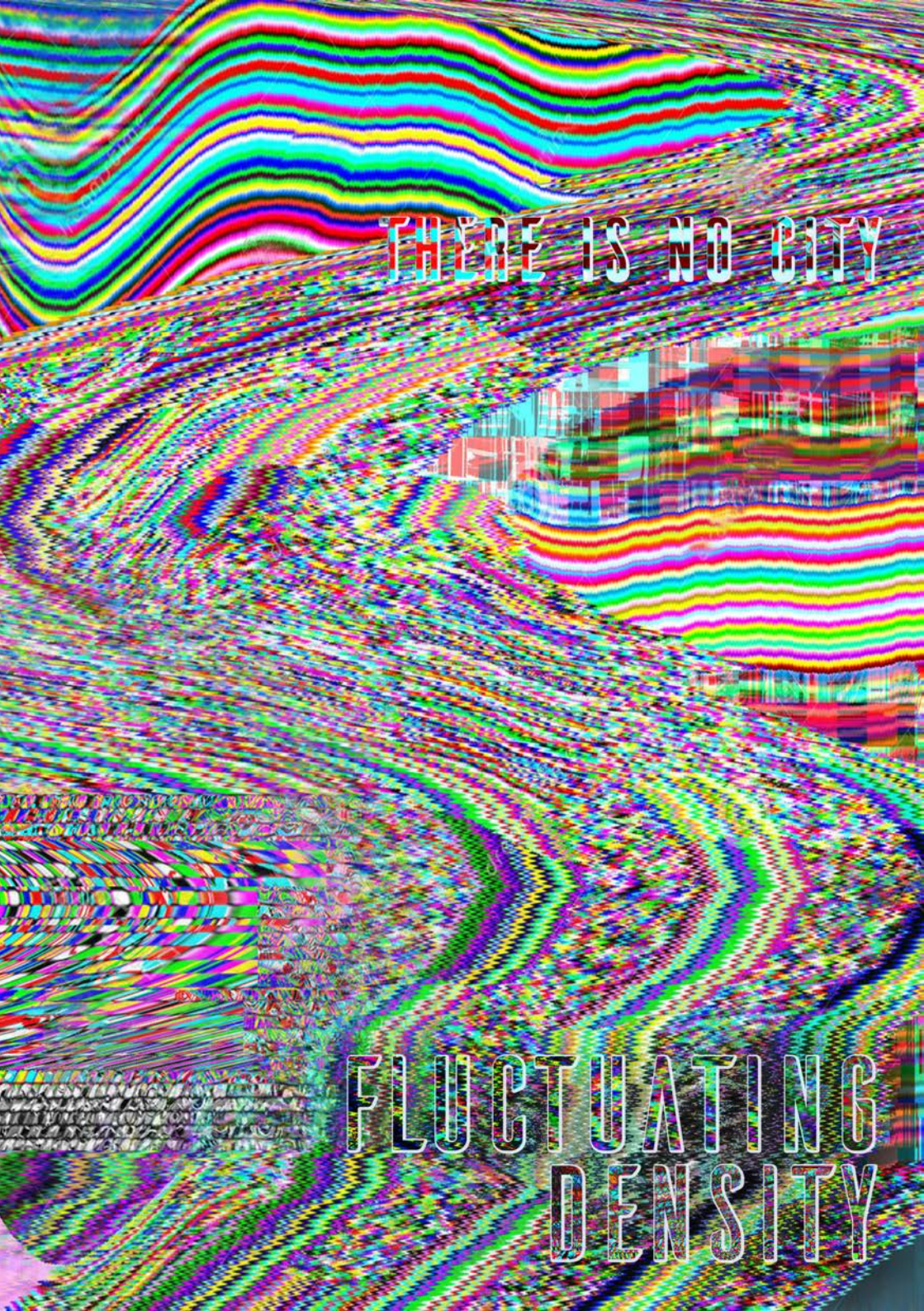
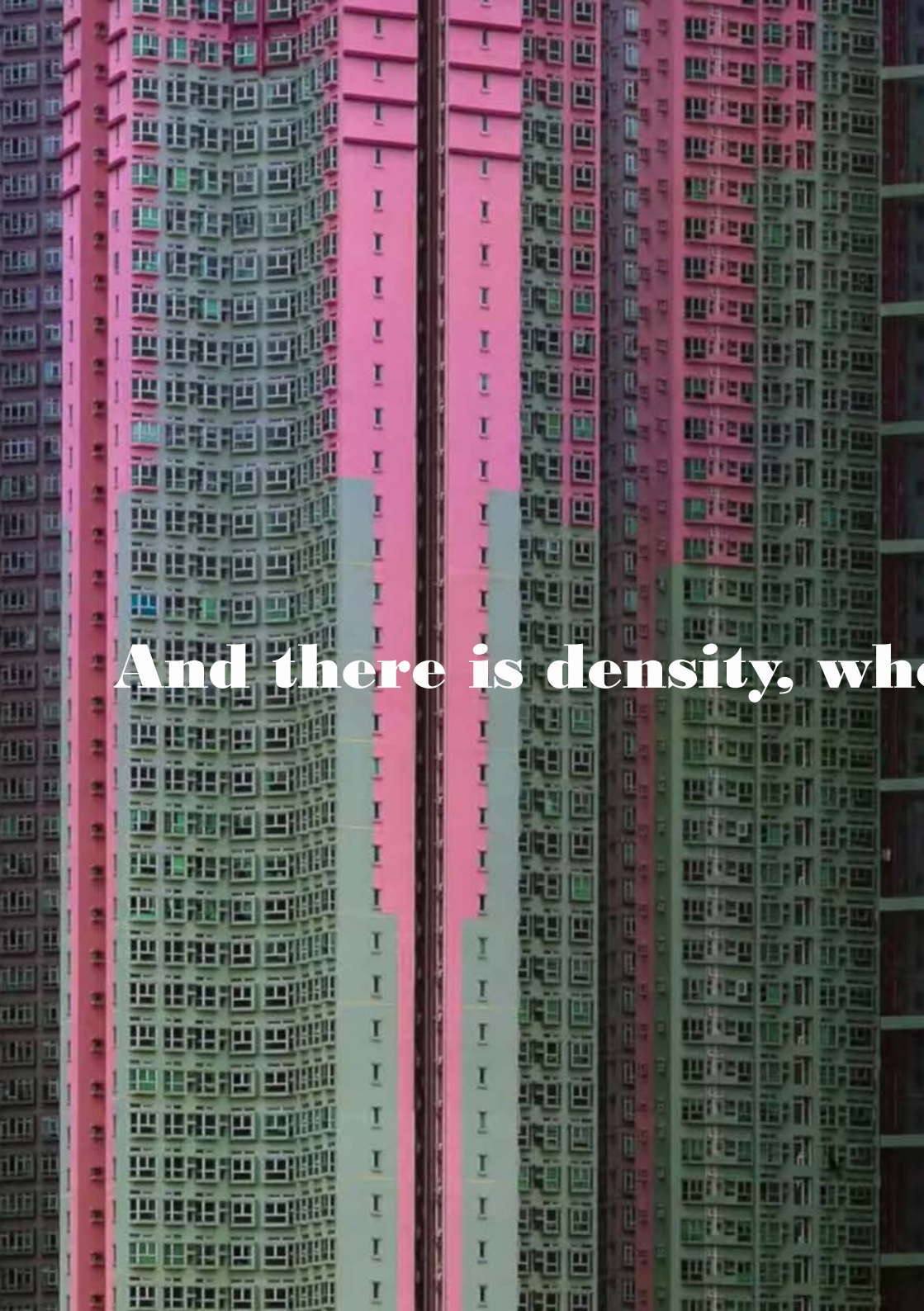
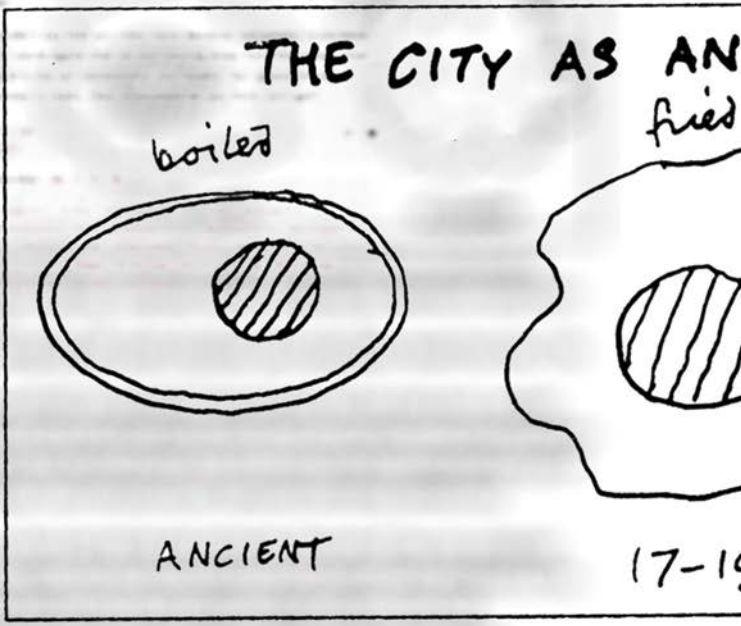

THERE IS NO CITY
FLUCTUATING
DENSITY

density has been an ever evolving factor in the field of architecture. The explosive development of human capacities (technological, economical,etcetera) has caused an exponential growth of **population** the last 80 years. Cities of prosperous countries were the first to be burdened with the demand of accommodating the immense speed of this growth, but nowadays even the less developed parts of the world face this tidal wave of people. By **2050** we will be forced to contend with an estimated amount of 9 billion people. How will cities keep up with the rapid **growth?**

GROWTH


And there is density, wh


ere the entity disappeares


THE CITY AS AN
boiled
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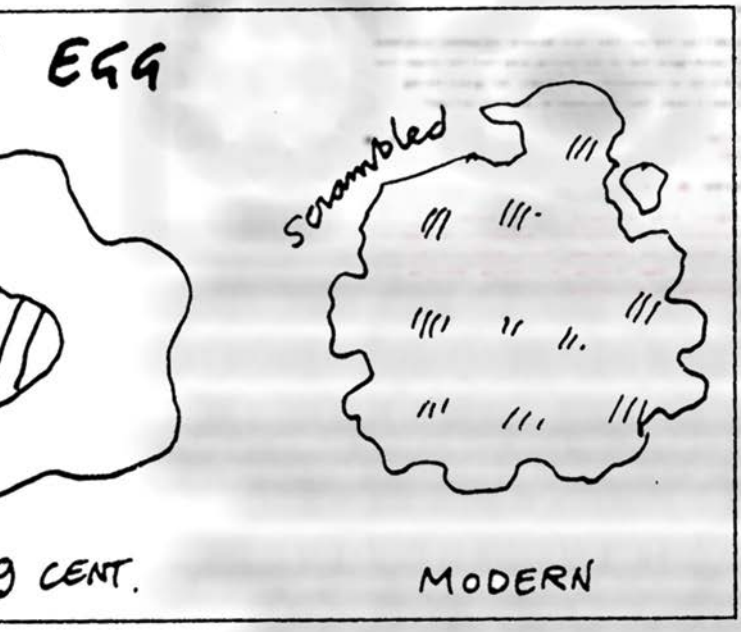
ANCIENT
17-1

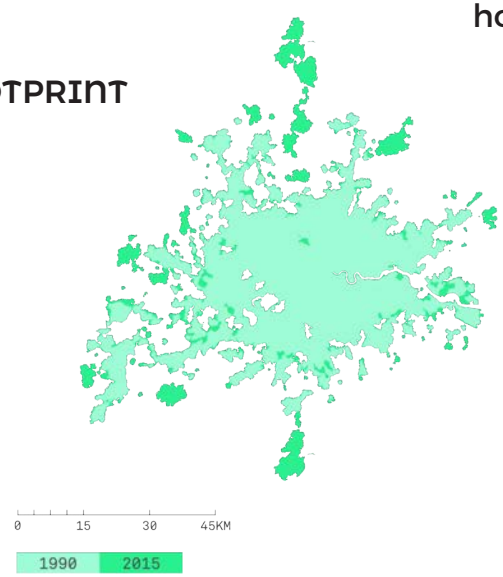

EGG
Scrambled
9 CENT.
MODERN

Cities are growing


Dubai 1991
Dubai 2004
g faster than ever

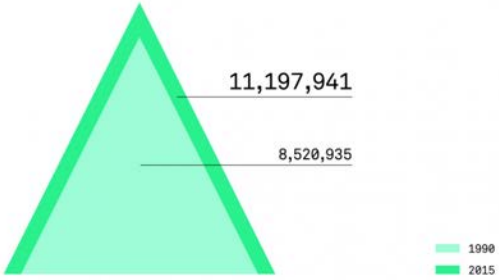
Lon

URBAN FOOTPRINT



Population	8,520,935	
	11,197,941	
Population growth		31%
Footprint increase		15%
Change of open space	-3%	
Change in population density		14%

HOW MANY RESIDENTS

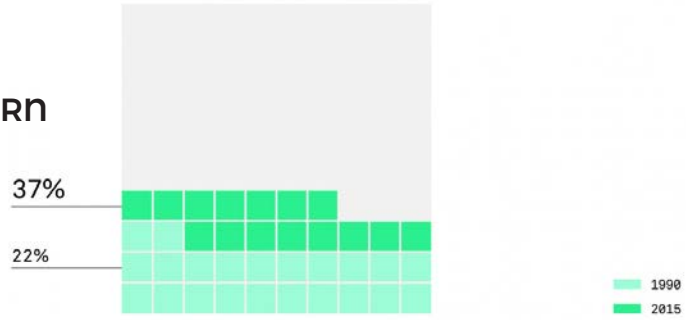


SPIRALING HOUSING PRICES

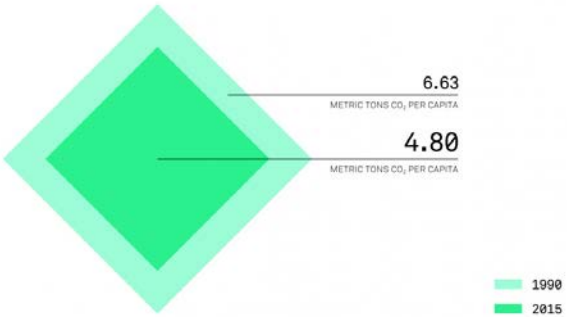
with the rapid growth?

DON

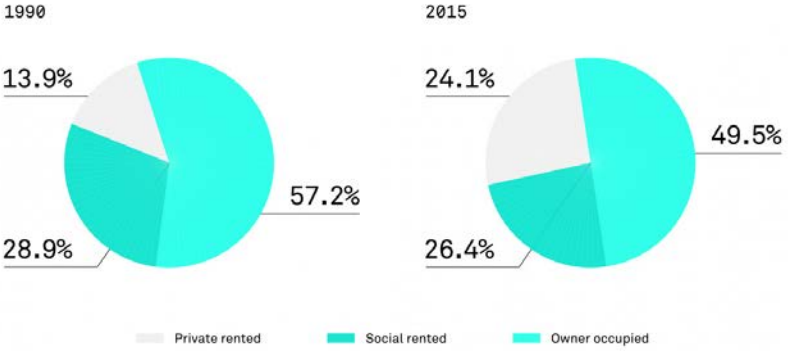
FOREIGN BORN



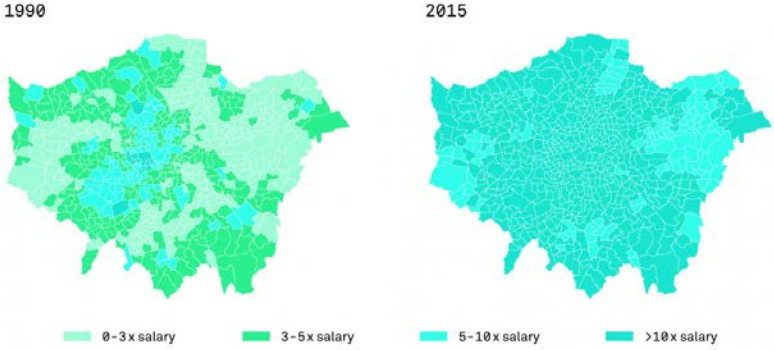
POLUTING POWER



WHO LIVES WHERE



UNAFFORDABLE LONDON

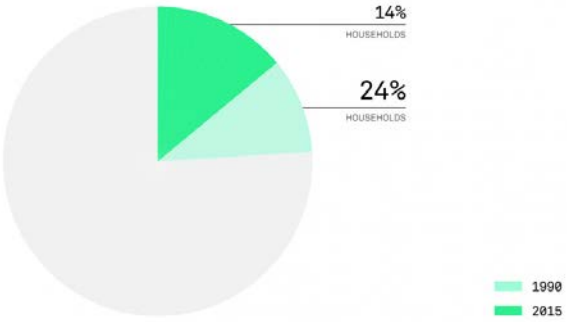


ADDIS

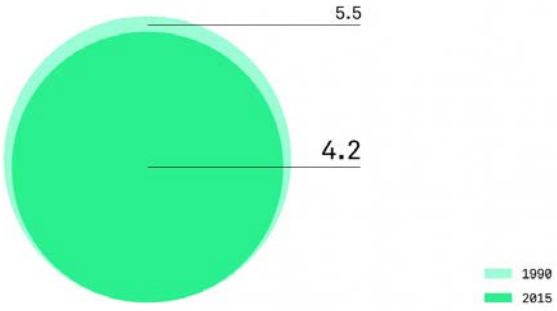
SLUM CONDITIONS

INVESTING IN HOUSING

BASIC FACULTIES



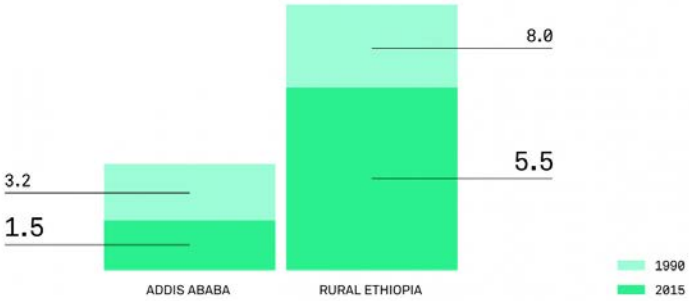
FAMILY SIZE



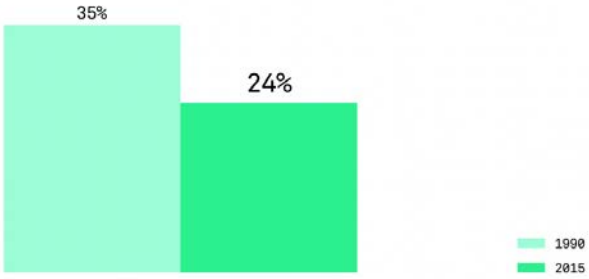
ABABA

CITY OF YOUTH

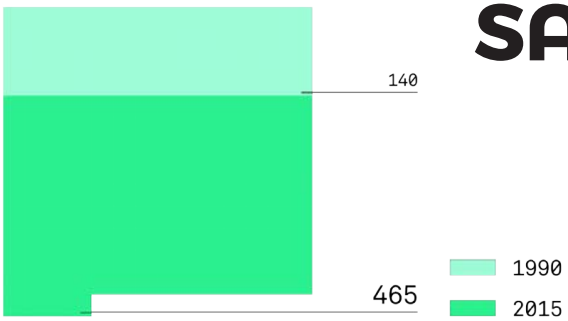
FAMILY SIZE



SECURING WORK

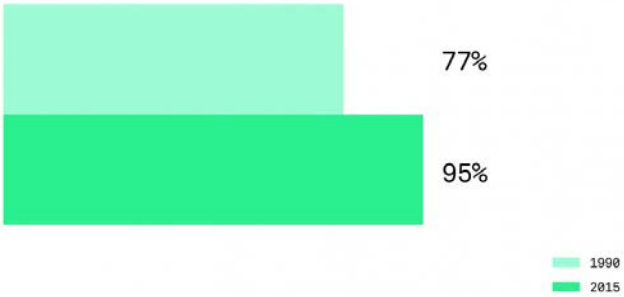


CAR POWER

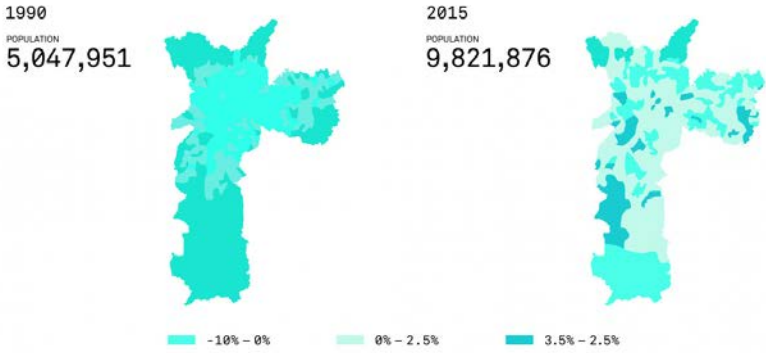


DAILY COMMUTING

IMPROVING LITERACY

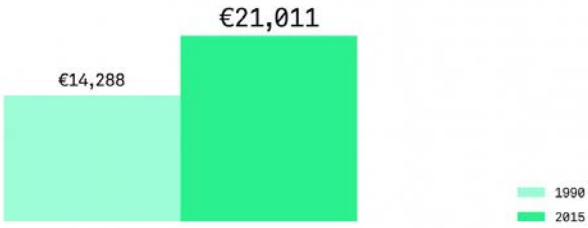


PUSHED TO THE EDGES

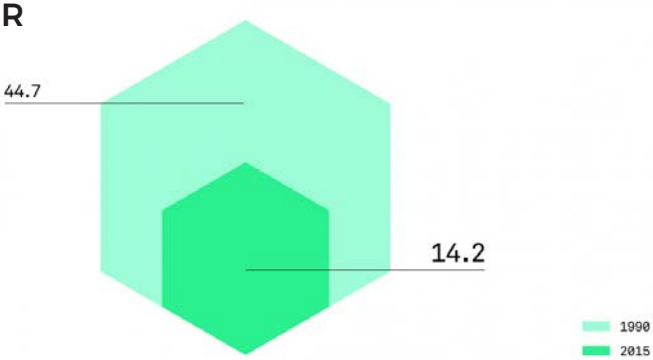


PAULO

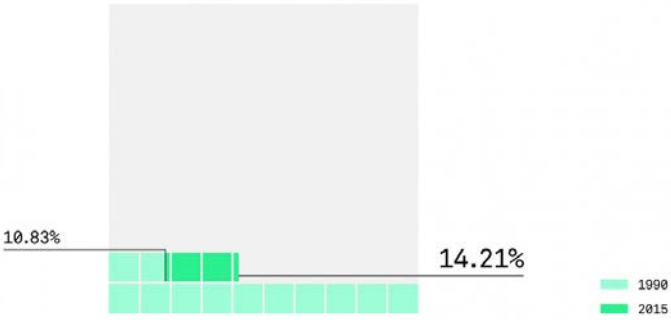
EARNING POWER



LIVING IN FEAR



VULNERABLE URBANISATION



CITY SMOG

Killer Smog

-656,000 Chinese die prematurely each year
- living in the capital causes a 49% increase in lung cancer and 32% increase in heart disease deaths

CAGES PEOPLE

Socail conflict

- cage people
- mass marriage
- the ratio of the poor to rich is increasing
- birth control
. contrating realities

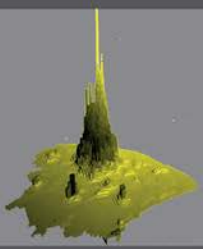
CAPSULES

Energy Consumption

No centraled heating system, only airconditioning which polluts and heat up the enviroment.

NEXT GENERATION IS COMING SOON

central
24.673
people/m²

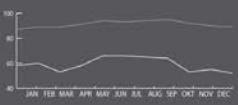


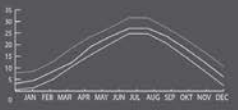
BETWEEN DENSITY AND POLLUTION

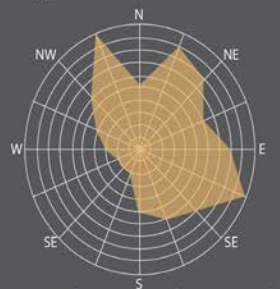
A PLACE WITH ENOUGH SPACE

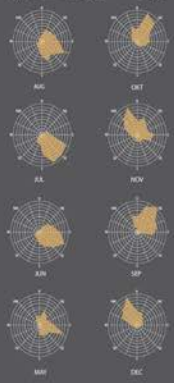
Shanghai has always been a source of attraction for people living in suburbs and villages, and im¬migration has increased dramatically through the years making the amount of people living in the cities ascend from 10% in 1900, to 50 % in 2012 and 75% later in 2050

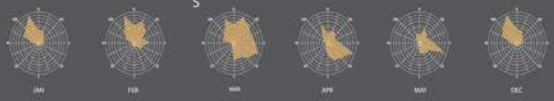
With urban populations, and global demand on goods sky-rocketing, it is imperative that new strategies be employed to .meet the human needs
To satisfy the global demand a big amount of production will be required



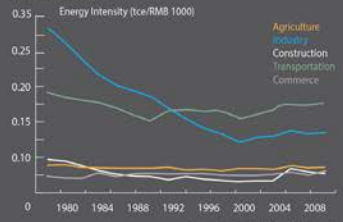




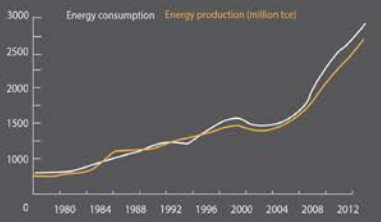




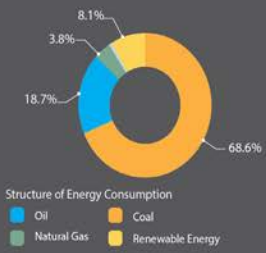
ENERGY



Source: Energy Volume 36, Issue 6,



Source: Energy Volume 36, Issue 6,

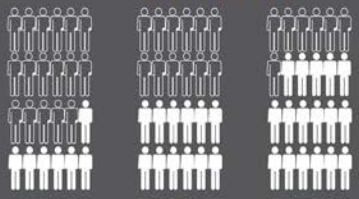


DENSITY

6,340.5 km2 Area of Shanghai

23,019,148 Population

8x Population increase since 1920

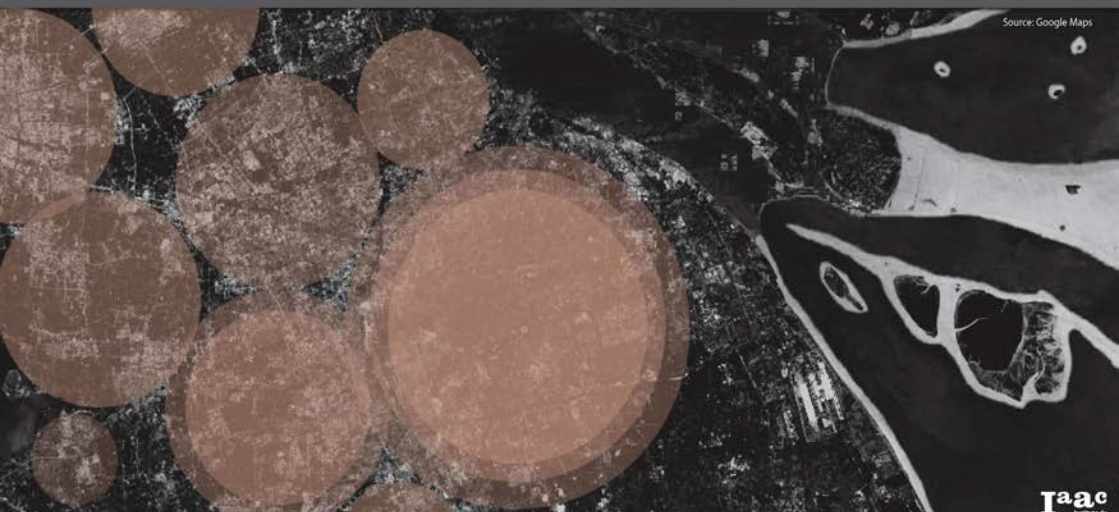


1960 | 38 %
2008 | 52 %
2050 | 70 %
Population living in the City

16m²
Space/pers

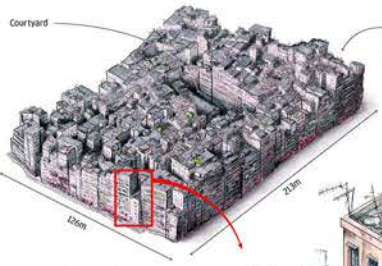
1980 - 121
2000 - 3529
2005 - 10,045
year - buildings over 8 storeys

26,000
People/km2 compared to 4,800 people/km2 in London



City of anarchy

Kowloon Walled City, located not far from the former Kai Tak Airport, was a remarkable high-rise squatter camp that by the 1980s had 50,000 residents. A historical accident of colonial Hong Kong, it existed in a lawless vacuum until it became an embarrassment for Britain. This month marks the 20th anniversary of its demolition.



500
Buildings built into 2.7 hecares

Without municipal services, there was no rubbish collection. Old television sets, broken furniture, discarded mattresses and other bulky items were hauled to the roof and abandoned

Other rooftops were used for exercise, playgrounds, relaxing and even pigeon racing

Planes needed to turn 45 degrees to land at Kai Tak

Buildings were no more than 14 floors high to avoid collisions

There were 77 wells inside the city some 90 metres deep. Electric pumps delivered water to big tanks on rooftops. From there, water was funnelled through narrow pipes to the homes

40sq ft
per person

The area's interconnected high-rise towers were built without architects and engineers, and ungoverned by Hong Kong's building and sanitation regulations

HK$35
monthly room rent

There were several schools and kindergartens, some of them run by organisations such as the Salvation Army

Despite its daunting, squalid appearance and reputation for lawlessness, many of Kowloon Walled City's former residents remember it fondly. It may have been the City of Darkness to outsiders, but to thousands who called it home, it was a friendly, tight-knit community that was poor but generally happy

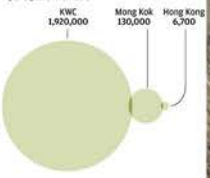
Tiny metal fabrication shops made up a good number of the 700 or so industrial premises. Most were found between the ground and fifth floors

Electric wires were placed outdoors to prevent fires

There were many heroin dealers but they were untouchable. Police could only arrest non-residents

KOWLOON WALLED CITY
HONG KONG

Population density
per square kilometre



The street-level shops were a mix of unlicensed dentists and doctors, market stalls and cafes that often included dog on the menu. Fish balls, barbecued and roast meat and other foodstuffs were manufactured in premises with little or no sanitation

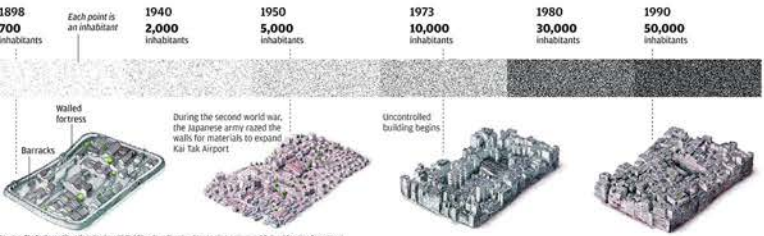
Brothels and gambling dens operated with impunity

Residents carried umbrellas to shield themselves from constantly dripping water pipes above the narrow alleys

Authorities installed eight freshwater standpipes – one inside the city, and the others outside its perimeter

From fortress to park

The Walled City underwent a dramatic transformation in the final decades of the 20th century



Fresh start

In March 1993, the settlement was demolished and a park that looked like a typical Chinese garden was built in its place. But it kept a few original elements from the Walled City, such as old cannons and remnants of the South Gate and its entrance plaques

Sources: *The Darkness City: Life in Kowloon Walled City* - Greg Girard and Ian Lambot, Leisure and Cultural Services Department

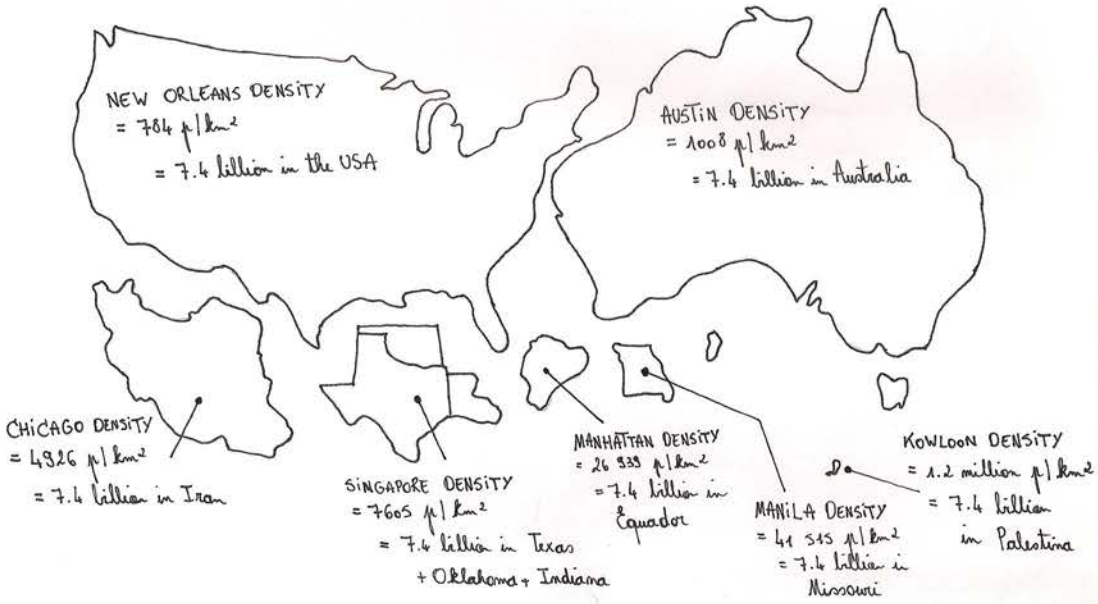
SCMP Graphic: Adolfo Arranz

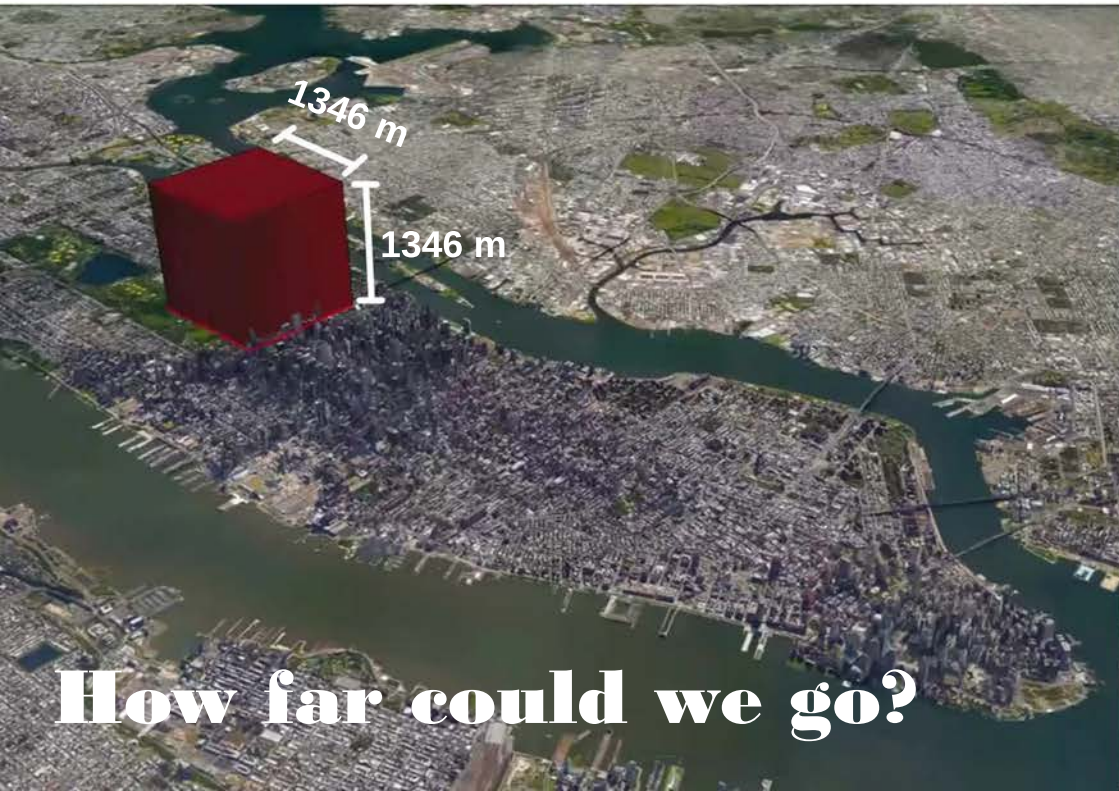
How far did we go?

50.000 residents

26.000 m²

7.4 Billion People Together in Different Densities






4.000.000
114.000
235.000
214
40.831.000
2.650.000

There is no such thing as a city that has run out of room

What we really mean when we say we can't make space for more neighbors.

LAST month, in response to the news that Detroit's white population is now growing for the first time in decades, with the number of residents surging in particular downtown, a local radio station paused to ask: "Is Detroit big enough for everyone?"
It was an odd question, given that the city's population is less than half the size it was in 1950, with tens of thousands of empty lots and hollow homes attesting to the ample elbow room. If any community in America has space — crannies to tuck new housing, capacity to absorb more ideas and bodies — it is Detroit.
Echoes of a similar suspicion to the contrary, though, are widespread in how we talk about the places where we live. The entire city of San Francisco is "cooked. Done." There's no more room in Silicon Valley, either. Brooklyn is at capacity. Boston, too. The nicest parts of Northwest Washington long ago reached the limit. Chicago's coveted Lincoln Park wants*fewer* people. Even whole countries now suffer from this condition: Britain just can't take in any of those refugees because the island, at long last, is full.

It is possible to fill up a space?

We seldom question the premise because it sounds absolute, measurable, even mathematical. *I'm sorry, it's not that I don't want you to move here. It's just that we are already full.*

But a neighborhood, no less a continent, defies the knowable volume of boxes or bottles or stadiums. We know when a bathtub is full, because the water runs over. Same with a rush-hour bus, when the bodies won't budge. But a city? A city block? How would you even define such a thing?

"Economists reject absolutes like 'full' and 'need,'" says Joe Cortright, one of several urban economists I asked. "It's always about tradeoffs and choices."

Cities, in particular, are about tradeoffs between hectic streets and vibrant economies, between scarce parking and neighborhoods worth traveling to, between cramped subway cars and the mass of humanity that makes the subway possible.
And so, from an economist's point of view, there is no such thing as a full place. Especially not in America, where our neighborhoods, as urban planning professor Sonia Hirt puts it, are "astonishingly low density" compared to the rest of the industrialized world. Maybe your particular geology can't handle the foundation of a mile-high skyscraper. But, for the most part, we can always make choices to make more room, to build taller and denser, to upgrade schools and rethink roads to let more people in.

