

ARCH 8903 Final Project
Definition, Role and Future of
Urban Design

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Territory of Investigation: Architecture+Urbanism
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Abstract

The concept of city design is often very uncertain and hard to define because it involves a great deal of factors such as behaviors, mentality, and social hierarchy. Understanding the definition of urban design helps to understand its mechanism. It can be divided into two categories. The first kind of urban design is the guideline to control and guide the urban form. Another kind of urban design is to integrate the existing urban environment through large scale project, and it can guide future development in this area. It could be called "guiding" and "feasible" urban design. What are the pros and cons of both approaches? A feasible urban design is more likely to have a positive impact in a direct and effective way. A guiding urban design works much better in the long term.

Further, as a variable concept, urban design will constantly change, integrate with other disciplines and even fade away with the development of science.

Table of Contents

1. A+U: Architecture of the Thoroughfare

ARCH 7111: Design A

Instructor: Nahyun Hwang & David Eugin Moon

2. Principle of Site Plan and Urban Design

CRP 5820

Lecturer: Prof. Thomas J. Campanella

3. The Anthropocene Style

Option Studio

Instructor: Philippe Rahm & Sarosh Anklesaria

4. Antifragile Housing Neo-Modular Systems

Arch 6605-106

Instructor: Andreas Tjeldflaat

1.A+U: Architecture of the Thoroughfare

ARCH 7111: Design A

Instructor: Nahyun Hwang & David Eugin Moon

If you try to define the word “urban design”, it is likely to waste a lot of effort and is difficult to figure out. Urban design begins with the visual quality that explores urban forms, and now the elements of urban design have become more and more complex. Perhaps it is because of the flexibility of the concept that makes it adapt to different phenomena of the city.

The study of this place helps me understand that there are more factors that are influencing the form of this city. All of these elusive urban phenomena are formed by the behaviors, mentality, social hierarchy of people in different historical periods. Therefore, social politics, economy, and culture present diversified urban forms. ¹Although urban development has a certain common law in history, there is no constant answer to urban design.



Elite: Handsome But Cold

1

From late 19th century, American and foreign immigrants flooded in New York City. The New York and Harlem Railroad began to increase the commercial opportunities for the northern areas of New York City. As the commercial areas spreads, the Upper East Side had become the prime residential space for middle class people working in downtown by 1890s. In early 1900s, the development expanded northward with more elegant and spacious residences, and aiming for wealthier individuals. To promote the quality of life, developers also built new schools, churches, social clubs, museums and etc. The Upper East Side then became the place where only the wealthiest in the nation can afford.

1185 Park Avenue/ 93rd and 94th streets
Carnegie Hill, New York City
1928-29
Schwartz&Gross
Streetseasy.com

Fig. 1. Caitlin Zhang, Analysis of Park Avenue 93rd st to 94th st



Salsa: Chaotic But Fun!

2

East Harlem welcomed a wave of Puerto Rican emigrants in 1920s. The residential area nowadays was rural for the most of the 19th century. When the Dutch arrived in the south part of the island, they left the north part for Indians. In the early 1800s, the population expanded as more immigrants moving into New York and started buying and building. The rural area then became suburbs for immigrants and emigrants to find a ground and chase their American Dreams. The neighborhood attracts some Irish, Italian, and German immigrants from the lower east side as the transportation system improved and the establishment of public housing. The East Harlem became a vivid neighborhood with diversity.

97th and Park Avenue
East Harlem, New York City

Fig. 2. Caitlin Zhang, Analysis of Park Avenue 97th st



Segments of Different Characteristics

3

Our study area of Park Avenue is made up of three segments- Blocks between east 81 St and 86 St, from 86 St to 96 St and blocks from 96 St to 100 St. The Carnegie Hill district which is confined by east 86 St, east 96 St, 3rd avenue and 5th avenue is a significantly prestigious residential area where the most wealthy people live. So most of the historically refined buildings are associated with those blocks. Also, as there is a limited height for the buildings with some inner private gardens, the living condition is far better than that of the upper district over 96 St where there are a number of high-rise public housings. But the area from 81 St to 86 St have some similarity with the Carnegie Hill.

The East 81 St to 100 St,
Park Avenue, New York City
Openstreet Map & Grasshopper Elk

Fig. 3. Guoyu Wang, Analysis of Park Avenue 81st st to 100th st



Boundaries and Isolation

4

The topographic transformation causing railway tracks to run from underneath the ground to up the ground is a very important factor determining the relationship between different parts of site. In the luxurious area- the lower region, people can easily pass through the Park Avenue from east to west or west to east as the tracks are underground and there are a series of green belts on the top of them. The Community is continuous and connected in a natural way. However, in the upper public housing areas, the tracks come out of the ground as the change of the topography, creating boundaries on both side of the railway. Thus, the visible tracks make it difficult for people to cross the street from the east-west direction.

The Intersection Area
Park Avenue, New York City
Mapbox website

Fig. 4. Guoyu Wang, Analysis of Park Avenue



Contrast of Different Aspects

5

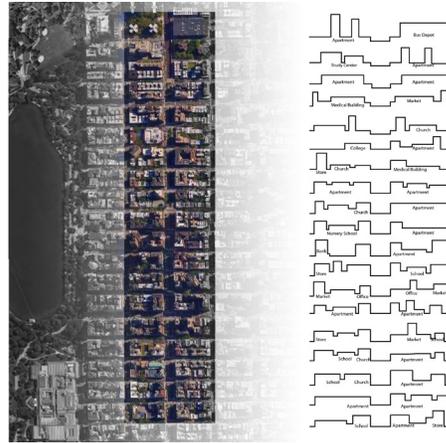
These mapping images above show the difference of two areas within the segment of Park Avenue from 81 St to 100 St in terms of different respects. In addition to the concentration of historical and limited height buildings in the lower area, especially the Carnegie Hill, a number of mixed used, commercial facilities and private green spaces are also mostly located in the rich people's area. However, almost all the fresh food store space and farm markets are in the upper public housing area. How to take into consideration of the dramatic contrast of the two become important in the later proposal phase.

