NEXT FORM OF HUMAN SETTLEMENT

#1

Technology's EYE × 技术史之眼

Communication Technology
Samuel Morse
1837,1888

Make wireless communication possible.
使无线通讯成为了可能。

Power generation
Edison
1880,1892

Make electric current the city's infrastructure.
使电流成为城市的基础设施。

Assembly line
HenryFord
1913,1930

Greatly accelerated industrial production.
极大的加速了工业大生产。

Railway Transportation
George Stephenson
1814,1956

International, inter-city transport costs have been significantly reduced.
国际、城际的运输成本得到大幅降低。

E-Commerce
Alibaba; Jingdong
1996,2014

E-commerce has greatly impacted the city's retail format.
电子商务极大的冲击了城市的零售业态。

Reinforced Concrete
Joseph Monier
1849,1900

Reinforced concrete technology makes the construction of tall buildings and long-span bridges possible, and the history of human architecture has entered a new era.
钢筋混凝土技术使高层建筑与大跨度桥梁的建造成为可能，人类建筑史进入新纪元。

Lift / Elevator
Elisha Graves Otis
1857,1906

Elevator technology makes skyscrapers possible, skyscrapers become a landmark of the big cities of the 20th century.
电梯技术让摩天大楼成为可能。摩天大楼成为20世纪大城市的标志物。

Engine vehicle
Karl Friedrich Benz
1885,1903

The widespread adoption of cars has laid the road network as the basic skeleton in urban planning.
汽车的大面积普及奠定了路网作为城市规划中的基本骨架

Aeroplane
Wright Brothers
1903,1960

Reduce people's reliance on local resources, and greatly advance the process of global industrialization.
降低了人们对本土资源的依赖，大大推进了全球工业化的进程。

Internet Technology
Microsoft
1975,1994

Internet instant connection of all information.
互联网即时连接一切信息。

Sharing ec
AirBnB;Uber;We
2009,2016

Sharing technology m lized, releasing a large 共享技术使城市资源 资源。

Power generation and electricity transport
Edison,1892

VR/AR
Palmer Luckey;Ocu
Microsoft,2022

Lift / Elevator
Eiffel Tower,1889

Highway System
Germany, United States, etc.,1954

Reinforced Concrete
William E. Ward House,1875

Pittsburgh, 1920

Power generation and electricity transport technology
Edison, 1892

Internet Technology
Microsoft-1994

EUROPE, 1800

NEW YORK CITY, 1970

MAERSK LINE

NEW YORK CITY, 2000

Through the reviewing of the technological invention history that affects the form of human settlement, we make insight into how the upcoming new technologies will dramatically affect the future human settlement form. Thus, as in the past, people from the rural areas to the urban habitat will enter a new form of living environment in the near future. In our scheme, this paper discusses the new form of living module, functional stream, life circle, new ideas, such as ecological human settlements to express a symbiotic relationship in the future city/Internet, and a new living environment under the new smart technology and infrastructure form.

building doctrine and techinics improving

skyscrapper; road system

urban-expanding / mega-cities

#1 form of human settlement
rural
(-1925)

#2 form of human settlement
urban
(1925-2030)

urb

1679 1754 1792 1817 1836 1852 1865 1876 1886 1895 1903 1910 1917 1923 1929 1934 1939 1944 1948 1952 1956 1960 1964 1968 1971 1974 1977 1980 1983 1986 1989 1992 1995 1998 2001 2003 2005 2007 2009 2011 2013

Communication Technology
Power generation and electricity transport
Reinforced Concrete
Engine vehicle
Lift / Elevator
Assembly line
Highway
Subway
Railway Transportation
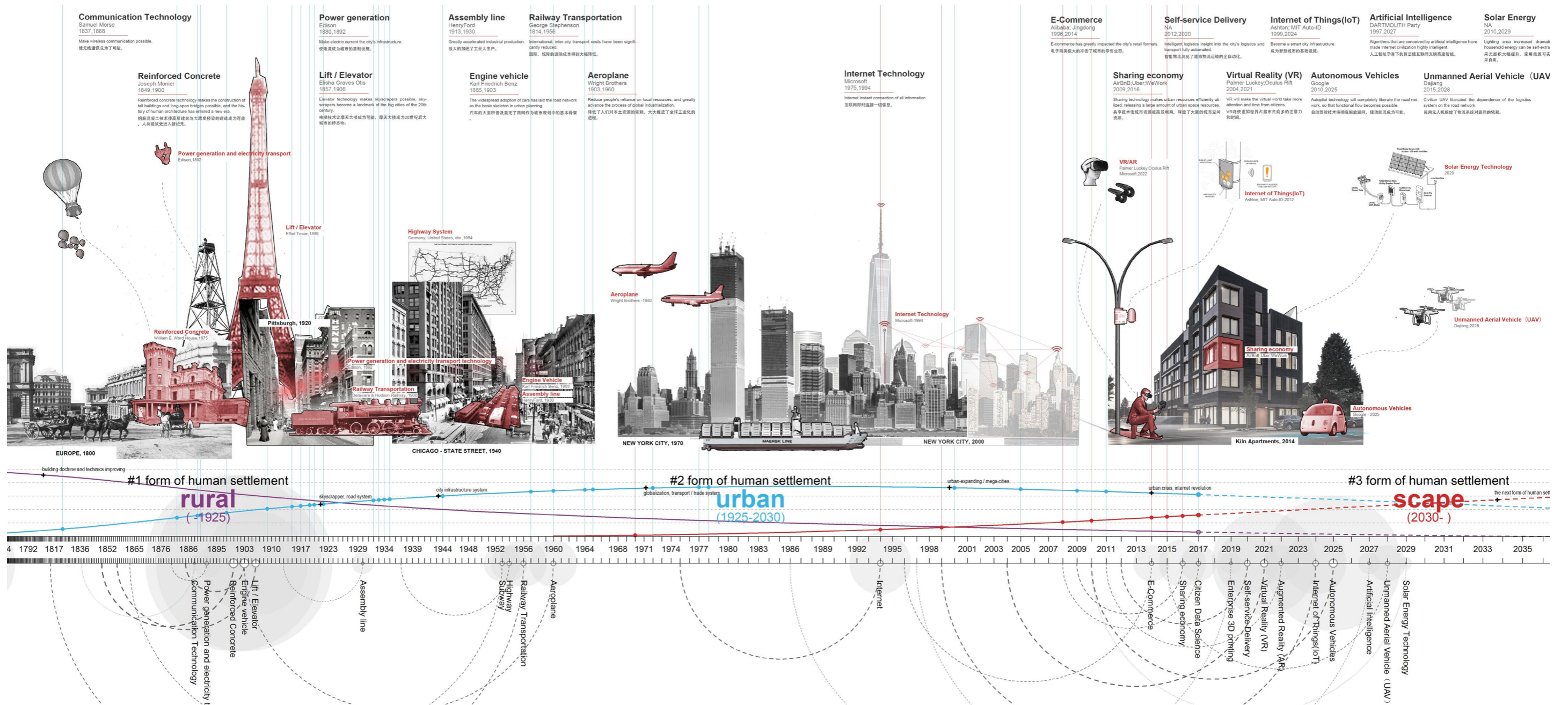Aeroplane
Internet
E-Commerce

Technology's EYE
with living form's evolution

We have sorted out all the technical inventions that have made a significant impact on human settlement since 1700s and observed the evolution of human settlement for these three centuries. We came to the conclusion that human beings have so far undergone two typical types of human settlement, respectively, rural and urban. The typical difference between the two states is the maturity of the construction technology, the use of concrete, the emergence of elevators, such as the popularity of vehicles makes the road network system, the height of the building become a major urban skeleton and urban elements. And we can foresee a series of new technologies such as autonomous vehicle, smart logistics, VR, UAVs, artificial intelligence, sharing technology and so on, which have a tremendous impact on the form of human settlement, are rapidly maturing, which has accelerated our historical progress towards the next human settlement.