It's not a limitation of space, it's a matter of politics disguised as physics

"When people say a place is 'full,' to me it's shorthand for they're not willing to even entertain the challenges of what it would mean to redevelop the space," says George McCarthy, the president of the Lincoln Institute of Land Policy.
"One of the things about being 'full' — or saying you're 'full' — is the conclusion that the quality of life in the place will never be better than it is right now," he goes on. "That's what people are really saying. They're saying 'any change you make is going to require a sacrifice of one sort or another that we're not willing to make.'"

By this logic, the latest person to move to San Francisco, or Portland, or even Detroit is always, miraculously, the last one to squeeze in before the gates must slam shut.

I'm here, development can stop

A deep misunderstanding of cities

Everything we know about cities suggests that, in fact, quality of life doesn't go down as more people crowd in — the opposite happens. Denser populations support not just more amenities (museums, baseball teams, restaurants) but more diverse amenities (Korean and Ethiopian and Peruvian joints!).

This is why so many people want to live in San Francisco in the first place, and why tourists like to visit Manhattan. The things there worth experiencing are there precisely because so many other people are, too.

The tight confines of cities make us more energy-efficient, too, as economist Ed Glaeser has argued, because 20 households in one apartment building devour fewer resources than 20 households in single-family [illegible] But more and more workers in one place, meanwhile, and you also get [illegible] [illegible] biotech corridor, where people working on the same problems bump into each other and share ideas and suppliers and become more productive. Put more people in a city, and the economy grows. It's the opposite of diminishing returns. The environmental costs, per person, can actually improve. In drought-stricken California, some of the lowest water consumption per capita is in San Francisco.
"To claim that an area can 'fill up' is to implicitly assume that there's an ecological footprint relationship, like a law of physics, such that every extra person uses the same amount of resources," says Matthew Kahn, a visiting professor of economics at USC. "But the whole point of economics is that we can always substitute inputs.

We can build up, build down. There's always [illegible] an achieve more [illegible]

Of course, there [illegible] ng the way — and tricky ones — to adding more people. They may bring congestion and pollution. It becomes harder to park. Schools fill up. But we have ways of dealing with the downside: congestion pricing and dynamic parking prices, for [illegible]s, Kahn suggests). And the real question for any community is whether those costs have grown so steep that they overwhelm all the benefits.
"For the vast majority of U.S. cities," says Berkeley economist Enrico Moretti, "we're far from the point [illegible]
That's true [illegible] f the Bay Area, he says, where a housing crisis has grown out of the fact that the region can't bear all of the people who want to live there.
"It's obvious that we could have millions and millions of people in San Francisco if we built skyscrapers on every plot of land," Moretti says. "That's not really interesting to talk about, because nobody wants that. I don't want that. I don't think that's what's at stake."

What is at stake, he says, is all the housing the Ba without substantially altering its character, witho Hong Kong. Just replace the surface parking lots, developed land near train stops, add a story or tw without paving over the scenic hills, and Moretti Area has space for 30-40 percent more people.

In the city of Los Angeles, replacing single-family modest four-unit buildings would make room for new housing units, says Devin Bunten, a Ph.D. st Kahn. "It's hard to think that we'd have a rent cris Bunten says, "if we allowed that kind of thing to h The problem, Bunten argues, is that the costs of a of those people (like less parking) are often visible doors, while the benefits (a more productive regio to kick in at a larger geography. And, crucially, we about how to use land at this first scale, not the se

Not-in-my-back- types step to the crophone

"I find it deeply troubling on economic grounds," "because limiting housing supply is actually going problem, not make it better. But also, it's really a misunderstanding of the nature of cities. Cities al changing, throughout centuries. American cities lu enormously in different and unexpected ways, and barriers around them is anti-urban in a deep sense

Seattle, U.S. 3,000 people per square mile

Los Angeles, U.S. 6,000

Madrid, 12,1

[illegible] an that no one has [illegible] e if they crave a yard and some privacy. [illegible] person who lives in that home doesn't have a right [illegible] const around it to preserve a parking spot. "To we'd ask 'did she buy it?'" Kahn says. "Why does th right to easily finding a spot on her block?"

NIMBYs and inequality

For much of the 20th century in America, the abili one place to another — from farming towns to mar from southern states to northern ones — was a cru poor used to get their hands on opportunity. This examp during the Great Migration, and from the

Remarkably, researchers Peter Ganong and Daniel that nearly a third of the decrease in economic ine [illegible] to 1970 can be [illegible] by w [illegible] states to rich ones.
[illegible] nce then something has changed. H [illegible] used to be about the same as home prices in Michi Connecticut. Today, there is a vast difference in ho [illegible] the country, and those differen [illegible] [illegible] ed in tandem with opp [illegible] [illegible] n places to block it — in states like C [illegible] [illegible] it's n [illegible] y expensive to live in th [illegible] effec [illegible] declared themselves "fu [illegible] [illegible] on this doesn't just force tech beo [illegible] [illegible] beds [illegible] on Valley; it also blocks [illegible] equal [illegible] e poor people who might [illegible] [illegible] William [illegible] chel, who has long studied [illegible] some fascinating theories of what changed in the 19 national Environmental Protection Act empowered worried about the environmental cost of new develo 1970s were also a time when we began to think of o as places to live, but as financial investments for the

Jakarta, Indonesia 24,500

Bogota, Colombia 47,300

Dhaka, Ba 112,

Homes became a financial investment for the future. What threatens the value of my investment ?

And people who believe their homes will put their children through college, or fund their retirement, are bound to be more protective of them.

"That's when people began to look around and say 'well what might threaten the value of this home?'" Fischel says of the 1970s. Residents were no longer worried about the old-school zoning [illegible] housing apart. "[illegible] well, if there's another housing development down there, it's going to [illegible] and create more traffic.' They became hyper-sensitive to community effects. And they started showing up in zoning hearings."

It's a [illegible]che to talk about property values at a public meeting, Fischel says, but the concerns people voice instead are [illegible]

In his new book, "Zoning Rules!" Fischel cleverly uses a Google Ngram, which tracks the frequency of words in digitized books, to follow the rise of our obsession with housing values against the surge in interest in [illegible]ting growth. We've reproduced his experiment here:

This new attitude over the last 30 years has layered atop an American instinct that has always been here.

"It [illegible]mise that if you come from E[illegible] the U.S., y[illegible] space, with your own home, and it's a private home, and it's got elbow room from your neighbors," says Hirt, the Virginia Tech urban planning expert who has written a new book on the history of American zoning.

Th[illegible] deep-seated cultural perception of spac[illegible]merica, t[illegible] we should all ha[illegible] a lot of it, that a town with a family per acre can[illegible] full. And it's not just because we have a big country; th[illegible]

lot of land in Russia, too, Hirt points out. Their cities are still much denser.

Of course, what's [illegible] of culture and politics -- not physics -- can change. So maybe we c[illegible]w differently.

"Everybody that lives in San Francisco thinks that San Francisco is the once-and-always great place," says McCarthy, head of the Lincoln Institu[illegible] "I was in San Fran[illegible]o in 1971 and it wasn't that great. It was actually in very bad shape."

The city was [illegible] population then, and it took many years to recover. Now we [illegible]k million-dollar micro-apartments are the norm.

"Bot 40 years from [illegible] San Francisco might look like Detroit. And it might look like Detroit because people have decided to stop evolving and adapting," McCarthy says. "And instead we move around on the planet instead of making the places that we care about work."

Paris, France
9,500

New York, U.S.
4,500 people per square mile

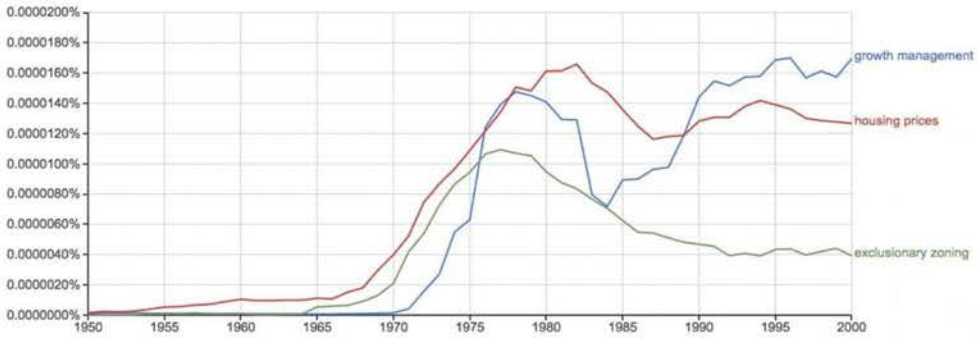
San Francisco, U.S.
5,400

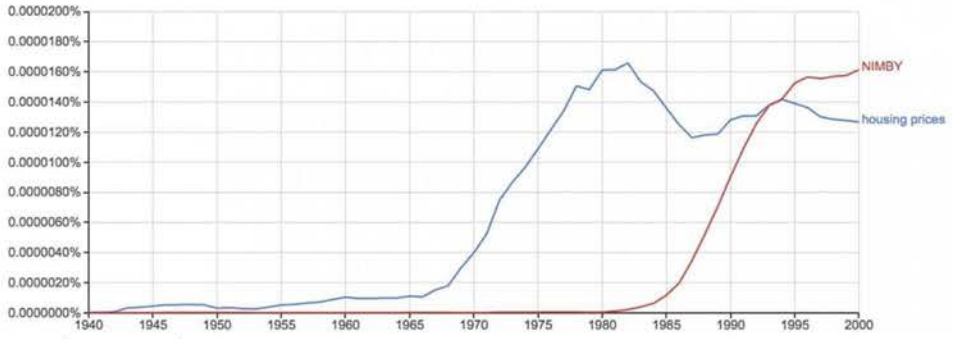
People have decided to stop evolving and adapting

London, U.K.
14,600

Mexico City
25,100

Seoul, South Korea
26,800





From Coexistence to Cooperation: Living Together Beyond the Family

Let's shift to cohabita-tion and cooperative living

Let's change the way we design

Let's change the way we live

Abstract

The distinction between the different generations and their allocation to "appropriate" modes of living regardless of their common needs and attitudes, the discordance between the actual modes of habitation and the built environment, the housing shortage and the extreme land values, summarise the housing crisis in London. The significant shifts to cooperative modes of habitation which are apparent in metropolitan cities such as London, are still restricted by the traditional nuclear family model of accommodation and domesticity, and cannot express their full dynamics and perspectives. Single parents, ageing population, students, young professionals and workers, internal and external immigrants who live outside the nuclear family model, constitute the subjects of this transformation of habitation, which is in the direction of aggregated single or co- operative households, in order to handle their daily agendas and reduce their living expenses. Cohabitation and cooperative living constitute the most important carriers of the shifts on habitation and call for a reevaluation of the built environment and in particular of the domestic space. The discordance between domesticity – in terms of households, actions and agendas – and typology can be exceeded not just through the typological transformation regarding the requirements of cohabitation or aggregated households, but ultimately through the creation of common fields of habitation, interaction and responsibility, concerning a new type of domestic space based on com- mon needs. Cohabitation hides inside its logic and existence the potentials for this transformation and the kernel for new liberating forms of living and modes of social interaction. If cohabitation, as we know it in modern terms, is the beginning point to think about a typological transformation of the domestic space, then the historical and contemporary paradigms of cooperative and collective living can provide the criteria for this transformation. Cohabitation, cooperative and collective living are perceived as the major poles which can reflect modes of habitation and domesticity outside of the family model and beyond the distinction of generations, and their intersection can be found in the matter of activities regarding household. In order to address these matters, the research focuses on the ideas of multigenerational living, cohabitation and collective living, proposing that the present situation offers the possibility for a new perception and intersection of these concepts.

1. **The contemporary metropolitan condition: cohabitation and the separation of generations**

The analysis of the reasons cohabitation constitutes not only a widespread living condition, but instead the dominant model of living in the metropolis for the lower classes and the young people, have to focus in two different aspects of the metropolitan condition. The first is the sovereign role of the Real Estate Market which struggles to speculate from every piece of space and hike the land values up. Therefore, cohabitation as the phenomenon of different individuals – who do not constitute a family – living together in a shared domestic space, is an inevitable response to the unaffordability of the rent prices in the metropolis. The second aspect is the extreme anonymity and alienation of the social interactions. Cohabitation is seen as a mode of socialisation and interaction, especially between people who have newly been established themselves in the metropolis. Therefore cohabitation can be seen both as economic and social response to the metropolitan condition: first as an aggregation of single households accommodated in a shared space and second as a possibility of socialisation. However, it can be supported that due to the huge economic pressure in the metropolis, the main base of cohabitation is primary economic and regards the very basic conditions of habitation: an affordable place to sleep. Therefore, cohabitation primarily appears as an economic necessity rather than an actual desire; however, this does not downgrade the fact that cohabitation is also a choice for social or political reasons.

Having this as a beginning point, cohabitation can be described as a forced action of sharing. If sharing can be initially distinguished in forced and voluntary sharing, then common needs which cannot be covered individually appertain to the first category, while social (and political) aspects regard the second. Despite the fact that this distinction is not completely accurate since the two forces impelling cohabitation mainly overlap, the primacy of the economic factor remains as the main reason cohabitation appears as a dominant phenomenon in the metropolitan areas.10

Cohabitation as the living condition that creates domestic relations outside of the family model of accommodation is traced in quite specific social and class groups. The most widespread case regards students, young professionals and internal or external immigrants. A more precise analysis about the mode of cohabitation and its character, have to focus in the economic and social status of the persons and their groupings. Cohabitation between blue-collar workers (immigrants or not) or precarious employees is completely different from cohabitation between young professionals who identify themselves as "creative class". Therefore, it can be supported that the condition of "living together" outside the family model of accommodation constitute an interclass phenomenon which appears between the working class and the lower parts of the middle class. In addition to this, aspects of cooperative living exist in institutionalised welfare structures and mainly in projects for the elderly population, where the individual households are unified and the inhabitants follow a common routine defined by their common needs and agreements. Thus, the condition of "living together" (either as cohabitation or as cooperative living) outside the family model is not a phenomenon that is restricted in a singular age group, but can be found under specific economic and social circumstances across all generations. However, a coexistence of multiple generations under the concept of cooperative living and outside of the model of the extended family, cannot be found yet in a contemporary, structured and widespread way.

Co[illegible] and co[illegible]rative li[illegible] is not a c[illegible] which a[illegible]tains exclusively to the young generations, despite the fact that this age group regards the majority of the cases. Structures [illegible] the persons [illegible] biological relationships or not) can live together by sharing – except from common spaces – aspects of household routines and agendas, can obtain complex social characteristics. The potential differences in age, culture, gender are able to create both fields of interaction and conflict and the harmonic symbiosis will always be under consideration and in a constant oscillation. Since these differences are apparent in the social structure of the domestic subject, the question of their translation to specific roles and hierarchies inside the domestic space is crucial. It can be an instrument of oppression and conflict, but under specific circumstances, this multigenerational living can be a deliberate factor of emancipation. The domestic space which can synthesise these characteristics, as[illegible] a character of collective edification and leads on in the creation of new subjectivities.

1. **[illegible] and theoretical framework: [illegible] forms and the idea of [illegible] living in [illegible]th & 20th century**

Cohabitation as a metropolitan and economic-based phenomenon in the framework of the end of the 20th century, began in a way spontaneously and it is detached from any historical forms of cooperative living. These historical forms are driven mainly by political ambitions and intentions and these facts function as a conjoiner factor across the time and the transformations of the capitalist society12. However, either referring to the Utopian Socialists of the 19nth century, the British and American Communes or the Soviet Union collective living housing projects, a sequence and an evolutional process between cohabitation and collective living can be clearly traced. The utopian social and architectural models of Saint-Simon, Robert Owen and Charles Fourier came as a response to the horrible living conditions of the working class in England and central Europe after the industrial revolution.13 These conditions were including also phenomena of absolute congestion between several families accommodated in one house or apartment, which later were transformed to the Cooperative Housekeeping movements of the 19th & 20th.14 The New Harmony, the Phalanstère and the other proposals of the utopian socialists were a response to the housing and living- conditions' crisis beyond the cooperative movements and cohabitation. They were not only new types of architectural models to accommodate the industrial workers but mainly new social and political structures, based on the collective living outside the family model. These models made a primary and fundamental effort to unify and exceed the contradictions between labour, social life and free time and between city and nature.

From the other hand, the Soviet Union projects of collective living have as origins the restrictions of war era and the cohabitation phenomena that the population adopted in order to survive from the absolute poverty.15 These collective living projects probably constitute the most structured, sophisticated, discussed, and long-lasting attempts for the replacement of the family as the fundamental cell of society.

From the propositions and implementations of the utopian socialists' ideas in the middle of the nineteenth century since the ultimate paradigms designed in the first decade of the Soviet Union, the displacement of the family model and its replacement with alternative groupings as the basic cells of society is the absolute target for the architects and the inspirers of the projects and part – or the intermediate target – of a coherent strategy for a fundamental change in the society. In the Soviet Union examples – and on the contrary of the model that is defined here as cohabitation – the condition which can be identified as ad hoc collective living occurs through the transfer of traditionally domestic services (or even dwellings services) and functions from the private domestic space of the dw[illegible] to a new shared domain wh[illegible] clearly distinctive from the [illegible]ate. These transformations gave to the bu[illegible] a major educational character and were capable of giving a[illegible]chitectural expression to a new society, cre[illegible] the appro[illegible] [illegible] "so[illegible] [illegible] we[illegible] their personalities, to [illegible] the self[illegible] people, to emancipate women by defeating the patriarchal society, and mainly, to create a new system of values different from that inherited from the past. The purpose was not only to destroy the capitalistic mode of production, but mostly to eliminate all its repercussions in the everyday life.16

Narkomfin, 1928, Units Analysis

The main idea behind the collective of people as a prerequisite is that it consists of persons who find and reconstruct freely their personalities inside it. The collective appears as an instrument of emancipation for the person and constitutes an antagonistic model to an oppressive society. The historical forms of collective living address habitation as a political and mass problem implemented by a centralised planning authority. However, a recent example of collective living which adopts some of the aforementioned design criteria but rejects and opposes all the political criteria, is the Women's Dormitory designed by Kazuyo Sejima in 1991. This dormitory for eighty employees of a company in Japan is designed exclusively for women in their first year with the firm. Collective living is perceived as a training period in order to foster a team spirit and increased productivity. The intentions are reflected on the design of the building and the project is a contemporary interpretation of the complete dissolution of the personal space, since there is not private space at all even in the bedrooms, where four women sleep together. The core of the building is a large common room and all the bedrooms and other rooms are directly linked to this main area. The toilets, the bathroom, and other utilities are inserted as separate volumes into the large central room. Cooking, eating and resting are meant to be collective activities taking place in the common room. The fact that the common room is the physically and conceptually the core of the building constitutes an important typological transformation beyond the hotel typology and the aforementioned historical forms of collective living. The proximity of private and collective spaces and the usage of the shared space as connective space, adopts characteristics which are related to the family houses and opens the way for a new genealogy of collective living.

the fundamental characteristic that distinguishes cohabitation from collective living lies in their subjects and most of all in their intentions. While in cohabitation the individual inhabitants tend to share a common space and relationships of mutual understanding in terms of the use of this space and the interaction (or not) of their individual lives, in collective living the actual subject is not anymore the individual person but the collective. In collective living, the inhabitants have as intention – or as a prerequisite – the existence of a collective, a coherent grouping that constitutes a higher synthesis of the individual persons; rather than an aggregation of people living together. The persons who constitute the collective, do not share only spaces, but most importantly activities and daily routines. Sharing a space does not create, neither indicate nor presuppose any strong connections between the inhabitants per se. Therefore, the existence of a collective as the distinctive factor between cohabitation and collective living appertains not to the sharing of spaces but to the collective activities which regard primary aspects of the domestic life. The notion of commons26 in habitation emerges exactly in that point when the inhabitants share activities and routines. The aggregation of private domestic lives existing in the cases of cohabitation give in the collective living their place to a constant interaction between numerous private domestic lives and – potentially – one collective domestic life. According to these definitions for cohabitation and collective living, cooperative living has to be defined as a situation in the middle of these distinctive conditions. The agreements regarding specific parts of the collective domestic life and not on its whole – but moreover the detachment of the person from common routines and agendas – create a condition characterised by stronger interpersonal relations than cohabitation but surely weaker than collective living. This definition refers mainly to institutionalised welfare structures for the elderly population or in extended cohabitation schemes or examples of cooperative housing projects. In all the above schemes, the connection between the inhabitants and between inhabitants and spaces, are the activities. Therefore, in order to characterise a typology as "collective", it has to assist or to force common actions. However, this does not mean necessarily the corresponding emergence of a collective or really collective actions. When spaces and programme (by the meaning of agreements in specific agendas, daily routines and collective activities) are in an interactive relation, then sharing becomes a design problem which exceeds by far the conventional adaptation of existing forms as it appears in the dominant model of cohabitation in family houses in the metropolitan areas, and appertain to conditions of cooperative and collective living.

III. Research questions and aims

According to the previous analysis, if cohabitation and collective living be perceived as the two major poles which reflect modes of habitation and domesticity outside of the family model of accommodation and their intersection can be found in the matter of activities which regard the household; and if cohabitation be accepted as a wider and more abstractly and freely defined category than collective living, then a sequence can be built between them, a connection which leads from cohabitation to collective living. Moreover, if cohabitation in the contemporary metropolis be perceived as an economic- based model but with crucial social characteristics (in terms of interaction and socialisation), then for the social categories that use it, the collectivisation of specific aspects of living can be more effective at confronting the economic and social root causes of cohabitation. The viability of this evolutional process relies on the specific categories of people who at the present economic and political circumstances are forced to live together, either because their individual needs cannot be covered individually, or because the potential of collectivised aspects of domesticity can be a deliberating factor for their lives. Cohabitation per se as a model based on spontaneity and randomization does not refer to common needs; therefore, the idea of collectivisation of domestic needs can be applied only to people who share common needs, and have similar or connectable routines and agendas. The similarity of the needs is not perceived here as a homogenization of different people and most importantly of generation.

DISCIPLINARY QUESTIONS

Therefore, in what instances across the different generations can be found intersections of common needs regarding different groupings of people? How can the individual and the shared domestic space of cohabitation schemes be reconsidered and re-conceptualised regarding the domestic needs of an evolution from cohabitation to collective living?

How can this evolutional process be adopted by multigenerational schemes of living? Can this process create new subjectivities in the metropolitan condition and challenge of the dominant role of family model?

TYPOLOGICAL QUESTIONS

Beyond the family house and the hotel types, what are the new typologies which can emerge through the gradual collectivisation of household aspects and the programmatic enrichment of domesticity? How the shared spaces can be reconsidered and reconceptualised as the medium between the living units, in order to create multiple centralities and layers of collective activities, rather than a single and detached space?

URBAN QUESTIONS

How can a new collective space -as the medium between the domestic space and the urban space – restructure the urban context of a housing project?

What relations can be built between multiple interventions in the urban fabric and more specifically between the different [illegible] spaces? How can the relations between different subjectivities – which are formed by multiple interven[illegible] re[illegible] programmes, ac[illegible] and subject[illegible] [illegible] the role of habitation in the metrop[illegible] co[illegible]? [illegible] can be bu[illegible] the co[illegible] the [illegible]stic space and the urban commo[illegible]

RESEARCH METHODOLOGY

The research methodology follows two main directions. The first direction regards the theoretical analysis of the object of research and the second the analysis of the corresponding case studies and typologies. The analysis of the object of research will trace the history of cohabitation, collective living and cooperative housing in the selected site and will identify the continuation of the matter in the present political, social and economic context. This historical and theoretical framework will be evaluated and its dynamics will be identified at the present, in order to justify the necessity for a reconsideration and reconceptualization of the matter. This framework will be furthermore enriched by the study of significant cases which are related to the matter, both historical and contemporary. These case studies will provide the criteria for a critical and contemporary proposal on the subject. Moreover, this analysis will be accompanied by the crucial typological analysis of the cases studies and will focus on the interaction between intentions, programmes and typologies, considering their prevailing historical framework. The selected case studies will be analysed and compared through diagrams, in order to reveal their typological patterns. Moreover, as defined by the research question, this analysis will not only appertain to the architectural scale of the buildings, but moreover to the urban scale, in order to show the connections between the projects and their urban fabric and therefore their importance for the composition of the city. The typological analysis of the case studies will lead on to comparative matrixes and to typological transformations and experimentations, which will guide to the design projects.

DESIGN METHODOLOGY

The design project will be approached not through a direct and one-dimensional design process but through a successive and analytical division of the generative components which will constitute it. These components have not to be perceived as self-standing or isolated issues, but as aspects which are in a constant, dynamic and dialectical interaction. Therefore, each one of the final projects – proposals assumes a paradigmatic role by combining and interpreting the different components in a unique way and for a specific purpose and instance. Thus, the proposal will be developed in multiple layers but mainly as a series of guidelines and series of interpreted experimentation, which will lead on to the final proposals. The purpose of the guidelines as the primary and generative components is to delineate the actuator issues which can assist the selected agendas but moreover to be able to further develop it autonomously according to the evolution of the community's coherence. Since the actual purpose is the community itself, the design has to be adaptable and in a dynamic relation with the community itself. However, it is quite important to function as safe substratum which does not leave the presence of the community to be dissolved. The guidelines will follow a primary division between Programme and Typologies.

PROGRAMME

The programme will not be analysed as a distribution of functions, but mainly of collective actions and peoples' interaction in the domestic space and in relation to the city, since it is a primary intention of the research to perceive habitation beyond the conventional arrangement of clearly separated and defined spaces. The fundamental aspect of the programme is habitation. Habitation is the base for all the other supportive aspects of domesticity which could be proposed or emerge, the cornerstone and the primary purpose of the proposition. However, and according to the preceded analysis about habitation as a dialectical action between the private and collective domesticity, habitation has to be analysed in the programme as set of relations and actions between these two poles.

TYPOLOGIES

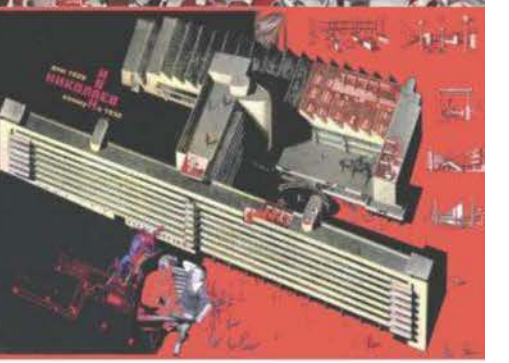
Following the re[illegible]ch methodology and its direction to the clarification and analysis of the distinctive typologies which [illegible] o[illegible] of collective living, the corresponding experimentation on typological transformation is crucial [illegible] [illegible] this typolog[illegible] [illegible] on the outcomes of the case st[illegible] an[illegible]. [illegible] to this direction [illegible] in the Part B.

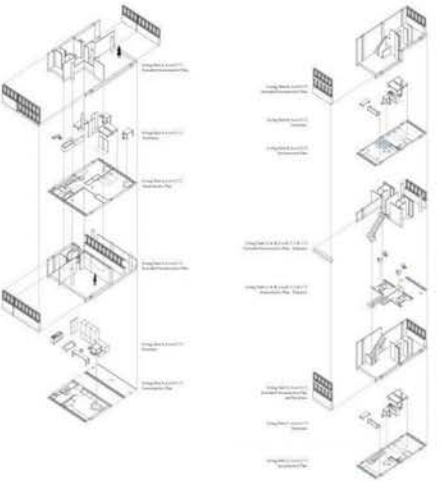
PROGR[illegible] [illegible]GIES

The synthesis of the programmatic studies and the typological studies constitute the final design projects, which assume a paradigmatic role in relation to the subject of collective living and its em[illegible]gence from cohabitation for the specifically defined social groupings. Therefore, the final design projects will be conceived as hypothetical and critical frames which refer to the possibilities of design regarding the selected subject. This methodology aims at providing a reconceptualization of the subject in the present situation, by using typological patterns and guidelines which are able to open the discussion in a new basis, considering the subjectivities of the design not only as its receivers but moreover as its carriers and co-constructors.

Part B

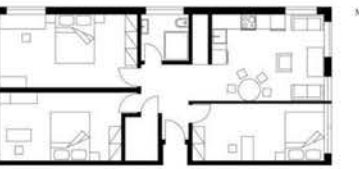
1. **Design brief**





Original version of the Flat

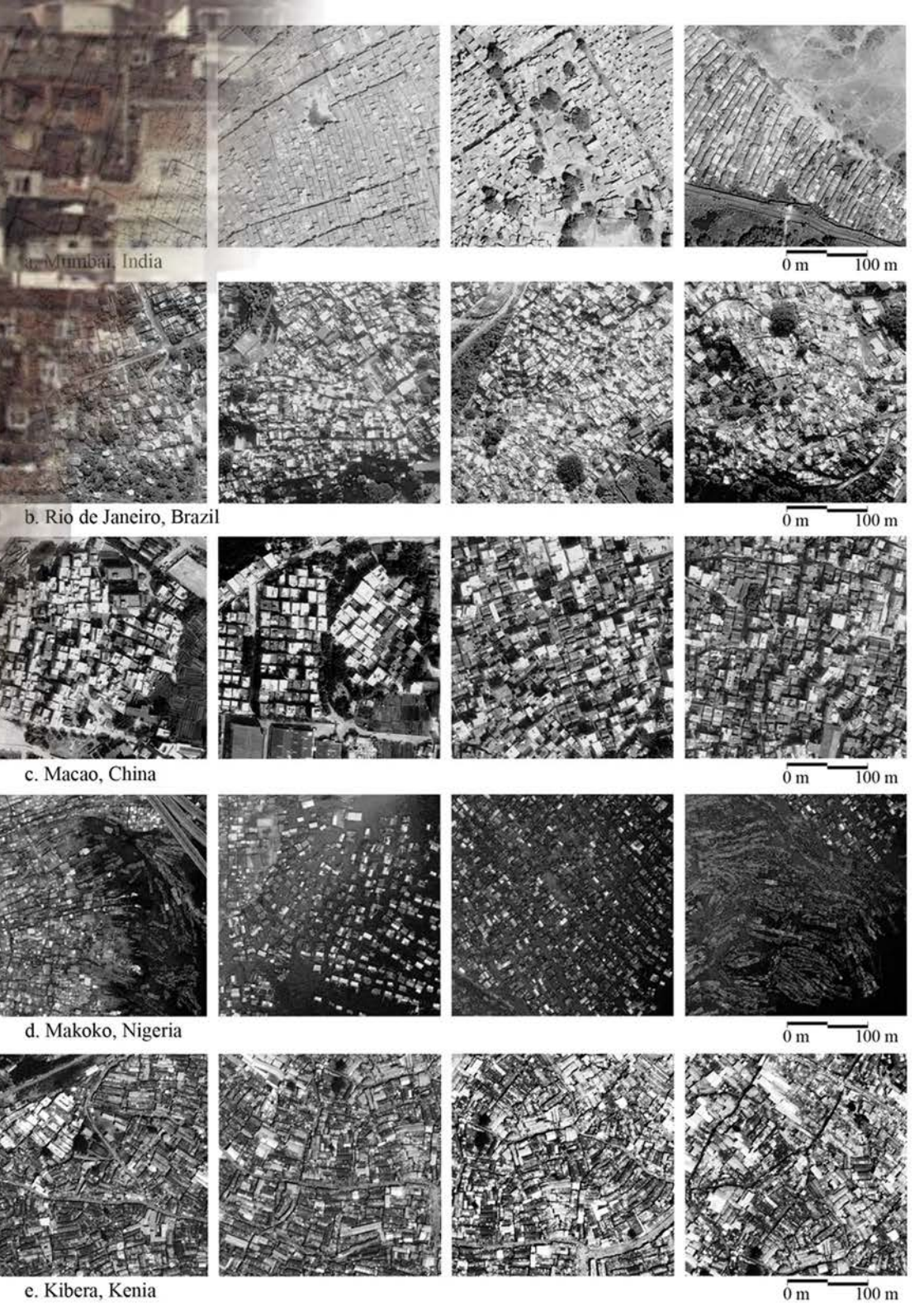
1. Mater Bedroom
2. Second Bedroom
3. Living Room
4. Kitchen
5. Bathroom
6. Storage

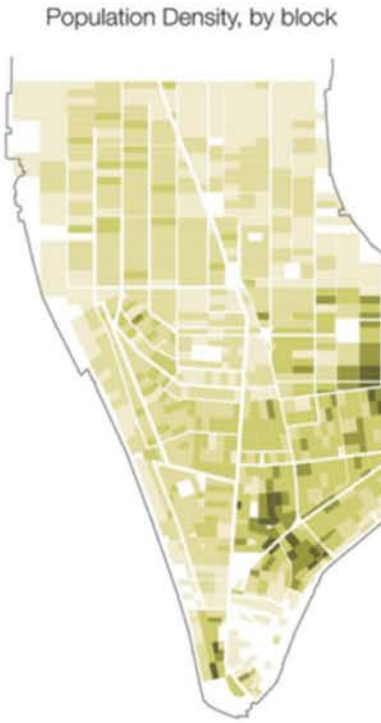


Modified version

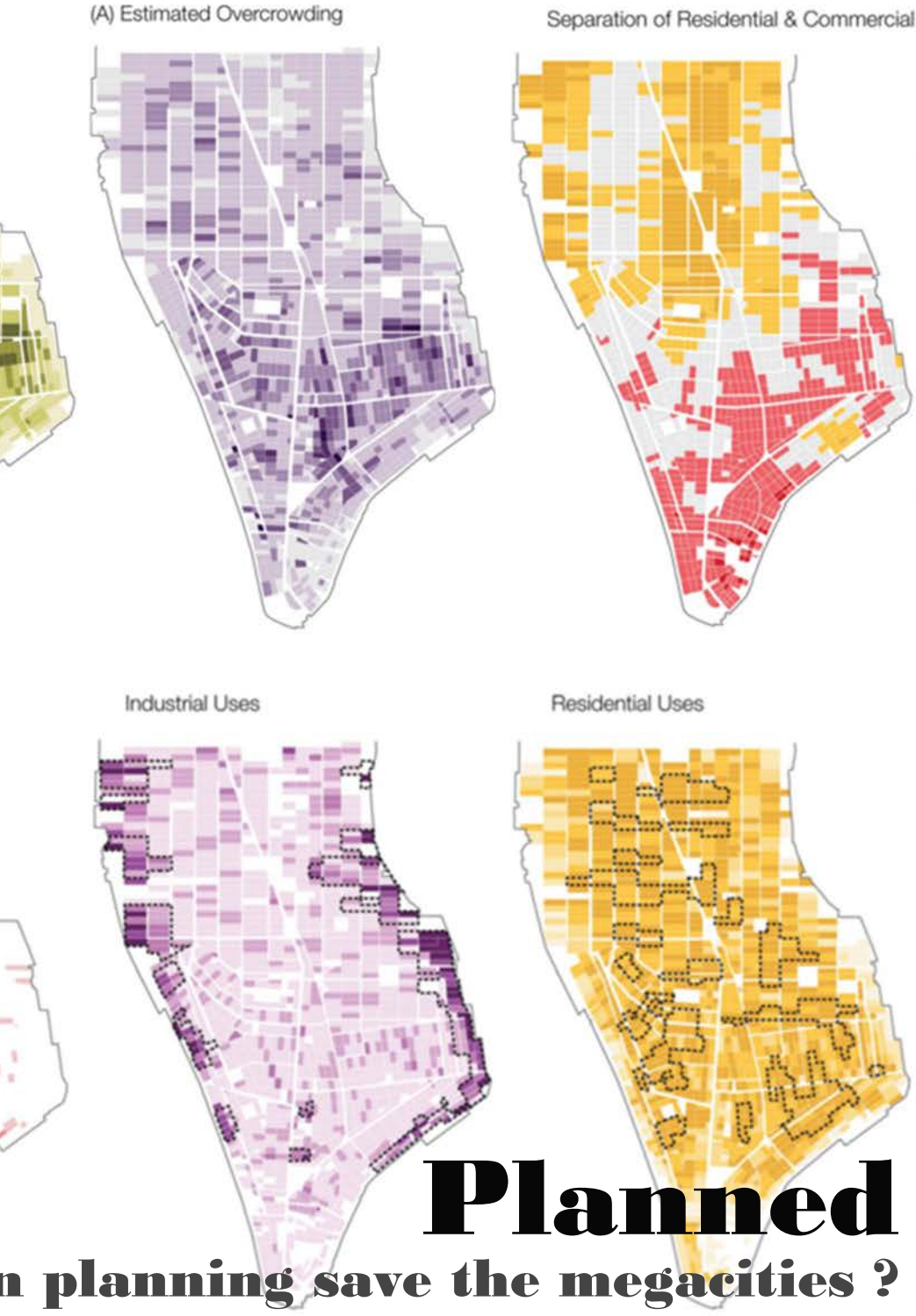
Unplanned

Where density booms, slums are born


a. Mumbai, India
0 m 100 m
b. Rio de Janeiro, Brazil
0 m 100 m
c. Macao, China
0 m 100 m
d. Makoko, Nigeria
0 m 100 m
e. Kibera, Kenia
0 m 100 m



Can urban



Planned

n planning save the megacities ?

Misunderstanding density: why we are building the wrong sort of cities

Successful city planners don't just look at the population size, but also how citizens in these communities work together

For such a scientific-sounding word, "density" sure is emotive. Utter it to Nimbys and you might get four-letter expletives. Mention a place like Hong Kong, and eyes glaze over at the thought of mile-high walls of people, packed in like sardines. Density still even brings to mind English cities during the Industrial Revolution, full of open sewers and cholera.

With so much riding on an ability to create and develop successful cities worldwide, are we making sure they are places we want to live in? That's the real crux – if we don't understand what good density looks like, and what the impact of bad density is on people's long-term health and wellbeing, then we don't have a working basis for current and future developments.

At a spatial level, density is all about the concentration of things in an area. Most local authorities, as well as the ONS, collect information about things they can readily count, such as the density of houses and people. With these two figures, along with other kinds of information, such as brownfield availability and where certain services are located, cities make decisions about how land is used, how it is described and what future uses might be needed.

Described in this way, density shapes how cities look, feel and are experienced. However, it is debatable whether these types of density alone are enough to make decisions. What about the density of rubbish bins? Cars? Cycle lanes?

Getting cities right in terms of density is difficult. For example, scholars advocating a more compact city model suggest that higher overall densities in cities can: support better and cheaper public transport, promote greater energy efficiency in buildings, create more opportunities for mixed-tenure housing, engender more social equality and provide greater control over who people contact. At the same time, high-density cities also lead to: more pedestrian casualties, urban heat island effects and waste; poorer ecosystem quality; loss of privacy and direct sunlight; and reductions in our physical and mental wellbeing.

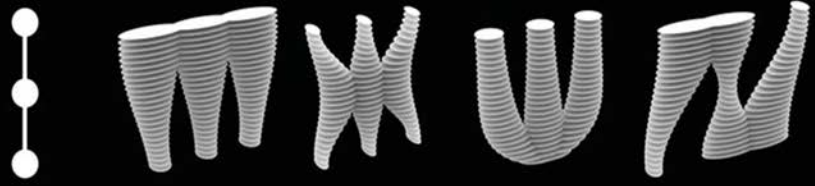
When we get density wrong, cities may become much more inefficient, as neighbourhoods become dead zones and valuable resources are diverted to solve the problems. So how can cities keep the good bits of density and get rid of the bad bits?