The East 81 St to 100 St
Location (if applicable)
Park Avenue, New York City
OASIS Map

Guoyu Wang

Historical Boundary
Limited Height Area
Mixed-used Space
Commerce
Green space
Fresh Food Store

Fig. 5. Guoyu Wang, Analysis of Park Avenue 81st st to 100th st



Comparison of Public Service

6

"While the income disparity has historically been large in Manhattan, it widened to a greater degree in the 1980's than in any other county with 50,000 or more people." -The New York Times Archives
Today, the disparity is worse because of the decline of the quality of civic life." The neighborhood of Carnegie Hill is characterized by chic shops, elegant town houses and converted mansions, museums, private schools and apartment buildings manned by white-gloved doormen. Upper side of 98th street, however, is characterized by low cost apartment, bus depot and some public facilities.

Comparison of Public Service
81st street-100th street Site Plan
Google Map

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Fig. 6. Junda Liu, Skyline of Park Avenue



The Poor and The Rich

7

Three miles makes a lot of difference.
It's enough space to stay away from the poor.
In Bradhurst, 3 of every 4 people live below the poverty level, but fewer than 1 in 100 in Carnegie Hill.

The Poor and The Rich
98th Street 93rd Street Park Avenue NYC
2018

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Fig. 7. Junda Liu, Analysis of Park Avenue 93rd st to 98th st



North Watershed South

8

Extremes often exist in close proximity, as the wide disparity in Manhattan suggests. While income disparities are common in virtually every society, demographic analysts said they were struck by the dimensions, both within the city and in comparison with the surrounding region. "The gap in Manhattan is even greater than that in Guatemala, as it is said in 1980's newspaper."

There is not a certain result of being rich or poor. Some of these average income group may have graduated into higher income categories, one consequence of their success was to drive the top and bottom groups further apart.

North Watershed South
97th Street Park Avenue NYC
2018

Junda Liu

Fig. 8. Junda Liu, Analysis of Park Avenue 97th st

American scholar and famous urban designer, Jonathan Barnett, has a famous saying "Designing cities without designing buildings."²

The two major tasks of urban design are the integration of urban system and the shaping of urban characteristics. If only he follows the principle of "economically reasonable" to design road network first? How is it possible to produce a distinctive urban form like Renzo piano's Potsdamer Platz in Berlin? Piano's design successfully regenerates the original Potsdamer avenue and combines it with squares and buildings at the end of the road, solving the problem that the end of the road directly faces the back of the national library in west Berlin during the partition of east and west Berlin. In this way, the new urban design successfully stitched together the fragmented city created by the Berlin wall.

In this case, the initial point is also to stitch this place and eliminate the barrier of social hierarchy here by finding a common point, children's playground. By creating different themes of playground, it might be able to attract children from different social hierarchies' family and build a relationship among these children, and thus eliminating this barrier in the next generation.

Urban design can be divided into three levels. 1. The project which has a specific location with a owner and completion date; 2. The system design; 3. The urban or regional design.

Urban design is the level of design that studies the relationship between various important elements in the urban structure. Therefore, it may be argued that the key to understanding urban design lies in two aspects. First, the purpose of urban design is to shape the urban form, and the result can be perceived by people. Second, the research object of urban design is the elements involved in urban structure, all of which are the basis for the final form.

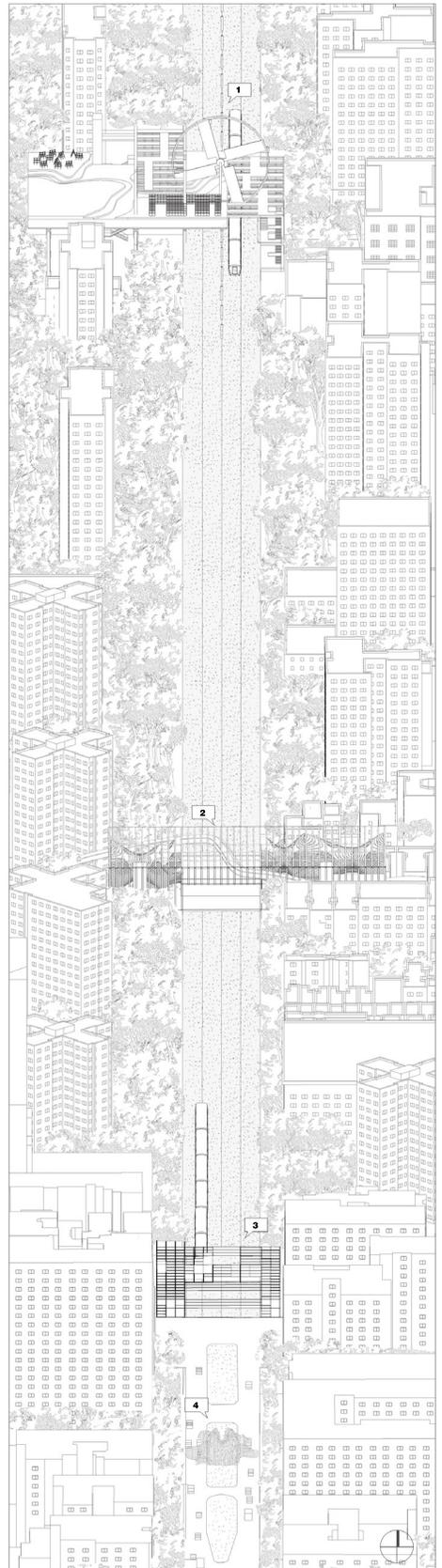
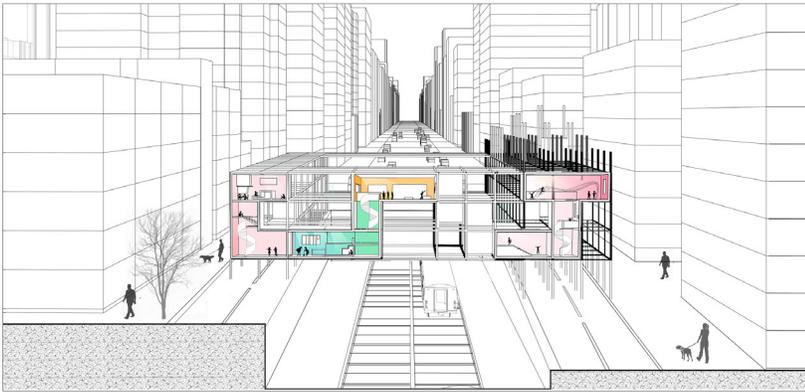
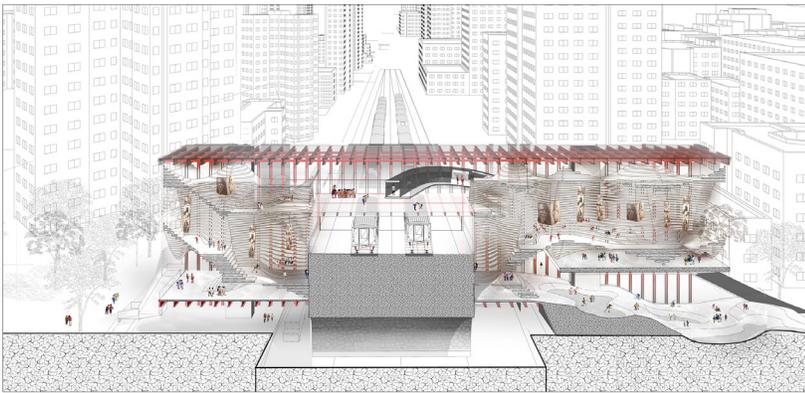
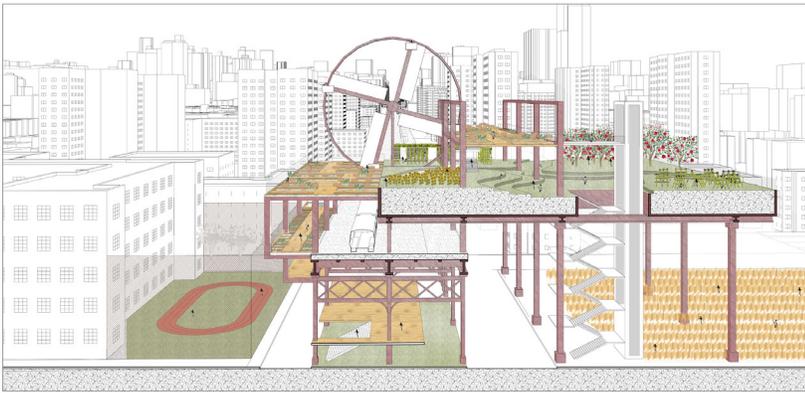