我们整理出了所有 1700 年以后对人居形态影响显著的技术发明，并观察了这三百年来的人居形态的演变过程，得出了这样的结论：人类迄今经历了两种典型的人居形态，分别是农业人居（rural）和城市人居（urban），两种状态的典型区别是建造技术的成熟、混凝土的使用、电梯的出现、汽车的普及等使得路网、高度的建筑成为了主要城市骨架和城市元素。而我们能预见到无人驾驶、智能物流、VR、无人机、人工智能、共享技术等一系列对城市形态产生巨大影响的新技术正在迅速成熟起来，这加速了我们迈进下一个人居形态的历史进程。

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1998,2014
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Self-service Delivery
NA
2012,2020
Intelligent logistics insight into the city's logistics and transport fully automated.
智能物流真正了城市物流运输的全自动化。

Internet of Things(IoT)
Ashton; MIT Auto-ID
1999,2024
Become a smart city infrastructure.
成为智慧城市的基础设施。

Artificial Intelligence
DARTMOUTH Party
1997,2027
Algorithms that are conceived by artificial intelligence have made internet civilization highly intelligent.
人工智能的算法使互联网文明变得智能。

Solar Energy
NA
2010,2029
Lighting area increased dramatically, household energy can be self-extra.
采光面积大幅增加，家用能源可以实现自给自足。

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Internet Technology
Microsoft
1975,1994
Internet instant connection of all information.
互联网即时连接一切信息。

Sharing economy
AirBnB;Uber;WeWork
2009,2016
Sharing technology makes urban resources efficiently utilized, releasing a large amount of urban space resources.
共享技术令城市资源得到高效利用，释放了大量的城市空间资源。

Virtual Reality (VR)
Palmer Luckey;Oculus Rift
2004,2021
VR will make the virtual world take more attention and time from citizens.
VR将会让居民付出更多的关注度和时间于虚拟世界中。

Autonomous Vehicles
Google
2010,2025
Autopilot technology will completely liberate the road network, so that functional flow becomes possible.
自动驾驶技术将彻底解放路网，使功能流成为可能。

Unmanned Aerial Vehicle（UAV
Dajiang
2015,2028
Civilian UAV liberated the dependence of the logistics system on the road network.
民用无人机的出现了物流系统对路网的依赖。

Power generation and electricity transport
Edison,1892

Lift / Elevator
Eiffel Tower,1889

Highway System
Germany, United States, etc.,1954

Aeroplane
Wright Brothers ;1900

Internet Technology
Microsoft,1994

Reinforced Concrete
William E. Ward House,1875

Pittsburgh, 1920

Power generation and electricity transport technology
Delaware & Hudson Railway,1900

Railway Transportation
Delaware & Hudson Railway,1900

Engine Vehicle
Karl Friedrich Benz, 1900

Assembly line

VR/AR
Palmer Luckey;Oculus Rift
Microsoft,2022

Internet of Things(IoT)
Ashton; MIT Auto-ID-2012

Solar Energy Technology
2029

Unmanned Aerial Vehicle（UAV
Dajiang,2028

Sharing economy
AirBnB; Uber; WeWork

Autonomous Vehicles
Google ; 2025

EUROPE, 1800

CHICAGO - STATE STREET, 1940

NEW YORK CITY, 1970

MAERSK LINE

NEW YORK CITY, 2000

Kiln Apartments, 2014

building doctrine and technics improving

#1 form of human settlement
rural
（ -1925）

skyscrapper, road system

city infrastructure system

#2 form of human settlement
urban
(1925-2030)

globalization, transport / trade system

urban-expanding / mega-cities

urban cross, internet revolution

#3 form of human settlement
scape
(2030-)

the next form of human set

Communication Technology | Power generation and electricity | Reinforced Concrete | Engine vehicle | Lift / Elevator | Assembly line | Highway Subway | Railway Transportation | Aeroplane | Internet | E-Commerce | Sharing economy | Citizen Data Science | Enterprise 3D printing | Self-service Delivery | Virtual Reality (VR) | Augmented Reality (AR) | Internet of Things(IoT) | Autonomous Vehicles | Artificial Intelligence | Unmanned Aerial Vehicle (UAV) | Solar Energy Technology

4 1792 1817 1836 1852 1865 1876 1886 1895 1903 1910 1917 1923 1929 1934 1939 1944 1948 1952 1956 1960 1964 1968 1971 1974 1977 1980 1983 1986 1989 1992 1995 1998 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021 2023 2025 2027 2029 2031 2033 2035
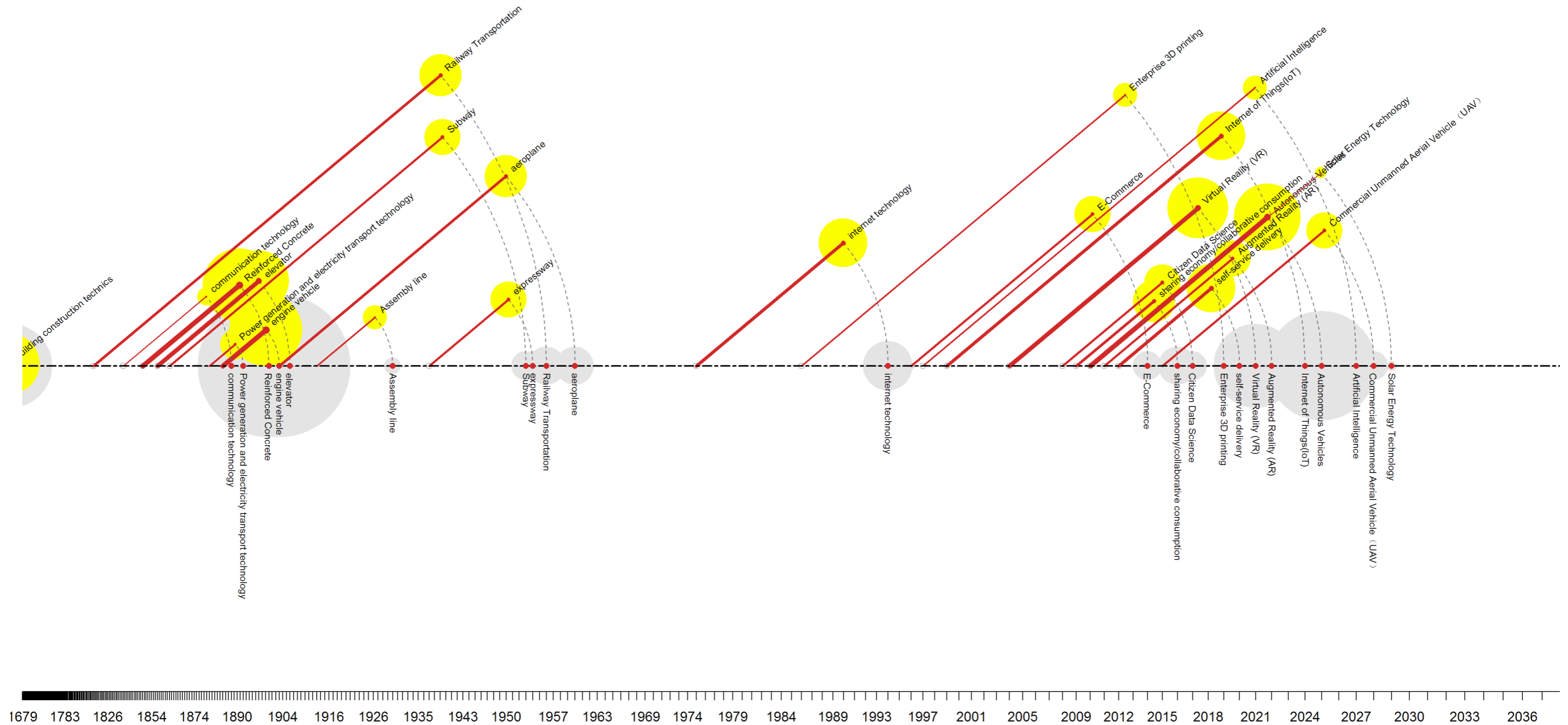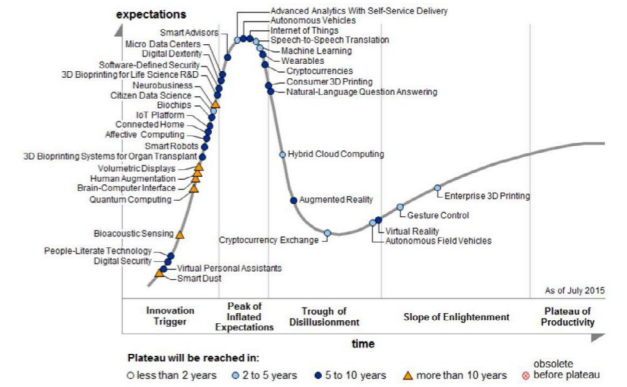
Technology MAP
which influences form of human settlement

Technical MAP affecting human settlement

According to the Gartner growth curve, technology will go through four stages, media exposure, citing bottleneck, popularization of technology. We have arranged the invention which deeply influence the morphology of the habitat for 300 years, and mark their invention time and mature period of popularization, making this piece of "living form the technology of map".

影响人居形态的技术地图

根据 Gartner 的技术生长曲线，技术会经历技术发明、媒体过分曝光、引用遇到瓶颈、技术成熟应用普及四个阶段。我们整理了三百年以来深刻影响人居形态的技术发明，并标记了他们的发明时间和成熟普及时间，制作成了这张"影响人居形态的技术地图"。

| 1679 | 1783 | 1826 | 1854 | 1874 | 1890 | 1904 | 1916 | 1926 | 1935 | 1943 | 1950 | 1957 | 1963 | 1969 | 1974 | 1979 | 1984 | 1989 | 1993 | 1997 | 2001 | 2005 | 2009 | 2012 | 2015 | 2018 | 2021 | 2024 | 2027 | 2030 | 2033 | 2036 |

Trend of thoughts
along with different forms of human settlement

Trend of thoughts upon city has also been updated as the technology change. For example, in 1930 the city began to gather significant efficiency. In the mean time, people began to focus on the new human settlements rules (code) for the first time. Garden city, industrial city, linear city, broadacre City, gradient city are born in this era. After, in the 1950-1960s, as the basic form of human settlement is almost fixed, the trend of thoughts began to praise the victory of the city (city of victory, Edward), highly hailed skyscraper (delirious New York, Koolhaas). However, in the past few years (2010s), with the rise of the Internet revolution and the intellectual revolution, planners and citizens obviously feel that compared to the Internet, city lacks efficiency and adaptability. There began to occur negative space, retail withering, local culture civilization crisis in city. Many scholars began to focus on sustainable development, low carbon, the relationship between the city and the Internet, and even think about the future urban form--just as the theme of this competition. This somehow indicates that the urban form revolution is taking place, and the next human settlement is coming!

