU:UtIAtttY. CAU ASO FROVIDt AGRtAt WAtKIUG FATH At AROUUD THt IStAUD, WITH GRtAt tIHTIUG tIItt AtUIGT.



~UFFtR FART WHtRt YOU CAU DO GAR DtUIUG



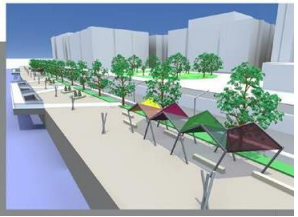
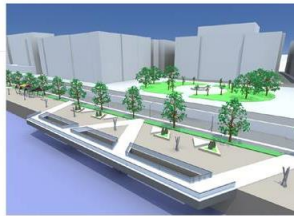
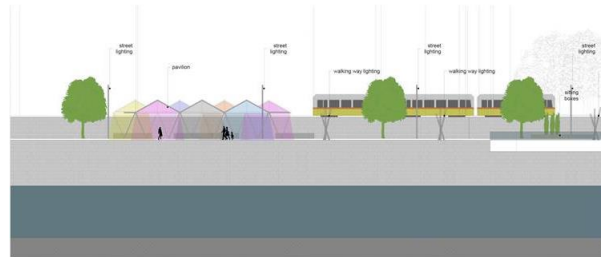
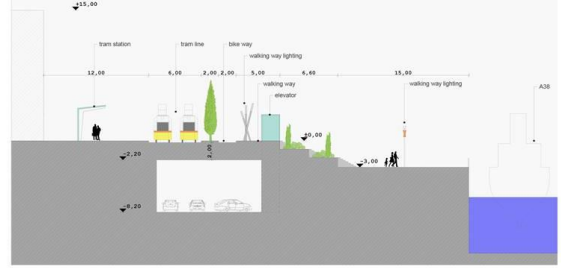
~tOWtR FART TRASH Dttt~ VIRY AUD LAKIUG RICH SOIt



~WAtKIUG FATH AROUUD THt IStAUD

<sup>12</sup> Sara Aliakbari – Farshid Azari – Omar Alwani – Manar Shashaty





7.



CITIES OF THE WORLD  
BME 2015-2016



**LONDON'S FLOATING BIKELIFE**  
THE TRAILS DESIGNER WOULD NOT FORGIVE LEFTS CHOICE TO THE RIVER SIDE  
FROM THE BATTERSEA TO CANARY WHARF DISTRICTS OF THE LONDON METRO-  
POLITAN AREA AND LAID OUT WITH THE TRAM CYCLE, ACCORDING TO A  
PROM BILLY ABOUT THE PROJECT 190L THE DESIGNERS BUILT IT THE RIVER  
ENTIREWAY CONSIDERABLE IT WILL GO EAST TO THE NEW LONDON BRIDGE  
STATION THAT WILL USE THE PATENT AND USE A COLLABORATION OF SOURCES TO  
MAKE THE RIVER BUS-TOURIST.

**FLUATING HOTEL CONCEPT**  
FLUATING HOTEL, CREATED BY HERMAN MOUTOUCOS AND A WHITE, IS THE ANSWER.  
THE HOTEL, WHICH IS CALLED WOOD THE 2013 LONDONIUM, TACTIC DESIGN  
ARCHITECTS, SHOWS VISITORS TO CHECK INTO THEIR OWN PERSONAL CATALANIAN ANNO-  
UNIST HOTEL, WHICH CAN BE DETACHABLE FROM THE FLUATING HOTEL AND BUILT FROM  
LAKES THE RIVER BUS-TOURIST.

MARK ALBRECHT

FABRIZIO ARZUFFI

DAVID ALBERT

MARK ALBRECHT