Fig. 9. Xiaotong Wang, Guoyu Wang, Caitlin Zhang, Junda Liu, Section and Axon of Park Avenue

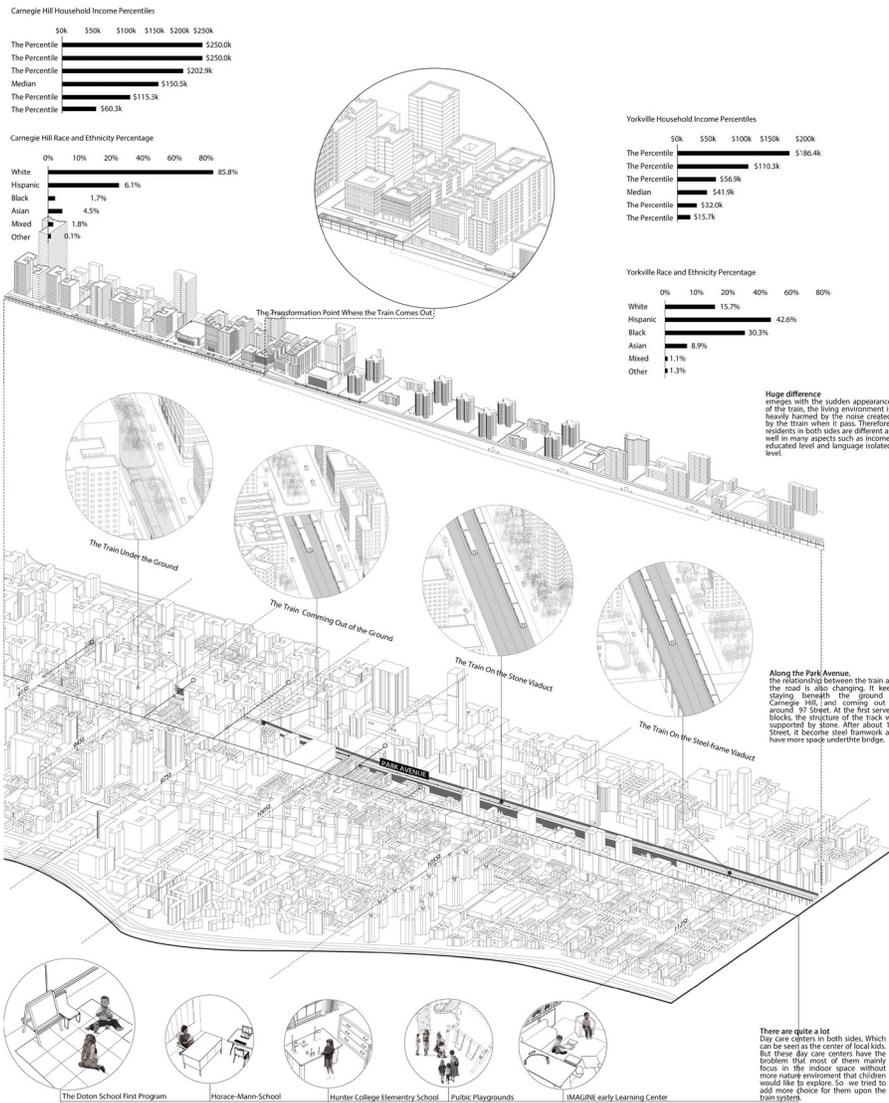


Fig. 10. Xiaotong Wang, Guoyu Wang, Caitlin Zhang, Junda Liu, Income and Behavior Diagram