关于城市的思潮也一直随着技术的更新发生更替，例如在 1930 年城市的聚集开始表现出显著的效率，人们开始第一次关注城市这个新的人居形态的规则（code）应如何搭建，田园城市、工业城市、线性城市、广亩城市、光辉城市都是在这个时代孕育而生；在之后的 1950-1960 年代，城市形态基本固定，社会思潮开始出现诸如赞扬城市的胜利（城市的胜利，Edward）、为摩天楼的高度欢呼(癫狂的纽约 ,库哈斯)等思潮；然而到了近几年(2010 年代），随着互联网革命和智能革命的兴起，规划者和市民明显感受到城市相比互联网的低效和不适应性，开始出现城市的消极空间、零售业态的凋零、城市文明危机等，更多的学者开始关注可持续发展、低碳、城市和互联网的关系等，甚至像这个竞赛主题一样的对未来城市形态的思考。这预示着，城市的形态革命正在发生，下一个人居形态即将到来！

Timeline: 1679 1783 1826 1854 1874 1890 1904 1916 1926 1935 1943 1950 1957 1963 1969 1974 1979 1984 1989 1993 1997 2001 2005 2009 2012 2015 2018 2021 2024 2027 2030 2033 2036

human settlement form #1 : **rural**
human settlement form #2 : **urban**
human settlement form #3 : **SCAPE**

population(%)

#1 rural form
#2 urban form
#3 SCAPE: the next form

New Moral World — Robert Owen 1824
L'AVENIR
Phalanstère — Charles Fourier 1890
Ciudad Lineal — Arturo Soria y Mata 1882
Urban design art — Camillo Sitte 1889
Garden city movement — Ebenezer Howard 1898
Bau'haus — Staatliches Bauhaus 1919
The Foundation and Manifesto of Futurism — Filippo Tommaso Marinetti 1909
Une Cité Industrielle — Tony Garnier
The Ville Radieuse — Le Corbusier
Athens Charter — Team CIAM 1934
cities in evolution — 1915
Neighborhood Unit — Clarence Perry 1920
City Beautiful Movement — Daniel Burnham, Chicago 1909
Satellite towns — Owen 1920
Chicago school (sociology)
Broadacre City — Frank Wright 1932
a town for the motor age — Radburn in Fairlawn, New Jersery?
growth poles — François petroux 1944
Mega structures — Archigram 1960
Plug-in City — Peter Cook 1964
metabolism — Kenzo Tange 1960
The Walking City — Ron Herron 1964
planning of Brasilia — Niemeyer 1957
Advocacy Planning — Paul Davidoff
Modern Architecture dies — Rem Koolhaas
CHARTER OF MIACHU — Urban planners 1977
Delirious New York — Rem Koolhaas 1978
Eco-City — UNESCO 1970
Flows of Space — Manuel Castells 1984
smart city — IBM etc. 2010
urban identity crisis — the general public
City Bits — William J. Michael 1999
Out of Control — Kevin Kelly
Low-carbon City — WWF 2008
internet v.s. city — Rong Zhou
the Death and Life of Great American Cities — Jacobs, Jane 2005
large urban diseases of blind expansion — the General public 2008
Triumph of the City — Edward Gleaser
A Self-sufficent City — Vicente Guallart 2014
U-City — Korean government 2015
Data Augmented Design — Ying Long 2015
Silicon based City? — Rong, Zhou 2016
Sidewalk Toronto — Alphabet, Sidewalk Labs
The New Urban Crisis — Richard Florida? 2017

NEXT FORM OF HUMAN SETTLEMENT
#2

PROTOTYPE × 新规则

If mountain and river is the core code of rural settlement, the road system and infrastructure system is the core code of urban settlement. The NEW CODE that the next form of human settlement will be intelligent and network. With the popularization and development of new technology, we have the following judgments on the future of human settlements:

CODE
new code of the next form of human settlement

If mountain and river is the core code of rural settlement, the road system and infrastructure system is the core code of urban settlement. The NEW CODE that the next form of human settlement will be intelligent and network. With the popularization and development of new technology, we have the following judgments on the future of human settlements:

Autonomous vehicles will evolve into the basic functional unit of future human settlements.
At first, car driver was liberated under the technology of autonomous vehicles, then people will be in the automatic vehicle using the space as conference, film-watching, entertainment, catering and other functions. Finally, these autopilot "box" will be the functional flow into your house, and even be planted into homes.

People can do most of the life-living and working within the range of 20m.
As autonomous vehicles turned into a functional stream, people can reserve functional stream (business, food, entertainment, clinics, education experts) come into their doors; plus, take into account the sophisticated logistics technology (takeaway, E-commerce express) and sophisticated VR technology Meeting, real-time interaction), most people can complete most of their living and working content in their home (that is, within 20m).

City will, as a whole, become the infrastructure.
As residential units become the smallest unit of human existence, a large amount of space is released in the entire urban system. The entire urban system will become an infrastructure that serves human beings. UAV logistics systems, distributed warehousing systems, cloud control of autonomous driving functions, the urban digital infrastructure in the cloud, and the distributed energy supply system serving as a new infrastructure system for people.

People will realize that ecosystems will never be important, and ecological experiences will become an important way of life for human beings.
People will be aware of the scarcity and importance of natural ecology. The ecosystem will infiltrate into the living space and become a new skeleton of the habitat. Fitness, bicycle, off-road, tea ceremony and outdoor festival experience will become important human leisure modes.
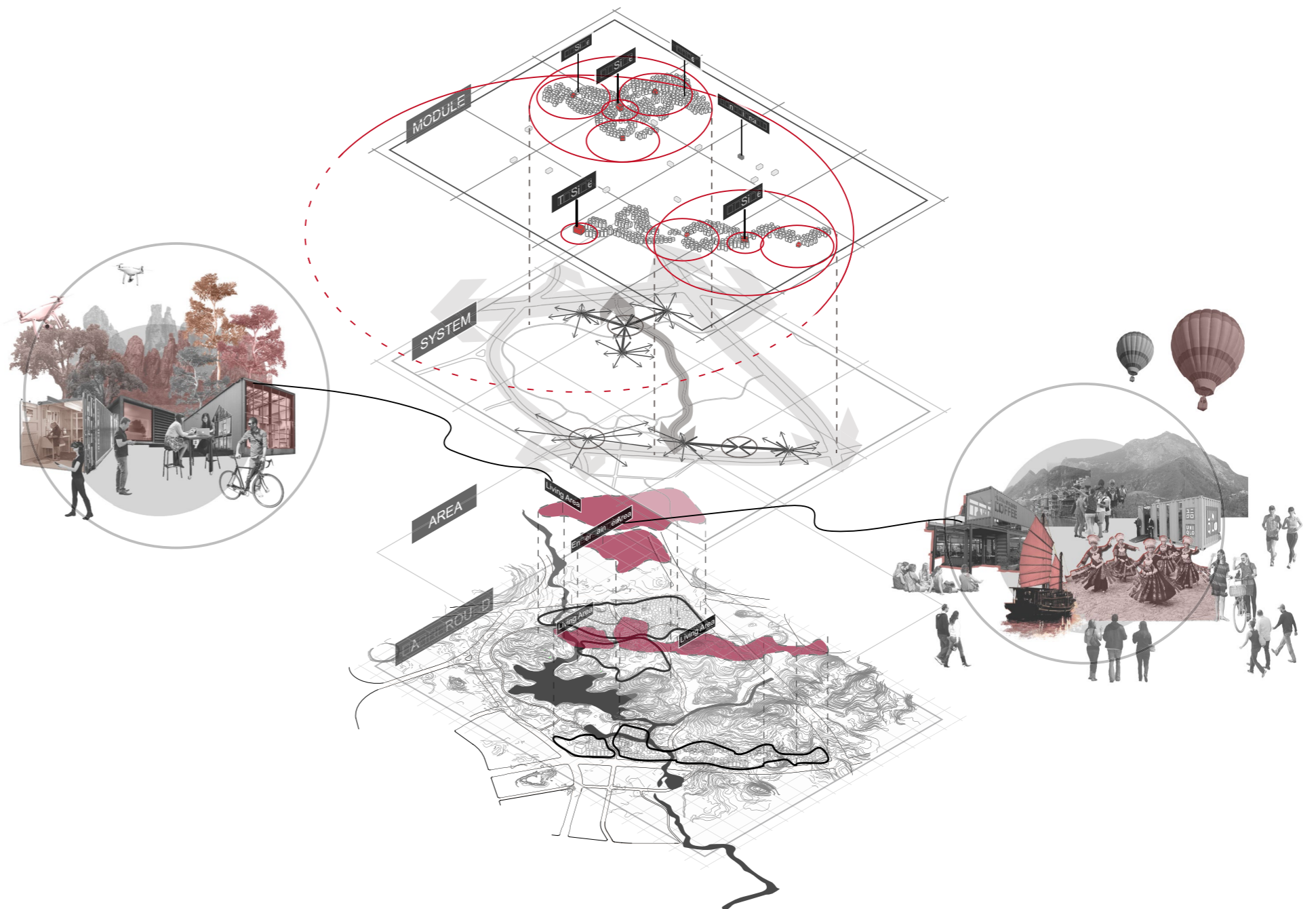
NEXT FORM OF HUMAN SETTLEMENT