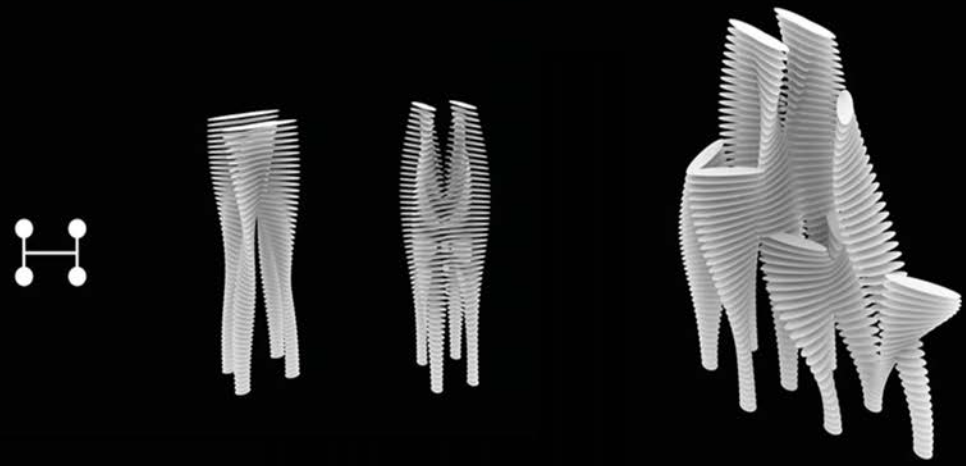
The short answer is: they can't. Cities are messy, complex places with both good and bad bits. But what cities can be is smarter about how they approach the issue.

For example, if high-density cities promote better and cheaper public transport, but induce more urban heat island effects, there should be processes, structures, services and products to maintain low-cost, high-coverage transit that is carbon neutral and works within dense, urban environments. For example, how are Lima and Bogotá doing it? An important question needs to be asked: who is going to be making density-related decisions?

Recent research that I've done with my colleague Professor Rachel Cooper suggests that the people currently making decisions about density, and the things that density affects, are often the wrong people. From a survey of built environment professionals, for example architects, urban designers, town planners, engineers, we found that developers are perceived to be the ones who make many of the density-based decisions in cities, followed by local authority planners and designers. When asked who should be making those decisions, they nominated local authorities, designers, councillors and residents.

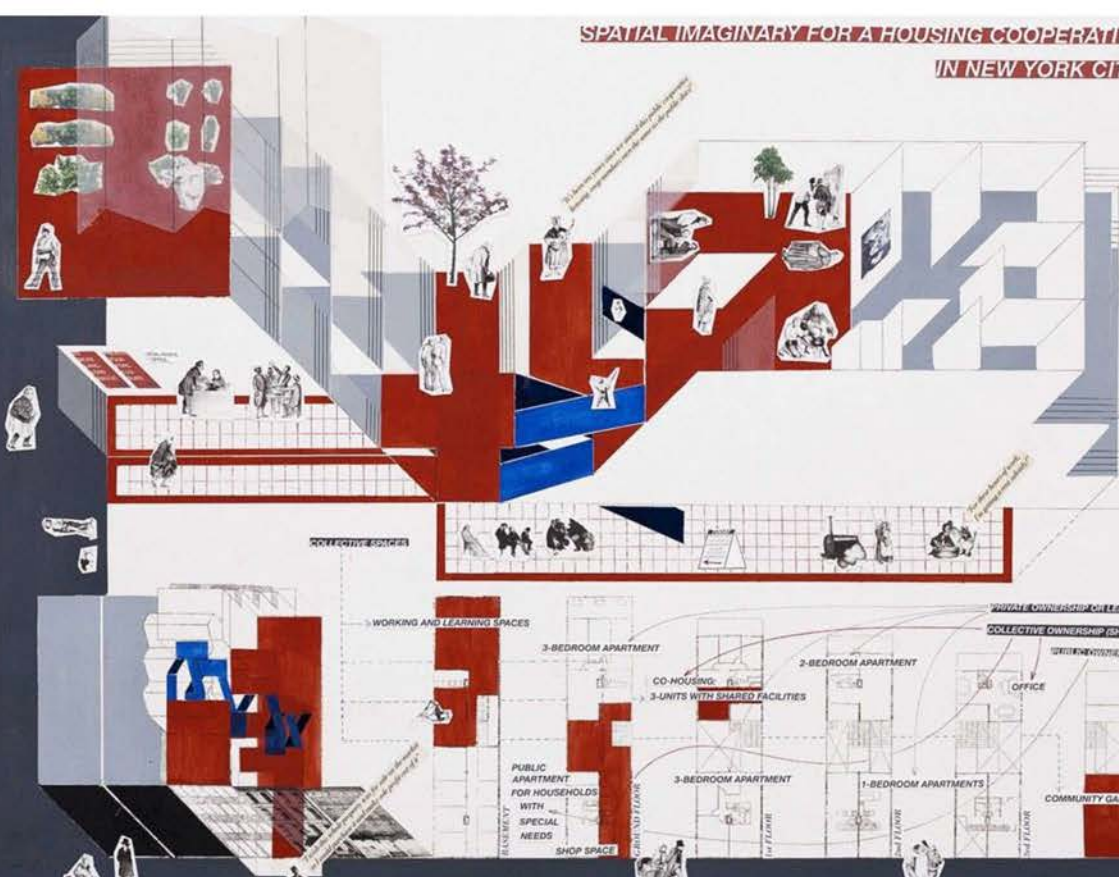
negative space





The conventional point-block tower and low-rise sprawl have been the primary (and default) typologies of shanghai's urban densification and expansion over the last 20 years. Given the complications arising from global economic turmoil, there has never been a more crucial time to challenge and propose alternatives to these dominant models of urban growth, which are tied to china's continuing policy of urbanising an additional 400 million of its citizens over the next 20 years. The workshop developed computational design tools and research concepts able to engage with the development of alternative social, spatial, structural and material systems. It sought to formulate new discourses on contemporary computation and production, including the use of code-based modelling and simulation techniques, in relation to the disciplines of architecture and urbanism.

URBAN PLANNING IDEAS FOR 2030, WHEN BILLIONS WILL LIVE IN MEGACITIES



A blueprint for housing cooperatives in New York, where the city, community stakeholders, an tenants work together to ensure housing affordability.

10/11 **This is an imagined view of Lagos, Nigeria, in 2050. Thirty percent of Lagos is currently underwater, leading to "water slum" housing, and the roads are congested with SUVs. Architects propose embracing the water to create transportation and economic opportunity, like in Venice or Amsterdam.** Courtesy NLÉ and Zoohaus/Inteligencias Colectivas and MoMA

11/11 **A new exhibit opens at MoMA tomorrow. Called** Uneven Growth: Tactical Urbanisms for Growing Megacities, **it looks at how urban planners could work informal housing developments to make megacities more livable.** Courtesy NLÉ and Zoohaus/Inteligencias Colectivas and MoMA

URBANIZATION AND THE MEGACITY

Across the globe and in a short amount of time, we've given up the tractor for the city bus, the open landscape for one of brick and mortar. We are now an urban planet. In fact, by 2008 over 50 percent of the global population was living in urban areas. It was 3 percent in 1800. Throughout history, cities have attracted people as centers of culture, religion, learning, and economics. Looking back, the first wave of urban migration took place in what are today's more developed countries, especially in Europe and North America. But looking ahead, 90 percent of the future urban increase is expected to take place in Asia and Africa, and it is projected that close to two-thirds of all people will be calling cities home by 2050.

Urbanization is often linked with economics – increased job opportunities, a centralized market, better pay and higher individual wealth have all drawn people into cities. And for a long time, these pull factors are what caused cities to grow. The Industrial Revolution caused a shift from agriculturally based societies to industrial, and thus geographically centered, societies. But that dynamic is changing. Today, most urban growth is natural increase – due to more births than deaths among those already dwelling in cities. Additionally, formerly small settlements are being reclassified as urban areas as the populace living there grows from within.

IMPLICATIONS OF GROWING "TOO FAST"

Depending on cities' ages and locations, there is much variation in wealth and infrastructure. Many of the newer urban areas, located in Latin America, Asia and Africa, have an entirely different look, feel, and outlook than their older European or North American counterparts. How fast an area grew, or is growing, is a key component.

When a city grows at a manageable rate, which is often considered roughly 1 percent annually, its infrastructure can keep pace with an increasing population and its demands. Necessities such as roads and public transportation, appropriate sewers and water treatment facilities, clinics, schools and housing have time to be planned and built alongside the increase in human numbers. The risk of fast urban growth, especially in an economically strained country, is that the necessary infrastructure often cannot expand fast enough to keep up with residents' needs. Without infrastructures in place to provide basic needs, residents can be forced to create their own provisions with whatever is available.

THE RISE OF SLUMS

In less developed countries, densely populated sl
largest cities. Due to a poor economy and weak in
do not have the means to support the overwhelmi
UN World Urbanization Prospects Report, Mumba
world, with over 20 million people in the entire me
half of Mumbai's metro residents live in slums sur
health, environmental, and land use problems.

Slum dwellers survive with practically no sanitation, w
security, and almost one-sixth of the world's populatio
lack of running water and sanitation, plus malnutrition
deadly conditions in the slums and shantytowns that s

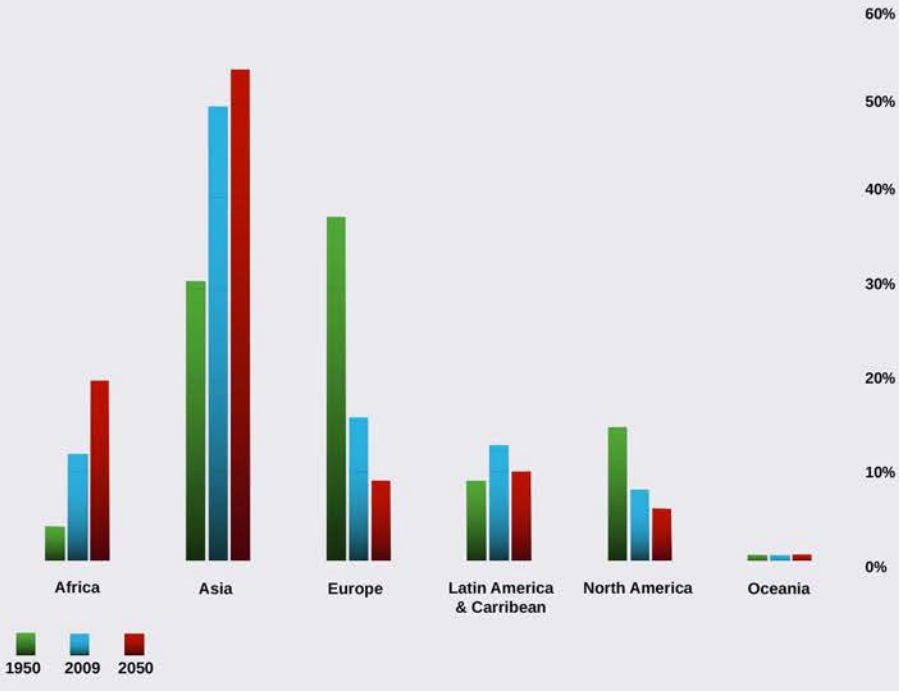
Latin America. The spread of HIV/AIDS and other
many people live in such close physical proximity
areas throughout the developing world. When con
inadequate schools, these public health issues cr
city's residents.

THE EMERGENCE OF MEGACITIES

The urban shift over time has led to the emergenc
of 10 million or more. New York City and Tokyo w
reaching an urban conglomeration of over 10 milli
from alone in their size. In 2014 there were 28 me
Paulo, Brazil to Lagos, Nigeria and London, Engla
global regions except Oceania are marked with m
the World Population Map).

Most of the cities that have reached the 10 million
and Africa. In fact, it's where seven of the eight ne
10 of the 12 projected 2030 megacities will be loc
fastest growing megacities. The population of Kins
of the Congo, has doubled roughly every 5 years
population grew by over 23 percent, and today ov
under 22 years old. A combination of factors has l
rural areas, high fertility rates, and widening of the
outpacing almost all support structures in the city
congestion, and insufficient education facilities ha

DISTRIBUTION OF WORLD URBAN POPULATION BY AREA



ums form both on the edges and within the
nfrastructure, cities such as Mumbai, India
ng urban population. According to the 2009
ai ranked as the fourth largest city in the
tropolitan area. Even more striking, over
rounding the city, causing huge public

ater, urban amenities, employment, or
n lives under these conditions. The
and inadequate housing, leads to
surround many cities in Africa, Asia, and

infectious diseases in areas where so
is a critical public health issue for urban
mbined with high unemployment rates and
eate a poor quality of life for many of the

e of the megacity – a city with a population
ere the first known megacities, both
on by the 1950s. But today they are far
gacities across the planet – from Sao
nd to Shanghai, China – and all major
egacities. (See the Megacities overlay on

marker in recent years are located in Asia
ewest megacities can be found and where
ated. These regions are also home to the
shasa, capital of the Democratic Republic
since 1950. From 2010 to 2015, Kinshasa's
er half of the 11.6 million residents are
ed to this growth including migration from
city's boundaries. The population is
where the threat of food shortages, traffic
ve become a stark reality.

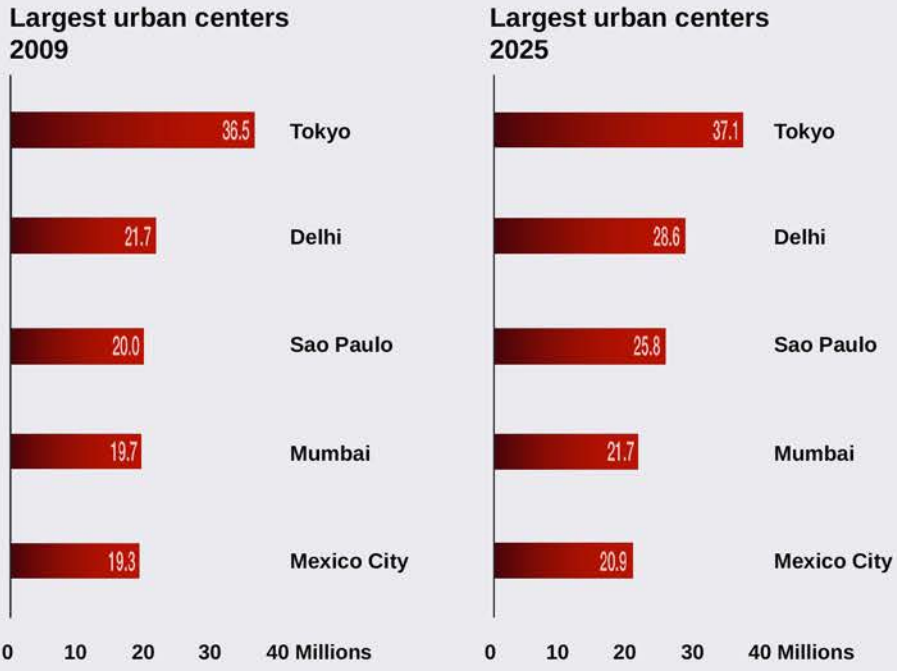
ENVIRONMENTAL PROS AND CONS

A large urban population may seem environmentally troublesome with cities viewed as a disruption to the natural world. But environmentalism and urbanization are not incompatible. Dense urban areas have a much smaller ecological footprint – many people live in apartments or smaller connected houses rather than ranch-style homes in sprawling neighborhoods. Multifamily dwellings have the added benefit of being more energy efficient and they require less resources per person. Cities are also walkable and have public transportation options that can make cars less of a necessity. And above all, densely populated areas make it possible to protect other open spaces to serve as wildlife habitat, farmland, conservation areas, or oxygen-producing forests.

But of course, there are ecological downsides to cities as well. Concentrations of people mean concentrations of pollutants and trash. Cities produce up to 70 percent of global CO_2 emissions and smog is becoming a common feature in many urban landscapes. Large swaths of continuous pavement prevent water drainage and boost temperatures. Without proper infrastructure, cities also risk having waste – both trash and human waste – clogging waterways and causing damage. And with cities across the globe producing 1.3 billion tons of waste annually, that's a lot for one area to handle.

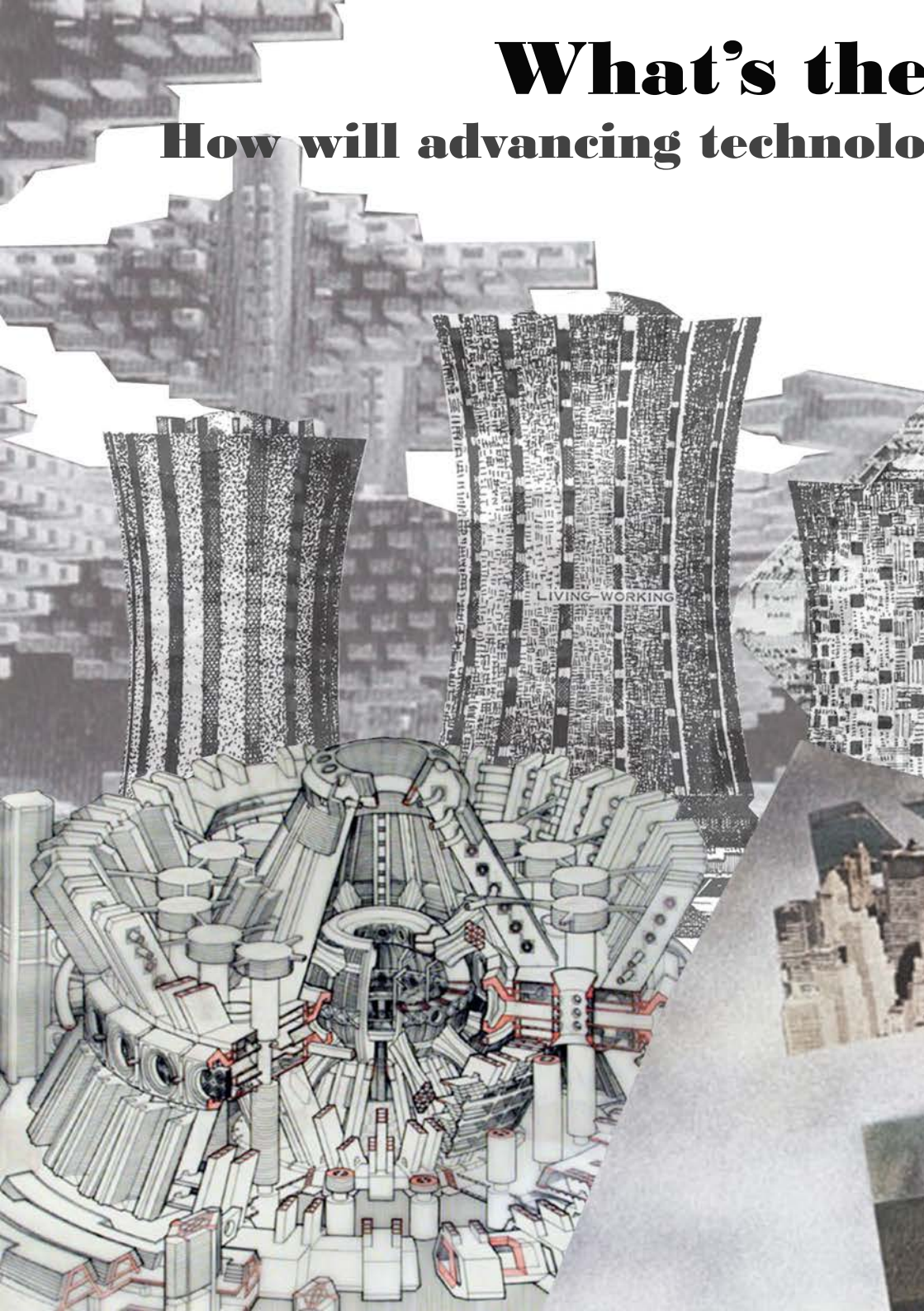
PLANNING AN URBAN FUTURE

It is predicted that most future urban growth will happen in settlements currently home to between 100,000 and 250,00 people, and if this is to be done sustainably, planning is a must. Future high-growth areas require strategic urban planning individually tailored to a city's history, culture, value system, and other specificities; a single cookie-cutter approach won't work, nor will the plans of the 20th century. But by keeping an eye towards social justice concerns, natural resource use, environmental hazards, and other issues of modern cities, urban plans can help ensure the health and well-being of tomorrow's city dwellers.



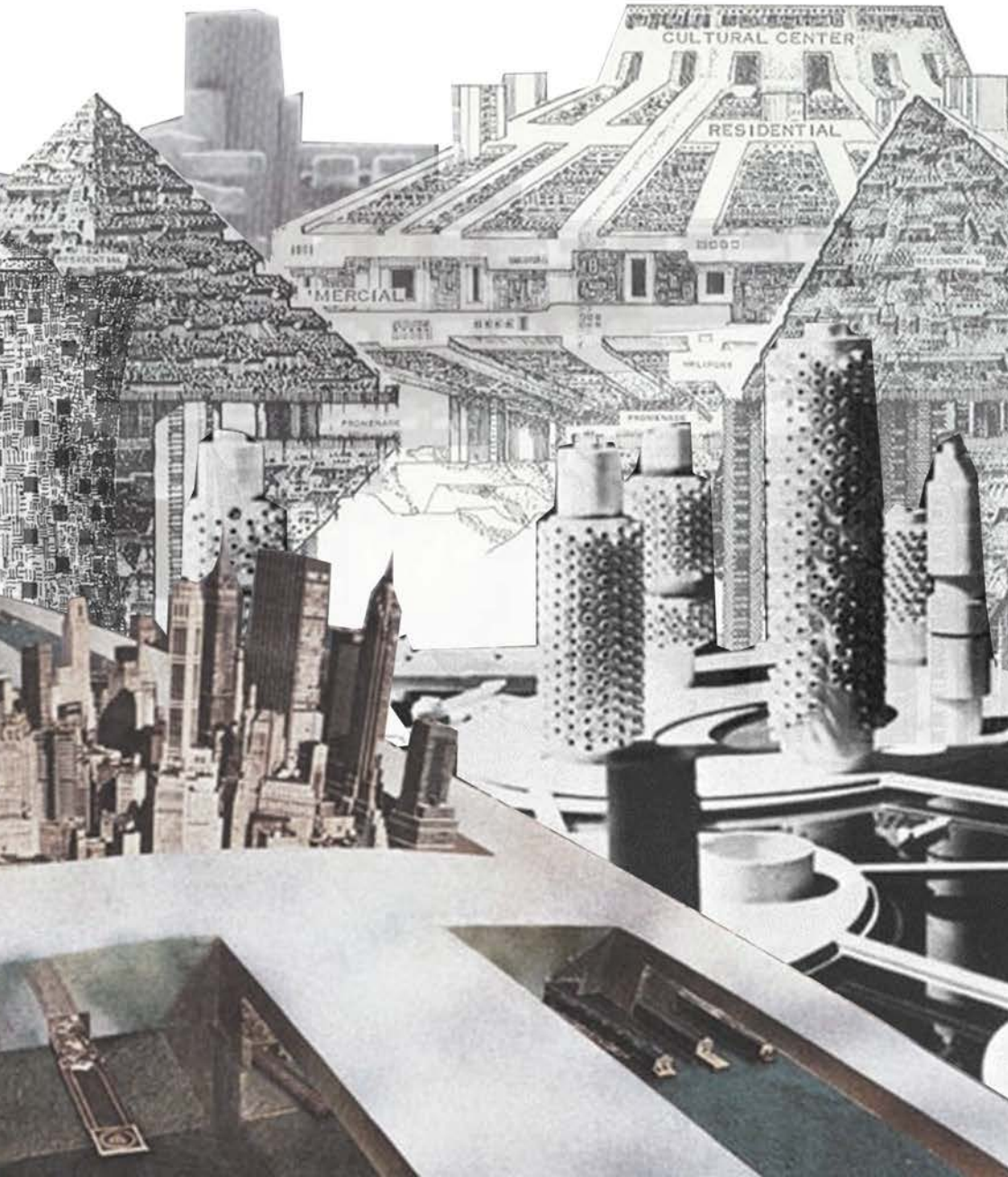
What's the

How will advancing technolo



e future of megacities ?

gies affect the building densities?



The Interactive Urban Model: Histories and Legacies Related to Prototyping the Twenty-First Century City

Tom Verebes*

Department of Architecture, The University of Hong Kong, Hong Kong

This article surveys the theoretical and historical [illegible] standardization, and the cultural issues associated [illegible] prolific era ever of urbanization. Situated at the intersection of [illegible] history, current conditions, and a speculative future, this article focuses on themes related to design research on computation, fabrication, and the city. Given the ongoing transition of industrial paradigm from Modernism's standardization [illegible] production, the context of today's emerging methods [illegible] explored, with an emphasis on design repercussions at the urban scale. Theorizations of the cultures surrounding, within, and against technology, this article will confront the difficult issues of the expression of identity in late capitalism, through resistance of regionalism and other neo-traditionalist positions in an increasingly globalized world. These issues lead to a proposition of the notion of an interactive urban model, as the basis of embedding intelligence into city design, and the potential of producing highly customized materialization through contemporary production technologies. [illegible] hypotheses of these issues [illegible] by three case study design projects [illegible] by the author's practice, OCEAN CN Consultancy Network, based in Hong Kong. [illegible] three projects demonstrate the author's design research experimentation with design and production technologies at various scales of practice in architecture, urbanism, urban and landscape design, and masterplanning, applying computation toward the objective of achieving modulated spatial attributes.

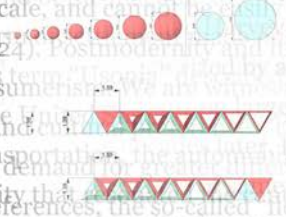
> The shift from an empirical, tradition-bound technics to an experimental mode has opened up such new realms as those of nuclear energy, supersonic transportation, cybernetic intelligence, and instantaneous distant communication.
>
> -Lewis Mumford, 1944 (Mumford, 1944)

Th

Against Similitude: The Dilemmas of Identity Making after Modernism

Mies van der Rohe, 1924

Le Corbusier



Andrea Branzi, *No Stop City*, Archizoom, 1968

entity is firmly embedded into contemporary epistemology, yet a gap exists between the acceptance of conceptual apparatus and the normalization of methods to achieve these concepts.

> Difference is not diversity. Diversity is given, but difference is that by which the given is given … Everything that happens and everything that appears is correlated with orders of difference: difference of level, temperature, pressure, tension, potential, difference of intensity (Deleuze, 2005, p. 280).
>
> Gilles Deleuze

Just as in other fields, the distinction of difference and diversity encapsulates an important shift, which confronts the platonic lineage, of the world increasingly understood and constructed "through differentials rather than underlying uniformities or models," which serve as indices of uniformity (Hight et al., 2009, p. 12). Change, it seems, is the only constant, but change most often occurs in gradients, rather than in great leaps.

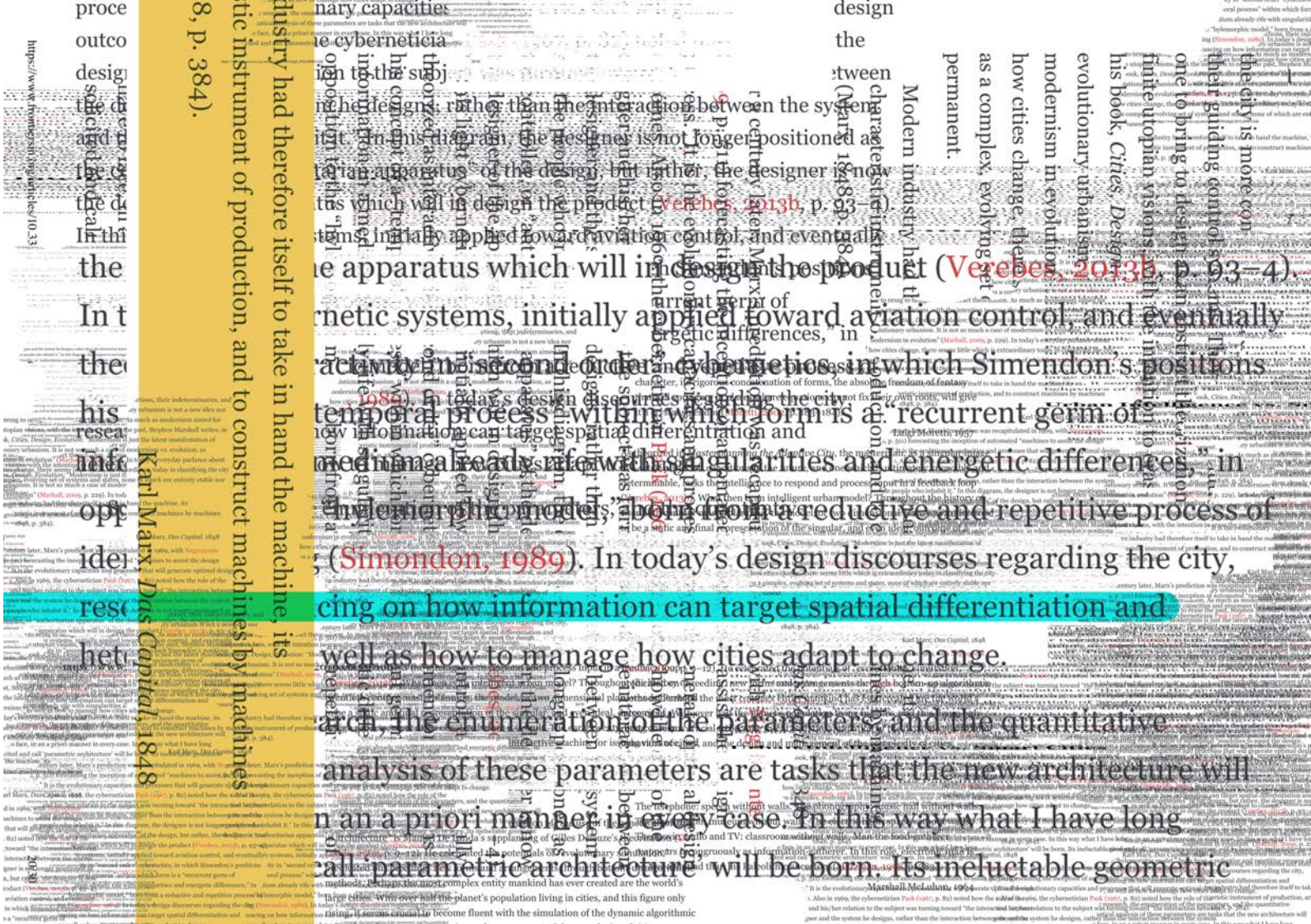
> Space today is no longer a backdrop or a foundation for events but a participant and unstable and unpredictable process that both harvests and produces reality on the run. Space has never before so dramatically resembled a living organism (Kwinter, 2011, p. 74).
>
> Sanford Kwinter

In recent decades, technological paradigms have repeatedly relied upon organic analogies, and biological associations for a reorientation of an understanding of the mechanical nature of technology, in an era where complexity is increasingly embraced, yet still elusive and unharnessed.

Masterplanning vs. Interactive Urban Models

In the Futurist manifesto, over 100 years ago (Marinetti, 1909, p. 38), polemically declared how "each generation will have to build its own city," due to the i... of the city, and the presumed advancements by which it corrects and repla... dysfunctionalities (Marinetti, 1909). Shortly afterwards, Geddes published... book, *Cities in Evolution* (1915), theorizing how the topographical context informs and shape them, in relation to "where food and water supplies car... where the settlement was established" (Sloane, 2011, p. 28). While the noti... architecture as organic has often be dismissed by critics as an esthetic preference, while

Modern ind... characteris... (Marx, 184...


industry had therefore itself to take in hand the machine, its instrument of production, and to construct machines by machines
Karl Marx, Das Capital, 1848
(Simondon, 1989)
Modern industry has therefore itself to take in hand the machine, its instrument of production, and to construct machines by machines
Karl Marx, Das Capital, 1848
(Simondon, 1989)

> character, its rigorous concatenation of forms, the absolute freedom of fantasy that will spring up in places where equations cannot fix their own roots, will give it a crystal splendor (Moretti, 2002, p. 183–184).
>
> Luigi Moretti, 1957

As theorized in *Masterplanning the Adaptive City*, the masterplan, as a singular image of a set of projected conditions of the future, and one which is ultimately knowable and determinable, lacks the intelligence to respond and process input in a feedback loop (Vreeberg, 2013b). What then is an intelligent urban model? Throughout the history of twentieth century masterplanning, the model, or two dimensional plan, was understood to be a static and final representation of the singular, and even ideal, outcome of a design process, most often obsolete before it is built. The early twenty-first century conception of the urban model is one of an interactive machine for issuing variance, and, as such, the notion of an urban plan, and its guiding interactive model, be postulated as the outcome(s) of multiple influences and associations in time. The underlying qualities of the formative processes of urbanism require methods that specify its propositions provisionally.

Perhaps the most cogent and impartful articulation of the use of the genetic algorithm in architecture" is Manuel De Landa's supplanning of Gilles Deleuze's (De Landa, 2002, p. 8–12). He celebrated the potentials of evolutionary simulation to predict[illegible] "breeding" new forms and arrangements through bottom-up genetic methods. Perhaps the most complex entity mankind has ever created are the so-called large cities. With over half the planet's population living in cities, and this figure rising, it seems crucial to become fluent with the simulation of the dynamics and behaviors of cities, and the design and management of the complexity of cities.

Urban Intelligence vs. Smart Cities

13/11/2017 Frontiers | The Interactive Urban Model: Histories and Legacies Related to Prototyping the Twenty-First Century City | Digital Humanities

Adaptive

"the anthropocene" (Crutzen, 2002).

> s need methods and tools that build in intelligent capacities to the capturing, feedback of data, not simply to argue for greater efficiency, through pplied toward regulatory metabolism. The evolution of culture (and cities) differ on the basis of speed, yet they share, if only analogically, relations of nsfer of information (Weinstock, 2013, p. 19).

when designing an

are indeed designing our future for they direct and manipulate the way in which we engage with our social values, educational, commerc
increased dramatically through the years making the amount of people living in the cities ascend from 10% in 1900, to 50 % in 2012 and
by the first face, people curiosity always encourage them to seek for more when it comes to better chances in life, making this city a larg
and declining "the human quality" the city should possess, focusing on the best ways to create a building that can be considered a "wo

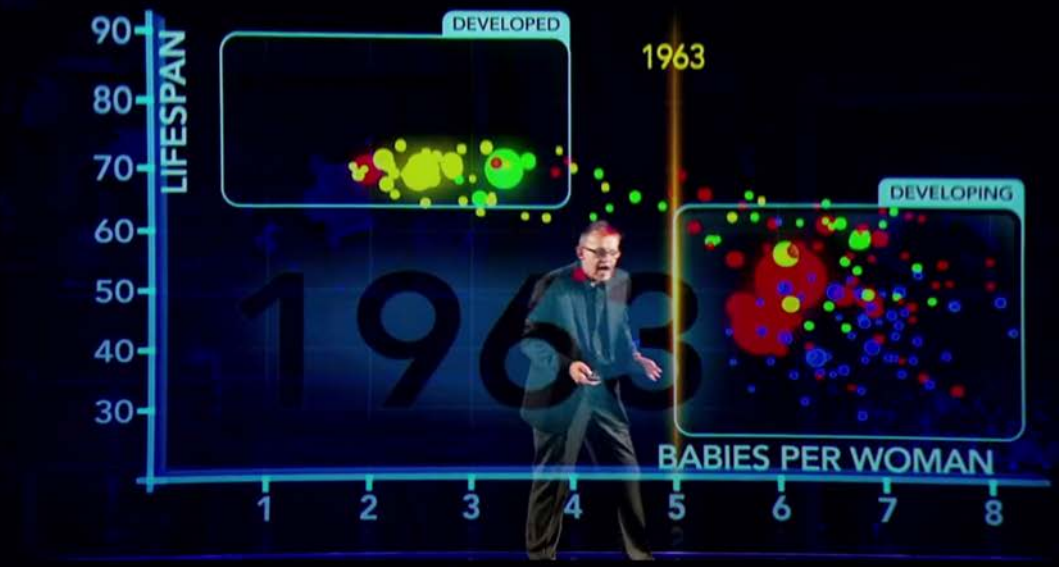
there are seven billions living in this world, **1.354.040.000** of which are in china, one of the most advances countries, and when it comes to overpopulation, there's always a particular city that beats all the records, shanghai "the city of the future".

u random buildinq

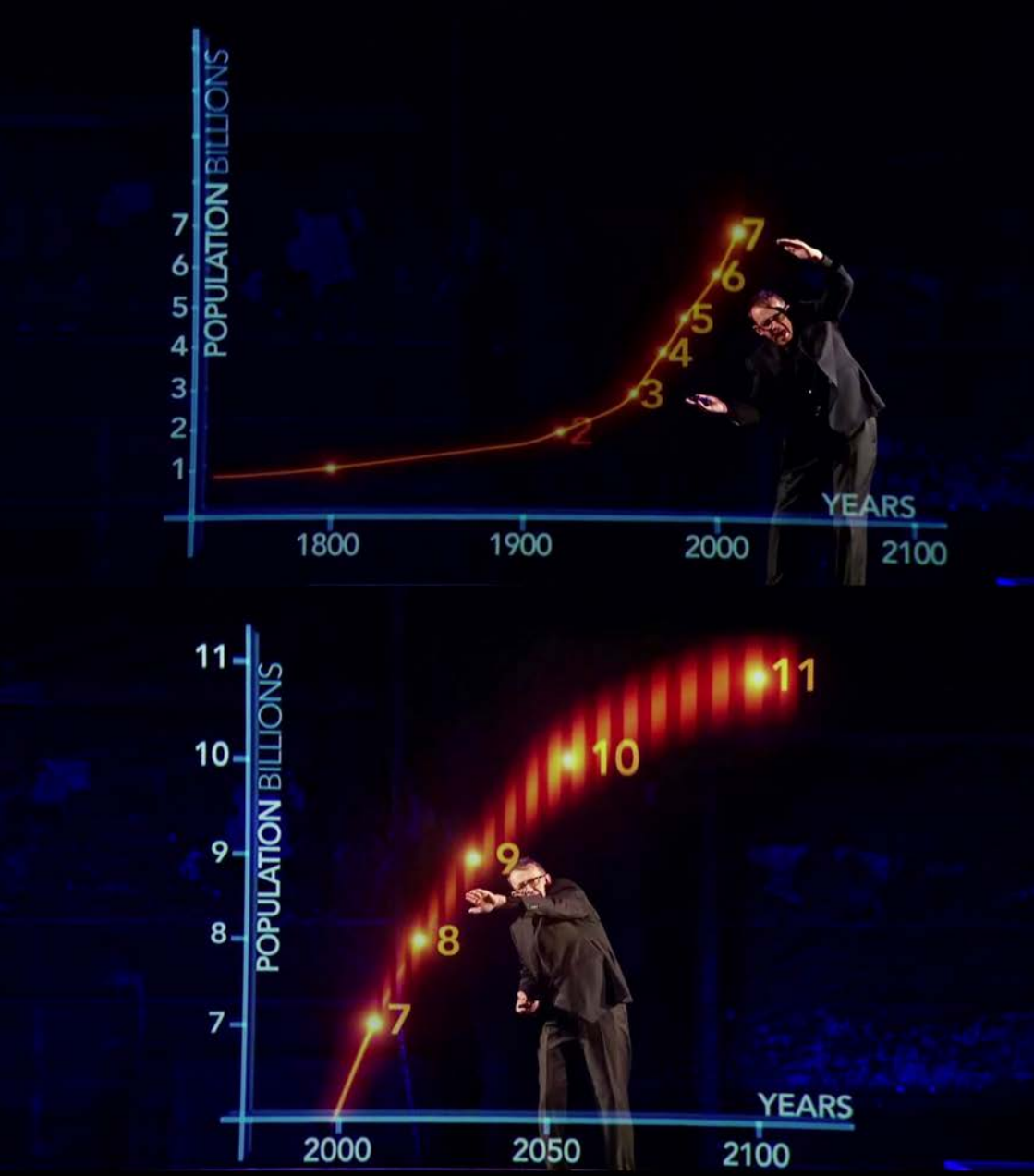
we
ial and spiritual needs. cities have always been a source of attraction for people living in suburbs and villages, and immigration has
75% later in 2050; making each city a coin with two contradicting faces, the touristic smart face, and the social crises one. blinded
e exhibition where designing buildings has become a competition between some brands or some fake modern pioneers seeking fame
k of art" or the tallest building in the century depriving it from its surrounding in many cases.