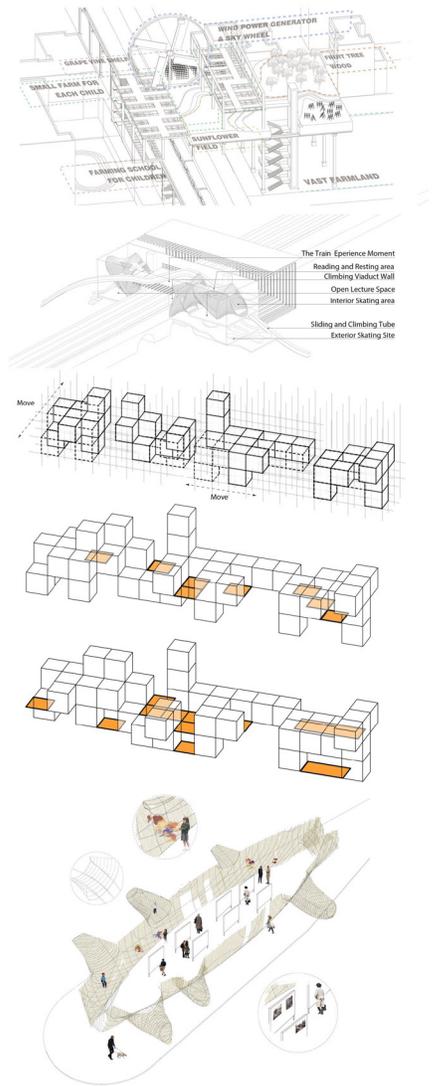


Fig. 11. Junda Liu, Axon of Projects

2.Principle of Site Plan and Urban Design

CRP 5820

Lecturer: Prof. Thomas J. Campanella

In some north American cities, such examples are often large urban complexes associated with larger urban developments, completed by specific real estate developers and architects.

The role of urban design exists not only as a guideline but also as a project. Moreover, the completion of an excellent project often plays a guiding role for the future development of nearby plots. For example, as a model of urban design, East Market in Philadelphia belongs to the first level mentioned above.

The most important part of the project we see now is a large urban complex spanning more than two blocks. The design integrates the aboveground and underground parts, and the pedestrian system on the ground floor is separated from the underground and aboveground floors. As a complex, the commercial part is linked to public transport facilities such as the metro and greyhound station.

The court of appeal in Vancouver also through a large building complex across a block, integrates the relationship between pedestrians and pedestrians through different elevation platforms, sunken squares and their three-dimensional greening, and integrates the greening into the natural environment of Vancouver.

In the 1950s, the famous Fortworth's urban design is mainly through a single municipal environment design. The axis connects the center of the city, north and south avenue, and the ground spreads completely red brick through the ground color of unified urban vision system. From the perspective of operation, the above are all single design projects or extensions of single design. Due to the architects' urban consciousness, single design is integrated into a comprehensive urban system In order to make the original less complete and even more chaotic, fragmented urban environment system to integrate.



Fig. 11. Market East, Philadelphia, May 16, 2017
<https://philly.curbed.com/2017/5/16/15646172/wawa-store-east-market-philadelphia>



Fig. 12. Market East, Philadelphia, May 16, 2017
<https://philly.curbed.com/2017/5/16/15646172/wawa-store-east-market-philadelphia>



Fig. 13. Law Courts, Vancouver
<https://www.flickr.com/photos/jmabel/4963110978>



Fig. 14. Law Courts, Vancouver
<https://www.flickr.com/photos/jmabel/4963110978>



Fig. 15. Law Courts, Vancouver
<https://www.flickr.com/photos/jmabel/4963110978>

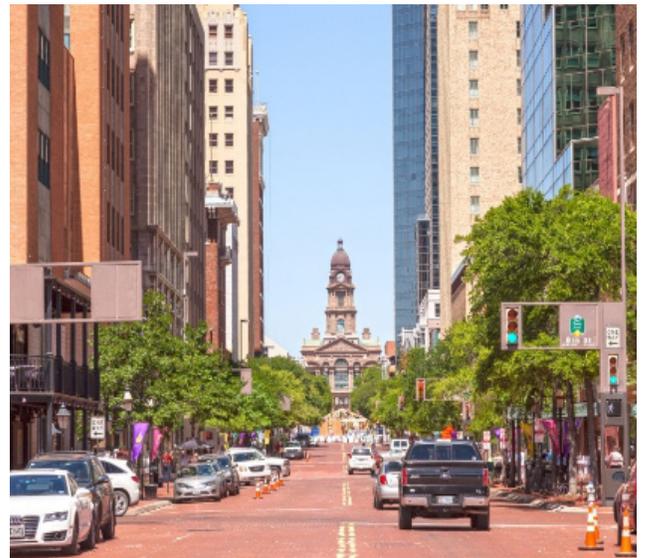


Fig. 16. Fort Worth, Texas
<https://flygv.com/jet-charters-from-fort-worth-tx>

This integration can be visual, behavioral, municipal, urban ecosystem, etc. Architects often occupy a quite dominant position among them. If the urban design in our general concept is often used to guide single architectural design, landscape design or municipal design in the upper level of "secondary design", then such urban design can be called a direct "feasible" urban design. A feasible urban design is more likely to have a positive impact in a direct and effective way. A guiding urban design works much better in the long term.

3.The Anthropocene Style

Option Studio

Instructor: Philippe Rahm & Sarosh Anklesaria

From the perspective of different disciplines, urban design can also be clarified. In practice, the division of work between urban planning and urban design is often confused. Therefore, it is particularly necessary to clearly delineate the lines of responsibility. In general, urban planning is deciding what to do. Urban design is deciding how to do.

The distribution of contemporary disciplines is network interwoven. Some researches are overlapping and interdisciplinary. As the social division of labor increasingly refined, each discipline also has its own emphasis. It is necessary to interweave each subject on the basis of specialization. In Europe, especially in France, it is more common to use the word "urbanism" to cover urban planning, urban design and the corresponding urban studies. Anthropocene While the natural environment becomes a social problem, the study of a natural phenomenon helps to analyze urban texture in a new way.