#3

AGENDA × 议题

Through the reviewing of the technological invention history that affects the form of human settlement, we make insight into how the upcoming new technologies will dramatically affect the future human settlement form. Thus, as in the past, people from the rural areas to the urban habitat will enter a new form of living environment in the near future. In our scheme, this paper discusses the new form of living module, functional stream, life circle, new ideas, such as ecological human settlements to express a symbiotic relationship in the future city/Internet, and a new living environment under the new smart technology and infrastructure form.

Background
along with different forms of human settlement

Based on the new city Code, we have retained more priority for the local ecological landscape, cultural landscape, historical features, to ensure that there is more space to conserve, preserve the unique style and temperament of the field.

基于新的城市 Code，我们保留了更多优先权给于当地的生态景观、人文景观、历史风貌，能有更多的空间来涵养、保存场域特有的风貌与气质

Area

along with different forms of human settlement

Based on the Background of the field, we divide the area into different types according to their functions and characteristics, for instance, living area, entertainment area, natural area, etc., The main goals of the Area is to set the ratio of the Module in the form of living and the natural form, and way to arrange the Systems.

基于 Background，我们将地区依据其功能与特性划分为不同个性的 Area，例如居住区、娱乐区、生态区。再依据 Area 设定 Module 中居住形态与自然形态的比例，以及各项系统的边排。
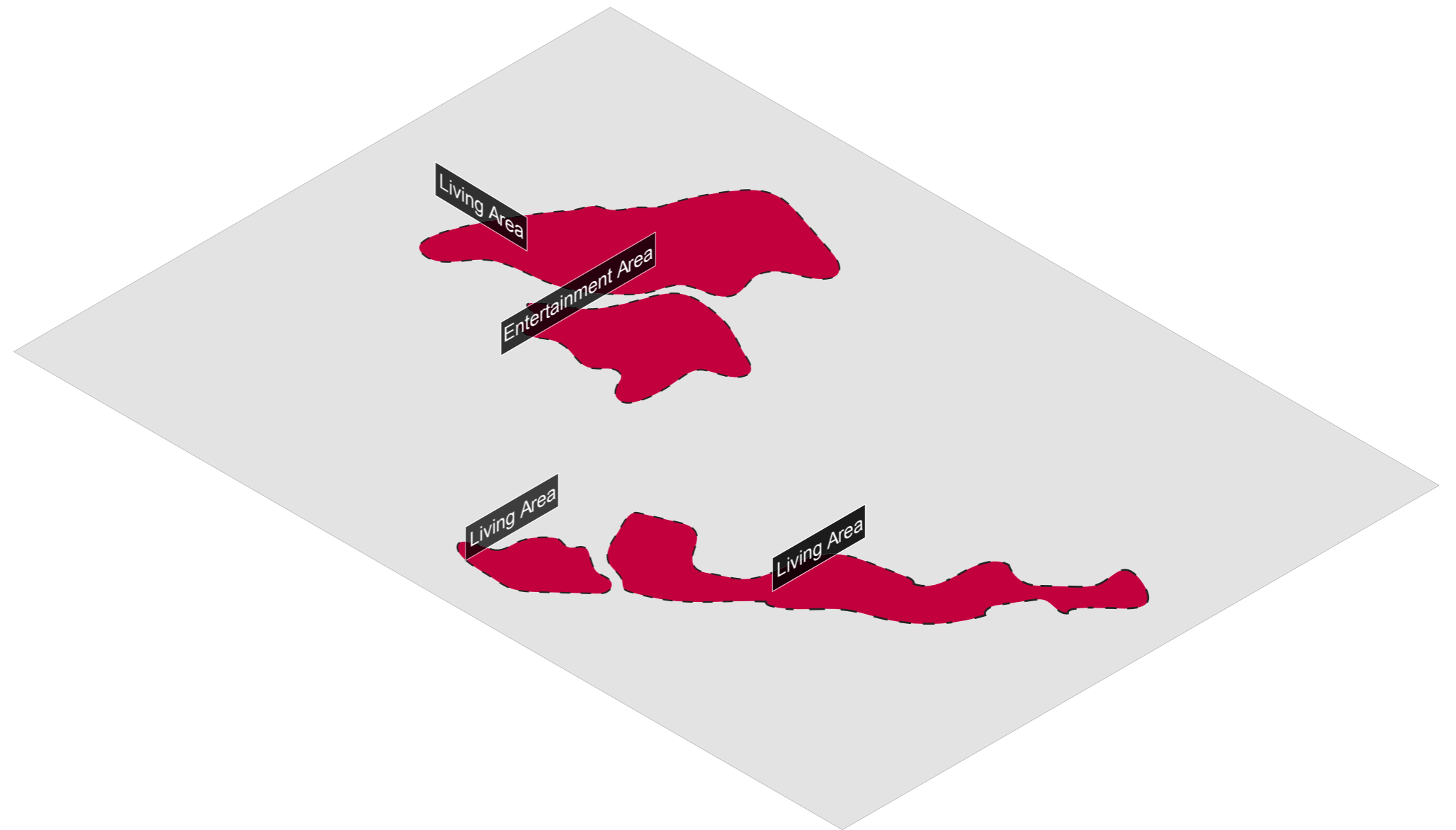
System
along with different forms of human settlement

In the new city code, System is a formula for arranging Module, including cloud computing infrastructures, functional systems, and Settlement systems.Cloud computing system is New City Code's most basic support, he helped the living environment more efficient use of space to effectively reduce the size of the dwelling. The functional system is responsible for arranging and shipping all Functional Cubes. Settlement system is first to define and standardize the human habitat range, then classify them into different sizes according to their size, the order from small to large as follows: Neighbor, Community, Township, City, Metropolitan.

新 的 城 市 Code 中 , System 就 是 作 为 编 排 Module 的 公式，包括了云计算基础设施，功能流系统，以及人居系统云 计 算 系 统 是 New City Code 的 最 基 础 支 撑 , 他 帮 助了人居环境空间更有效率的利用，以有效缩减人居范围功能流系统则是负责安排、运送所有 Functional Cubes人居系统则是首先定义了并规范了人居范围，再加以依照其范围大小分类别，其尺度由小到大依序为 : Neighbor、Community、Township、City、Metropolitan。