PEAK

Population will p



PEAK AT 11 BILLION



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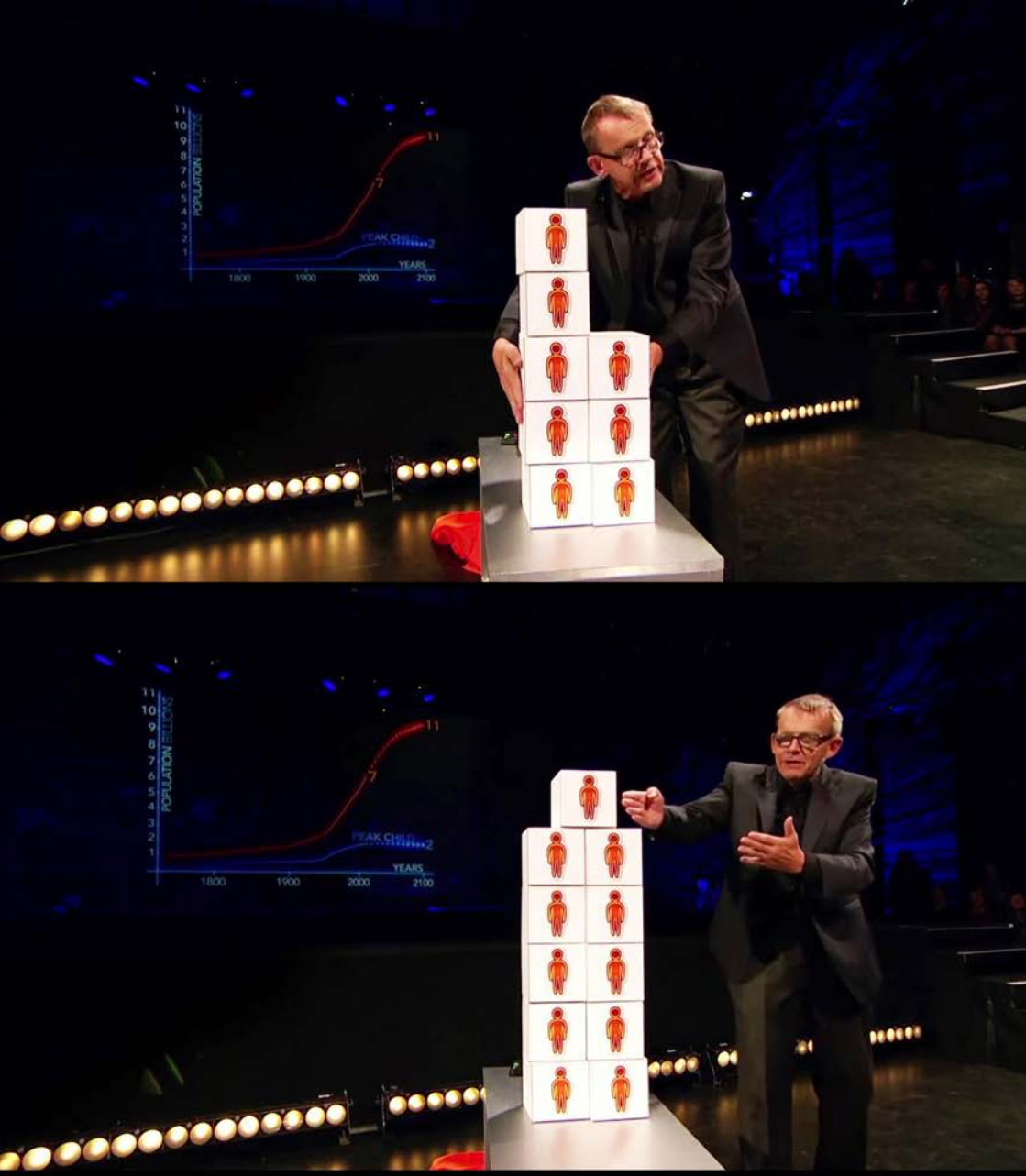

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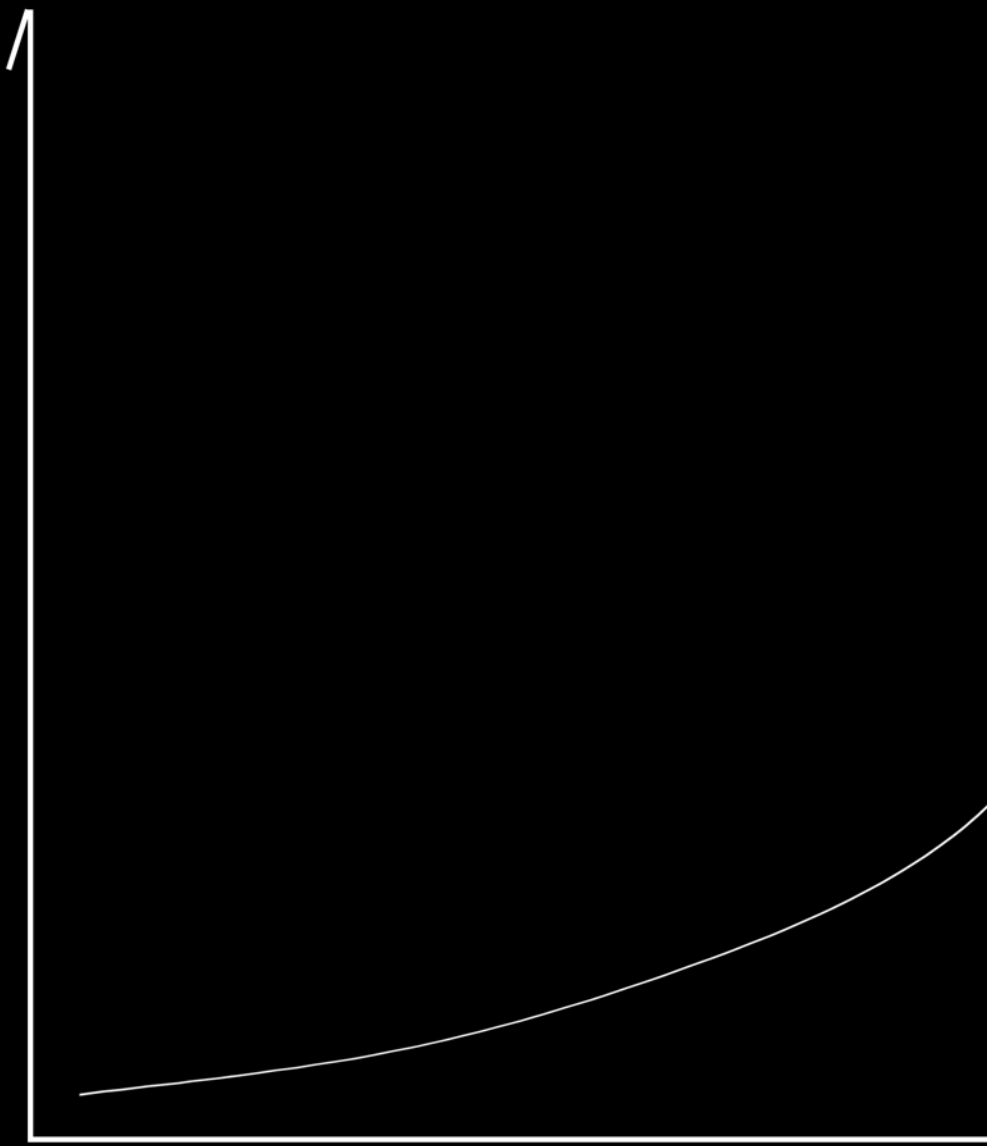
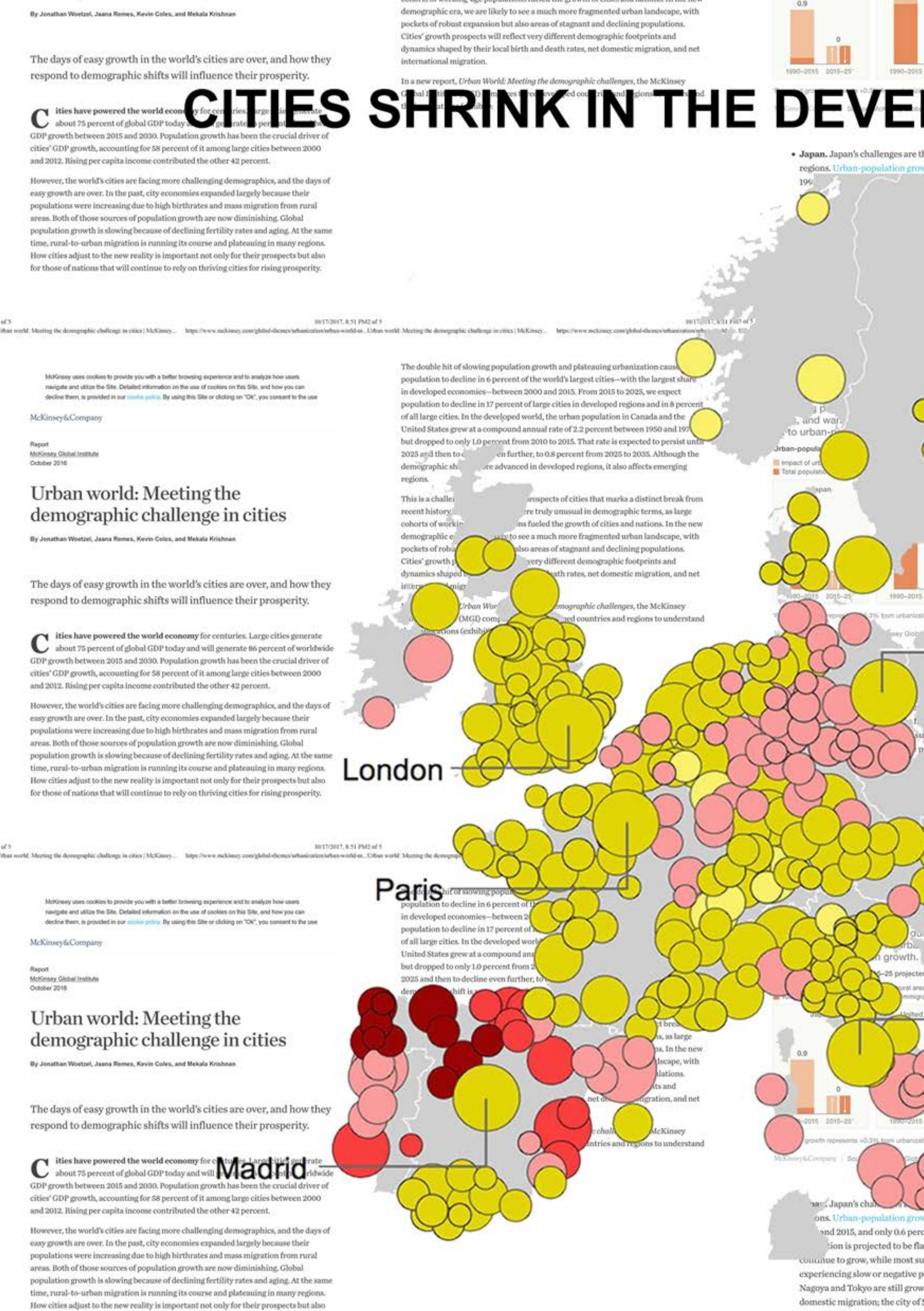


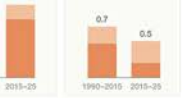
AND WILL FLUCTUATE

E AFTER THAT POINT

SHRINKAGE


CITIES SHRINK IN THE DEVE
London
Paris
Madrid
McKinsey&Company
Report
McKinsey Global Institute
October 2016
Urban world: Meeting the demographic challenge in cities
By Jonathan Woetzel, Jaana Remes, Kevin Coles, and Mekala Krishnan
The days of easy growth in the world's cities are over, and how they respond to demographic shifts will influence their prosperity.
Cities have powered the world economy for centuries. Large cities generate about 75 percent of global GDP today and will generate 86 percent of worldwide GDP growth between 2015 and 2030. Population growth has been the crucial driver of cities' GDP growth, accounting for 58 percent of it among large cities between 2000 and 2012. Rising per capita income contributed the other 42 percent.
However, the world's cities are facing more challenging demographics, and the days of easy growth are over. In the past, city economies expanded largely because their populations were increasing due to high birthrates and mass migration from rural areas. Both of those sources of population growth are now diminishing. Global population growth is slowing because of declining fertility rates and aging. At the same time, rural-to-urban migration is running its course and plateauing in many regions. How cities adjust to the new reality is important not only for their prospects but also for those of nations that will continue to rely on thriving cities for rising prosperity.
demographic era, we are likely to see a much more fragmented urban landscape, with pockets of robust expansion but also areas of stagnant and declining populations. Cities' growth prospects will reflect very different demographic footprints and dynamics shaped by their local birth and death rates, net domestic migration, and net international migration.
The double hit of slowing population growth and plateauing urbanization cause population to decline in 6 percent of the world's largest cities—with the largest share in developed economies—between 2000 and 2015. From 2015 to 2025, we expect population to decline in 17 percent of large cities in developed regions and in 8 percent of all large cities. In the developed world, the urban population in Canada and the United States grew at a compound annual rate of 2.2 percent between 1950 and 197 but dropped to only 1.0 percent from 2010 to 2015. That rate is expected to persist unti 2025 and then to decline even further, to 0.8 percent from 2025 to 2035.
Japan. Japan's challenges are th
regions. Urban-population grow

LOPED 'WESTERN' WORLD



growth driven by all three factors. In contrast, Pittsburgh, Pennsylvania, and Cleveland, Ohio, are seeing their populations flatten or even shrink, and both have had to rethink their visions of the city.

- **Western Europe.** Urban-population growth in Western Europe was 0.7 percent annually between 1990 and 2015. It is projected to decline to 0.5 percent between 2025 and 2035. Like Japan and the United States, Western Europe is aging unevenly and is likely to experience more differentiation in the future. The capital cities of Berlin, London, Oslo, Paris, and Stockholm all have growing populations. However, many cities are already experiencing population decline. This includes cities in Germany (for example, Chemnitz, Gera, and Saarbrücken) and Italy (Genoa and Venice).

About the author(s)

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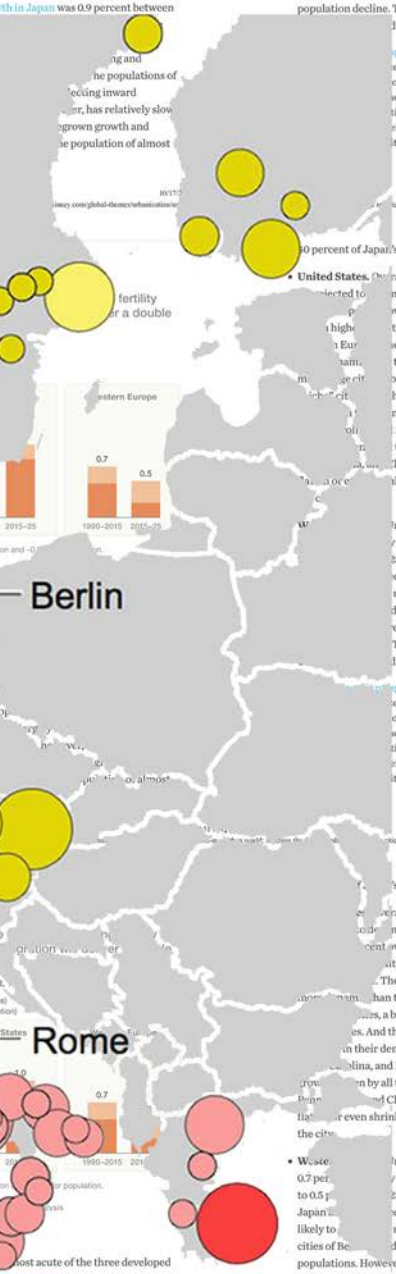

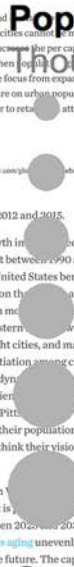

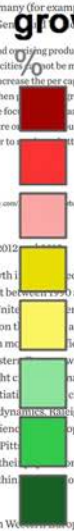

- **United States.** Overall urban-population growth in the United States is projected to decline slightly, from 1.3 percent between 1990 and 2015, to 0.9 percent between 2015 and 2025, and to 0.4 percent between 2025 and 2035. Like Japan and Western Europe, the United States benefits from high fertility rate and greater migration than Japan and Western Europe. The US urban system is much more decentralized and has a broader swath of middleweight cities, and many cities have significant differentiation among their demographic footprints and dynamics. Raleigh, North Carolina, and Houston, Texas, are experiencing population growth driven by all three factors. In contrast, Pittsburgh, Pennsylvania, and Cleveland, Ohio, are seeing their populations flatten or even shrink, and both have had to rethink their visions of the city.

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In most cities, economic prosperity increasingly will depend on rising productivity and incomes among their citizens. The economic success of cities cannot be measured simply by their overall GDP growth—cities that are able to increase the per capita income and quality of life of their citizens can thrive even when population growth slows or declines. For many cities, this will mean shifting the focus from expansive

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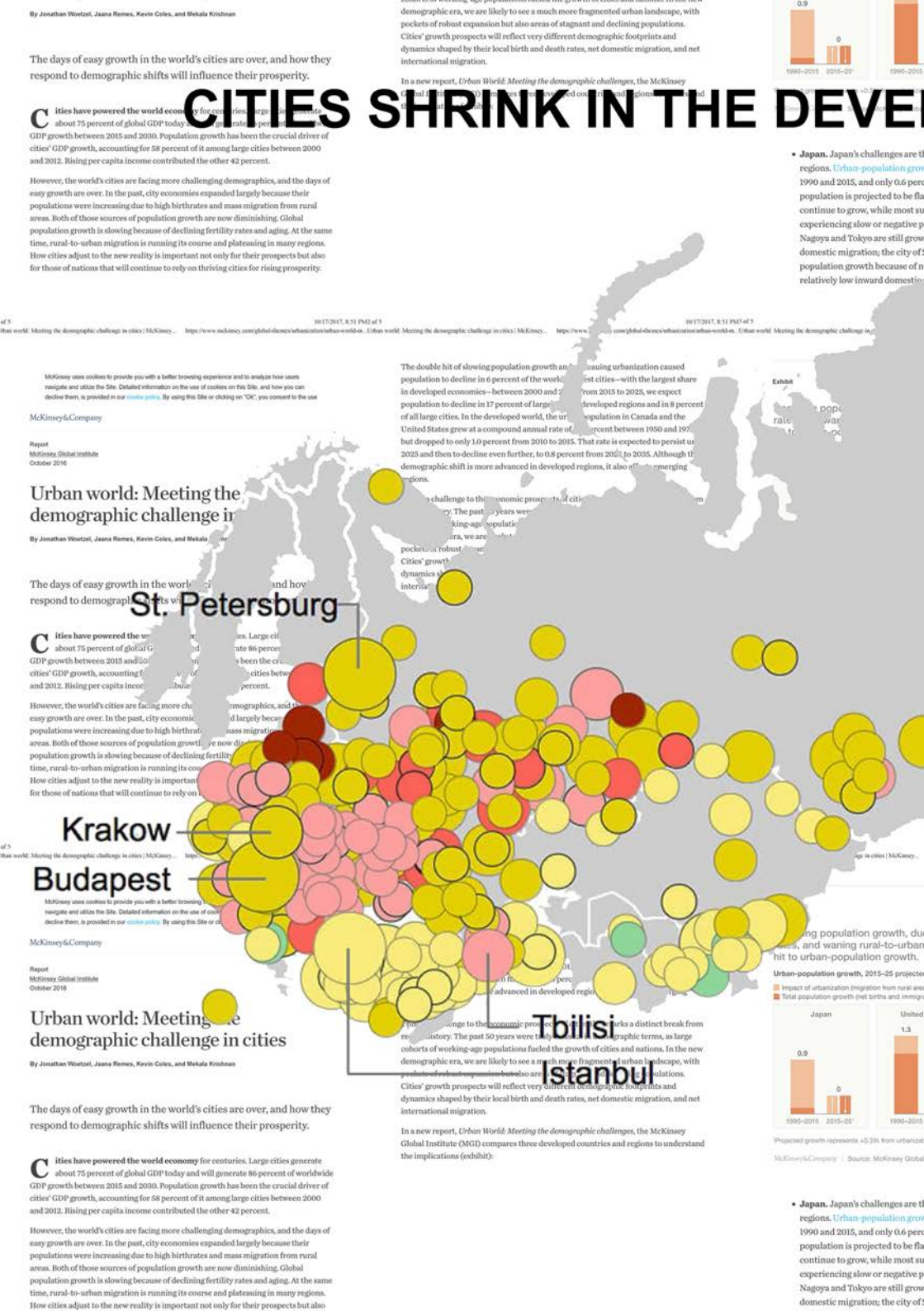

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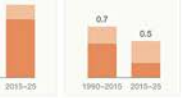

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The double hit of slowing population growth and plateauing urbanization caused population to decline in 6 percent of the world's largest cities—with the largest share in developed economies—between 2000 and 2015. From 2015 to 2025, we expect population to decline in 17 percent of large cities in developed regions and in 8 percent of all large cities. In the developed world, the urban population in Canada and the United States grew at a compound annual rate of 2.2 percent between 1950 and 1970 but dropped to only 1.0 percent from 2010 to 2015. That rate is expected to persist until 2025 and then to decline even further, to 0.8 percent from 2025 to 2035. Although the demographic shift is more advanced in developed regions, it also affects emerging regions.

This is a challenge to the economic prospects of cities that marks a distinct break from recent history. The past 50 years were truly unusual in demographic terms, as large cohorts of working-age populations fueled the growth of cities and nations. In the new demographic era, we are likely to see a much more fragmented urban landscape, with pockets of robust expansion but also areas of stagnant and declining populations. Cities' growth prospects will reflect very different demographic footprints and dynamics shaped by their local birth and death rates, net domestic migration, and net international migration.

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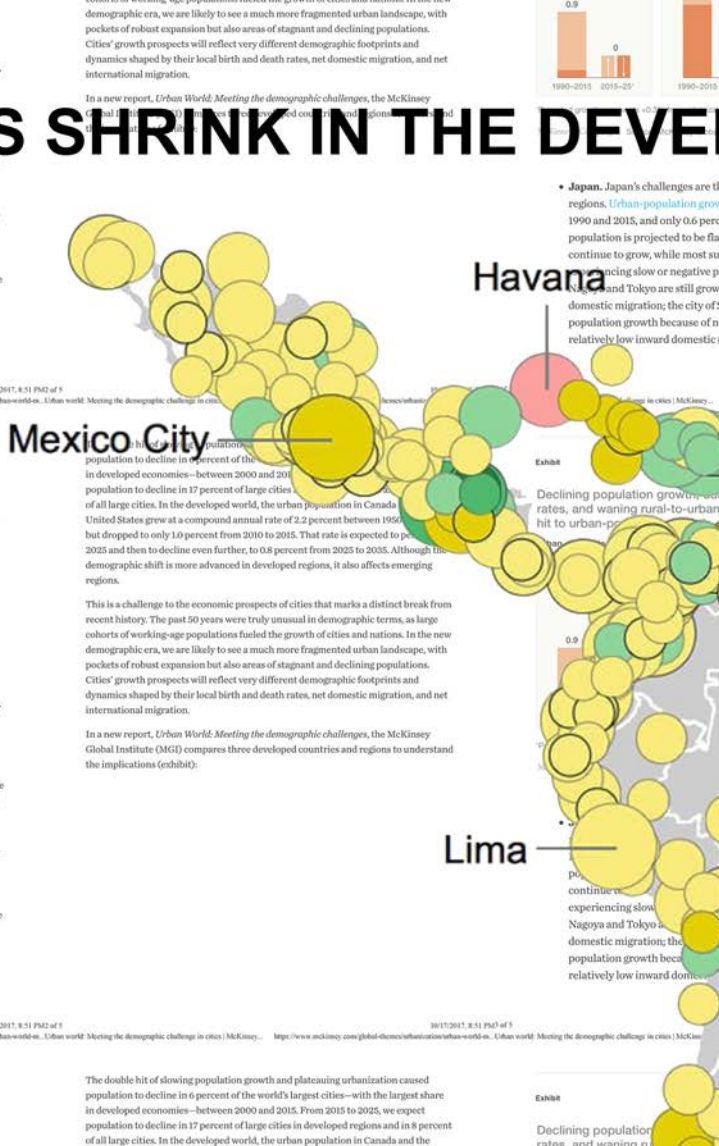

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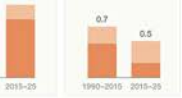

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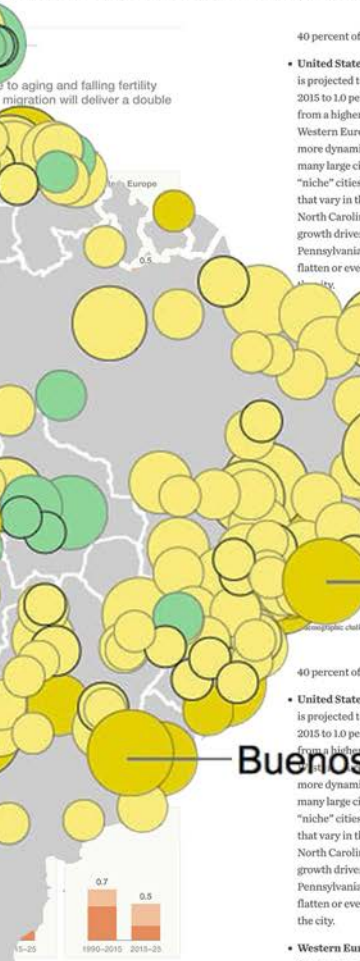

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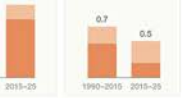

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Sydney

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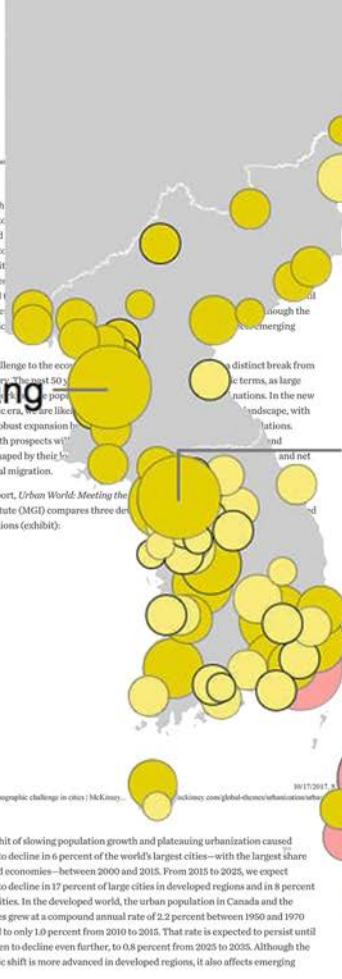

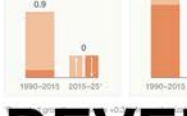

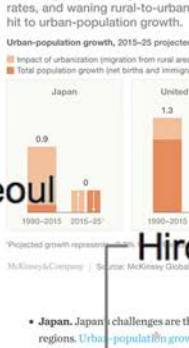

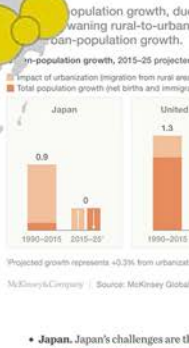

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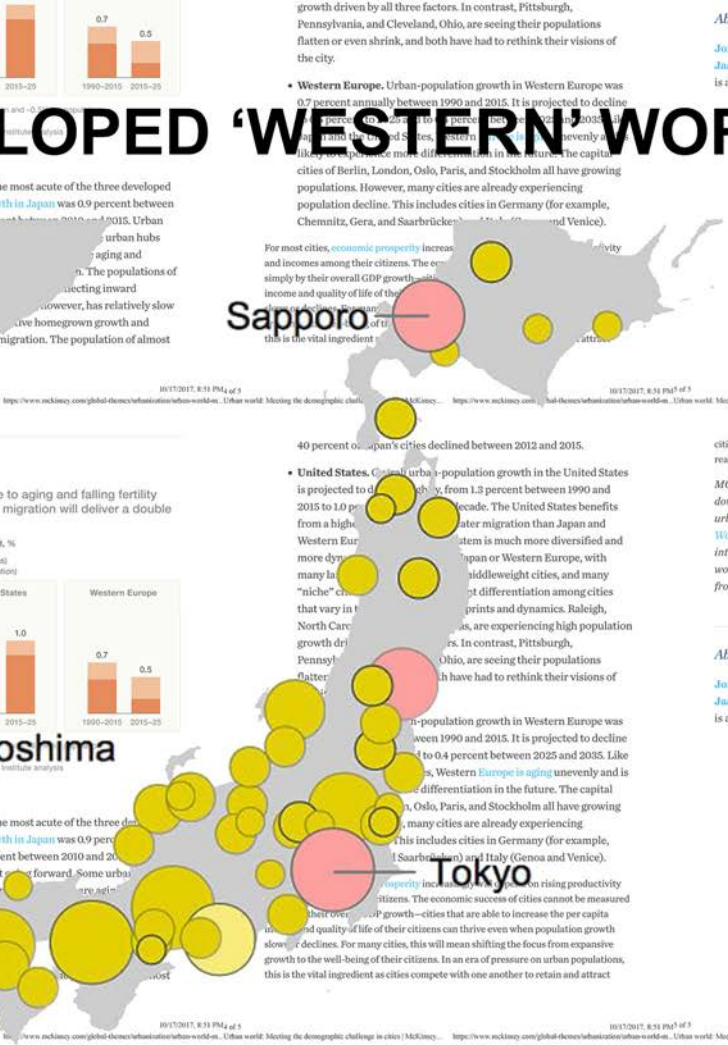

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Exhibit

Declining population growth, du… rates, and waning rural-to-urban… hit to urban-population growth…

Urban-population growth, 2015–25 projected…

Impact of urbanization (migration from rural are…
Total population growth (net births and immigr…

Japan

United…

0.9

0

1.3

1990–2015 2015–25*

1990–2015

*Projected growth represents +0.3% from urbanizat…

McKinsey&Company | Source: McKinsey Global…

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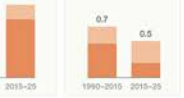
Casablanca



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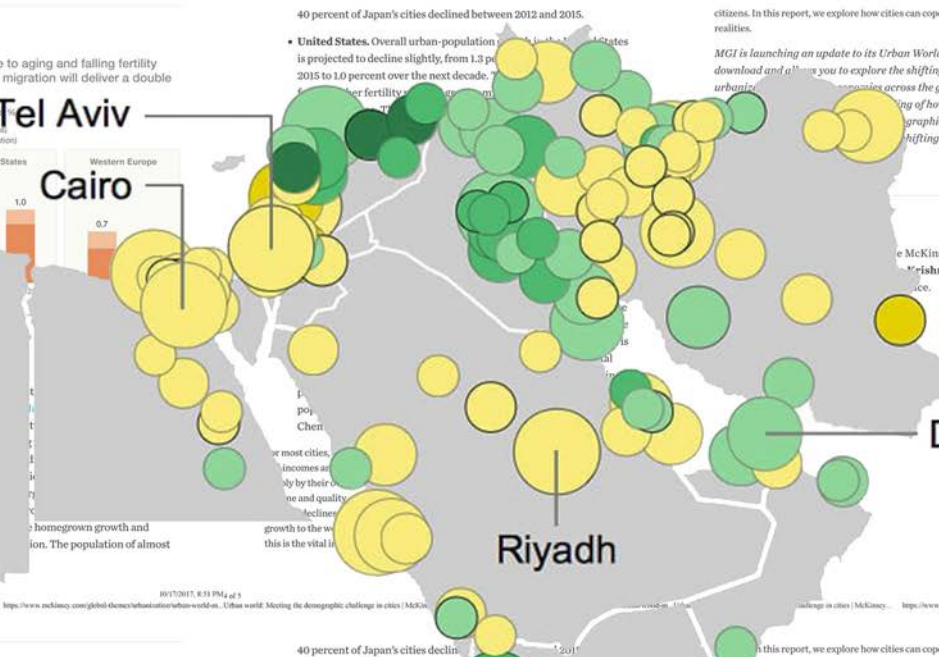

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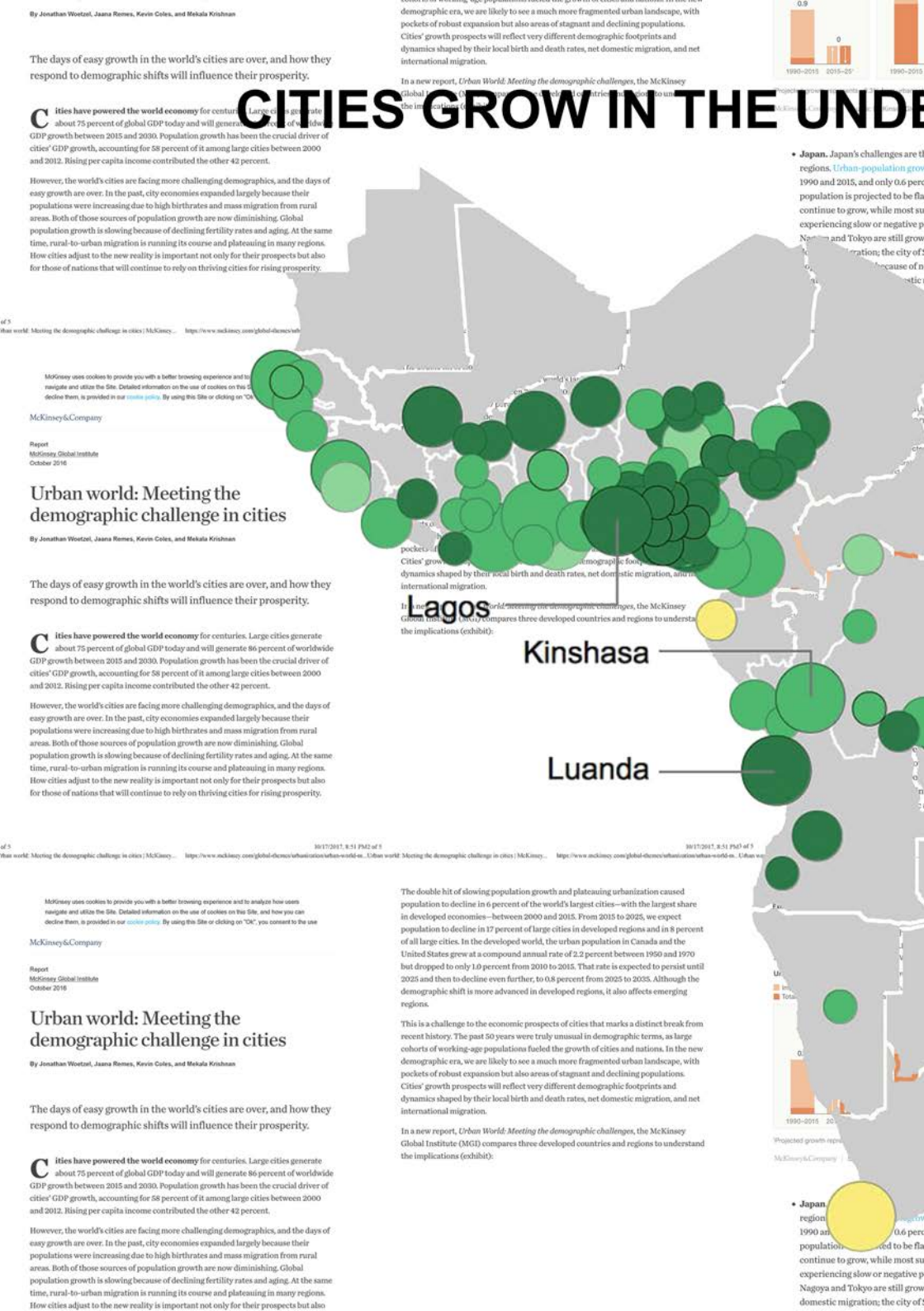

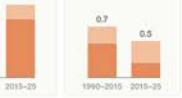

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The double- population growth and plateauing urbanization caused population to decline in 6 percent of the world's largest cities—with the largest share in developed economies—between 2000 and 2015. From 2015 to 2025, we expect population to decline in 17 percent of large cities in developed regions and in 8 percent of all large cities. In the developed world, the urban population in Canada and the United States grew at a compound annual rate of 2.2 percent between 1950 and 1970 but dropped to only 1.0 percent from 2010 to 2015. That rate is expected to persist until 2025 and then to decline even further, to 0.8 percent from 2025 to 2035. Although the demographic shift is more advanced in developed regions, it also affects emerging regions.

This is a challenge to the economic prospects of cities that marks a distinct break from recent history. The past 50 years were truly unusual in demographic terms, as large cohorts of working-age populations fueled the growth of cities and nations. In the new demographic era, we are likely to see a much more fragmented urban landscape, with pockets of robust expansion but also areas of stagnant and declining populations. Cities' growth prospects will reflect very different demographic footprints and dynamics shaped by their local birth and death rates, net domestic migration, and net international migration.

In a new report, *Urban World: Meeting the demographic challenge*, the McKinsey Global Institute (MGI) compares three developed countries and regions to understand the implications (exhibit):

- **Japan.** Japan's challenges are t regions. Urban-population grow 1990 and 2015, and only 0.6 perc population is projected to be fla continue to grow, while most su experiencing slow or negative p Nagoya and Tokyo are still grow domestic migration; the city of S population growth because of n relatively low inward domestic

Exhibit

Declining population growth, du ities, and waning rural-to-urban to urban-population growth.