Thermal Radiation Affordance Square

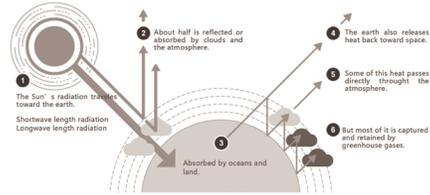
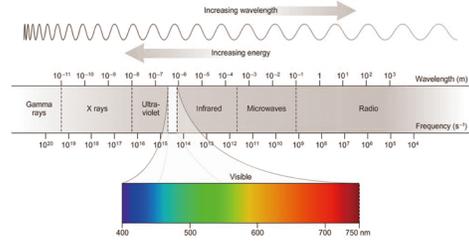
Thermal Radiation

Thermal radiation is electromagnetic radiation generated by the thermal motion of particles in matter. All matter with a temperature greater than absolute zero emits thermal radiation. Particle motion results in charge-acceleration or dipole oscillation which produces electromagnetic radiation.

Planck's law describes the spectrum of blackbody radiation, which depends solely on the object's temperature. Wien's displacement law determines the most likely frequency of the emitted radiation, and the Stefan-Boltzmann law gives the radiant intensity. Thermal radiation is also one of the fundamental mechanisms of heat transfer.

Project Concept

The project concept is inspired by the planetary phenomenon, greenhouse effect. The solar radiation consists of two different forms of radiation. One is the shortwave length radiation, the other one is longwave length radiation. That longwave length radiation is not as penetrative as shortwave length is causes the trapping of the sun's warmth in a planet's lower atmosphere. And utilization of two different forms of energy may create a more comfortable public space with more possibilities.



Longwave length Radiation

Materiality

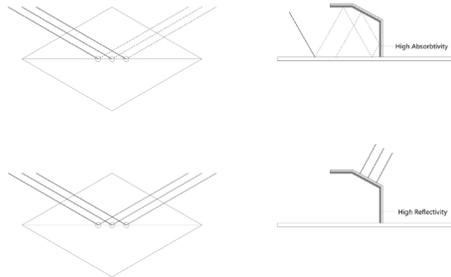
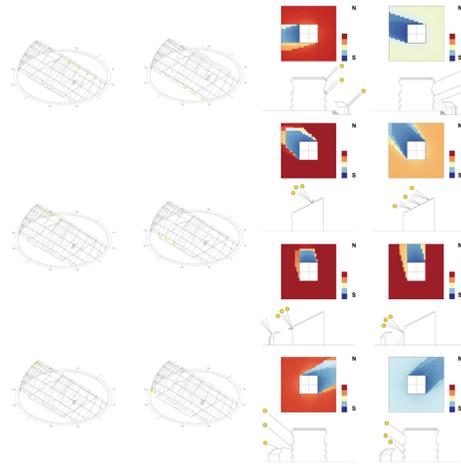
	Materials	Average reflective values
1	Mirror	135.3
2	Aluminum	46.3
3	Silver photo reflector	140.3
4	White plastic	41.3
5	White ceramic tile	38.5
6	White foam board	65
7	Plywood	43.3
8	Black fabric	15

Shortwave length Radiation

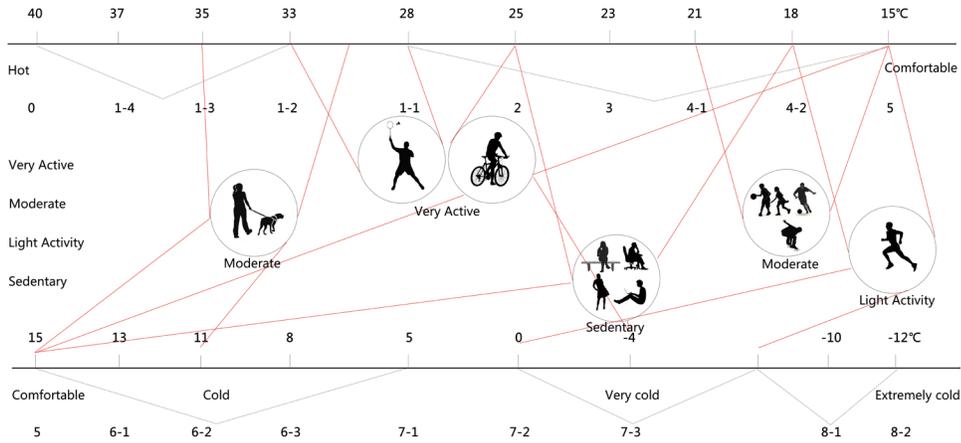
Color

Reflectivity	R	G	B
100%	255	255	255
90%	230	230	230
82%	210	210	210
67%	170	170	170
47%	120	120	120
24%	60	60	60
12%	30	30	30
0%	0	0	0