Cloud Infrastructure
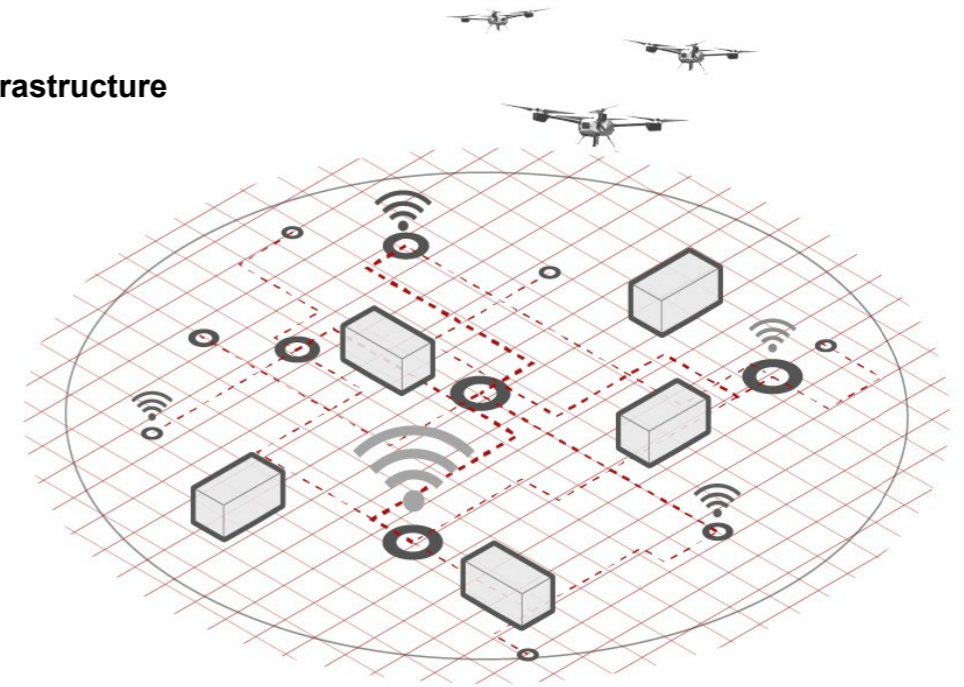
Functional Stream
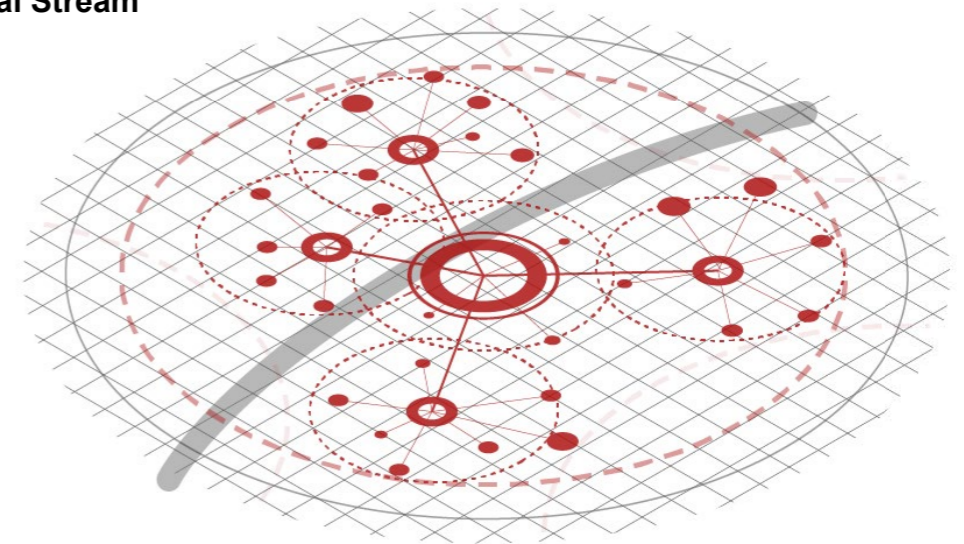
Settlement Region
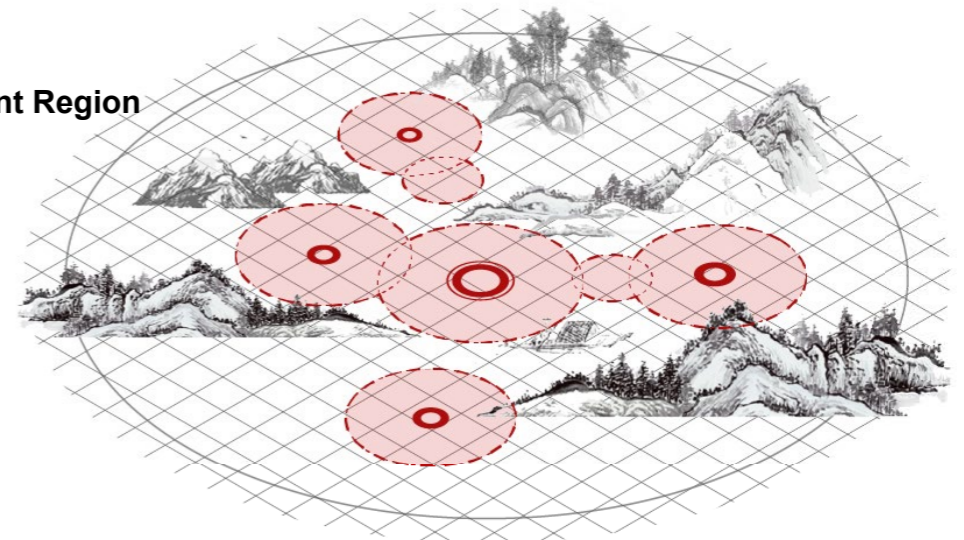
Module
along with different forms of human settlement

HOME
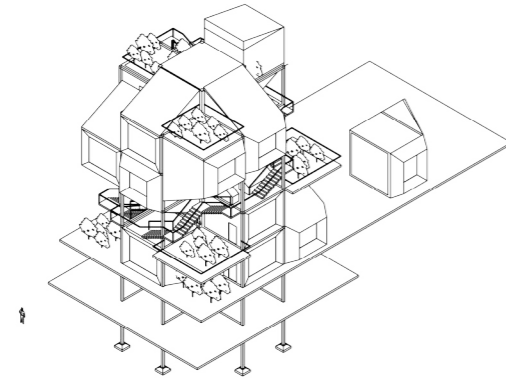
HUB

Neighbor-sized
25m*20m
for 80 units
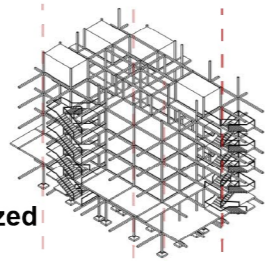
Community-sized
25m*40m
for 160 units
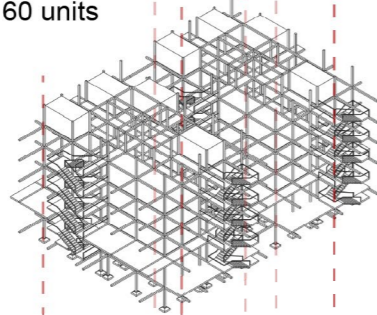
Township-sized
50m*40m
for 320 units
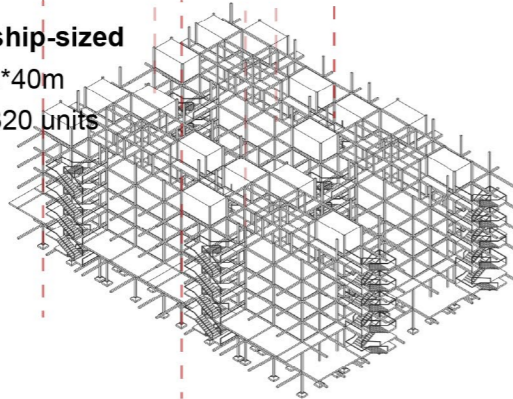
FUNCTIONAL CUBE

A Cube = 3m*5m*3m
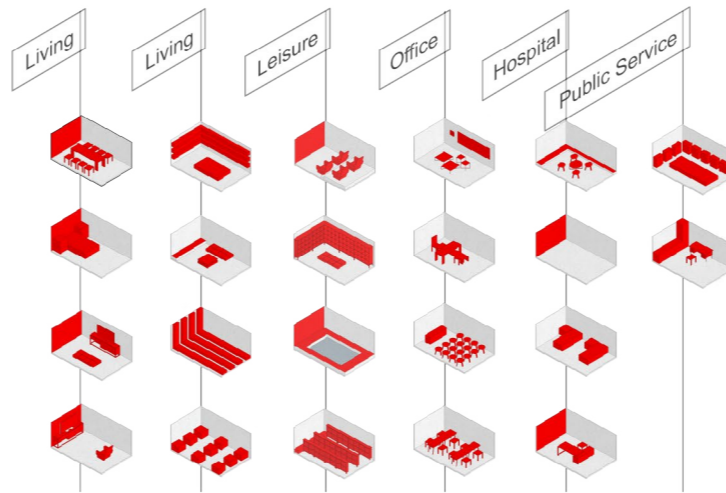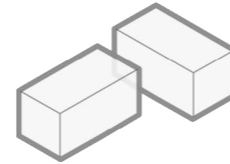
Living	Leisure	Office	Hospital
Bedroom	Movie	Personal	Nursing
Bathroom	Gym	Group	Medical Care
Working Room	Library	Ease Zone	Personal Clinic
Dining Room	Expo	Small Meeting	
Living Room	Dancing	Large Meeting	**Public Service**
Garden	Commercial	Forum Hall	Public Service