Urban-population growth, 2015–25 projected

Impact of urbaniz
Total population gr

Japan

United

1.3

0.9

0

1990–2015 2015–25*

1990–2015

*Projected growth represents +0.3% from urbaniz

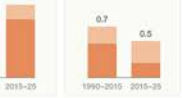
McKinsey&Company | Source: McKinsey Global

Mumbai

Yangon

Bangkok

Jakarta



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40 percent of Japan's cities declined between 2012 and 2015.

- **United States.** Overall urban-population growth in the United States is projected to decline slightly, from 1.3 percent between 1990 and 2015 to 1.0 percent over the next decade. The United States benefits from a higher fertility rate and greater migration than Japan and Western Europe. The US urban system is much more diversified and more dynamic than that of either Japan or Western Europe, with many large cities, a broad swath of middleweight cities, and many "niche" cities. And there is significant differentiation among cities that vary in their demographic footprints and dynamics. Raleigh, North Carolina, and Houston, Texas, are experiencing high population growth driven by all three factors. In contrast, Pittsburgh, Pennsylvania, and Cleveland, Ohio, are seeing their populations flatten or even shrink, and both have had to rethink their visions of the city.

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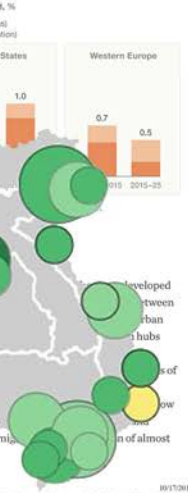

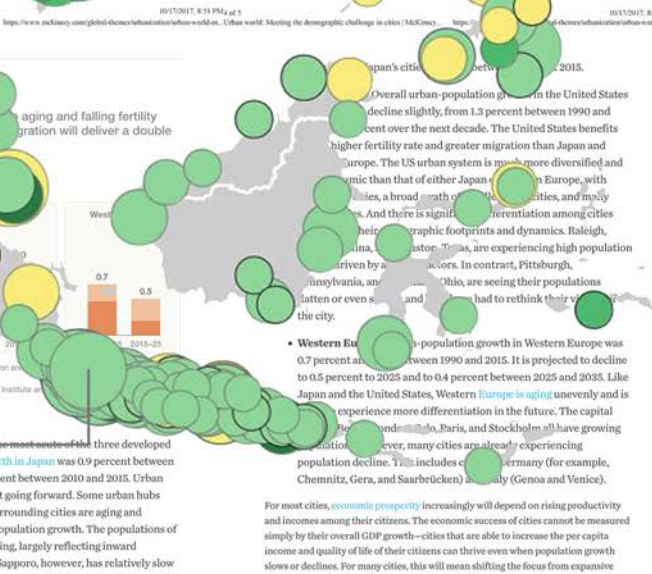

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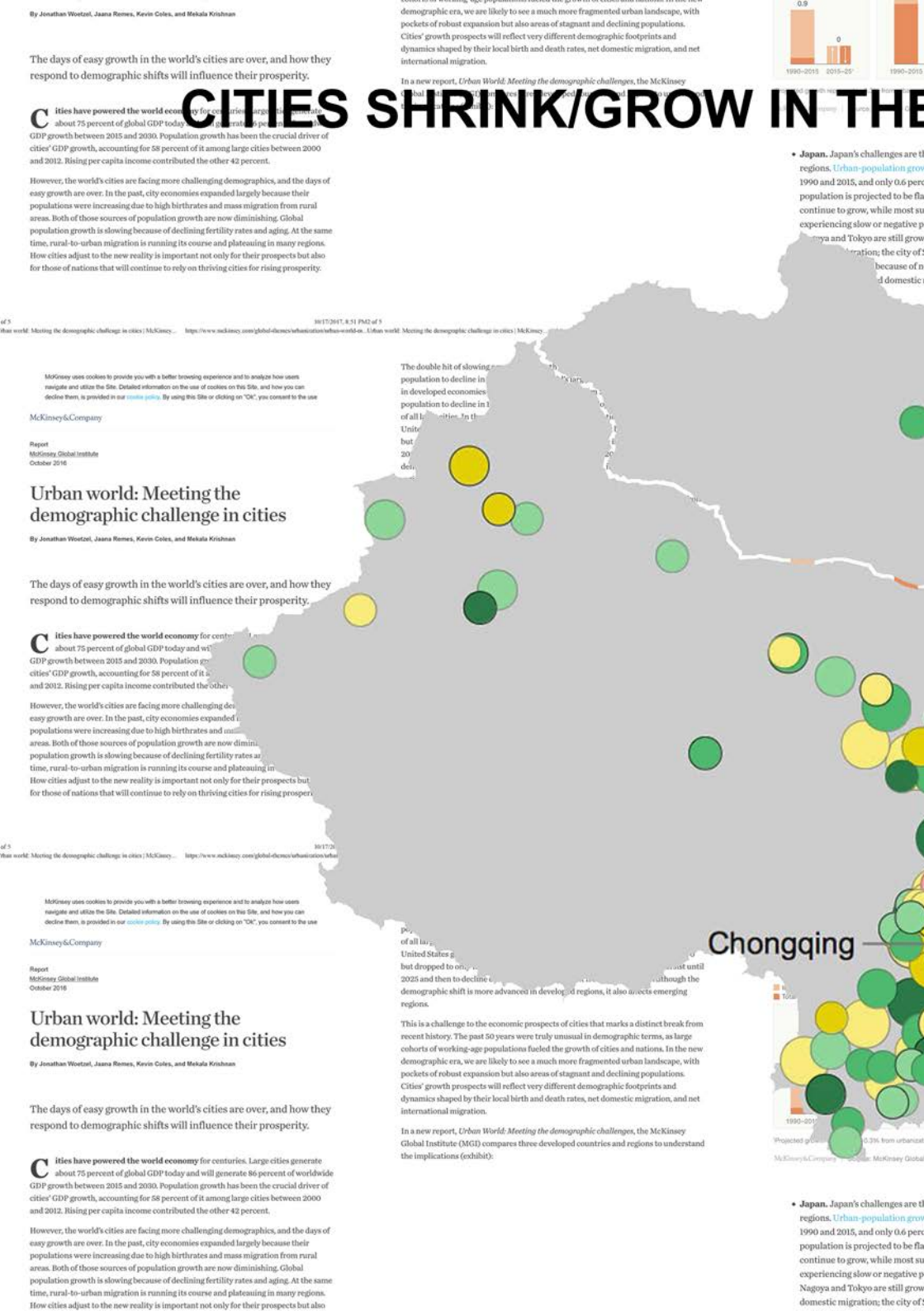

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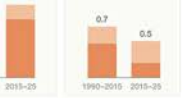

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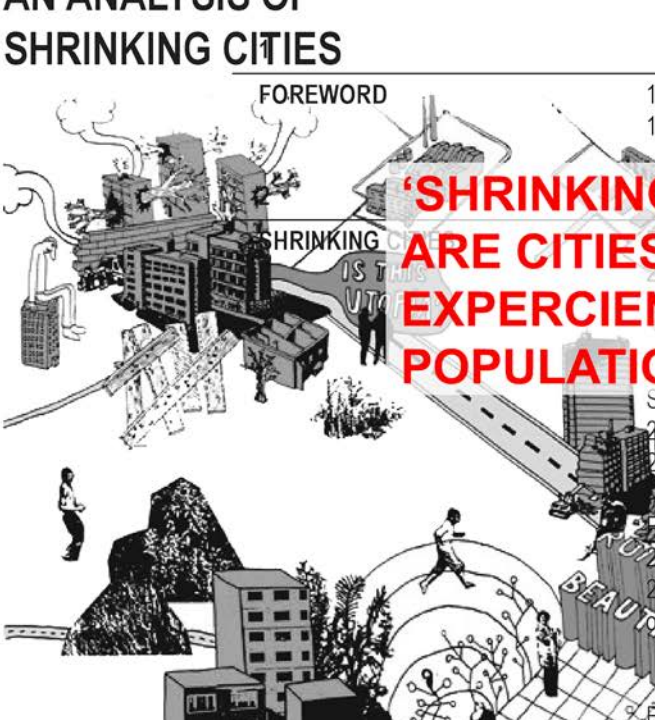
AN ANALYSIS OF SHRINKING CITIES



'SHRINKING CITIES ARE CITIES THAT ARE EXPERCIENCING ACUTE POPULATION LOSS.'

Simona Schett
0715258
Urban Ecology WS 2011/12
Institut für Städtebau und Raumplanung
Universität Innsbruck

AN ANALYSIS OF SHRINKING CITIES

1. FOREWORD

1.1. What is a shrinking city?

Shrinking cities are cities that are experier
some of the common reasons that cities sh
with the Rust Belt, while parts of Eastern E
such cities was built to support a larger po
http://en.wikipedia.org/wiki/Shrinking_cities#cite_n

A shrinking city is a densely populated urb
population losses in large parts for more th
symptoms of a structural crisis (Wiechman
International Research Network (S

ng cities
first indus
population
graphic, eco
100 000 ir
2000 every fourth city in the world was shrinking. A
are shrinking by now. There are a lot of fa
to service i
political change...
shrinking is not a new thing after all. Th
led to the same phenomenon throug
the fall of the Soviet Union
shrinkage now is a steady proc
socialistic to a democra
century new inventions led to
metropoles. But in the first half of
many more cities started to decline. Af
it would be even worse than in Eu
the same problems but in the 1990s the proce
caused another shrinking period in Russia, Roman
East Germany and the fall of the Berlin
War has always caused certain risks to cities and
has shown. But with the growing knowledge there
problems in nuclear power stations. And then there
will always endanger urban and non-urban living.
tion. People get older and certainly there are declin
cities. Furth
People are
outside the

'EMPTY HOUS
EVEN EMPTY
A LOT OF FAL
SHRINKING H

It is estimat
stop growin
developing
won't be ex

ECONOMICAL/STRUCTURAL/POLITICAL
2.4. East Germany and the fall of the Berlin
2.4.1 Leipzig, growing pains after the fall of th
Berlin Wall

'AN ANALYSIS OF SHRINKING CITIES'

2. SHRINKING CITIES

Empty houses, even empty streets of houses, a lot of fallow land, dying infrastructures....shrinking has a big impact on affected areas. But what are the reasons for this global development? Nowadays you can distinguish between three different sorts of shrinkage:

1. Economic Change: Deindustrialization, relocation of industry and service (Manchester)
2. Structural Change: Suburbanization, out-flow of people (Detroit)
3. Political Change: Collapse of socialist organizations in Eastern Europe (Ivanovo)
4. Economic/Structural/Political Change: In East Germany, where shrinking has been a major problem since the fall of the Berlin Wall, there is a mixture of all three of these sources. After the fall of the Berlin Wall (political) East Germany was united with the former DDR. To support a quick integration the government reached for economic measures which led to a structural change of the society (Leipzig).

This classification does not mean that there is just one ecological, structural or political reason in one area. The classification has been generated due the dominant reasons, which could be found in certain regional districts.

2.1. Deindustrialization in Great Britain

At mid-nineteenth century Industrial Revolution was starting out from England, the railroad industry and the shipbuilding ... labour and draft-animal-based economy became a machine-based manufacturing. With the Industrial Revolution the urbanization process started and more and more people moved into cities to get one of the newly developed jobs. It was the birth of a new labouring class, which moved into the newly developed houses, that emerged close to the industrial plants. The employment figures boomed as there was enough demand even form overseas and at the climax of the Industrial

'... STREETS OF HOUSES, ... LOW LAND, DYING INFRASTRUCTURES... HAS A BIG IMPACT ON AFFECTED AREAS.'

Revolution 48% of all employees were working in the industrial sector. About 100 years later the USA managed to gain global supremacy in employment figures dropped dramatically to 34%. Eastern Germany or the Rustbelt/USA and in every other most.

CAUSES AND EFFECTS

Great Britain was the first ever country to be fully industrialized. has a few reasons:

- The service sector gained in importance.
- Great Britain was strongly depended on export, but
- Economic reasons: Economic crisis after the 1973 oil Yom-Kippur-War to restrain the support of the western 1980s Margaret Thatchers economic policy of monetal cyclical fluctuations and ensure a smooth economic de
- Political reasons: Margaret Thatcher abolished state industries should survive and get Britain back on the labour class, which she tried to decimate. This is how

Starting in 1974 the traditional industrial sectors collapsed ing (West Midlands/Birmingham, North West-Merseyside) big industrial cities like Liverpool, Manchester or Glas industrial sector collapsed as well. People had to look workers' settlements. London was the only city which movement in female part-time employment, a lot of m

SOCIAL CHANGE

Whereas industrialization led to a "mod ern" society concentrated on the indivi concentrated on single individuals whic tion of immaterial things like music and world developed into a female post-mo

2.1.1 Manchester_fall of the world's first in

Manchester
1930: 766 000 inhabitants
1992: 422 300 inhabitants
population decline: 44,9%

In 1961 the industrial sector in Manchester off only 35 000, which is a quarter.
In the late 1960s Liverpool and Manchester h 2000 there have been 30 000 in each city.
From 1981 to 1996 Merseyside lost 83 000 jo

Manchester was the world's first industrial metropole and the biggest commercial city of th was in the 19th century. Today the city is struggling to get back on track!

Since the end of the 18th century Manchester was known for its machine-based manufact one of the most important factors of Britain's industrialization. But with other countries star land's industrialization process, the slow fall of a metropole began by 1850.

'1. ECONOMIC CHANGE: DEINDUSTRIALISATION, REALLOCATION OF INDUSTRY AND SERVICES (MANCHESTER).'

Manchester, average price per postcode dis
The cheapest postcode districts are are mo

Manchester

Deprivation (The Index of Multiple Deprivat
ties. The first study (released in 2004) cove
hood Renewal Unit are: Income, Employme
to Housing and Services. Crime the Living
Manchester is the 6th poorest area within t

REVITALIZATION

Soon a rehabilitation progress starte
leisure facilities and business premis

2.2 Suburbanization in the USA

‘MANCHESTER:
1930: 766 000 INHABITANTS
1992: 422 300 INHABITANTS
POPULATION DECLINE: 44,9%’

2.2.1 Detroit_downfall by racism

Detroit:
1950: 1 849 568 inhabitants

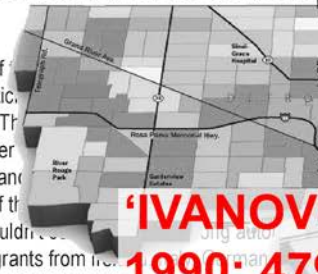
‘2. STRUCTURAL CHANGE: SUBURBANIZATION, OUTFLOW OF PEOPLE (DETROIT).’

The slogan of the suburbanization proce
more, but everything was smaller. Look
squeezed into a little house and there ha
reachable within walking distance. Nowa
huge parking space. There will be at lea

of Detroit. (2002)
Between 1980 and 1990 there have been 0 -
Detroit. It's been 10 000 each year in the sul
In 1999 the average annual income per capita i
capita of the suburbs.
Since 1960 Detroit lost 165 000 of 230 000 ind
ones. The suburbs gained 50 000 industrial jobs and 600 000 jobs in the ser

Detroit was an icon of the modern world. It was mobility that explained the city's fame, it
that finally led to the fall of the former metropole. Nowadays the inner city is shrinking wh
growing. The city is now split into black and white, poor and rich, city and suburb. Detroi
doom of the modern world's metropoles.

The growth of the city started with the invention of
of fordism. The mass production of automobiles kic
and more car companies located in Detroit, with "Th
The "Motor City" was born and people from all over
manpower and technology, the American Dream an
car companies they could watch the production of th
before a automobile crises came up as Detroit couldn
The booming automobile industry attracted immigrants from
ally – after the collapse of the cotton industry - more and more
- leading motives within the American society – there have
After the 2nd World War a new era began. Factories developed
moved to the suburbs, where more ground could be provided. T
and also moved to the suburbs, where they created a new urban
behind their empty houses in the centre. A developement that was supported
the breaking automobile industry, cause as the jobs were dying out the white middle-class was gone. Detroit became
a ghetto for unemployed black people, dominated by crime and violence, empty houses, abandonned areas, nailed-up
windows and burnt down houses. The city's biggest problem was the fact, that it had always been dependent on jobs
in manufacturing industry. And they couldn't generate enough jobs in other industries, because nearly everything was
shifted to the suburbs. In 1954 the Northland Mall was build, which was the first ever shopping centre in suburbia
became a symbol of the new movement. The symbolic climax of the moving retail sector was in 1985, when the
ping centre Hudson's finally closed. It was the last department store in the inner city! And whereas new roads and
highways were build - connecting not only the centre with the newly developed suburbs, but mainly the suburbs
each other – and suburbia was glowing, nothing much was done in the inner city. In the 1980s the government
get some companies back into town by offering tax deduction. With the Poletown-building (General Motors), the
Chrysler factory and Ford's Renaissance Park, there were a few structures built in the city centre, but they could
vide enough jobs. There have been open housing projects and anti-discrimination-laws recently, but bigger revita
projects dashed against financing! The consequences are devastating. Since 1950 Detroit lost nearly half of it's inhabi-
ants, and hundreds of thousands jobs. Areas, which had been densely populated in former days are now dominated by
10 000 empty houses, 60 000 abandoned areas, nailed-up windows and burnt down houses.



2.3 Russia and the fall of the Soviet

Shrinking due to post-socialistic conditions i
system. In the former Soviet Union this colla

‘IVANOVO:
1990: 479 700 INHABITA
2003: 447 100 INHABITA
POPULATION DECLINE:

poles whereas in the poor areas of central R
The collapse of the Soviet Union also meant
locations as in Siberia could survive because
When the support disappeared, more
the evacuation of such s
The discontinuation of g
gartens, hospitals et cet

‘DETR
1950: 1
2003: 9
POPUL

Despite lack and high ma
At the moment people are trying to get
They could either promote the 'old' way
go with the suburban idea of sprawling, which they prefer. The la
ate fields and farmland that existed before
thought about such drastic methods. But 10 years later the situa
structural change in a few years. In former days
could move to a green city-centre!
sion payment only for people which stay in t
eration from daring a new start at a new loca
educated people leave their hometown behi

hardly any vacancy rate.
The housing space per capita in Russia is half of the European standard. So whenever there's room available, it will be occupied from residents within a few days. Furthermore, the young aren't moving away officially. They usually keep their main residence which they only underlet. This is why there aren't well documented statistics which makes it even more difficult to deal with the phenomenon.

2.1.1 Ivanovo_ from a socialistic to a democratic organization

Ivanovo
1990: 479 700 inhabitants
2003: 447 100 inhabitants
population decline: 6,8%

In the Ivanovo area life expectation for women is 71 years; for men it is 55,5; with an average of 62,7 years this is the lowest rate in Central Russia. It is dropped by 4 years since 1990.
In 2002 82% of Ivanovo's population was living below the poverty line. In 2003 the poverty level was

In 1998 t

On avera

'3: POLITICAL CHANGE: COLLAPSE OF SOCIALIST ORGANIZATIONS IN EASTERN EUROPE (IVANOVO)'

At the beginning

working class, w

once described t

In 1905 there wa

After the October Revolution in 1917 these councils took over and Ivanovo – "Russia's Manchester" - became the capital of a new administration union. It was a short, glowing period with a building boom and lots of hope. But with Lenin's takeover the city's downfall slowly began as economy was concentrating on heavy manufacturing. Ivanovo did get a few new factories, but it was the textile sector, that remained strongest. It wasn't long that the city became trivial, but concentration effecting the Soviet Union's political and economic

ed economy with sales guarantee and fixed prices prevented a collapse. Nobody would have talked about a crisis

ough Ivanovo's economic output was decreasing since the 1930th. In the 1930ts they attracted many, mostly female

kers from all around the country to boost the economy, which caused a major housing problem. As most of the

ding material was used for factories, they developed worker's residential homes, where people had to share rooms.

economic conferences collapsed as well. Lots of enter-

as not until the 1960s that they could offer proper communal flats with a technical progress. But even now housing

ce is limited and many families are waiting for council flats. But although the city was growing, Ivanovo struggled to

ove their economic output and was highly depending on controlled economy.

en the Soviet Union finally collapsed in 1991, Ivanovo lost nearly all of their production sources and sales markets.

they couldn't compete with strong international textile countries like Turkey or East Asia. And as the import of cotton got

well expensive, the crisis was finally there. But although Ivanovo was known for its workers movement, this time there

was no strike. So Moscow didn't have to intervene and Ivanovo was hoping to compensate the migration with immigra-

and more people moved away. Nowadays government is only supporting

saved. As many factories had to shut down the unemployment rate increased and even those, who could hold on to a

job got minimum wages. The living standard dropped dramatically and people had to go back to the only thing, the coun-

try could still offer: land. They founded "dachas" and started to grow their own vegetables to manage to survive. In 2001,

nearly all of the inhabitants depended on those "dachas".

Ivanovo is shrinking since 1990, but if you compere it to other cities, it doesn't seem to be that dramatic. But there are

immigrates got to Ivanovo after the collapse. 20% of all housing

ant to increase their housing space and take over available lats.

- Hidden migration: Young people are officially still resident's, but actually they live somewhere else to look for a new start.
- Seasonal suburbanization: Due to limited living space, people move to their "dachas" during summer

REVITALIZATION

The Ivanovo of today is a poor city that has buildings and monuments that remind you of the socialist decade. Seed funding been a lot of change, although there are only a few factories, the industrial sites and the new shopping malls. What you can't see is the fact that life expectation decreased in the past decades due to horrible living conditions. In 2002 governor Vladimir Ilich Tichonov was talking about different suggestions to get Ivanovo back on track. It be- came clear that they wanted to keep concentrating on the textile industry ... and the service sector. It seems to ... you look at other similar examples like Manchester. But ... chance of re-positioning? And they ... lot of affordable business premisses and there are no ...

of the DDR. The fusion policy did not take account of any economic consequences. The reintroduction of free market economy in East Germany led to the collapse of former state-owned domains and liberalization of trade. ... competitive edge and the deindustrialisation of the former DDR began.

EFFECTS

'4. ECONOMIC/STRUCTURAL/POLIT... IN EAST GERMANY, ..., IT IS A MIXT...

respect. But since the start of the deindustrialization the factories size has ... sized companies offer less jobs and lead to missing capacity and expertize, as is the research and development department. This leads to missing innovation ... attraction.

This doesn't mean that the whole economy is still declining, there are certain ... years. (automobile-, chemical-, food industry ...)

The chemical industry offered 74 596 jo...

Eastern Germany lost 1,5 Mio people b...

In the Halle/Leipzig area the birthrate d... 1989.

The Halle/Leipzig area experienced a vital indus... and 1930s that both cities gained on importance...

The new plans were not to revitalize, but to build ... which were build in the suburbs leaving the dem... arose offering new living space, the up-coming ... ment for seedy flats in old buildings. When the v... reached up to 20% - the government finally star... already to late and the situation couldn't be solv... slow downfall started with the end of the 2nd W... mixture of the economic policy of the Nation... DDR the Leipzig area became a center of ... poor in natural resources. With the soviet... the growing petrochemistry, the brown coal indu... and probably led to the quick deindustrial... got known as a symbol of natural devastation... ments the air pollution was tremendous. ... for days, rivers were dieing.

It wasn't surprising that due to horrible working a... moved to the west in 1989. It's been 16 000 peo... shrinking birthrate the long term population dec... phenomenon was deindustrialization, but the ex... area was hit by many close-downs and mass dis... trial jobs. Leipzig by itself lost 90 000 jobs. The ... cushion the blow a little by offering retraining ... immigration.

'L... 19... 20... PO...

Ivanovo

REVITALIZATION

Soon after the reunion lots of investors tried to i... the west". It wasn't always a good thing as their ...

2.4 East Germany and the fall of the Berlin Wall

'SO IT SEEMS TO BE IMPORTANT TO CONSID... THIS PHENOMENON IN CITY PLANNING TO D... CITIES THAT CAN EASILY ADAPT TO THESE K...

The ... in the new economic policy a sudden deindustrialization caused high unemployment figures and the migration of one million ...

2.4.1 Leipzig, growing ...

If you ... part there are growing populations, whereas cities in the eastern part tend to shrink rapidly. ... population, only 1% of all settlements in the west are affected. In marked contrast to the east, where every second local community is shrinking. But the phenomenon of shrinking (in a small percentage) is a common appearance and can be found in West Germany as well. The reasons for that geographical separation are on-going economic crisis after the fall

2003: 496 532 inhabitants

population decline: 6,3%

... child-care facilities and primary schools already ... reaching high school age.

Nevertheless Leipzig could get back on track as...

well-running infrastructure. Leipzig might always be a city with "green dots" but as the time in years, there might be a brighter future.

TICAL CHANGE:
URE OF ALL THREE OF THESE SOURCES.'

EIPZIG:
989: 530 010 INHABITANTS
003: 496 532 INHABITANTS
OPULATION DECLINE: 6,3%'

3. CONCLUSIO

by 2070 – 2010. Up to then cities in developing countries are expected to continue to grow, whereas some cities of the western world will have to deal with shrinkage, a phenomenon that has been around for quite some time. So it seems to be important to consider this phenomenon in city planning to design cities that are flexible enough to adapt to these kind of changes. Because – as we learned from history figures not only do not change the age structure, it could a wide range of economic, political, natural or

So it might be necessary to compile a catalogue of things, that could be affected by a sudden population loss:

a birthrate decline would affect the education sector causing the closure of child-care facilities, schools or parts of higher education

an older generation would need more hospitals and caring facilities. You will also need more nursing person-

an older generation could cause a change of consumer behavior as they have different needs and ideas

ER
ESIGN
KIND OF CHANGES.'

infrastructure; empty buses won't go that often

And there might be a second phase when the low-birth generation is

As I said before, the tricky thing is to consider all those possibilities in city planning to be able to maybe counteract by having a sustainable planning

Deindustrialisierung
Deindustrialization

Die industrielle Revolution war die Grundlage für die Urbanisierung in Europa und Nordamerika: Die städtische Bevölkerung wuchs in der zweiten Hälfte des 19. Jahrhunderts sprunghaft an. Seit dem Zweiten Weltkrieg löste sich diese ökonomische Basis der Städte jedoch zunehmend auf. Mit dem Niedergang der klassischen Industrien, der Automatisierung der Produktion, ihrer Flexibilisierung und räumlichen Verlagerung hat sich der Anteil der Industriearbeitsplätze drastisch verringert. Viele ehemals wichtige Industriestandorte gerieten in eine schwere Krise: Hohe Arbeitslosigkeit, Abwanderung und städtischer Zerfall sind die Folge.

The industrial revolution provided the basis for the urbanization in Europe and North America. The urban population grew rapidly in the second half of the 19th century. This economic basis of cities, however, has been dissolving more and more since the Second World War. With the decline of the classical industries, the automation of production and an increase in flexibility and mobility, the proportion of industrial jobs has dropped drastically. Many once-major industrial locations entered a state of crisis resulting in high unemployment, migration and urban decline

5. Shrinking processes lead to dual societies: urban development, economic development, lifestyles, and much more differ fundamentally between the zones of growth and of shrinking.

the suburbanisation of detroit was no creeping reduction in density. it was dramatic.

the drastic changes in cities caused by shrinking thus present not only an economic and social, but also a cultural challenge. urban shrinking can hardly be affected by city planning, and it brings numerous problems. new types of cities arise; we do not yet have ways of thinking or of using their specific character.

Städte und Regionen werden heute von der zunehmend ungleichen Entwicklung konkurrierender Standorte bestimmt. Neben der Bündelung von Funktionen und Ressourcen in Wachstumspolen bilden sich immer größere Peripherien, die von den internationalen ökonomischen Netzen abgeschnitten sind. Während einzelne Stadtteile, Städte oder ganze Stadtregionen Schrumpfun[illegible] auch in unmittelbarer räumlicher Nähe zu de[illegible] sozia[illegible]

%-Anteil an der Stadtbevölkerung
percentage of the city's population

Leipzig Migration nach Herkunfts- und Zielregion
1953-2001

In Leipzig suchte die Wanderung ins Umland fast 40% des gesamten Migrationsverlusts aus. Seit 1998 ist die Abwanderungstendenz wieder rückläufig.
In Leipzig the migration to the periphery accounted for almost 40% of the total loss of population due to migration. Since 1998 the dynamic of migration has begun to decline again.

In the new Länder a process of suburbanization has been under way only since the 1990s – a process which, in the old Länder, has gone on for decades. Compared to the number of residents, the large cities in eastern Germany are on the top of the list of migration from city to suburbs.

For the last 200 years epoch was characte concepts for action, were colonization, t construction boom,

Construction has so areas. But now that stagnating or shrink be more on constru construction is not t

6. Urban planning a been seen as the gr

Quelle Ekonomicheskaya, Statistischer Sammelband

suburbanisation

whether in the USA, Britain, or Belgium, Finland, Italy, Russia, Kazakhstan, or China: everywhere, cities are shrinking. The dramatic development in eastern Germany since 1989 which has led to more than a million empty apartments and to the abandoning of countless industrial parks and social and cultural facilities, has proven to be no exception, but a general pattern of our civilization.

troit

völkerungsentwicklung: Migration
pulation Change: Migration

USA

California
+ 1 130 338

VERGLEICH/STATIS

le: US Census Bureau.

die Informalisierung der
hungen und der Einkommen durch
Arbeitslosigkeit maskiert – nominell
ren Arbeitsplatz, auch wenn eine Fabrik
im Jahr produziert. Der Lebensunterhalt
ch informelle Tätigkeiten wie Kleinhandel
Selbstversorgung finanziert werden.

rmalization of economic relations and
d by the quantity of unregistered
any ostensibly retain their jobs, although
perates for one month a year. People often
elves by way of informal occupation, such as
or by subsistence farming.

troit

kommen
ome

res Haushaltseinkommen, 1999
an household income, 1999

USA

$ 47 493

California

West Virginia

1997

Detroit

Hauspreise
House Prices

USA

Suburbanization

USA

109,6%

California

West Virginia

66,5%

polarisatio

"Tiffany Jones", 1972

Disasters

Venice reached its population peak in the mid-nineteenth century. It has shrunk rapidly ever since, a process accelerated by natural disasters that have hit Venice badly. By the 1960s, floods occurred with increasing frequency, heightening the anxiety within the population. The 1966 flood marked a point of no return in the city's history. The exceptionally high water levels and the phenomenon's unusually long duration initiated a new era for Venice, with 16,000 inhabitants losing their homes.

Disastri

Venezia, negli anni '50 del Novecento, registra un picco di popolazione. Da quel momento in poi conosce un rapido declino, accelerato dagli eventi naturali avversi che la colpiscono. Già prima del 1960 l'acqua alta era diventata un fenomeno sempre più frequente, raggiungendo livelli di allarme preoccupanti. L'alluvione del 1966 è un punto di riferimento negativo nella storia della città. Il livello eccezionale raggiunto dall'acqua e la durata anomala del fenomeno aprono per Venezia una nuova era. Nel 1966 i 16.000 veneziani che abitano i piani terra perdono tutto.

Today, cities and regions are affected by the increasingly unequal development of competing economic areas. There are areas of strong economic growth that combine a broad range of functions and resources, but there are also ever larger peripheral areas that are cut off from internationalized economic networks. While a few city sectors, cities or entire city regions are subject to processes of shrinking, there is also growth, often in the immediate vicinity of regions that are shrinking. On various levels the social and spatial contradictions are becoming more critical.

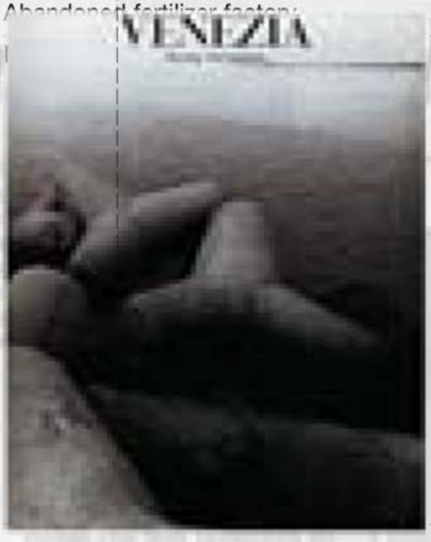
The national and international public took notice of the realities of the lagoon city, which spawned an endless number of publications on the subject: repetitive photo essays [illegible] tankers across the Canale de[illegible] [illegible] cement sa[illegible]ks on the port entran[illegible] the waters entering St. Mark's Squ[illegible] and Porto Mar[illegible]era with its dense mis[illegible]

disneysification

L'o[illegible] della [illegible] rappre-sentata. Si sprecano le pubbl[illegible]zioni sul tema, che riprendono una serie fotografica standard: le petroliere che attrav[illegible] il Canale della Giudecca, i sacchi di cemento alla bocca di porto, l'acqua che invade piazza San Marco, Porto Marghera e le sue dense nubi, interi edifici cadenti e muri rabberciati.

Venezia, negli anni '50 del Novecento, registra un picco di popolazione. Da quel momento in poi conosce un rapido declino, accelerato dagli eventi naturali avversi che la colpiscono. Già prima del 1960 l'acqua alta era diventata un fenomeno sempre più frequente, raggiungendo livelli di allarme preoccupanti. L'alluvione del 1966 è un punto di riferimento negativo nella storia della città. Il livello eccezionale raggiunto dall'acqua e la durata anomala del fenomeno aprono per Venezia una nuova era. Nel 1966 i 16.000 veneziani che abitano i piani terra perdono tutto.

Abandoned fertilizer factory

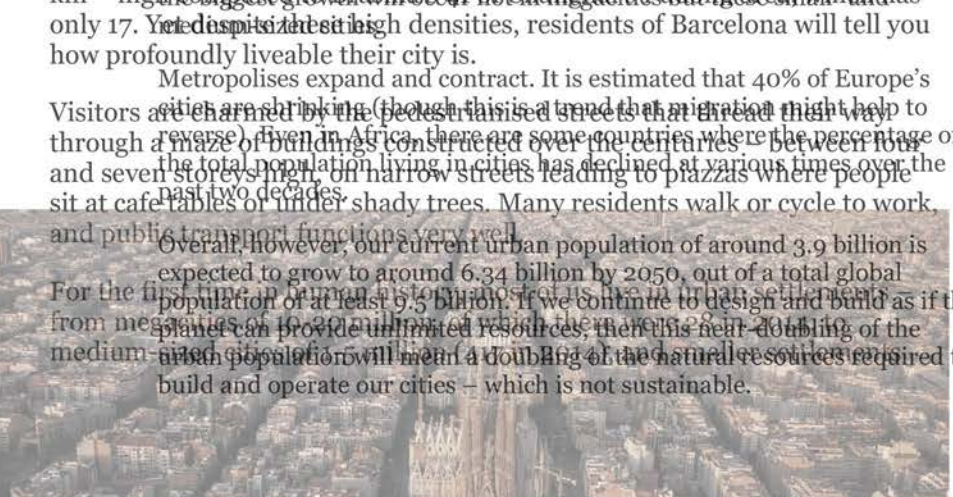


The curse of urban sprawl: how cities grow, and why this has to change

The total area covered by the world's cities is set to triple in the next 40 years – eating up farmland and threatening the planet's sustainability.

I have just spent two days in Barcelona, one of the most densely populated urban settlements in the world. There are 103 road intersections per sq km – high compared to Brasília's 41 or Shanghai's Pudong area, which has only 17. Yet despite these high densities, residents of Barcelona will tell you how profoundly liveable their city is.

Visitors are charmed by the pedestrianised streets that thread their way through a maze of buildings constructed over the centuries – between four and seven storeys high, on narrow streets leading to piazzas where people sit at cafe tables or under shady trees. Many residents walk or cycle to work, and public transport functions very well.



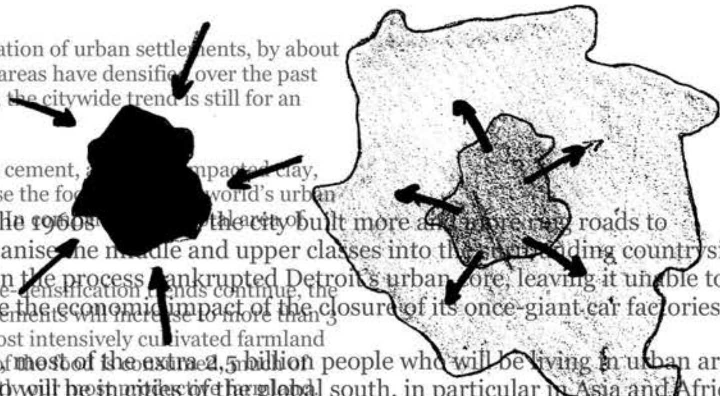
As cities grow, perhaps our most serious concern should be how they expand out into the surrounding countryside. Contrary to popular belief, over the past century urban settlements have not only expanded

Attention sprawl causes cancer

…mographically, they have also sprawled outwards – covering some of the …rld's most valuable farmland in the process.

…ntinued urbanisation in its current form could threaten global food …pplies

…e result has been a steady de-densification of urban settlements, by about …% per annum. Even where inner-city areas have densified over the past …v decades (Copenhagen, for example), the citywide trend is still for an …erall reduction in average densities.



…2010, the total area covered by all the cement, a… compacted clay, …rk areas and open spaces that comprise the fo… world's urban …tlements was around 1 million sq km. … …ance is 643,000 sq km.

…he urban population and long-term de-densification trends continue, the …ea of the planet covered by urban settlements will increase to more than 3 …llion sq km by 2050. And since the most intensively cultivated farmland …ypically located near where the… …s additional 2 million sq km is… …

…short, continued urbanisation in its current form could threaten global …od supplies at a time when food production is already not keeping up with …pulation growth.

…nderstanding rapid urbanisation

…key determinant of rampant urban sprawl… …e it is a particularly serious problem… …the existence of cheap … When oil prices reached record highs in 2008 and exacerbated the …al economic crisis, the people who traveled furthest needed to… …st to default on their mortgage payments.

… their fuel expenses for travelling to work and school rocketed, … …pacity to afford urban sprawl dr… …v weeks ago, I found that of the… …rrently stand empty – and mostly derelict.

From the 1960s … the city built more and more new roads to suburbanise the middle and upper classes into the surrounding countryside – and in the process bankrupted Detroit's urban core, leaving it unable to manage the economic impact of the closure of its once-giant car factories.