Planetary Phenomenon



Sun Angle Facade Analysis



Form of Space

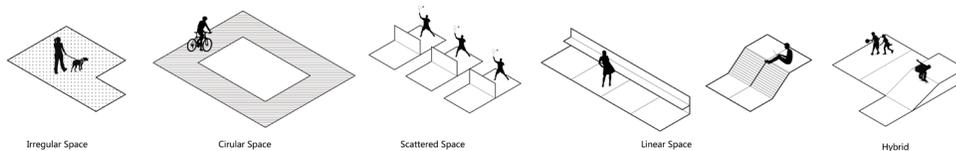


Fig. 17. Analysis of Phenomenon

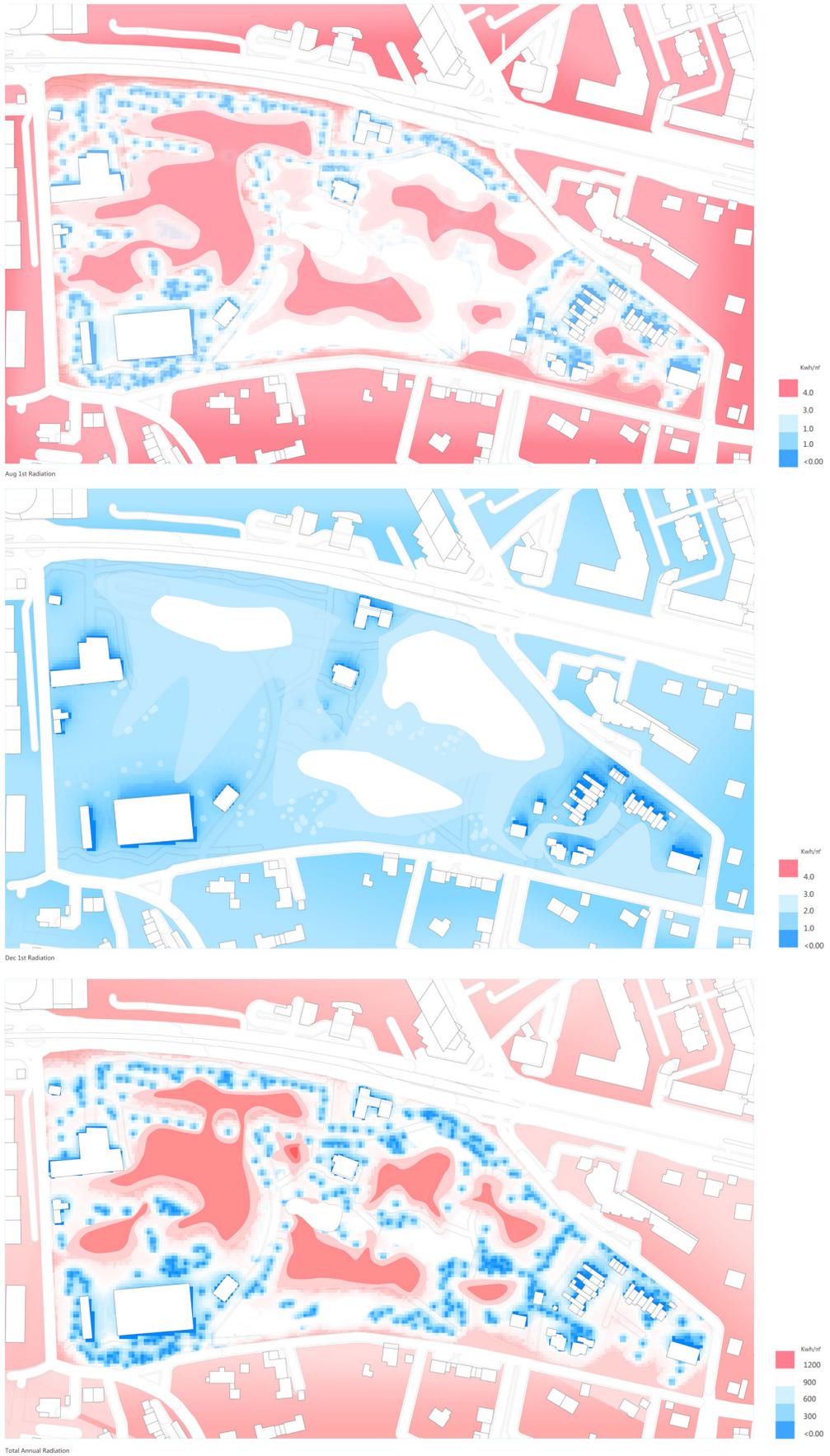


Fig. 18. Radiation Simulation of Site

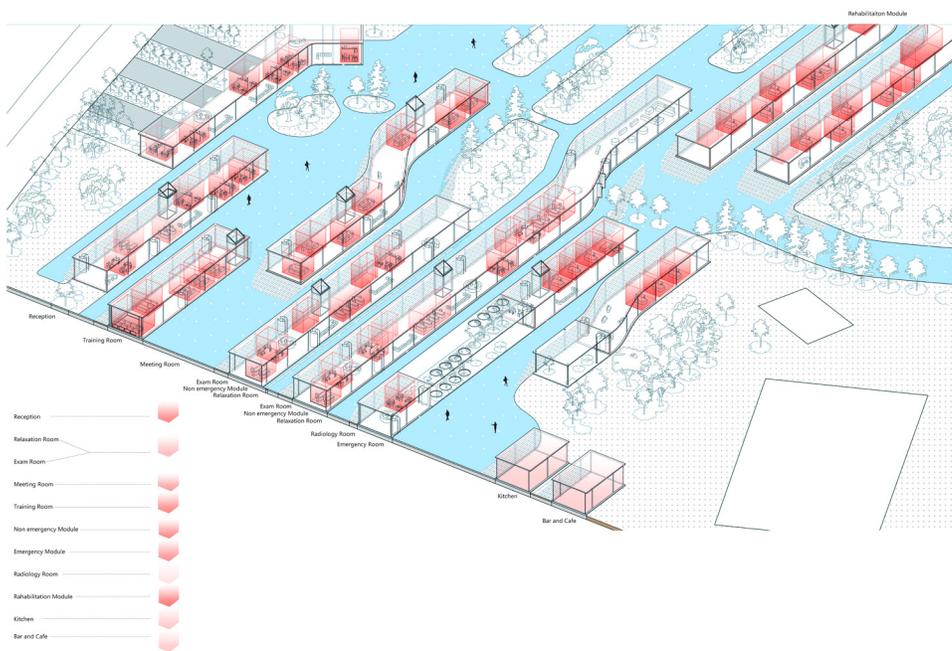
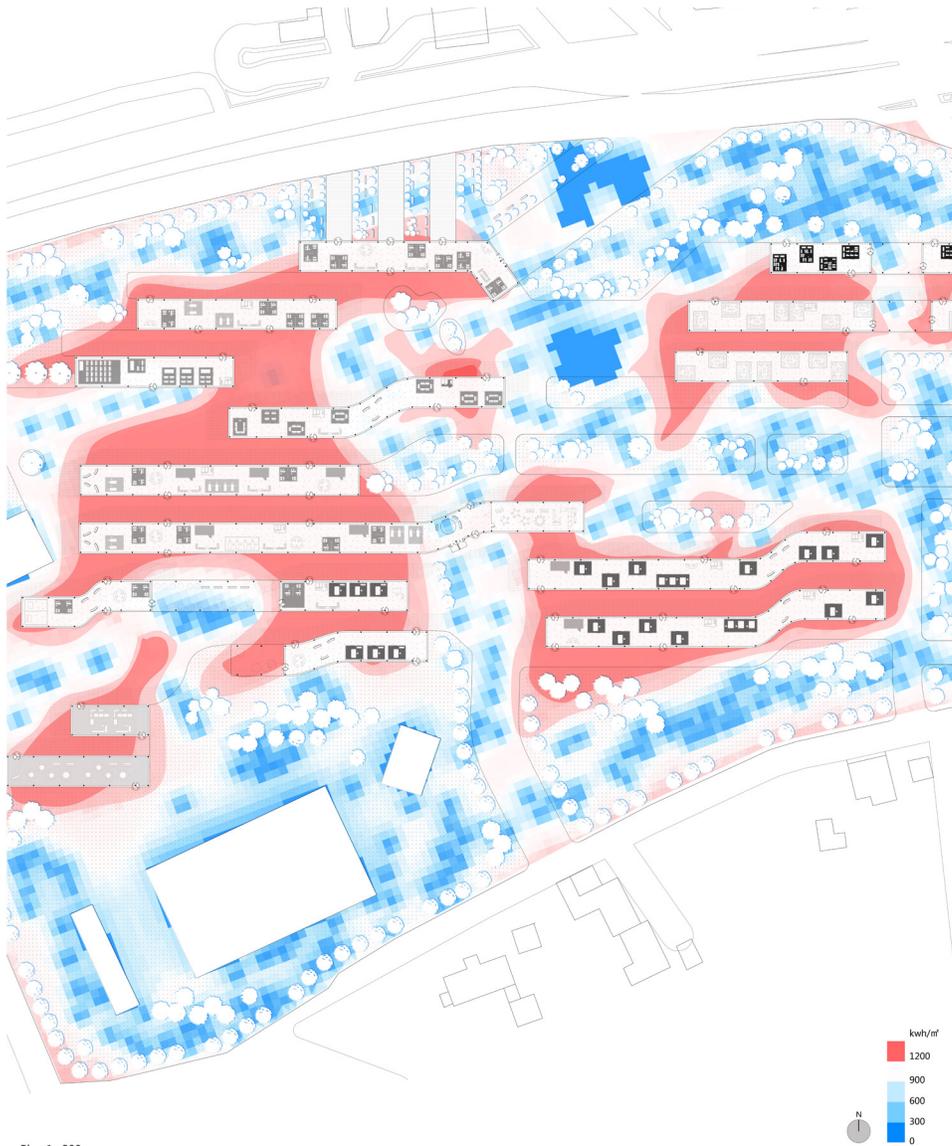


Fig. 19. Partial Plan and Axon

4. The Antifragile Housing

Arch 6605-106

Instructor: Andreas Tjeldflaat

Does the definition and classification of urban design described above apply to all regions and historical periods? If not, what are the future trends? As a concept and method, urban design will not exist forever, but will eventually die out.

Urban design and development will gradually give way to personalized, regional, and ecological guidance, and adapt to the rapid development of science and technology. The method of forming a good city must be adjusted to different regions, different cultures, and different human behaviors.³

With the future as the background and the theme of transportation, The elective course Antifragile is thinking about how to influence the possible future life style with modular architecture, thus influencing the city. In this project, each household is taken as a mobile unit, which evolves into a vertical and horizontal mode of transportation, to enhance the accessibility of future city. Certainly, there are more possibilities of imagining future city. Cities are always places of opportunity and challenge. The building of cities is one of man's greatest achievements.