THE STRUCTURE OF THE MODULE
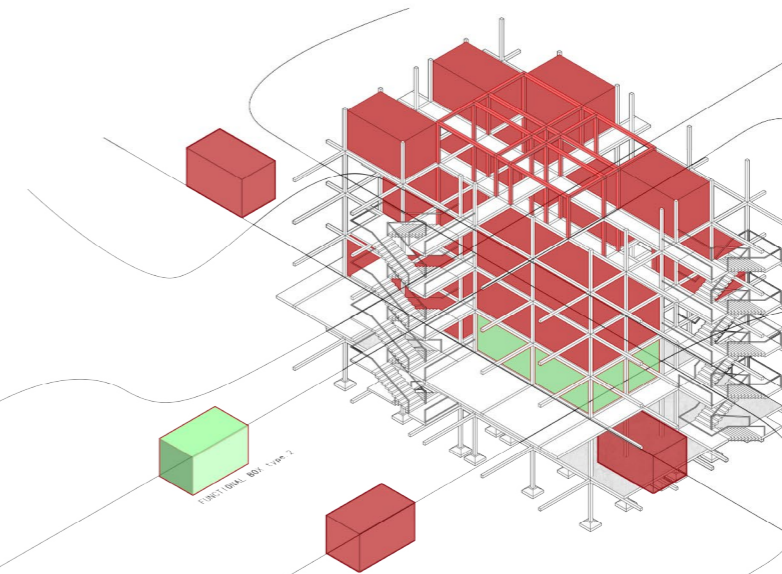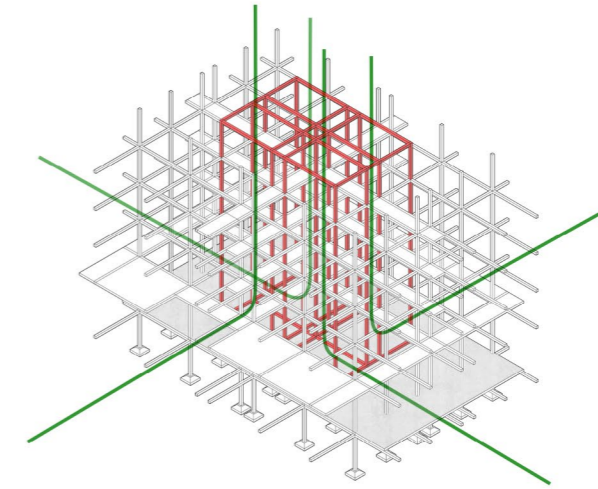
We assume that in the future, the living environment supporting by the new technology, for instance, UAV and self-driving cars, will be more flexible and humanity. People won't be able to tremendous travel or transport to the destinations anymore. Instead of using modules, most of the function would be directly transport to where people need. As a result, standardized and detachable Functional Cubes have been designed to carry various functions, while the fixed module, which is divided into two types. One is Hub which is designed to be a collection center. The other one is Home, the module where people lives in.

我们设想未来的人居环境因应技术，所有功能都可以借助无人机、无人驾驶而作流动，人不再需要大量长途跋涉或借助交通工具来移动至目的地，而是藉由模块将功能，直接传达至人的居住地。因此设计了标准化、模块化的 Functional Cubes，以承载各种功能，以及固定的模块，其中又分以作为移动模块集合中心的 Hub，和人类的居住单元 Home.

Layout
along with different forms of human settlement
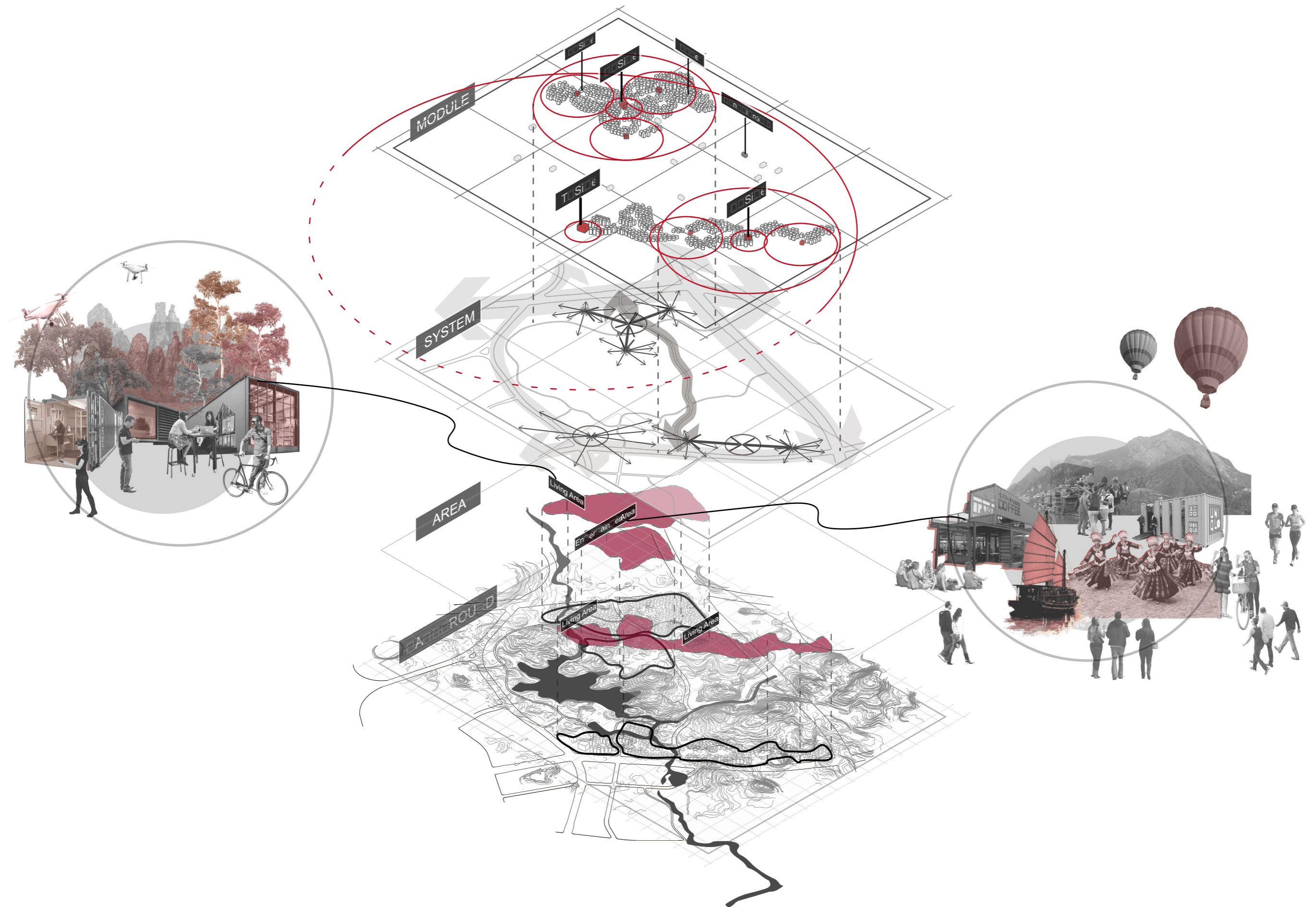
MODULE

SYSTEM

AREA

GROUND

Living Area

Entertainment Area

Living Area

Living Area

NEXT FORM OF HUMAN SETTLEMENT

#4

ENGAGEMENT × 介入义龙

Mountains and mountains is a major feature of Guizhou region, the traditional local architecture will be based on different geographical and hydrological reasonable "growth" to form a unique geographical and cultural landscape.
In this architectural design, we use the "traditional" architectural language of "sloping roof" in combination with the concept of "modularity" to freely combine the spaces and deepen the design to form the unique "Karma Stewart "image.

Architecture Concept

Mountains and mountains is a major feature of Guizhou region, the traditional local architecture will be based on different geographical and hydrological reasonable "growth" to form a unique geographical and cultural landscape.

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The building itself will also be reasonably "metabolized" according to the different needs of different periods to maintain the status quo and meet the needs of the times while promoting the national culture.in city. Many scholars began to focus on sustainable development, low carbon, the relationship between the city and the