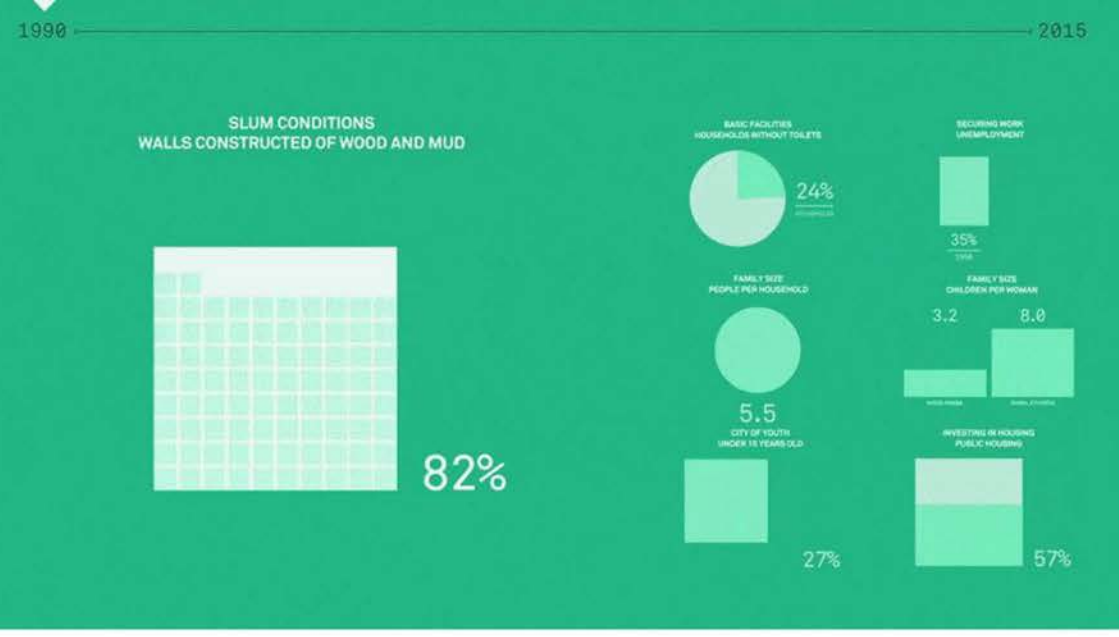
Indeed, most of the extra 2.5 billion people who will be living in urban areas by 2050 will be in cities of the global south, in particular in Asia and Africa; 37% of all future urban growth is expected to take place in only three countries: China, India and Nigeria.

Other than in China, rapid urbanisation in these developing counties has resulted in an explosion of informal urban settlements, or slums. In India, millions of slum-dwellers live within the core urban areas, creating the fairly unique Indian phenomenon of neighbourhoods where the urban poor and middle class live together.

Cities don't shrink

By contrast, in African cities – where 62% of all urbanites are in slums – the majority of slum-dwellers live in expanding urban settlements on the peripheries of cities. With Africa's urban population (currently around 400 million people) expected to triple to 1.2 billion by 2050, this form of urbanisation will result in massive, sprawling, relatively low-density urban settlements across the continent.

they leak



and 40km from the urban periphery. Many of these turned into slums as population numbers far exceeded what these settlements were designed to accommodate.

After democratisation in 1994, there was a major inward flow of people into the urban core that could not be accommodated, despite a massive housing construction programme. Land invasions took place in all South African cities, including on inner-city land.

Johannesburg's metropolitan government realised it could not build an integrated city by moving millions of people around, because so many already lived in formal townships. Instead, it identified a set of strategically located urban development hotspots, and then invested in mass transit services to link them together.

The aim is to rapidly intensify job and residential densities in these development hotspots, thus increasing the number of people who can access publicly funded mass-transit services.

In Addis Ababa, increasing urbanisation has seen public housing decrease from 57% to 40% of total stock between 1990 and 2015. Source: Urban Age/LSE Cities

This will increase average densities over time, and integrate the city via transit, rather than expensive residential relocations. These, coupled with strategies to upgrade informal settlements rather than building new houses on the peripheries, has contributed significantly to enhancing densification.

Slums are the bastard children of the megacity

Eradicating sprawl in favor of liveable, accessible, multi-centred, high-density cities should become a global commitment

China, meanwhile, ... past three decades. This has tended to be in high-rise, multi-storey buildings located in "superblocks" with wide traffic-congested streets and few intersections per sq km. The result is relatively low densities in neighbourhoods with virtually no street or community life – in short, not ... one would call liveable.

Compare this with the neighbourhoods you find in Barcelona, where buildings are five to eight storeys high, located on narrow streets with pavements, trees and small piazzas for social engagement, and all well connected to both motorised and non-motorised forms of transport.

Detroit: The 'Shrinking City' That Isn't Actually Shrinking

KAID BENFIELD

We're often told that Detroit has been abandoned—but the metro area is stable, and addressing sprawl is still a challenge

At the bottom of this post are two short videos about Detroit, both *Press* (published on the web site architect and planner Mark Nickita, principal of the city's Archive Studioand a lifelong Detroit resident. In a very refreshing change f mind-numbing negativity one usually hears about the city, Nickita and hopeful. His point of view, emphasizing revitalization, is much my own than much of what I read, which effectively takes the appr the city has somehow been abandoned beyond redemption, leavin question how to manage its more-or-less permanent shrinkage.

But it's not that simple.

There has indeed been a decline in part of the region. In 1970, 1,670,144 people lived within the city limits of Detroit. By 2010, that number had declined to 713,777, an astounding apparent loss of some 57 percent of the 1970 population. Recently, much has been made the 25 percent population decline over the last decade, from 2000 (951,270) to 2010.

Shrinking city?
Really?

Detr
not

But the extent to which Detroit i
on your definition of "city." The
jurisdictional inner city and its i
but only from 4,490,90
ce.

math: What that means i
g so drastically, its subu
dsome rate of 27 percent
urbs added some 91,000
Cooper-McCann writes
g, the physical size of m
s I've written before, nei
n to jurisdictional lines;

the maps below. On the
1900; in the middle, by
ight, you can see by 200

urrent trends, it's only g
planning agency was pr
developed land in metro Detroit
or more. "390,000 more acres b
continue to be mostly single-fam
more stores and more schools,"

Design
Shrinking city? Really? What thi
Detroit than the decline of the r
the region has been allowed, mo
shrink, and to suck the life and h
self-styled progressive responses
critical aspect of the problem?

Maybe they are, but the only one
the inner city—demolishing vaca

letting vast areas revert to nature or farming, and so forth. Let sprawl, the cause of the problem, be someone else's issue to address. But, in fact, the areas that are sprawling are where the "right-sizing" most needs to occur.

oit needs a regional approach,

just demolitions in the center

Whether or not there is any good in the current approach for Detroit as a community, it is impossible to see how it will be good for the region's carbon emissions. Just as is the case in every other U.S. metro area, households on the fringe emit far more CO2 than households in the center of the region, because their inhabitants walk less, drive longer distances, and drive more often. On the map above from the Center for Neighborhood Technology, households in the areas in red emit, on average, 8.6 metric tons or more of carbon dioxide per year from transportation; households in the pale yellow areas in the center emit 3.3 metric tons or less. Again, big difference.

The way to stem pollution is to address the unchecked expansion on the fringe and keep the center as urban as possible. In this troubled place even more than in others, Detroit needs a regional approach, not just demolitions in the center.

In the first video below, Mark Nickita discusses the importance of, and prospects for, revitalizing the Woodward Avenue corridor that forms the Detroit region's historic and economic backbone:

https://youtu.be/ggR7FEEs_pI

In the next (which actually was recorded first), Nickita discusses what's really been happening with regard to population in the Motor City:

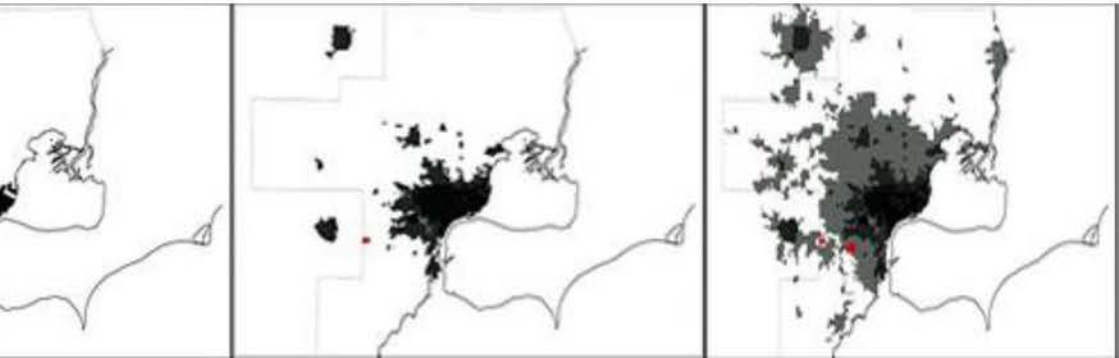
https://youtu.be/kDjoNUgJKiM

Inner city drops by 4%

(Note: Nickita's numbers on the region's population are bigger than mine because I conservatively used the six-county, census-defined Metropolitan Statistical Area (MSA) to define the region. Nickita used the nine-county Combined Metropolitan Statistical Area.)

Suburbs added 7%

Metro size grows by 50%

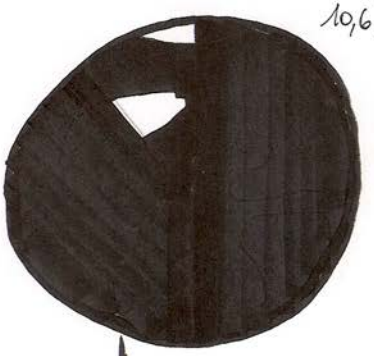


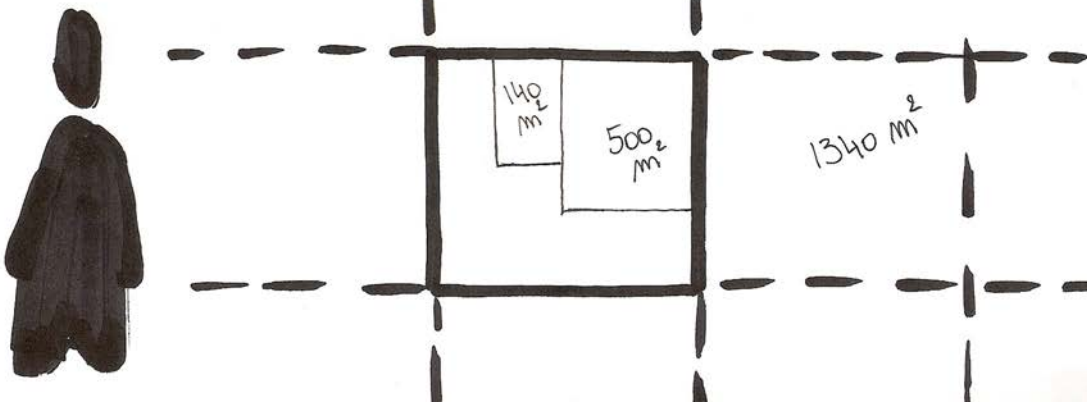
510 million km²

148,94 million km²

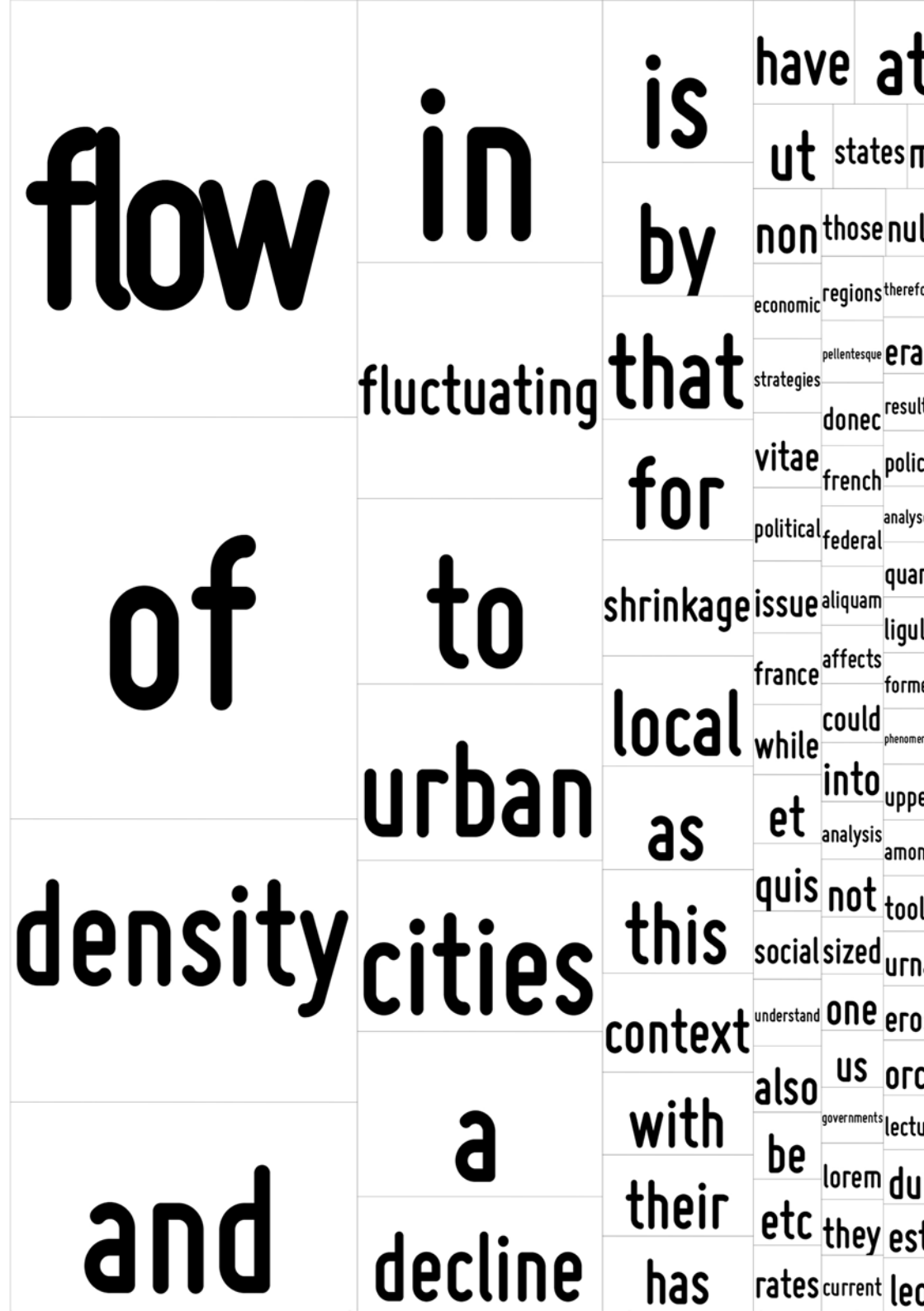
37,7% Agriculture land

10,6% arable land






ULTIMATE
SPRAWL


flow
in
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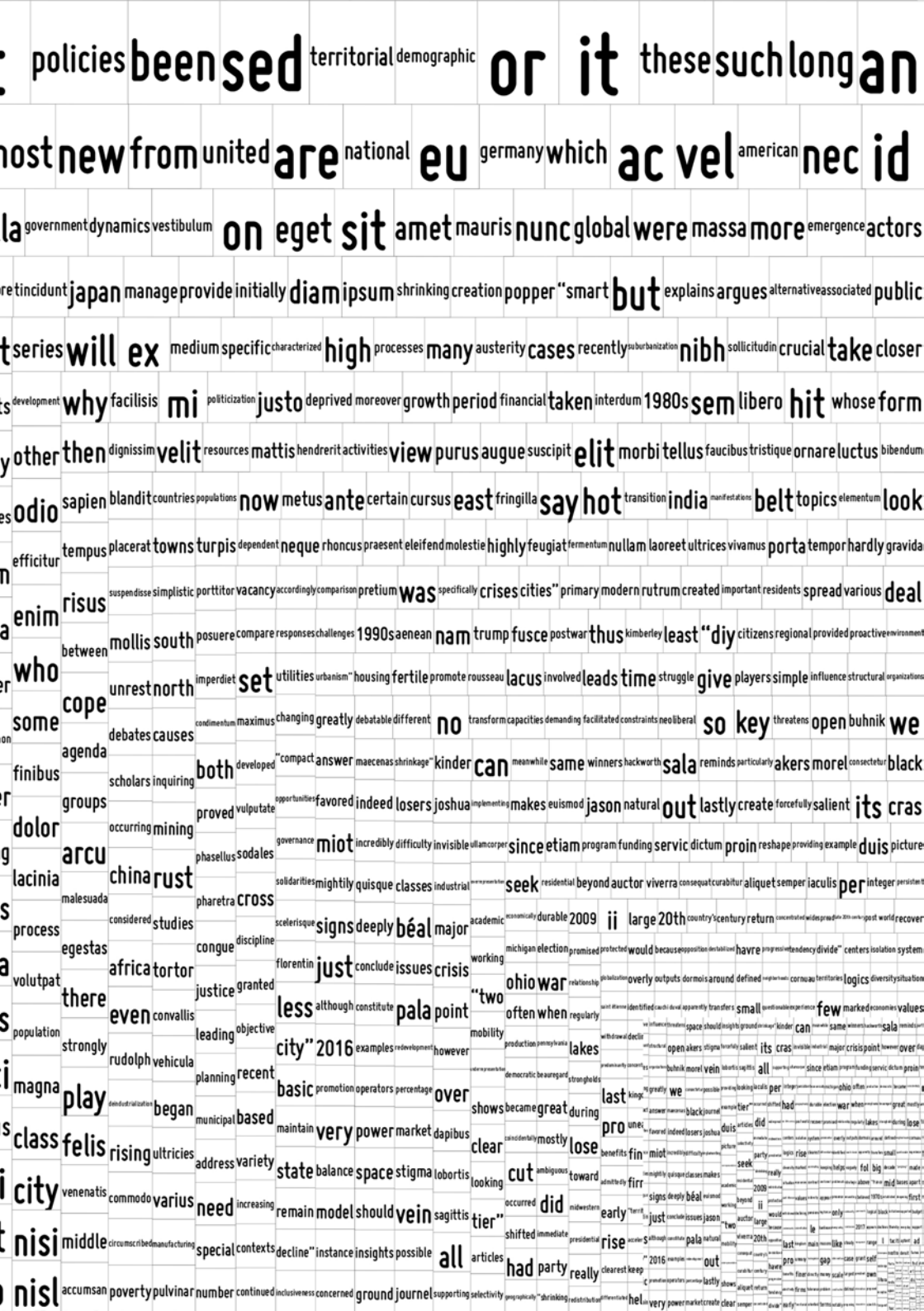
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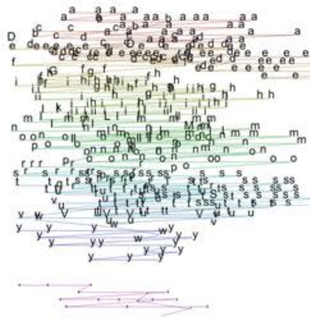

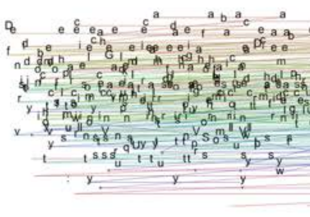

Density, or more precisely, the volumetric mass density, of a s
for density is the lower case Greek letter rho, although the La
divided by volume: m V , displaystyle rho frac mV, rho fra
some cases for instance, in the United States oil and gas indu
this is scientifically inaccurate this quantity is more specifically

information

How can the unplanned process of growth and shrinkage be qualified? strategies for action to date have failed to formulate a satisfactory answer to this question. shrinking and overpopulated cities question existing social practices, values and models. They call for fundamental cultural reflection and reevaluation. can differences take a positive turn without fostering social polarization? Is urbanism conceivable without density? can unused spaces and materials be used in different ways? Are there informal practices that can be read as positive models for action? How do mentalities and identity crises influence urban space?

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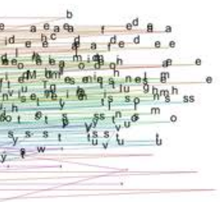


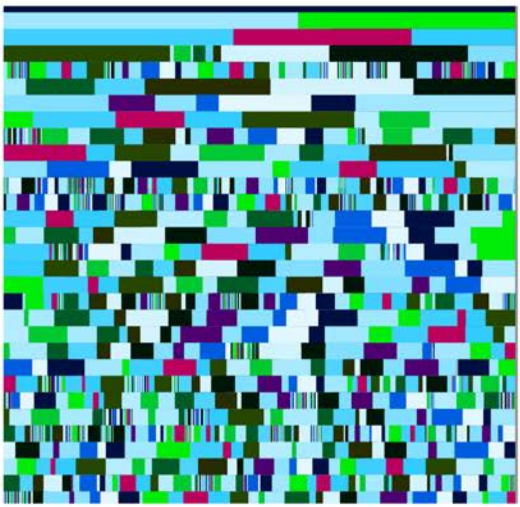
ubstance is its mass per unit volume. The symbol most often used

tin letter D can also be used. Mathematically, density is defined as mass

cmV, where is the density, m is the mass, and V is the volume. In

stry, density is loosely defined as its weight per unit volume, although

called specific weight.



the city

is a dynamic entity which **grows** and **contracts**. The need for the rethinking of a city is pressing now more than ever. It needs to become a

flexible

organism capable of effectively answering the fluctuations of density.


ELUCIDATION

Make sure there are no vacant spaces. How do we breathe new life in them?

ADAPTIBUILT TEMPORARY SOCIAL ECONOMIES BUILD MULT-FUNCTION

SHIFT OF PROGRAM CHANGING LAWS OWNERSHIP RIGHTS =

TO OWN THIS?

REDISTRIBUTION OF SPACE

TEMPORARY URBANISM

RETHINKING OWNERSHIP

TEMPORARY CITY

JUST AIRBNB THIS

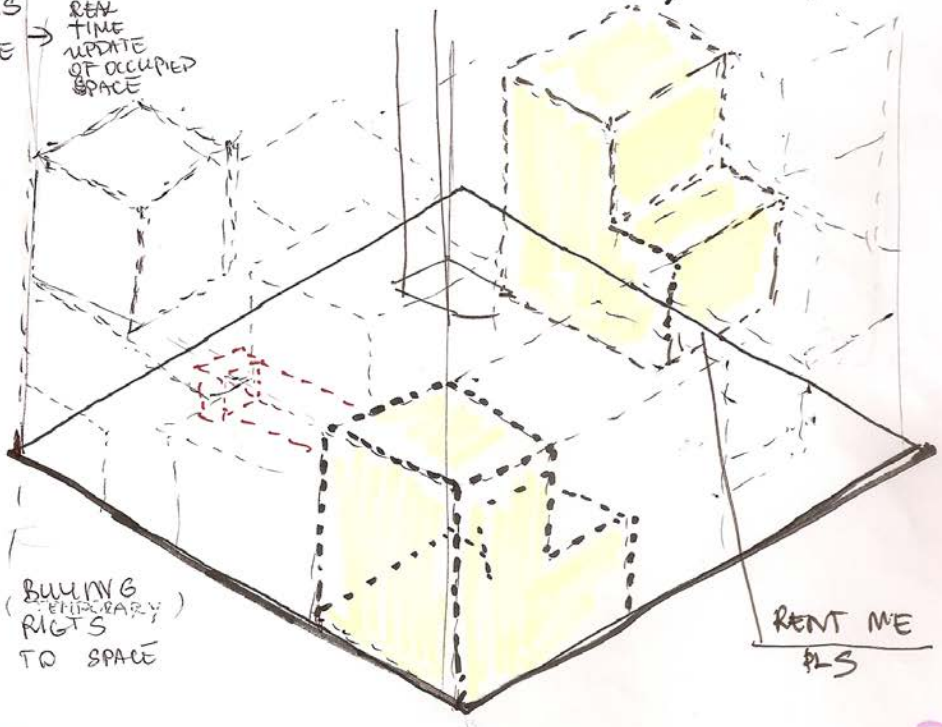
DO THIS?

SPACE EASY TO CHANGE/FIX

Shifting owernship to renting to prevent vacant buildings. Lot of money loss to rent a space you don't need.

CONSTANT SHIFTING OF FUNCTIONS AND RESIDENTS

ARCGIS MAP OF THE CITY → REAL TIME UPDATE OF OCCUPIED SPACE



(BUYING TEMPORARY) RIGTS TO SPACE

RENT ME $$$

DO YOU NEED TO OWN IT?

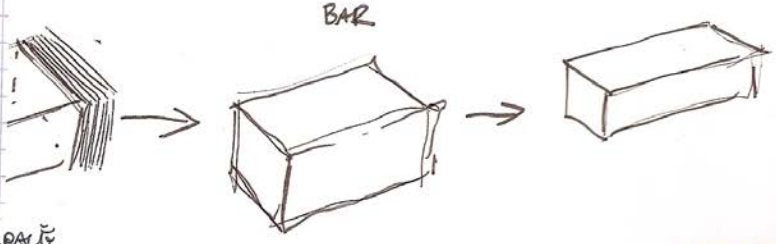
AIRBNB

SOCIAL
ECONOMICS
ADAPTIBILITY
TEMPORARINY
BUILD
~~HOPE~~
~~CHANGE OF LAWS~~
DATA EXHANGE
MAPPING THE CITY
RE DISTRIBUTION OF SPACE

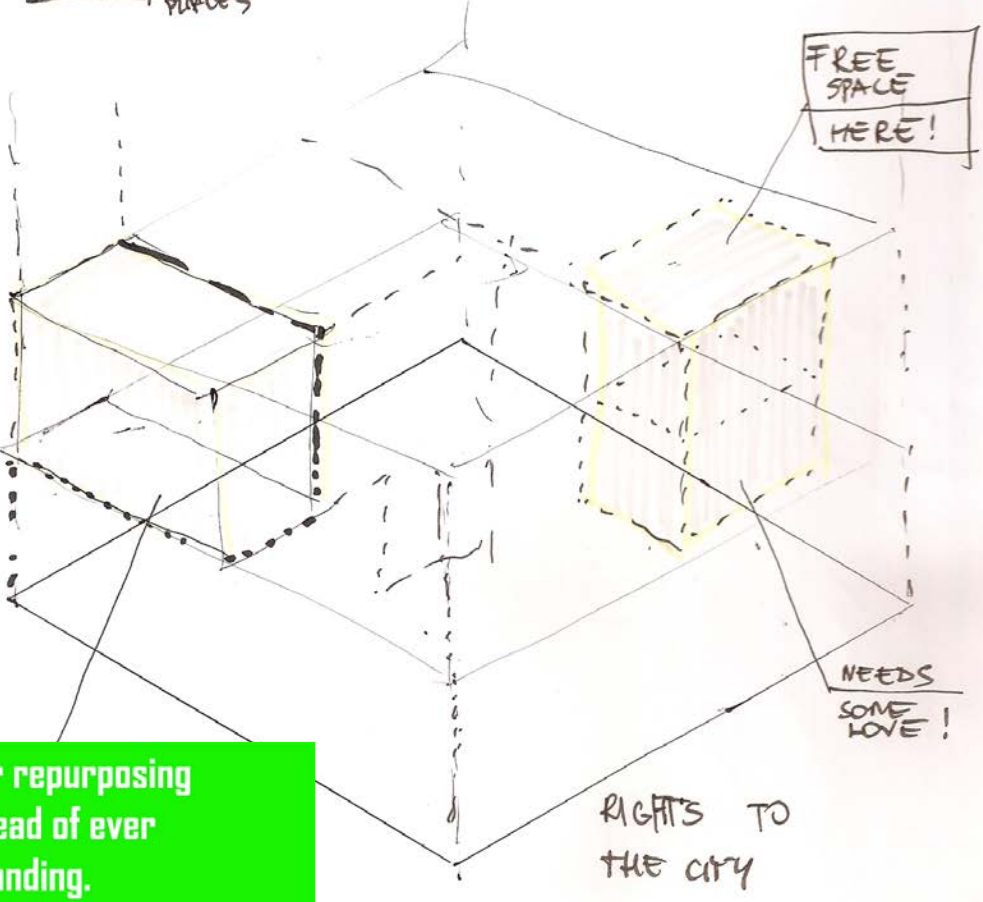
REPURPOSED CITY

- ABANDONED SPACE WITH NEW POTENTIAL

ADOPT THE CITY



→ ADOPT THIS SPACE



RIGHTS TO
THE CITY

KRAKEN!

Ever repurposing instead of ever expanding.

SOCIAL
ECONOMICS
ADAPTIBILITY
FLEXIBILITY
OPEN
MULTIFUNCION
VERTICAL SPACE REDISTRIBUTION
RETHINKING SPACE 2 USAGE
PERSONAL MOD OF SPACE

BUY SPACE

BUY S

TOILETS

SAVED SPACE

BUY SPACE. COM

SPACE AS U LIKE IT!

VERTICAR REDISTRIBUTION OF SPACE

RAUMPLAN?

WASTED SPACE

WASTED

$x m^3$

$m^2 \rightarrow m^3$

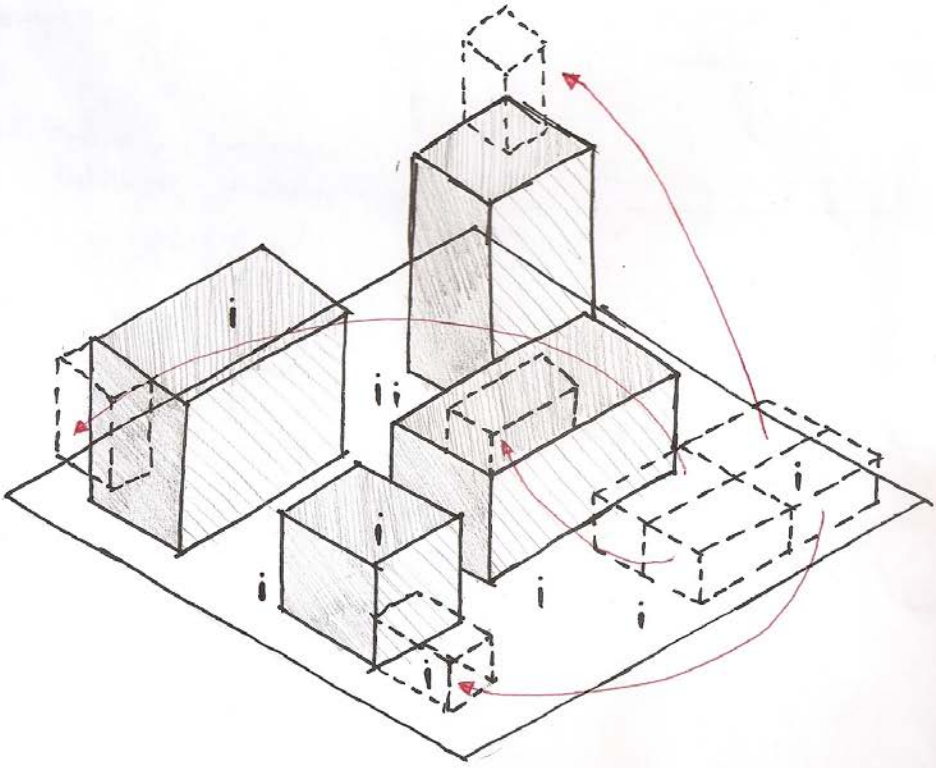
Redistribute vacant space as parasites/plug in units for other occupied spaces as a temporary bonus room.

CITY BLOCK SCALE
SPACE DISTRIBUTION
~~SEMI MOBILE~~
OPEN VS BUILD
PARASITE
PLUG IN SPACE
MOVING UNITS

Redistribute space

→ unused space gets devided & added to
that are still in use

→ plug-in / parasite of unused space



ELEVATOR CITY

SOCIAL

OPEN VS BUILT

MOVEMENT

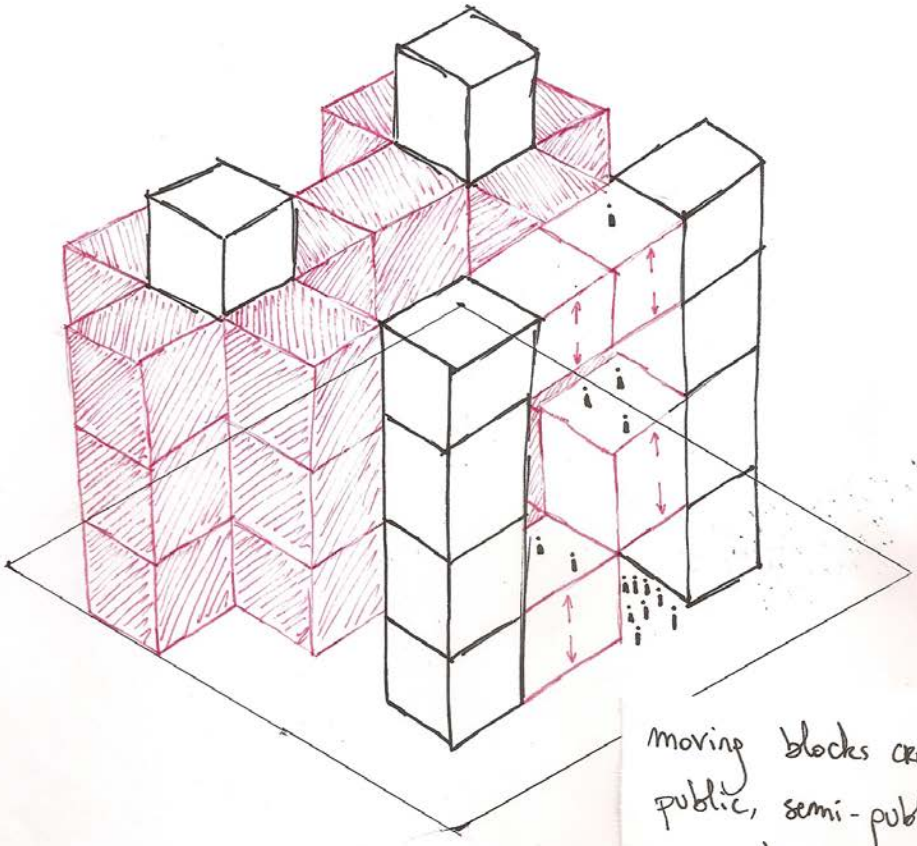
STRUCTURAL

Flexibility

Very specific and defined plans limit the plan of the future. Open up options to repurpose the structure to different programs. Multiple buildings in one building. Multiple structures in one structure.

modular structure

Moving units



moving blocks create public, semi-public & peivate open spaces
Floor becomes roof,..

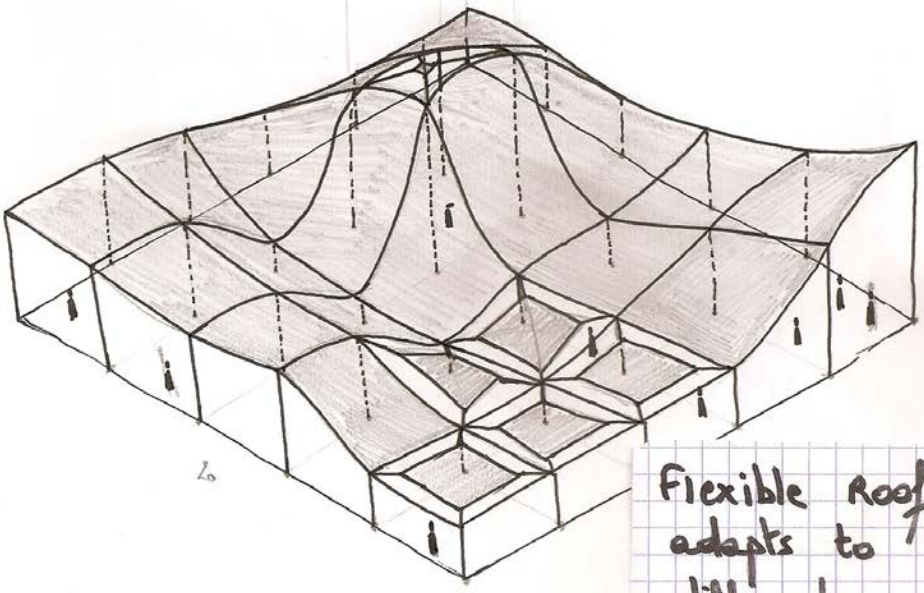
STRUCTURE
MOVEMENT
MULTI FUNCTIONAL

Dynamic
Structures

Flexible Roof ⇝ adapts to needs of program

housing ⇝ hall ⇝ church ⇝ school ⇝ ... ∞

Roof fillings open - closed

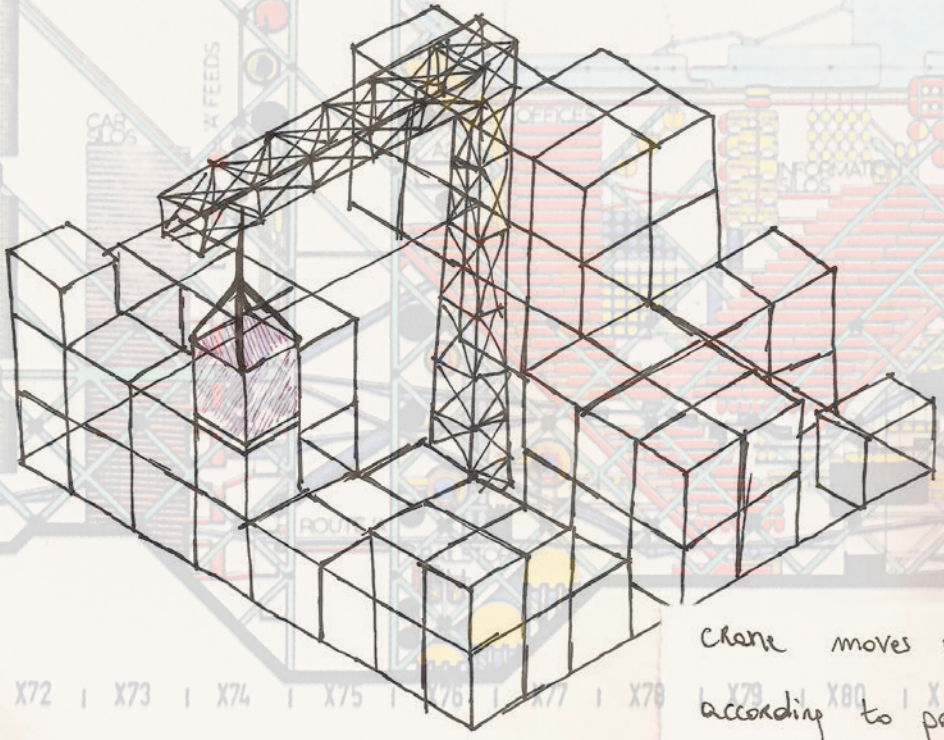


Flexible Roof adapts to the different programs

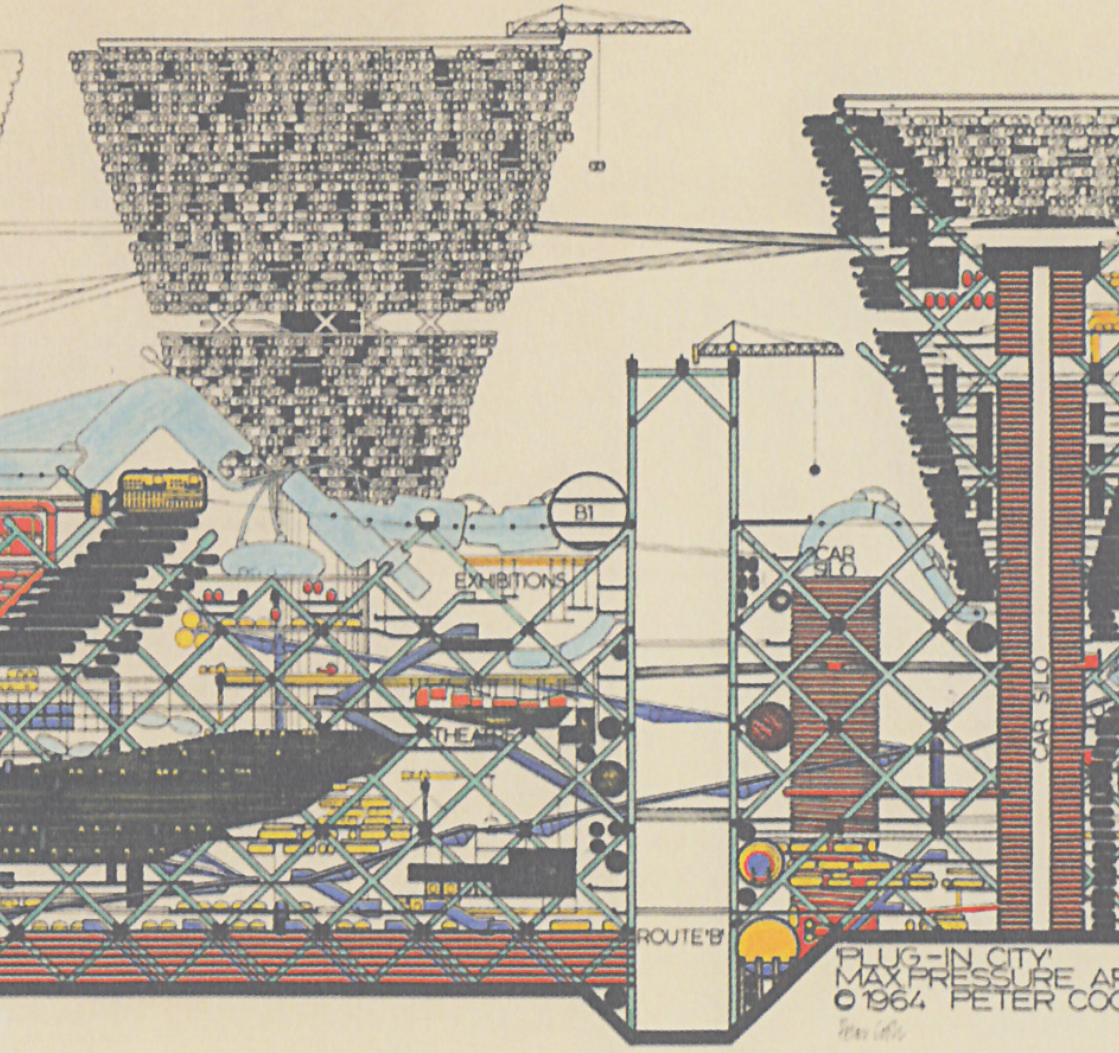
CRANE CITY

TECHN.
MOVEMENT

Modular | system
Cellular |
superstructures
moving units



crane moves units according to program demands



X82 | X83 | X84 | X85 | X86 | X87 | X88 | X89 | X90 | X91 | X92 |

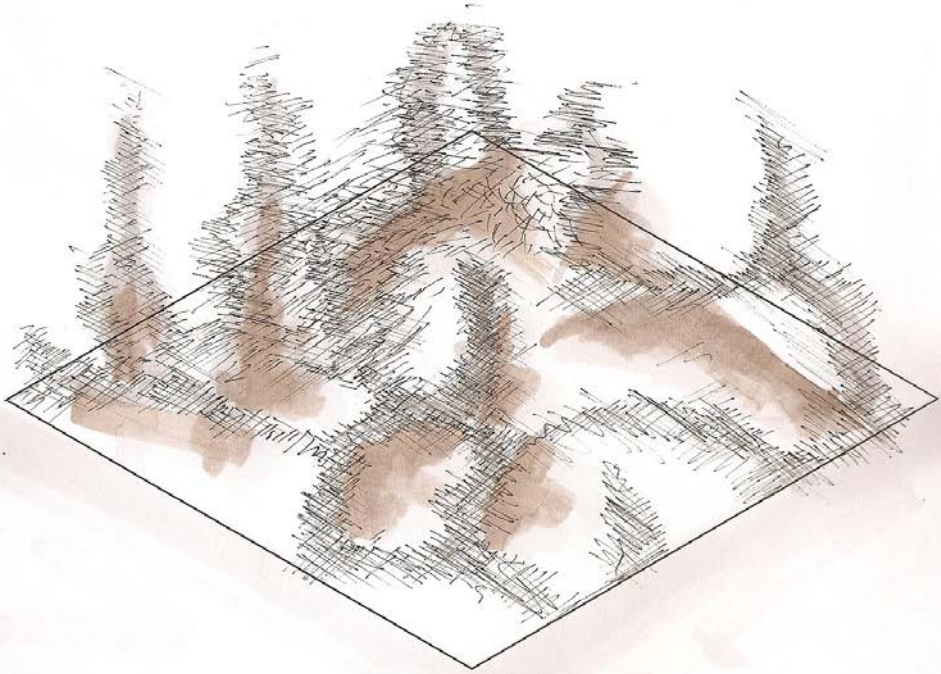
Superstructures /systems that allow the nomatic nature of mankind. How do they cope?