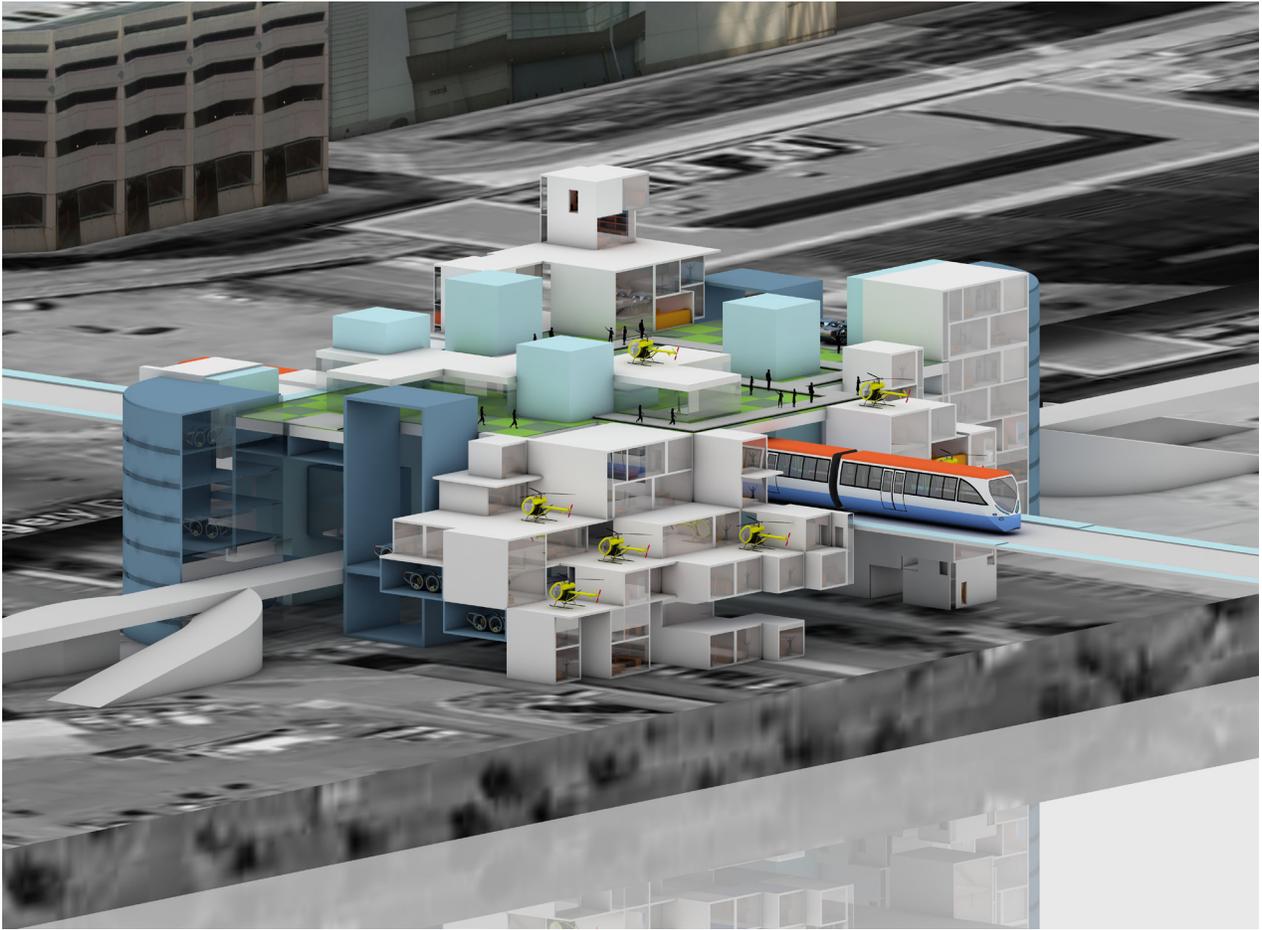


Fig. 21. Perspective Drawing of Modular System

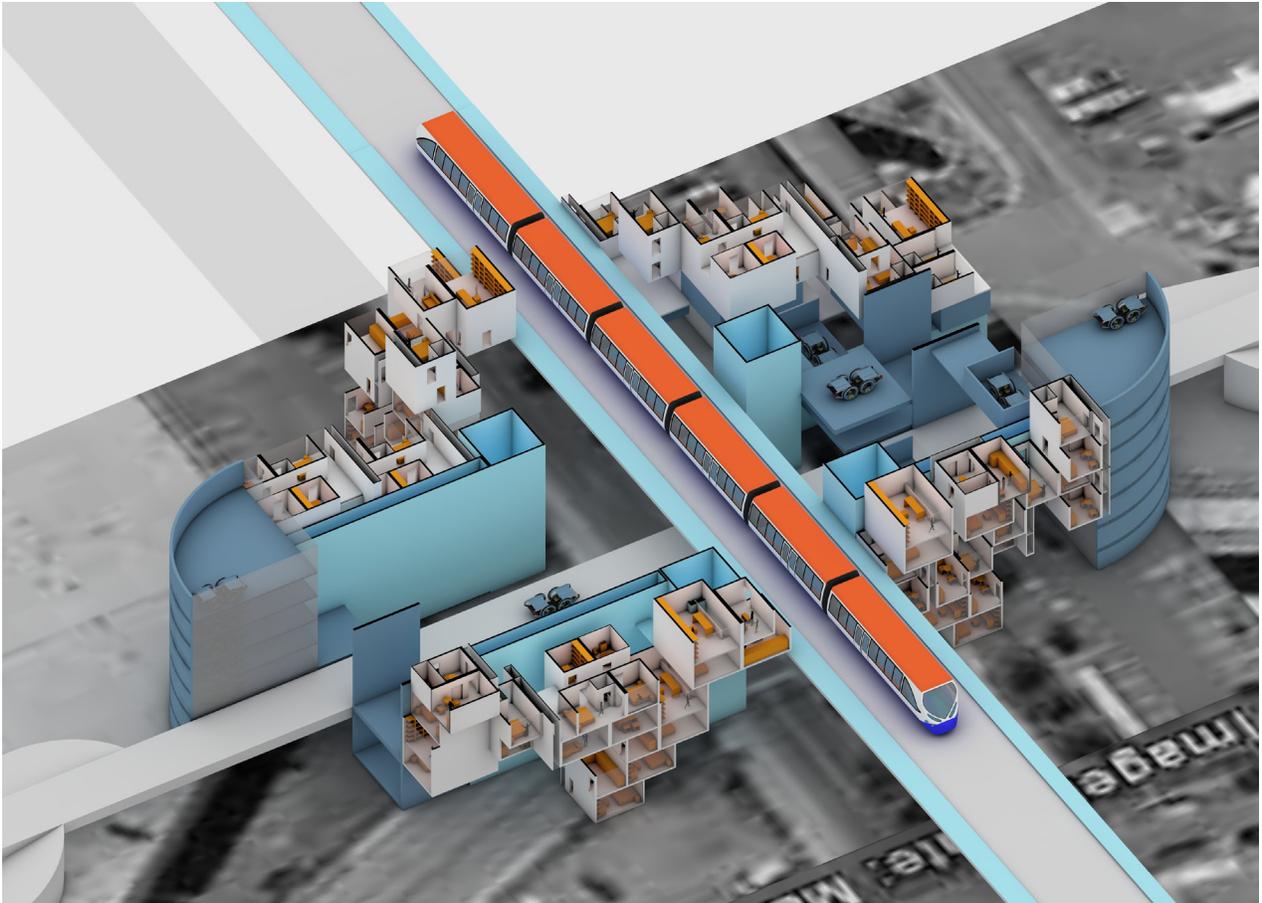


Fig. 22. Axon Drawing of Modular System

Conclusion

The background of contemporary urban design is that the subdivision of disciplines is increasingly intensive; The emergence of interdiscipline; The abandonment of traditional urban structures; Excessive collage of urban fabric; The deep psychological needs of human beings promote the integration of urban forms while preserving diversity. After entering the era of globalization, "Mile City" and "SuperCity" are appearing. The change of people's living state triggered the inevitable changes of urban behavior and morphology.

Cities with rapid urbanization urgently need to study how to avoid negative effects. Being individualized, localized, ecological becomes an new orientation and it can adapt to the rapid development of science and technology. Though the factor of time keeps changing, the method to form a good city must be determined by different regions, different cultures, and different human desires.

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