奇山峻岭是贵州地区的一大特色，传统的当地建筑会根据地理和水文的不同合理的进行"生长"，形成独一无二的地域人文风貌。在本次建筑设计中，我们运用"坡屋顶"这一"传统"的建筑语言，与"模块化"的概念相结合，将空间自由组合，并深化设计，形成贵州当地别具特色的"噶斯特"形象。
建筑本身亦会根据不同时期的不同需求进行合理的"代谢"，以不变应万变，在满足时代需求的同时，弘扬民族文化。
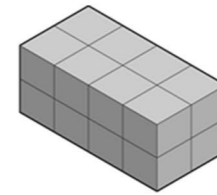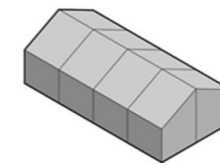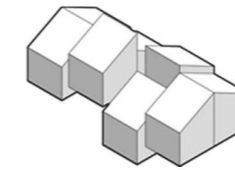
CUBE   TRANSFOR 1   TRANSFOR 2
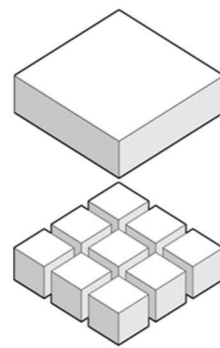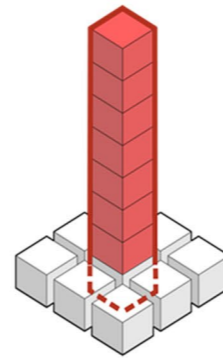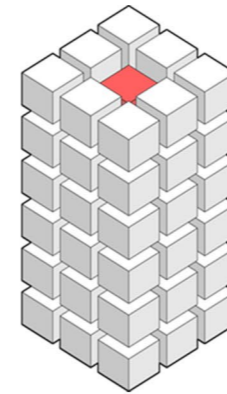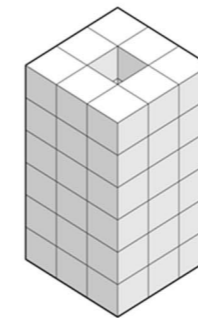
SPLITE   UP   ARRAY   COMBARE   SUBTRACT
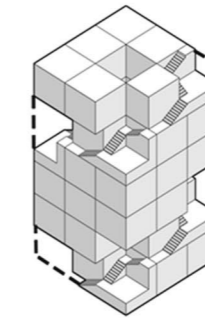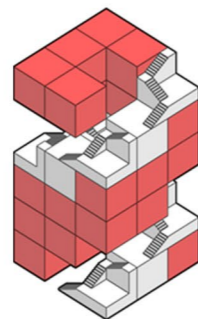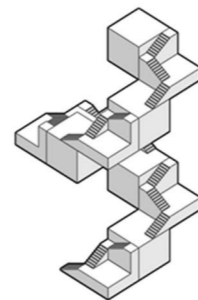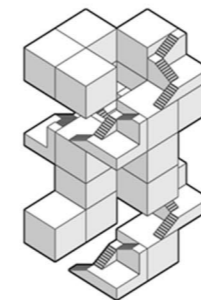
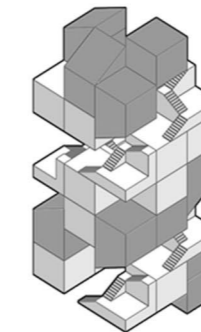SUBTRACUT   STAIR   ADD SPACE   ADD MODULE   COMBARE
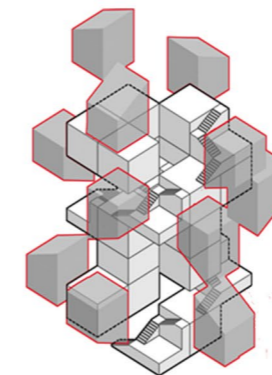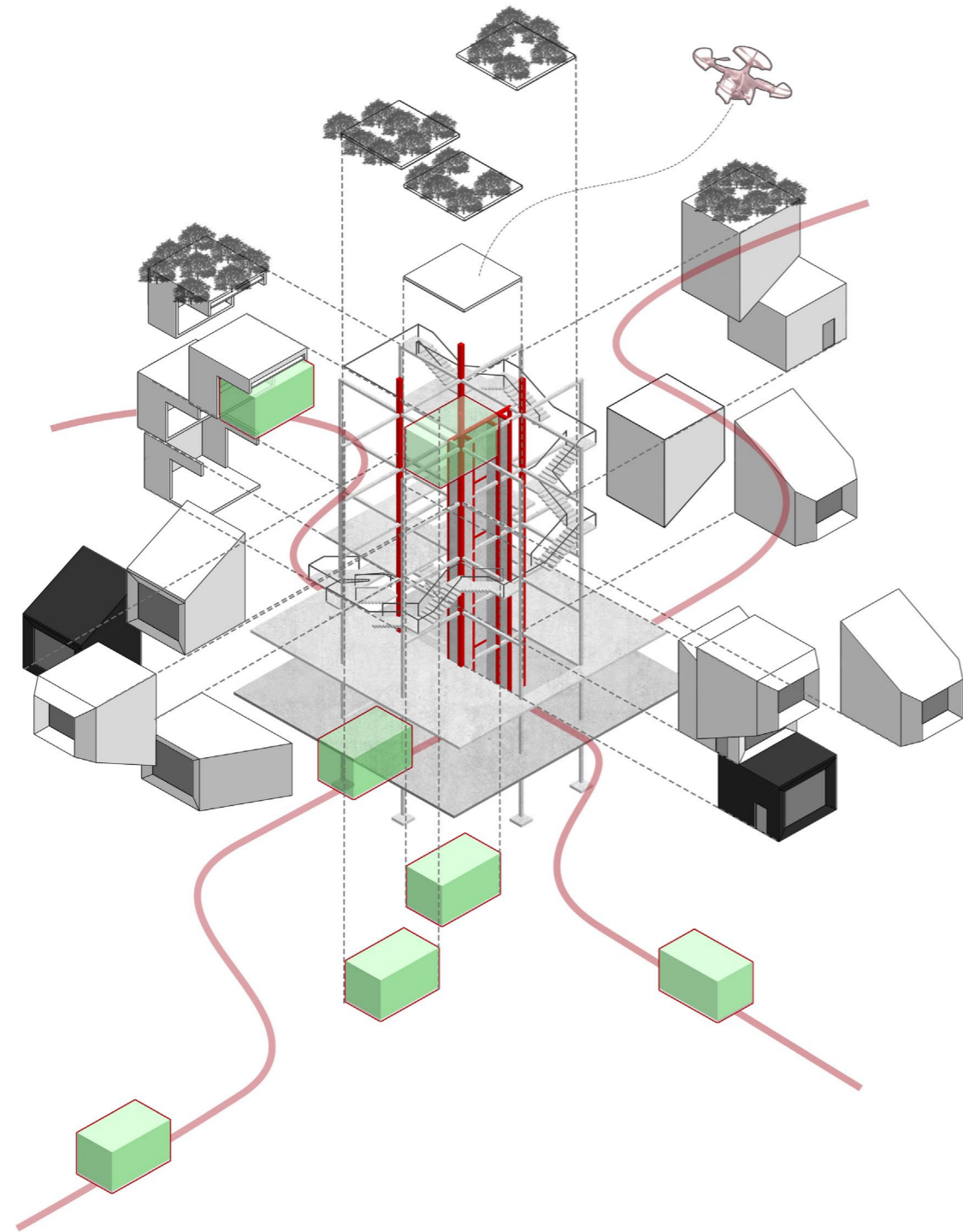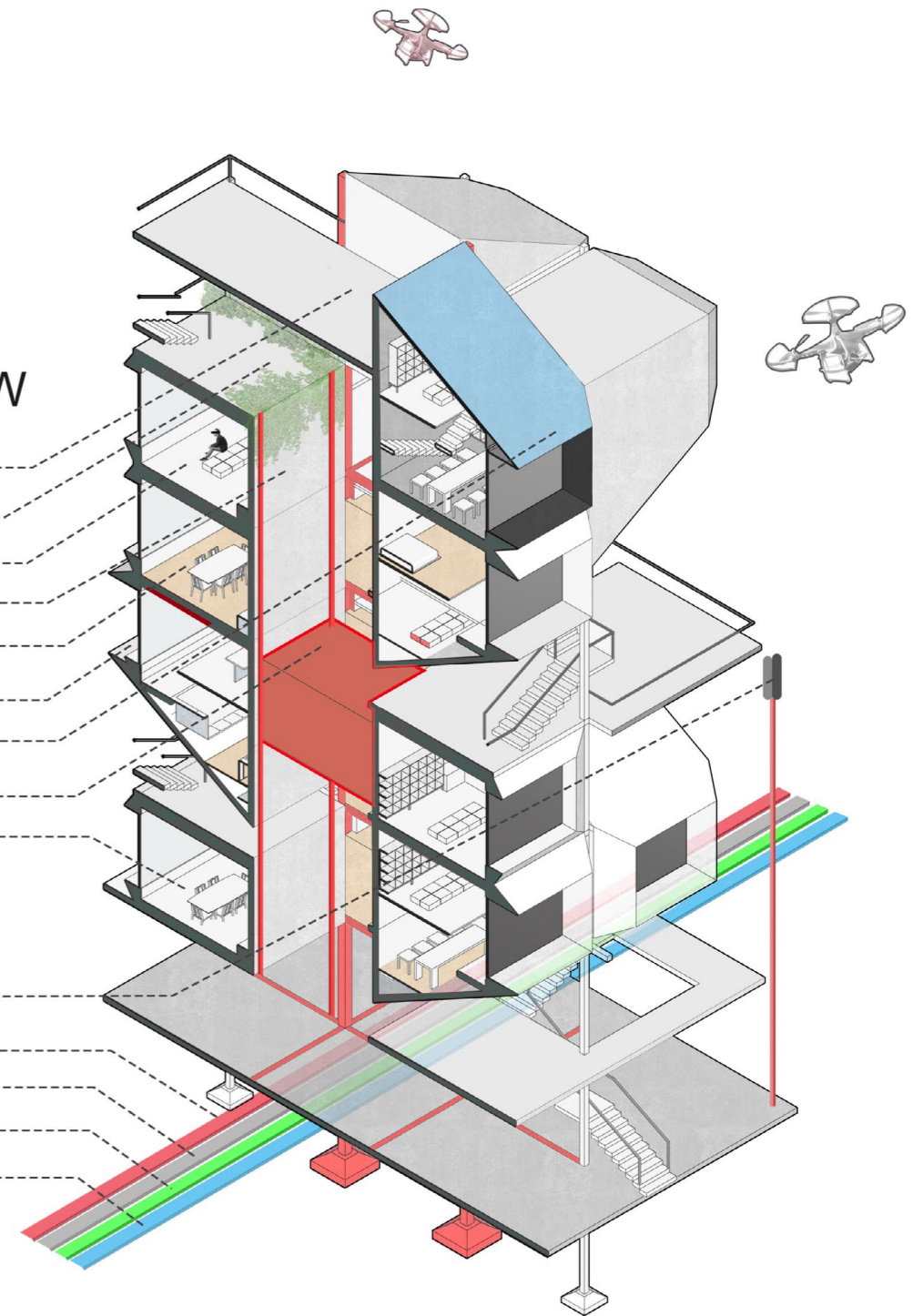
Architecture