SUPERSTRUCTURE

STRUCTURE
MATERIALS
TECHNOLOGY

SUPERSTRUCTURE
STATIC
MODULE

No more distinction between buildings or cities.
Superstructure where mass is a dynamic entity driven by nomadic fluctuations of density.
An endless empty frame to fill.

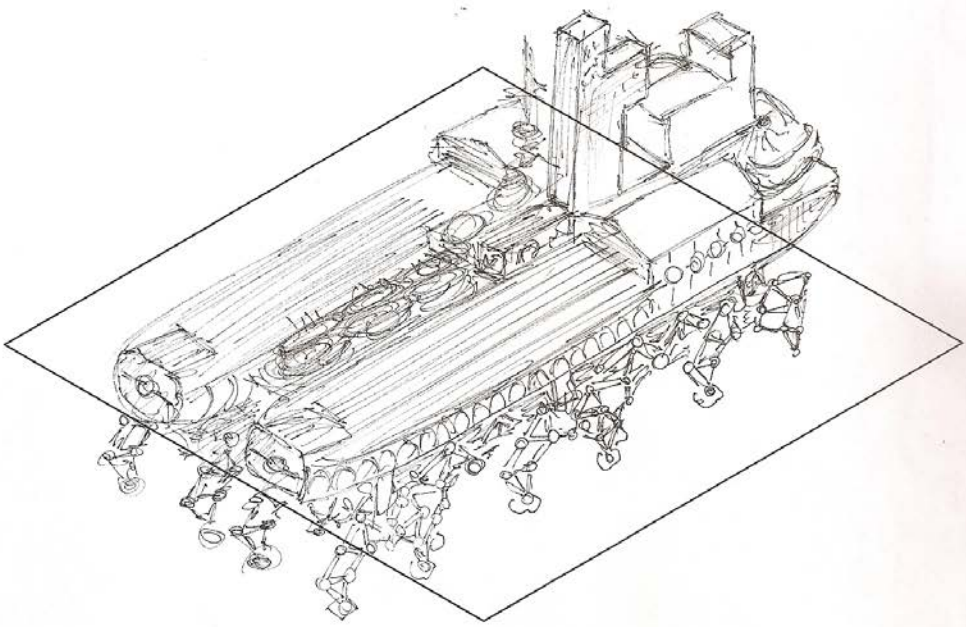


cityShip.
Crawling the land

MOVEMENT
TECHNOLOGY

Can we create a structure that allows the nomadic needs of the population. Moving structure instead of destroying the structure and rebuilding it somewhere else. Population/societies as moving entities bound to one ship.

NOMAD

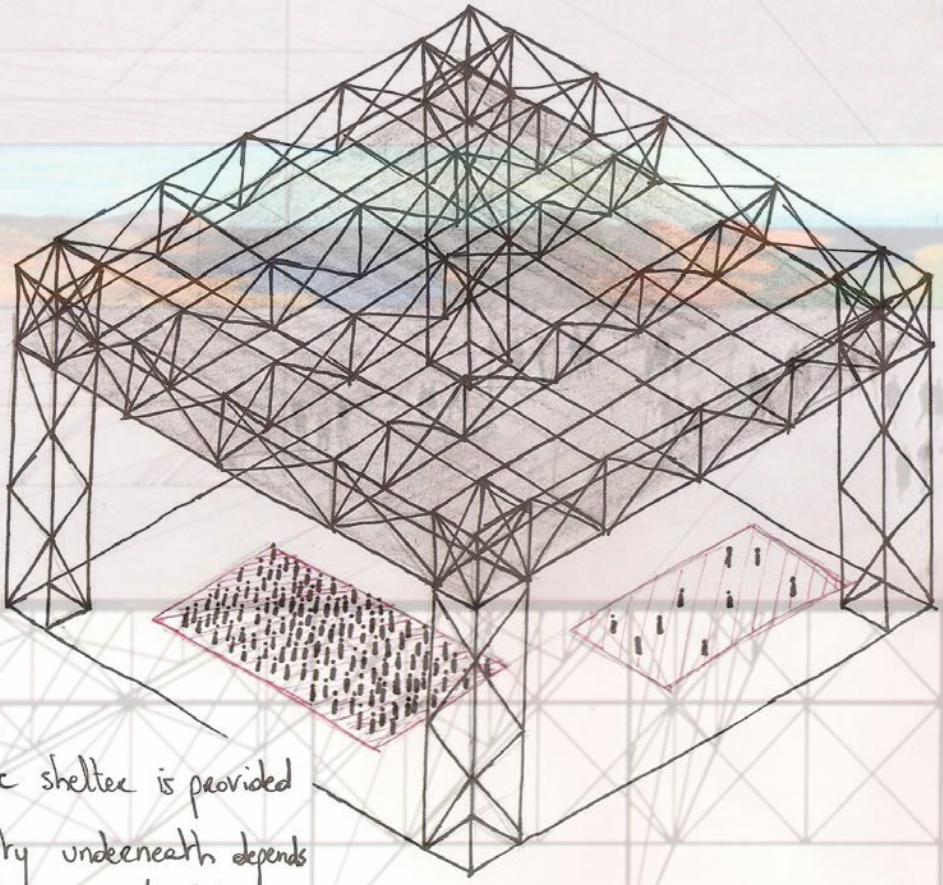


NON STOP CITY

Endless structure that provides shelter for users. Density fluctuates depending on program, social behavior, ... An endless flat and empty space to fill.

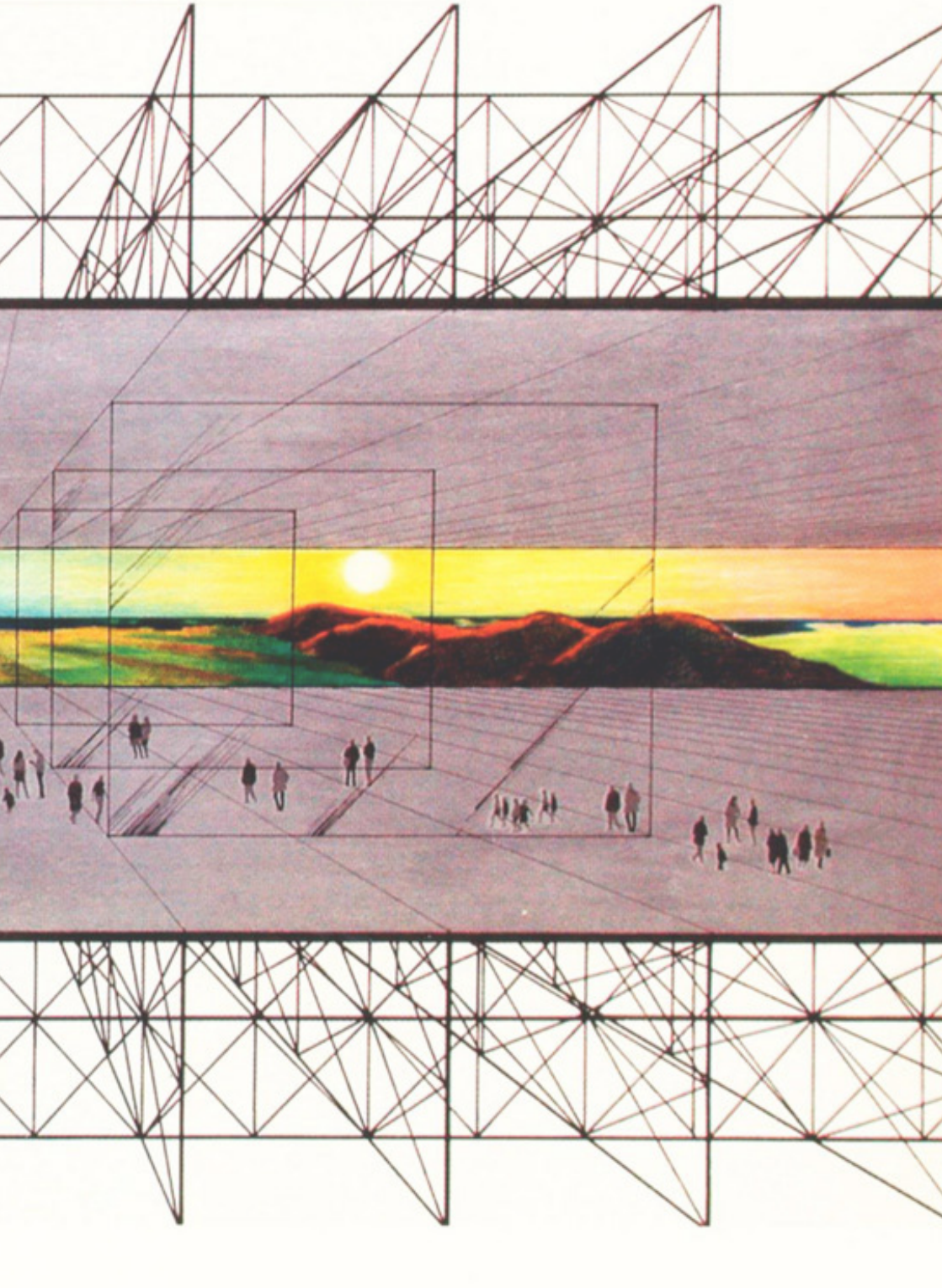
Superstructuress

STRUCTURE
OPEN vs BUILT
SOCIAL
MULTI FUNCTION



Basic shelter is provided

Density underneath depends on the amount of ppl/programms that present themselves



FUTURE OF THE EARTH PLANET

OVERPOPULATION

GLOBAL WARMING

EXTERMINATION OF NATURAL ENVIROMENT

INDUSTRIALIZATION

URBANISATION

AIR AND WATER POLLUTION

FOR THE CENTURIES WORLD HAS BEEN PROGRESSIVELY POPULATED BY PEOPLE. CURRENT NUMBER REACH 8000 MILLION, AND POPULATION RATE IS CONTINUOUSLY GROWING. IN THE LAST 25 YEARS NUMBER OF PEOPLE LIVING ON THE EARTH REACH LEVEL AS NEVER BEFORE IN THE WHOLE HISTORY. ACCORDING TO THE MOST RECENT UNITED NATIONS ESTIMATES, THE HUMAN POPULATION OF THE WORLD IS EXPECTED TO REACH 8 BILLION PEOPLE IN THE SPRING OF 2024. THE EFFECTS OF OVERPOPULATION ARE EXTREMELY DANGEROUS FOR THE FUTURE OF THE WORLD. MOST OF THE ENVIRONMENTAL DAMAGE BEING SEEN IN THE LAST FIFTY ODD YEARS IS BECAUSE OF THE GROWING NUMBER OF PEOPLE ON THE PLANET. INCREASING POPULATION RATE LEADS TO CONTINUOUS GROWTH OF CITIES (URBANISATION), INDUSTRIALISATION, SOCIAL PROBLEMS ETC. AS A CONSEQUENCES OF THIS ACTIONS WE CAN NOTICE DEGRADATION OF NATURAL ENVIRONMENT. WHAT IN THE FUTURE MAY CAUSE COMPLETE DESTRUCTION OF EARTH ECOSYSTEM (GLOBAL WARMING, CLIMATE CHANGE, AIR AND WATER POLLUTIONS, LOSS OF LAND, RAISE SEA LEVEL, DISAPPEARING OF WILD ANIMALS ETC.).

DESPITE OF MANY EFFORT PEOPLE PUT INTO CHANGE CURRENT AND FUTURE SITUATION, THAT ADVANCED PROCESS IS REALLY HARD TO REVERSE. THE CHALLENGE OF STOPPING OVERPOPULATION IS NOW ONE OF THE MOST IMPORTANT ISSUE TO SOLVE BY HUMANITY. IF THIS TENDENCY IS NOT GOING TO BE STOPPED, NEXT GENERATIONS MAY STRUGGLE WITH MORE AND MORE COMPLICATED AND PROGRESSIVE ISSUES. FUTURE PREDICTIONS DON'T GIVE ANY DOUBT ABOUT DECREASING CONDITION OF THE WORLD ENVIRONMENT AND SOCIETY. THAT FORECASTS PROVOKE MANY QUESTIONS ABOUT IDEAS AND SOLUTIONS THAT MAY SOLVE THIS GROWING PROBLEMS.

HOW TO SAVE EARTH?

HOW TO REVERSE PROCESS OF ENVIRONMENTAL DEGRADATION?

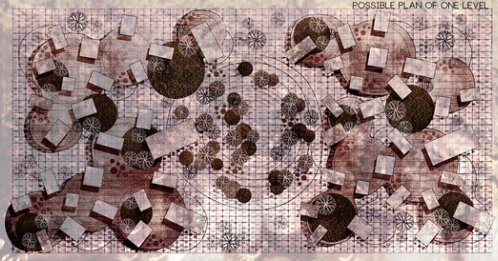
EARTH EVOLUTION- FROM GREEN PLANET TO DESTROYED BY HUMAN WORLD

REVERSE PROCESS- EARTH GOING BACK TO GREEN PLANET

PEOPLE HAVE BEEN TRYING TO INTRODUCE NUMBERLESS STRATEGIES TO SAVE A FUTURE OF PLANET EARTH DESPITE OF IT, WORLD CONDITION IS CONSTANTLY GETTING WORST WITHOUT ANY CERTAINTY OF THE FUTURE IMPROVEMENTS. IF SMALLER ACTIONS AREN'T GOING TO GIVE ANY CONVENIENCE EFFECTS, WORLD MAY NEED SOME NEW PERMANENT AND RADICAL SOLUTIONS.

CREATE AN OPPORTUNITY FOR PLANET TO SLOWLY TURN BACK TO PAST CONDITION-BACK TO THE TIME WHEN EARTH WASN'T AFFECTED THAT MUCH BY HUMAN ACTIVITY. INITIATE AN IDEA OF GIVING EARTH POSSIBILITY TO REGENERATE ITSELF. BY SEPARATE SOURCE OF DEVASTATION FROM NATURAL ENVIRONMENT. SEARCHING FOR SOLUTIONS GIVING AN OPPORTUNITY TO REALISING PLANET FROM NEGATIVE INFLUENCE OF CIVILISATION DEVELOPMENT. RETURN ALL LANDS TO EXTEND NATURAL GROWTH, INSTEAD OF URBANISATION EXPANSION AND INDUSTRIALISATION GROWTH.

POSSIBLE PLAN OF ONE LEVEL

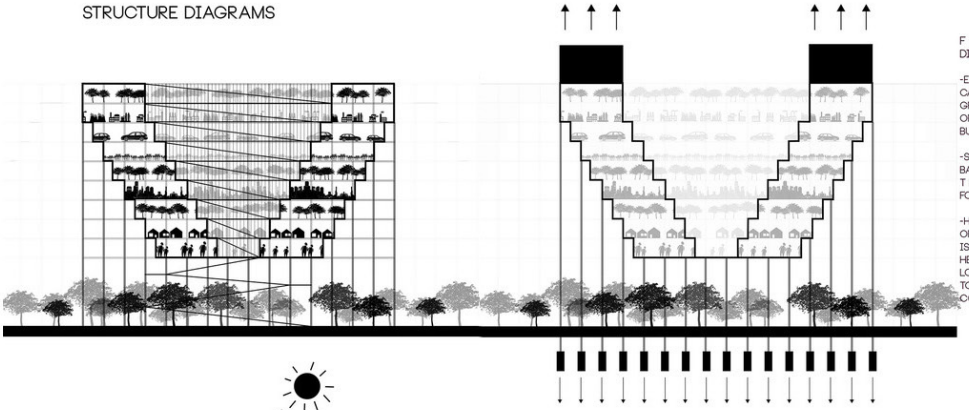


SEPARATION OF BAD CIVILISATION INFLUENCES FROM NATURE

DOMINANCE OF NATUR OVER CIVILISATION PROCESS

RETHINKING AND REDESIGNING THE WAY WE ORGANISE CITIES, WITH NEW URBAN STRUCTURE AND NEW WAY OF THINKING ABOUT ENVIRONMENT. GIVING AN OPPORTUNITY FOR EARTH TO RECREATE INITIAL MANNER OF NATURE EXISTENCE, WHERE HUMANS DIDN'T DOMINATE ON NATURAL ENVIRONMENT. GIVE PEOPLE EASY ACCESS TO GREEN AREAS WITHOUT POSSIBILITY TO RADICAL IMPACT ON NEW ENVIRONMENT SYSTEM. NEW STRATEGY CAN GIVE A PERFECT BALANCE BETWEEN

STRUCTURE DIAGRAMS

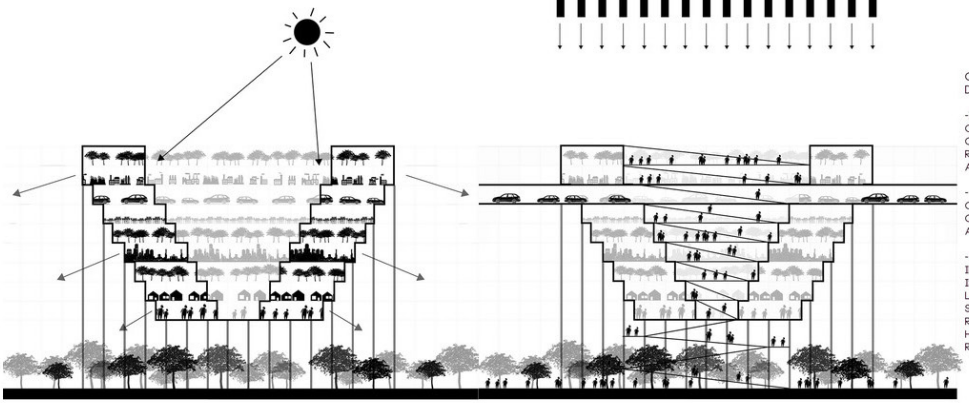


FOUNDATION DIAGRAM

-EARTH OVERLOUD CAUSED BY GROWING NUMBER OF PEOPLE AND BUILDINGS

-STRUCTURE IS BASED ON TRADITIONAL FOUNDATION

-HIGH LOAD FACTOR OF THE STRUCTURE IS OPTIMISED BY HELIUM STRUCTURES LOCATED ON THE TOP PART OF THE CONSTRUCTION



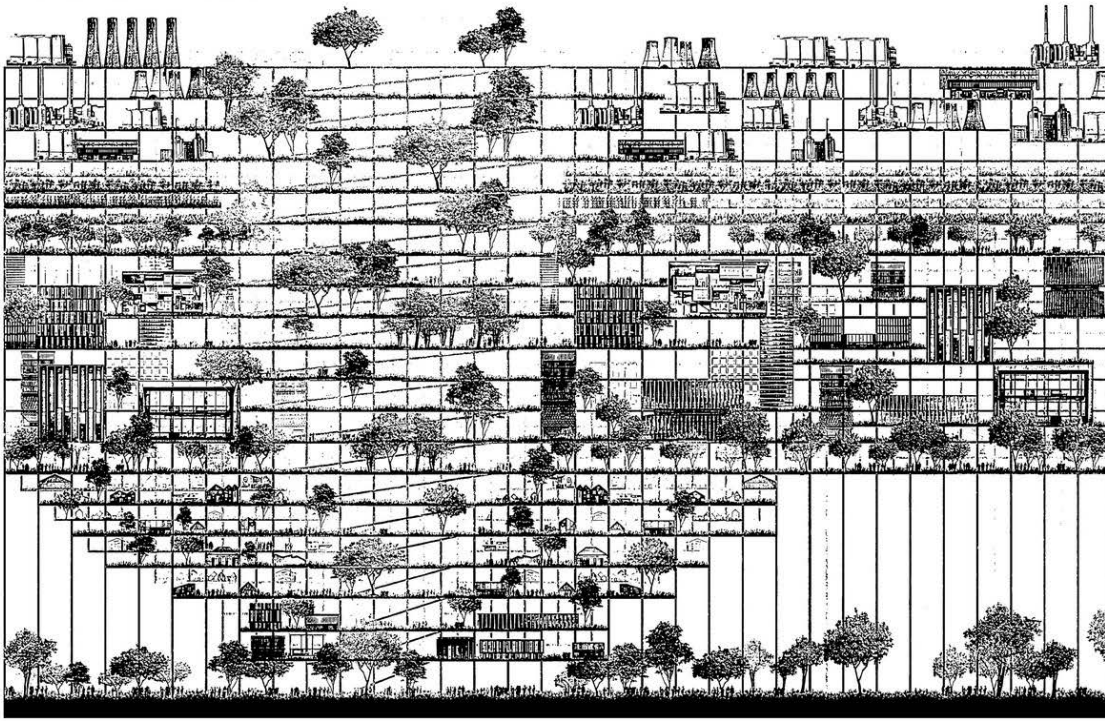
COMMUNICATION DIAGRAM

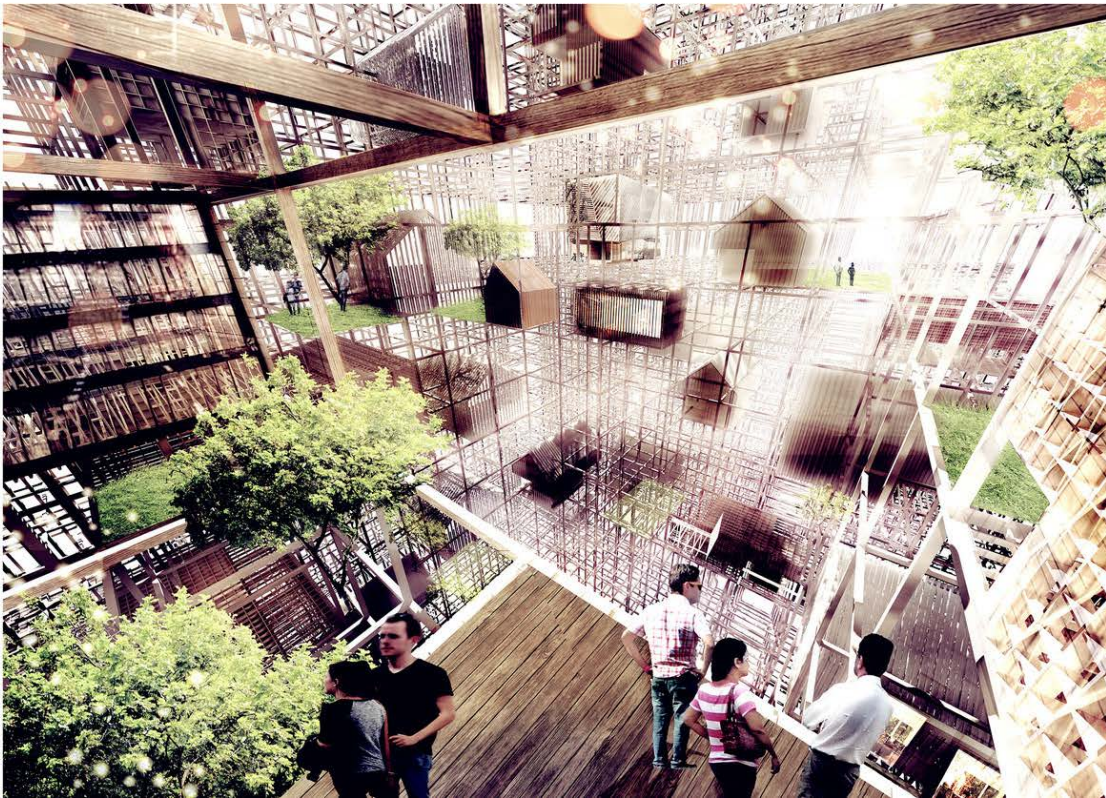
-INTERNAL CITY COMMUNICATION IS CREATED BY STAIRS, RAMPS, ESCALATORS AND ELEVATORS

- MAIN COMMUNICATION CORE IS LOCATED IN ATRIUM AREA

-COMMUNICATION INBEETWEEN CITES IS CREATED BY ONE LEVEL OF THE STRUCTURE RESERVED FOR HIGHWAYS AND ROADS

SCHEMATIC STRUCTURE SECTION





Using the shifting border of technology to help us cope with the fluctuations of density. Human slave to the machine or vice versa?

TECHNOLOGY
FLEXIBILITY PARAMETRIC
TEMPORARITY
MOVEMENT
MULTI-FUNCTION
PARAMETRIC
REAL TIME
DATA EXCHANGE
PROGRAMMABLE SPACE

TERFACE?

DATA CITY

3D MAPPING

INFLUENCING URBAN FABRIC

UT

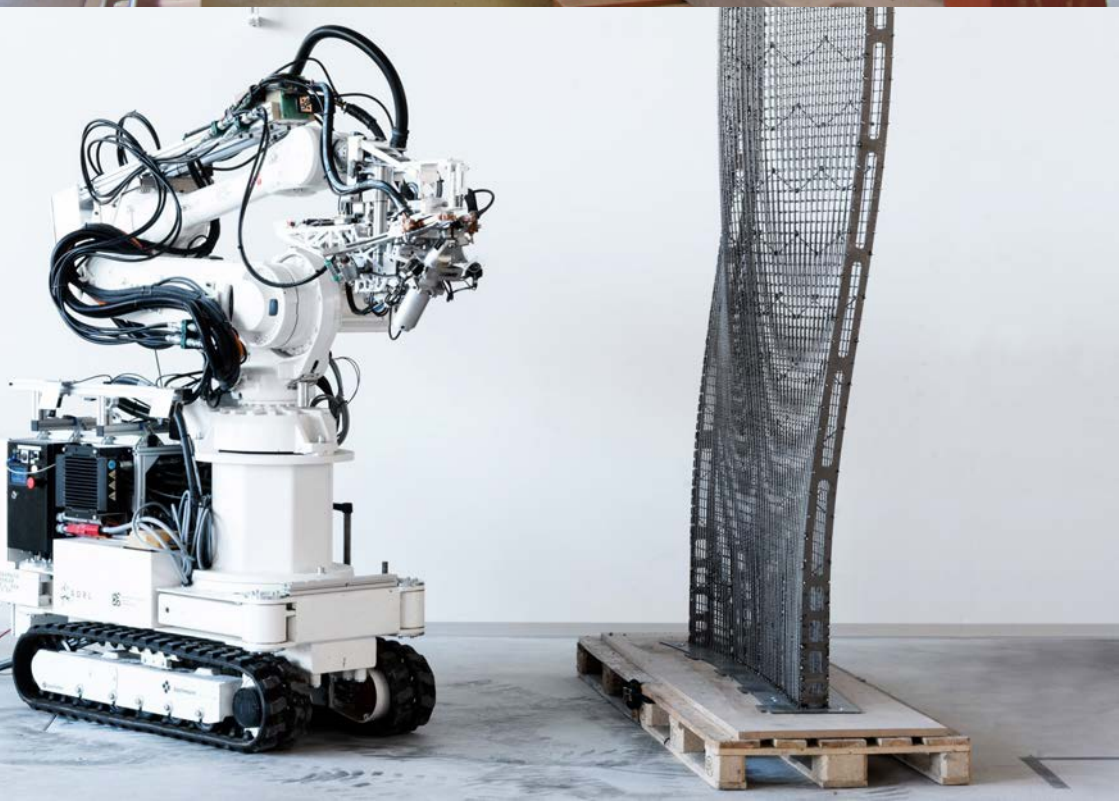
DATA EXHANGE

REAL TIME CITY TRAFFIC CONTROL

Using technology to optimise the distribution and repurposing of space. Algorithms control the structure. What's the perfect algorithm? Are the parameters endless?

SENSOR INTERFACES?

CHANGING FUNCTIONS REAL TIME



AUTOMATED CITY

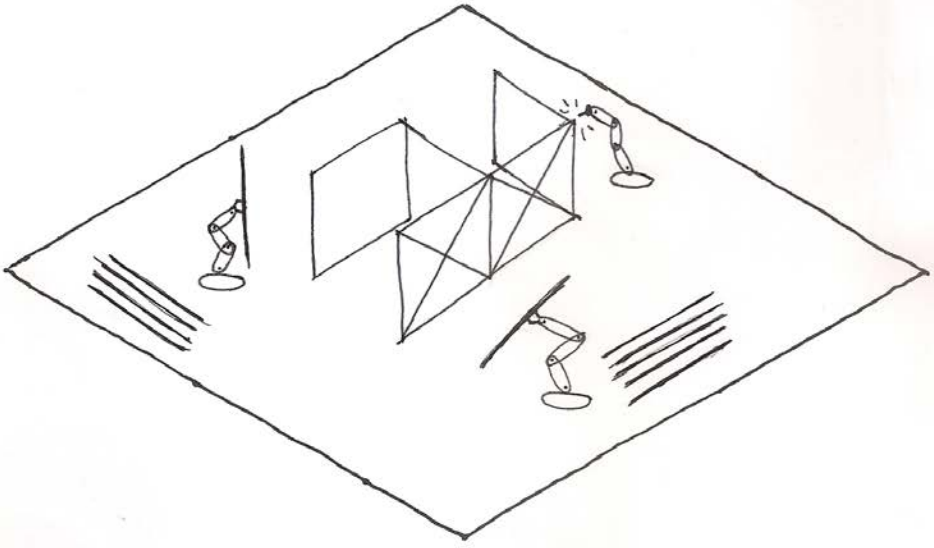
ROBOTICS
STATIC
CITY SCALE
BUILD VS OPEN
PROGRAMMING
CREATE & DESTROY

THE PROGRAM KNOWS WHEN TO SHRINK OR EXPAN

THE CITY BUILDS AND DESTROYS ITSELF

SLAVE TO THE PROGRAM?

Technology controls the construction and destruction of the built.



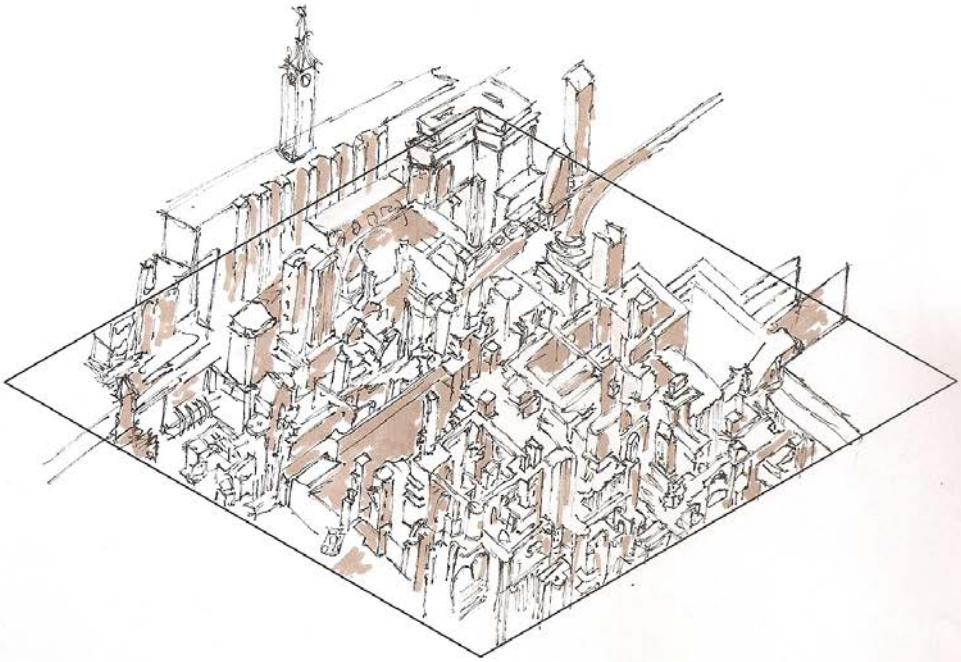
Endless growing densities. Build What you want, where you want. Without regards for ethics?

Ever Expanding city.

Where did it start ?!

Social
Static
overgrown
city Scale

Embrace the ever expanding built human space. How far can we go? Will we selfdestruct?

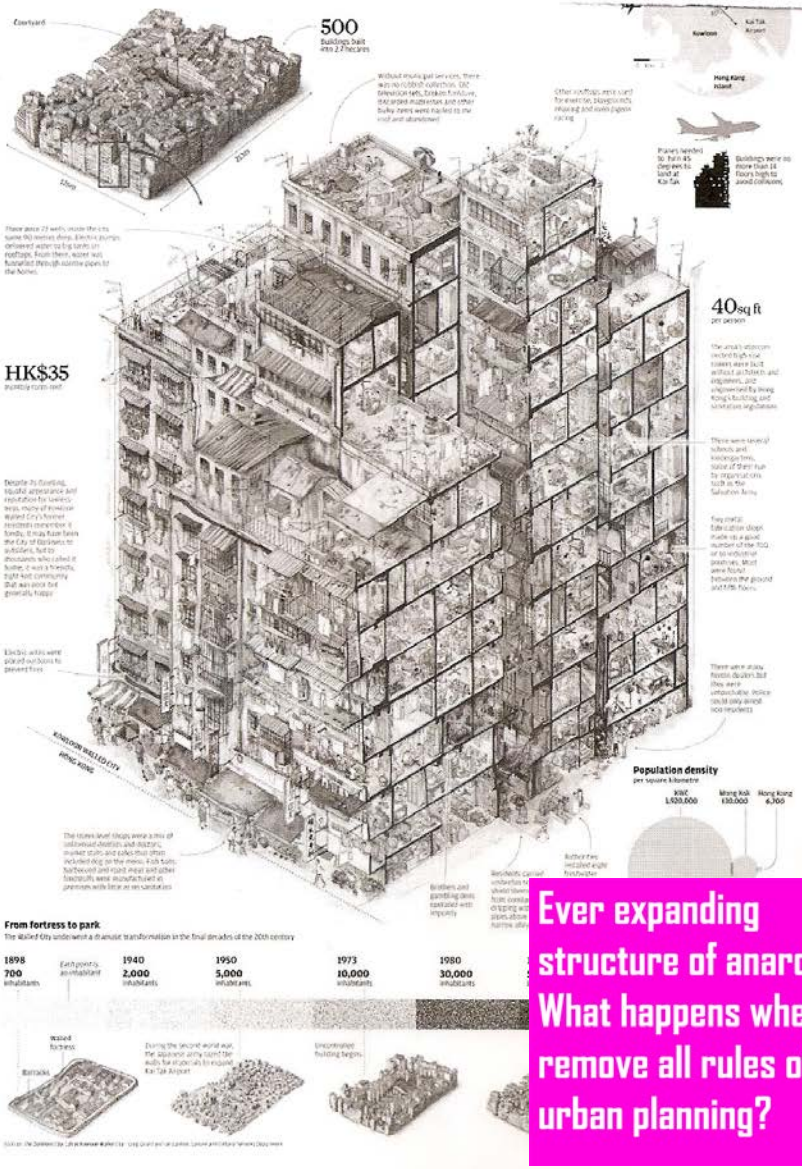


Kowloon Walled City

Ethics
Social
Economic
Superstructure

City of anarchy

Kowloon Walled City, located not far from the former Kai Tak Airport, was a remarka
squatter camp that by the 1980s had 50,000 residents. A historical accident of colonia
it existed in a lawless vacuum until it became an embarrassment for Britain.
This month marks the 20th anniversary of its demolition.