SECTIONAL VIEW

UAV receiving station
Green balcony
AR experience room
Function flow shaft
Restaurant kitchen
Leisure Balcony
Solar panels
Functional Box
SOHO

Internet of Things sensor
Information Flow
Drain
Strong electricity
Heating

Engagement in Yilong
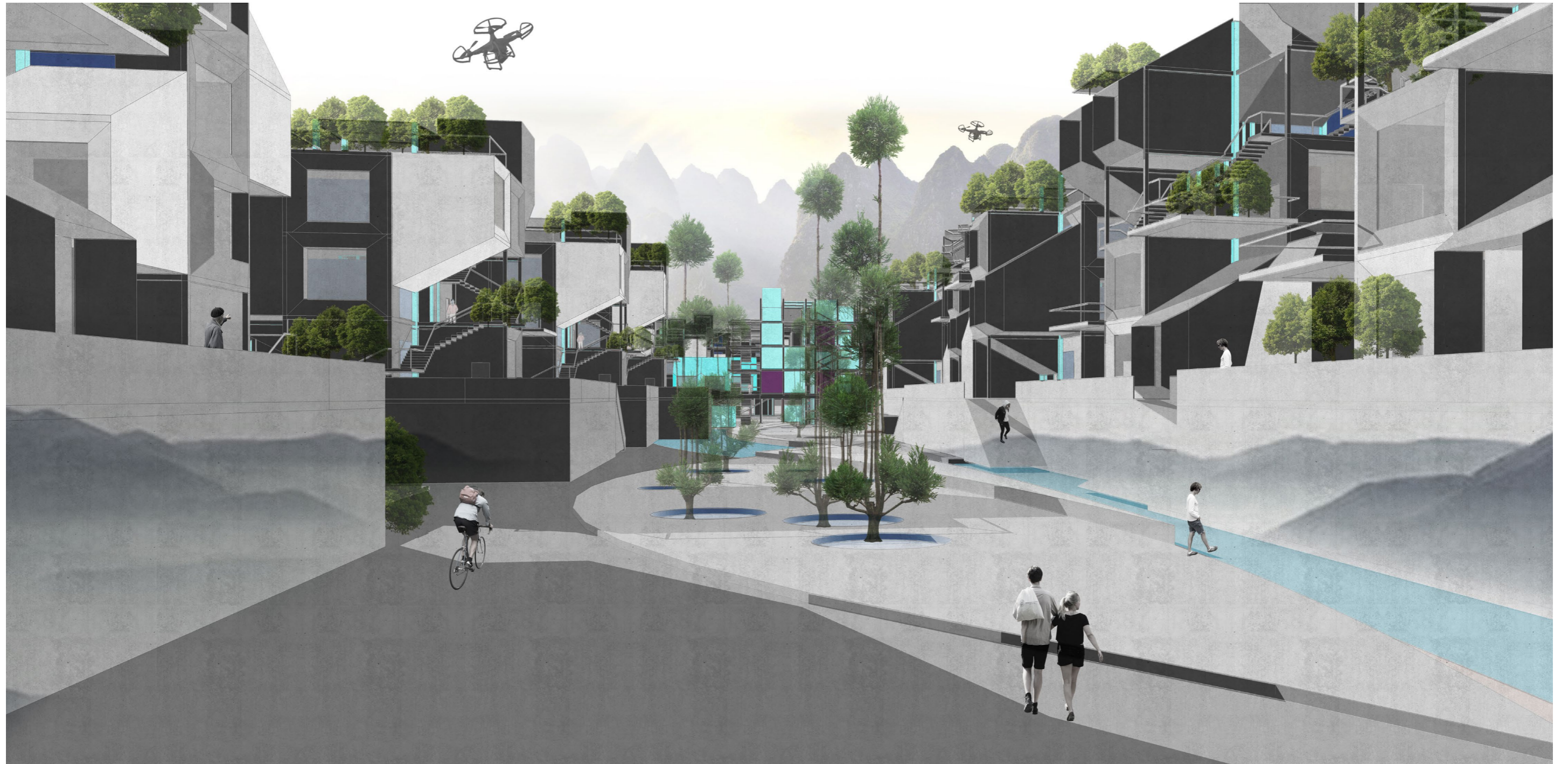new settlement form adopted in Yilong

U.V.A

HUB. 1

ECO.LANDSCAPE

EX.SPACE

COMMUNITY

HUB. 2

BIKE ROAD

FLOW BOX

AUGMENT REALITY

V.R
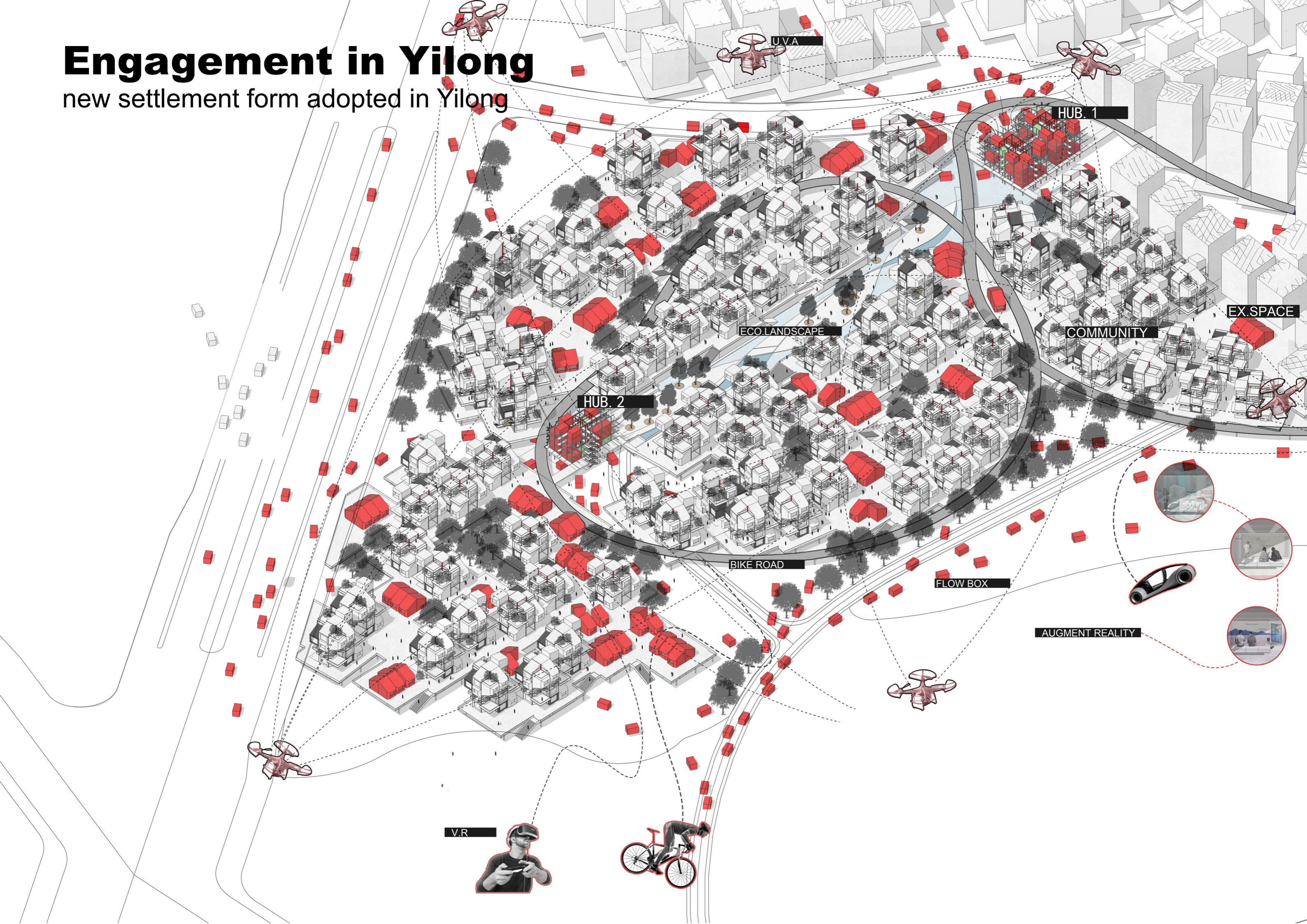
Design Sketch

a daily perspective in future Yilong

NEXT FORM OF HUMAN SETTLEMENT
#END

THE NEXT FORM OF HUMAN SETTLEMENT