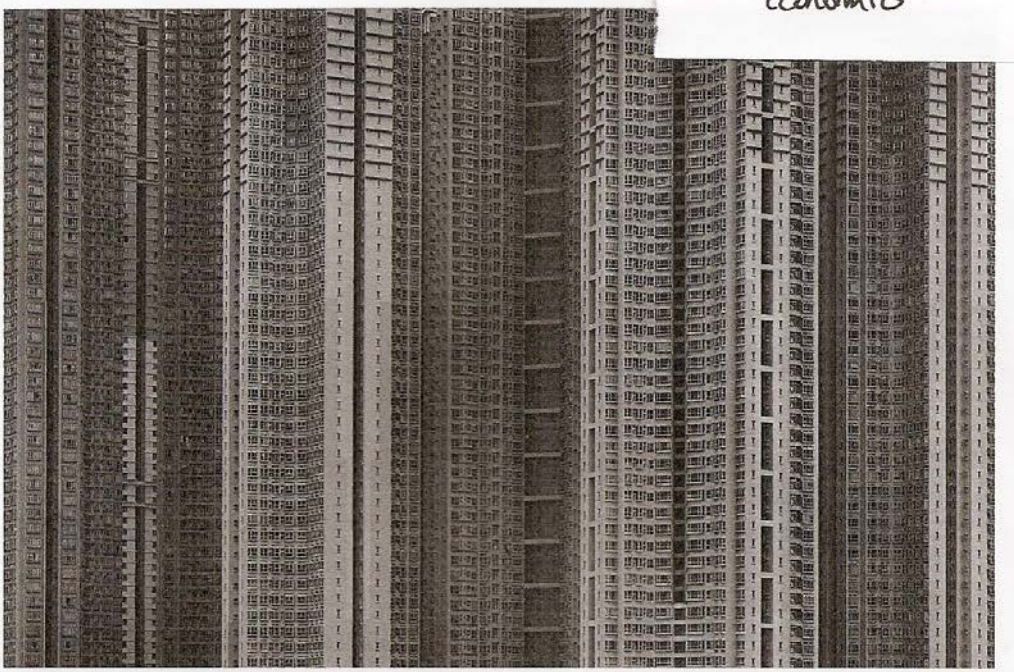


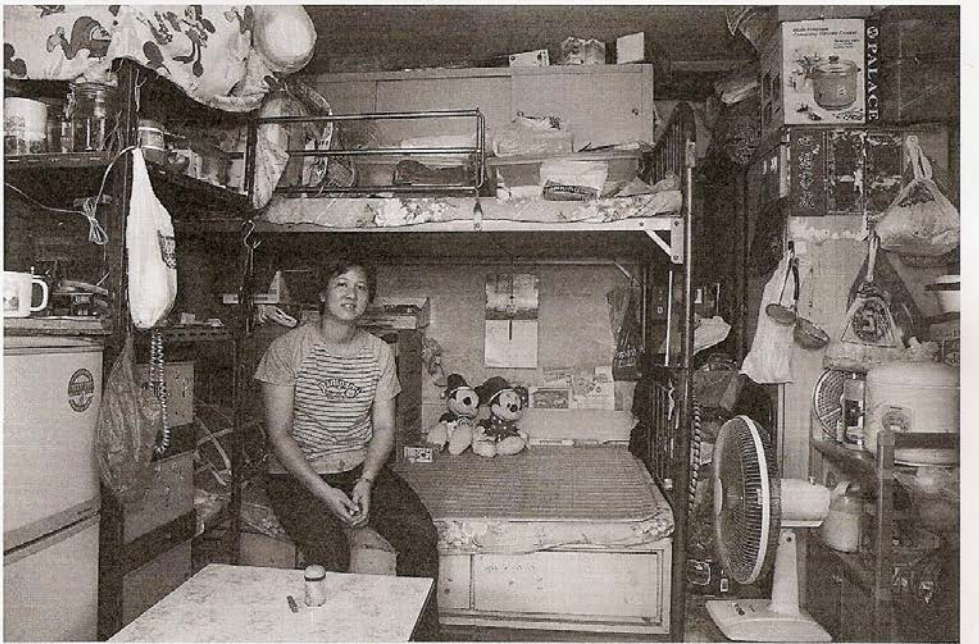
Ever expanding structure of anarchy. What happens when we remove all rules of urban planning?

Tokyo battery blocks

ethics
social
economics

The dazzling and depressing architectu
megacities





Inception City

Technology

Mini globe
Social !
Fixed
Build

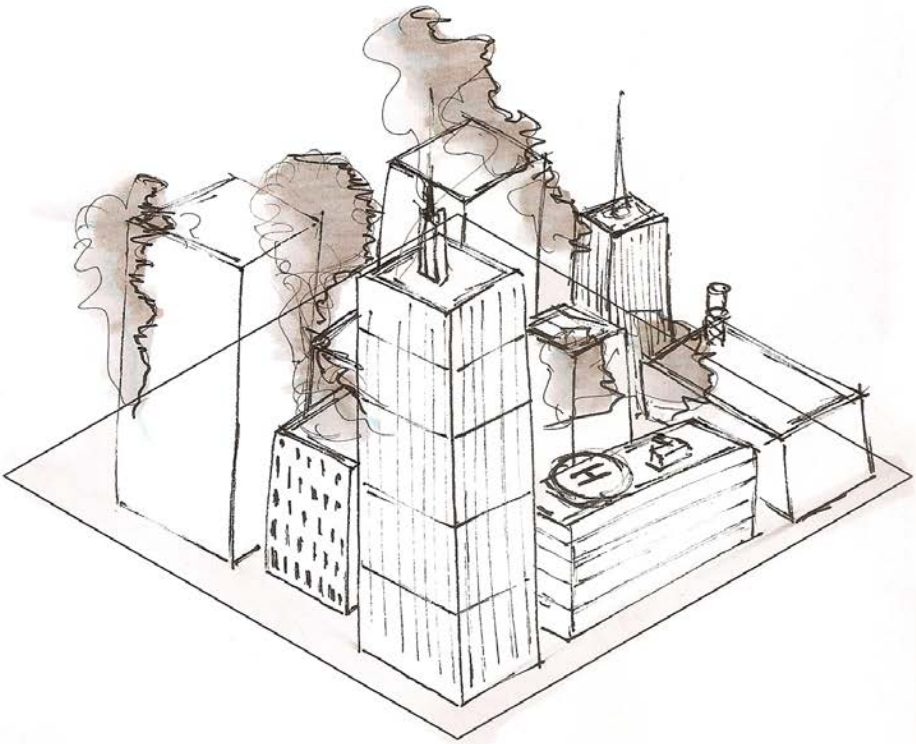
paracity

clouds come down

Ever growing structures on top of existing buildings. Density upon density.

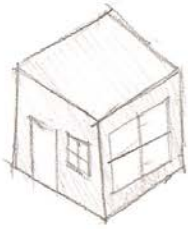
STATIC
PARASITE
~~FLEXIBLE~~
TEMPORARY

EVER CHANGING



Remove or downscale everything you're not using. Reconstruct it when you need it. How fast?

FRAME CITY



OPEN FRAME
STATIC
FILL IN
ORIGINAL INFRASTRUCTURE
CITY SCALE
MULTIFUNCTIONAL

FILL THE FRAMES TO YOUR NEEDS

STRIP EXISTING BUILDINGS

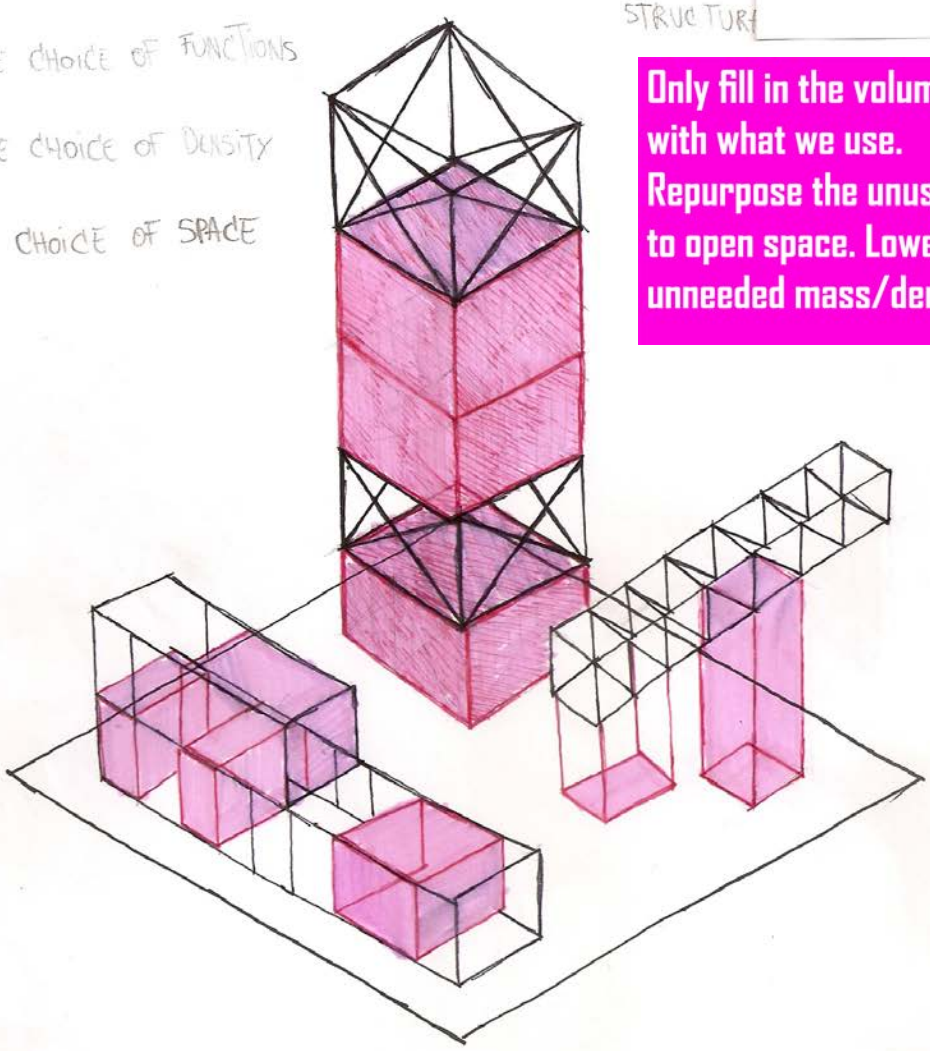
STRUCTURE

FREE CHOICE OF FUNCTIONS

FREE CHOICE OF DENSITY

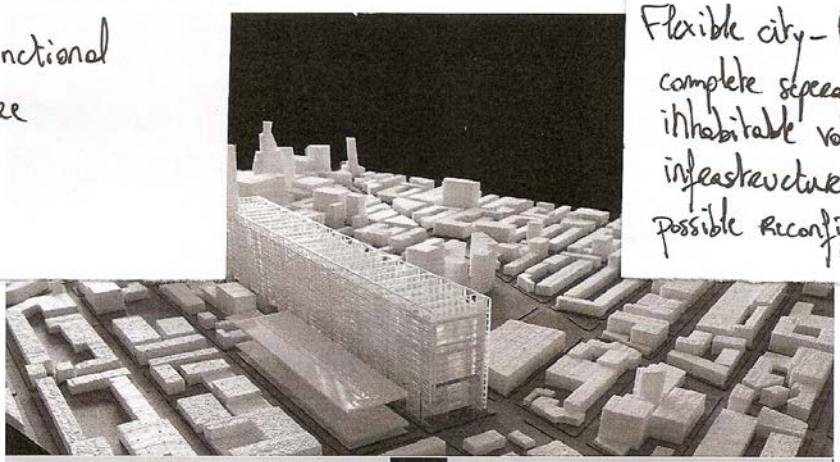
FREE CHOICE OF SPACE

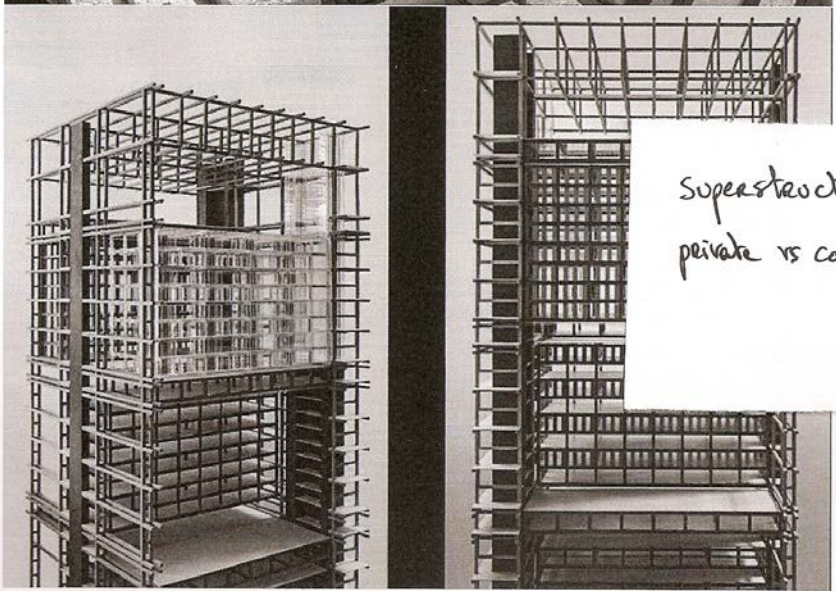
Only fill in the volume with what we use. Repurpose the unused to open space. Lower unneeded mass/density.



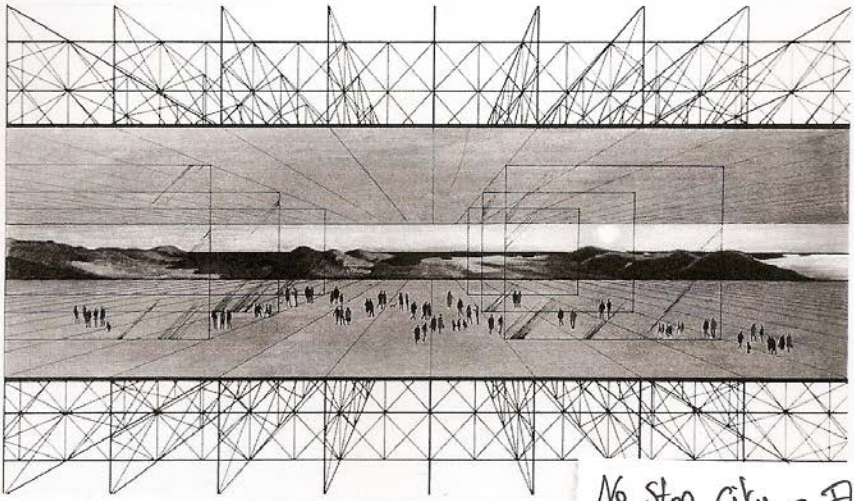
Multifunctional
Structure
Social

Flexible city – Faezara Gandhi
complete seperation of
inhabitable volume and
infrastructure
possible reconfigurations



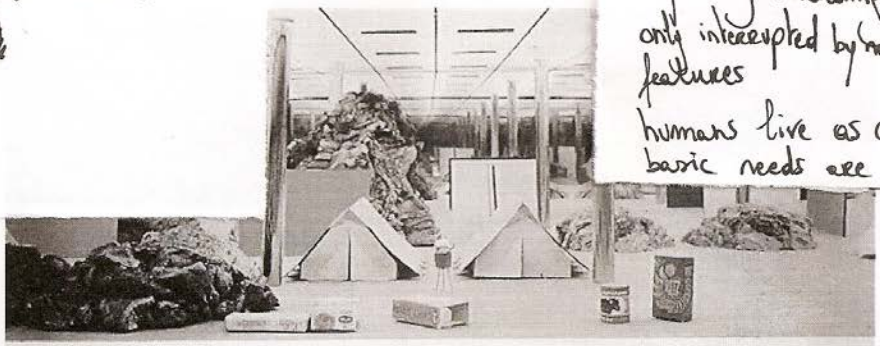


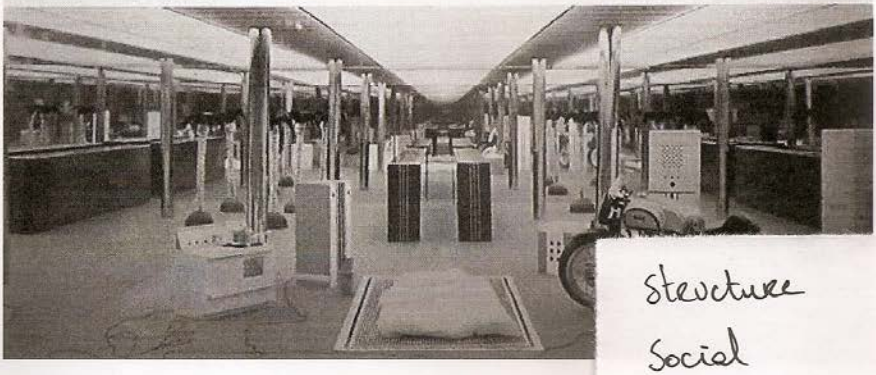
Superstructures
private vs communal



No Stop City - Archizoom
infinitely extending grid
only interrupted by natural
features
humans live as campers
basic needs are met

Supperstructures





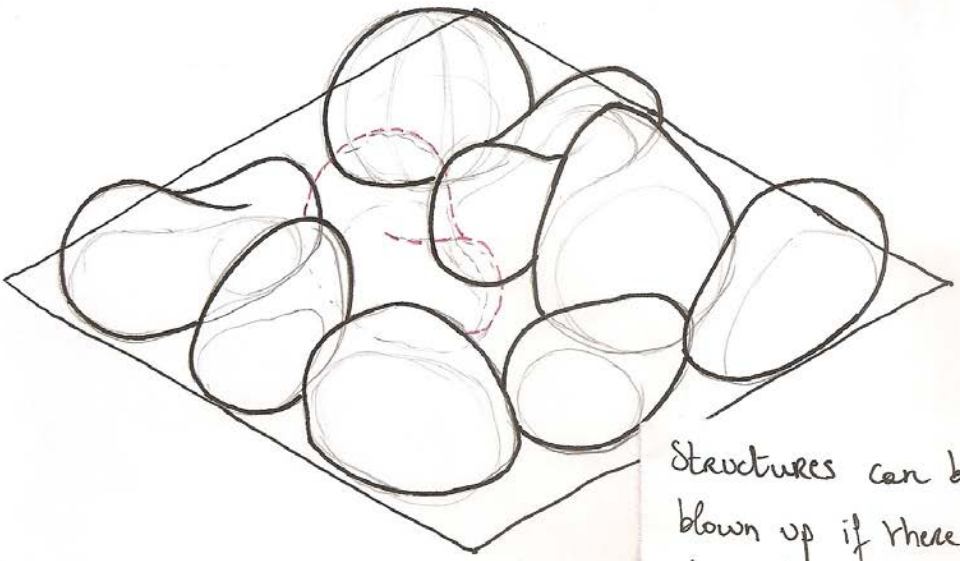
Structure
Social
Temporacity

BLOW UP ~~CITY~~

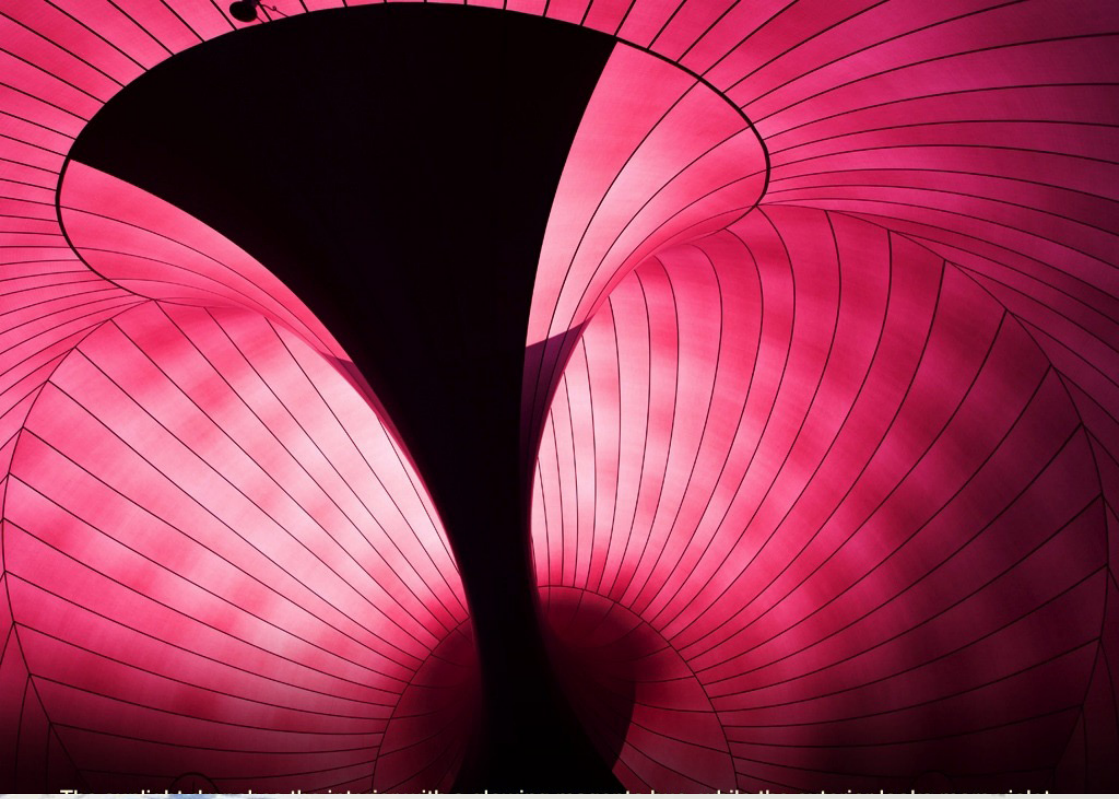
OPEN VS BUILT MATERIAL

FLEXIBILITY

Blow up structures



Structures can be blown up if there is demand or suck down when the demand




ARK NOVA

POLE CITY

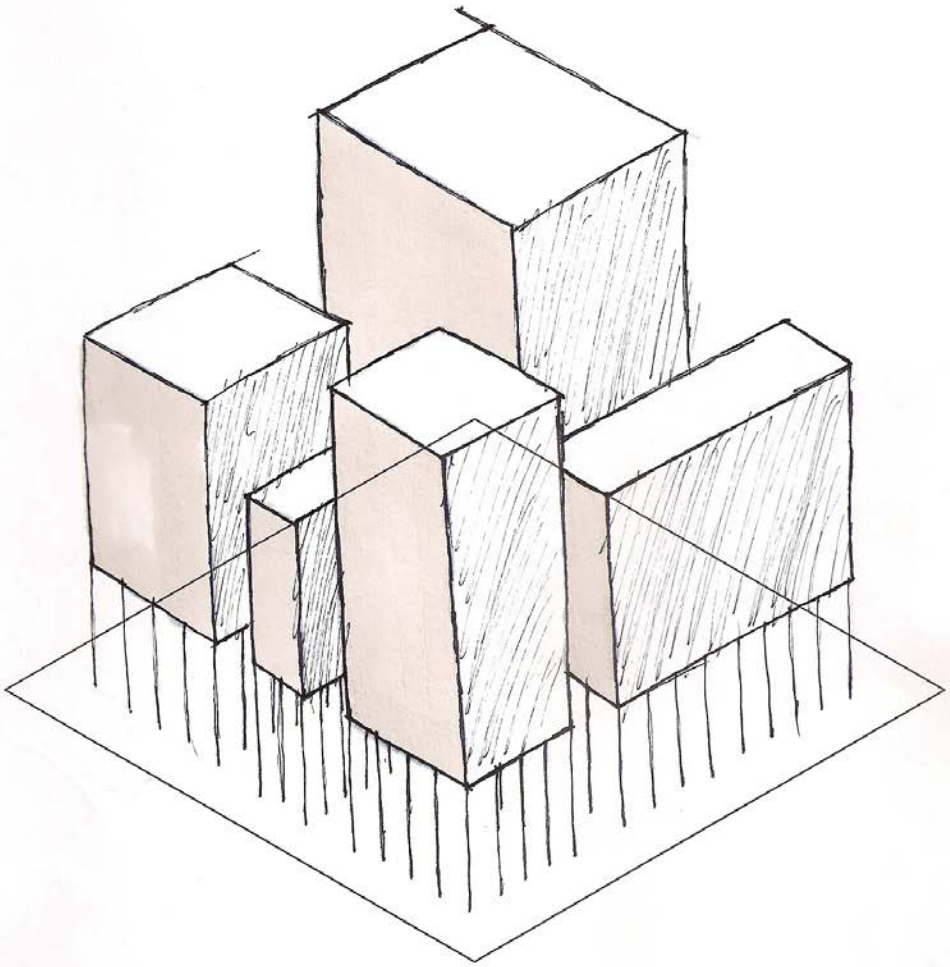
STATIC

OPEN VS BUILD

COLUMN STRUCTURE

PUSH UP

CITY BLOCK SCALE

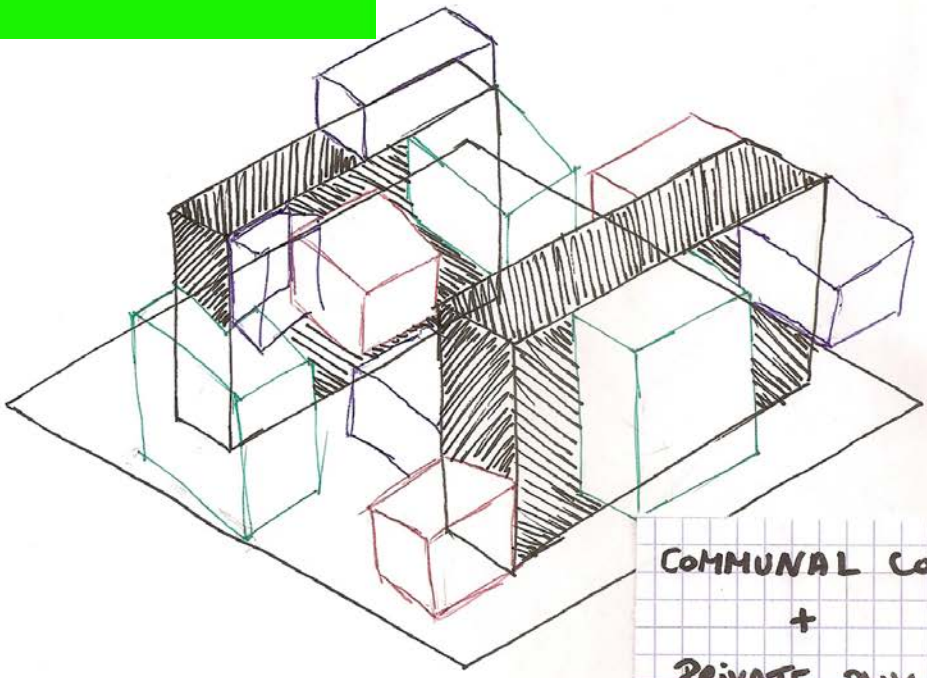


SOCIAL
STRUCTURE
TEMPORARY

private
vs
communal

mmunal units
↳ plugin private / temporary programs
plug out when they leave ⟹ dynamic interspace

Potential nomadic private units plug in to communal cores.

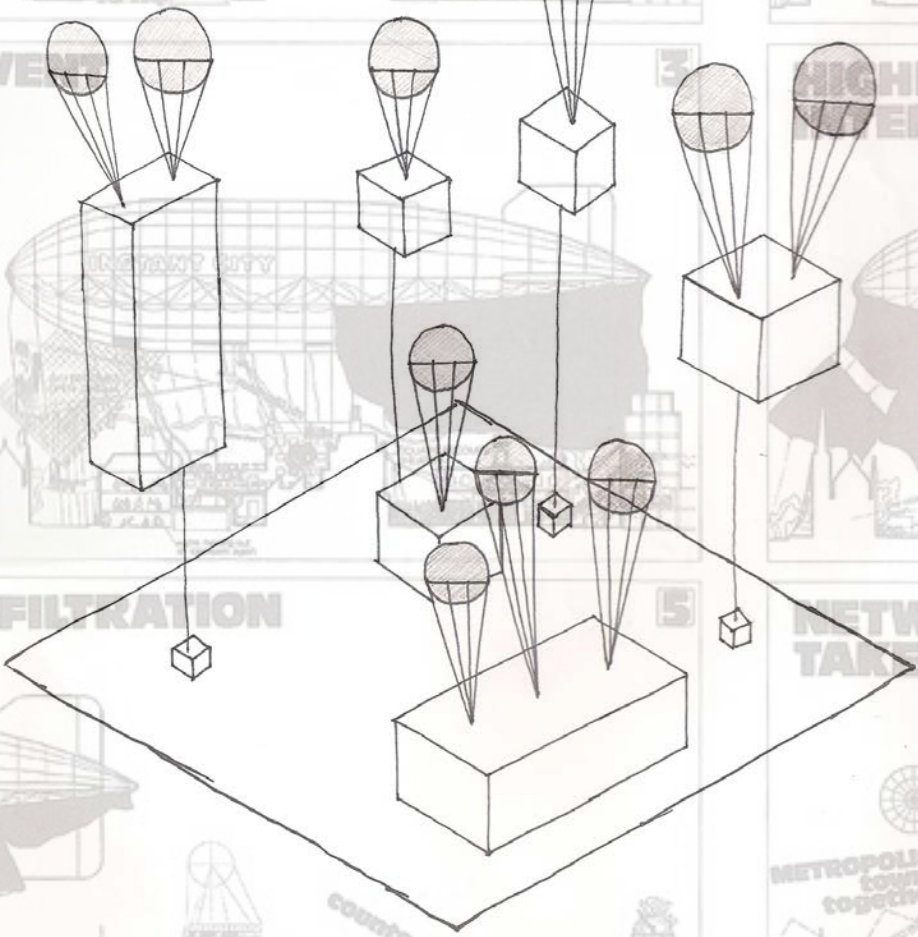


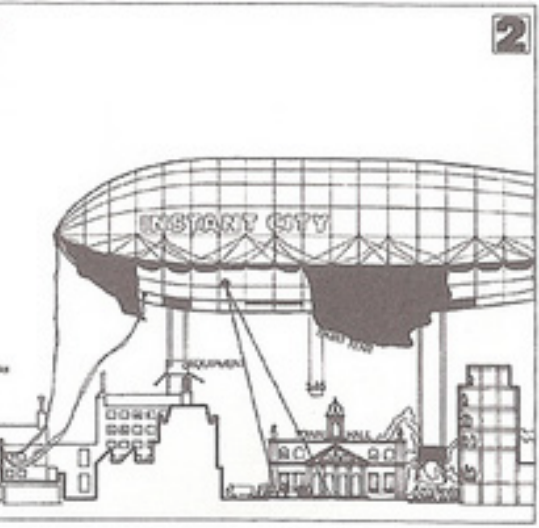
COMMUNAL CORES
+
PRIVATE PLUGINS

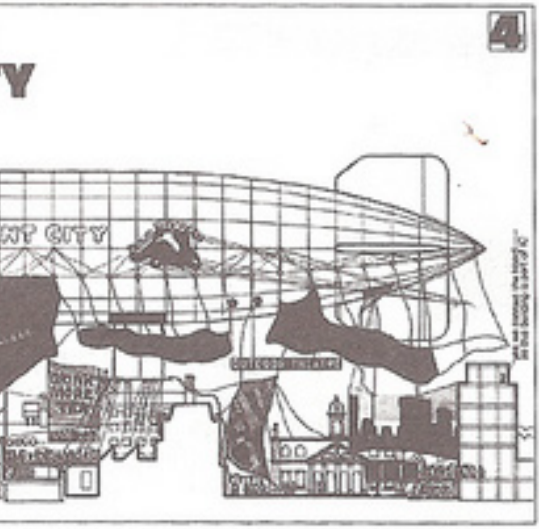
FLOATING CITY

PULL DOWN YOUR ARCHITECTURE

PULL DOWN
OPEN VS BUILD
FLOATING TECH
STATIC
PUSH UP
CITY BLOCK SCALE

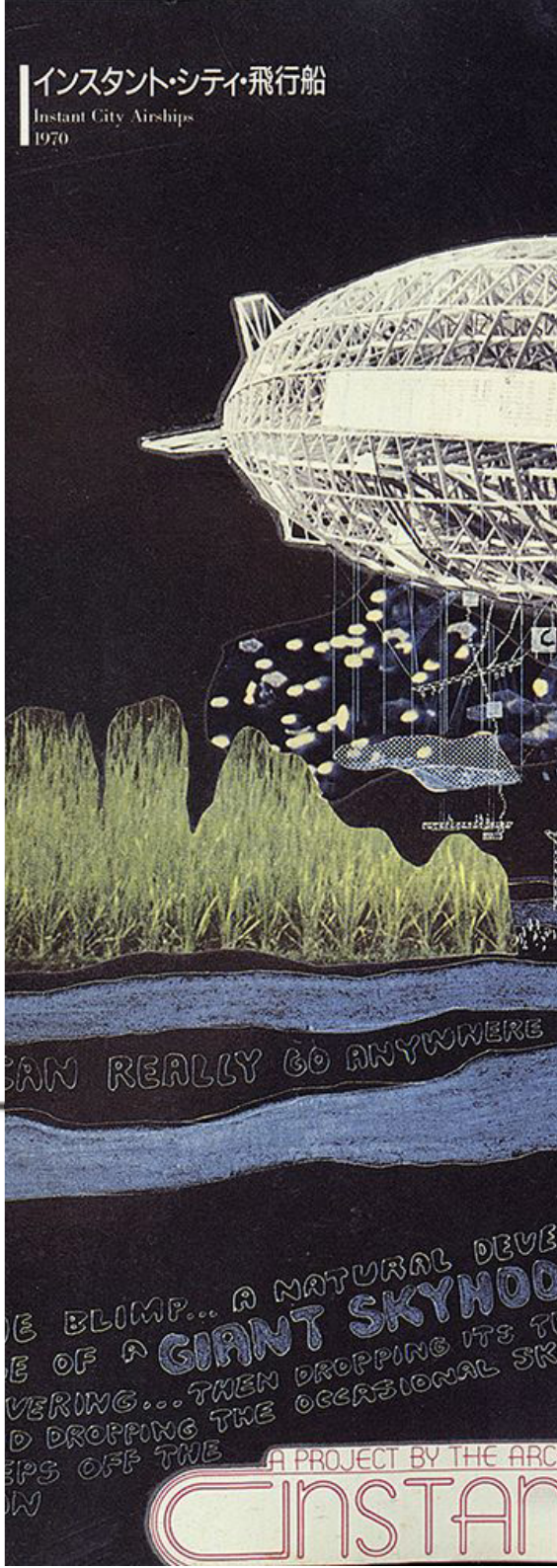


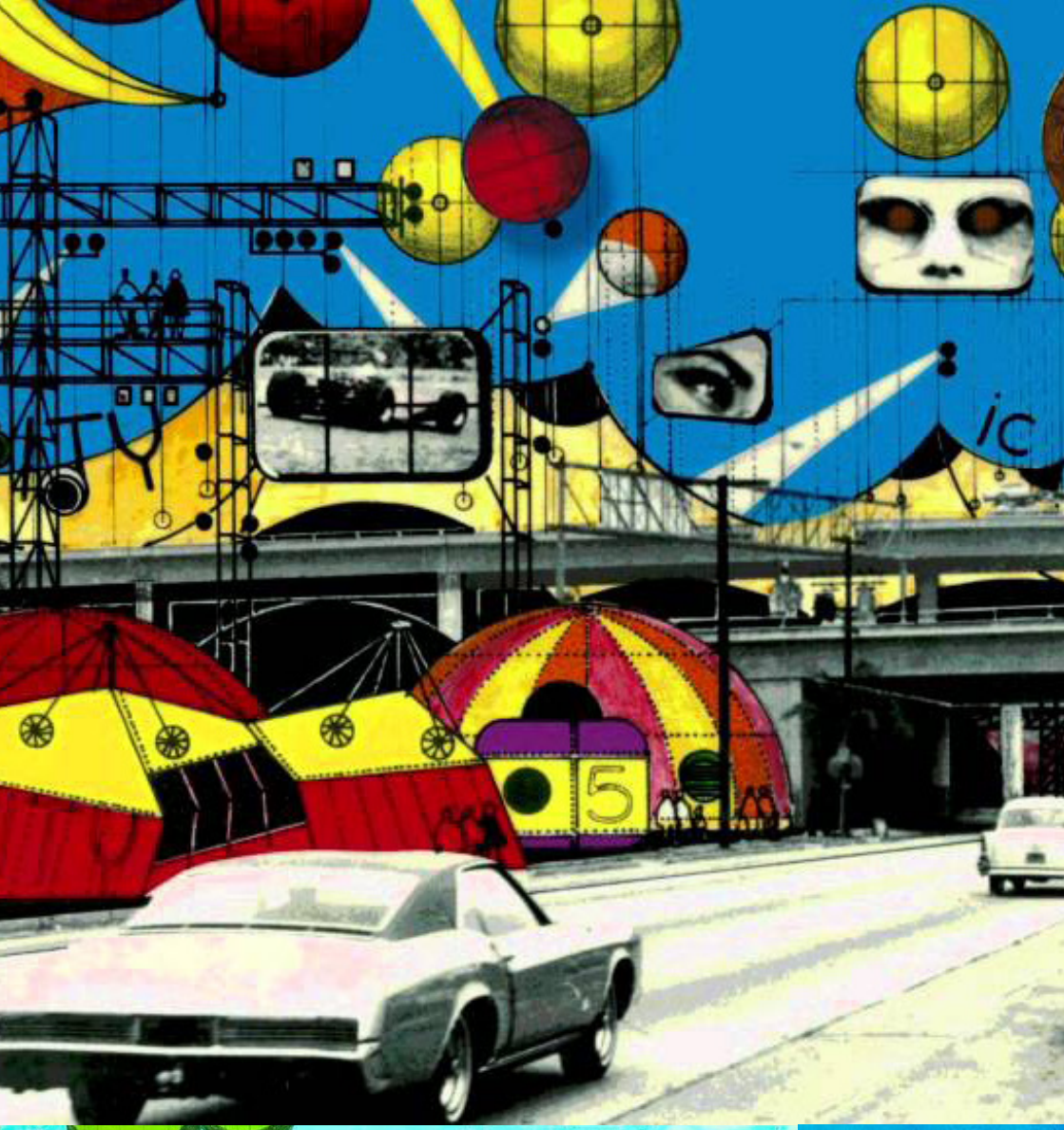




インスタント・シティ・飛行船

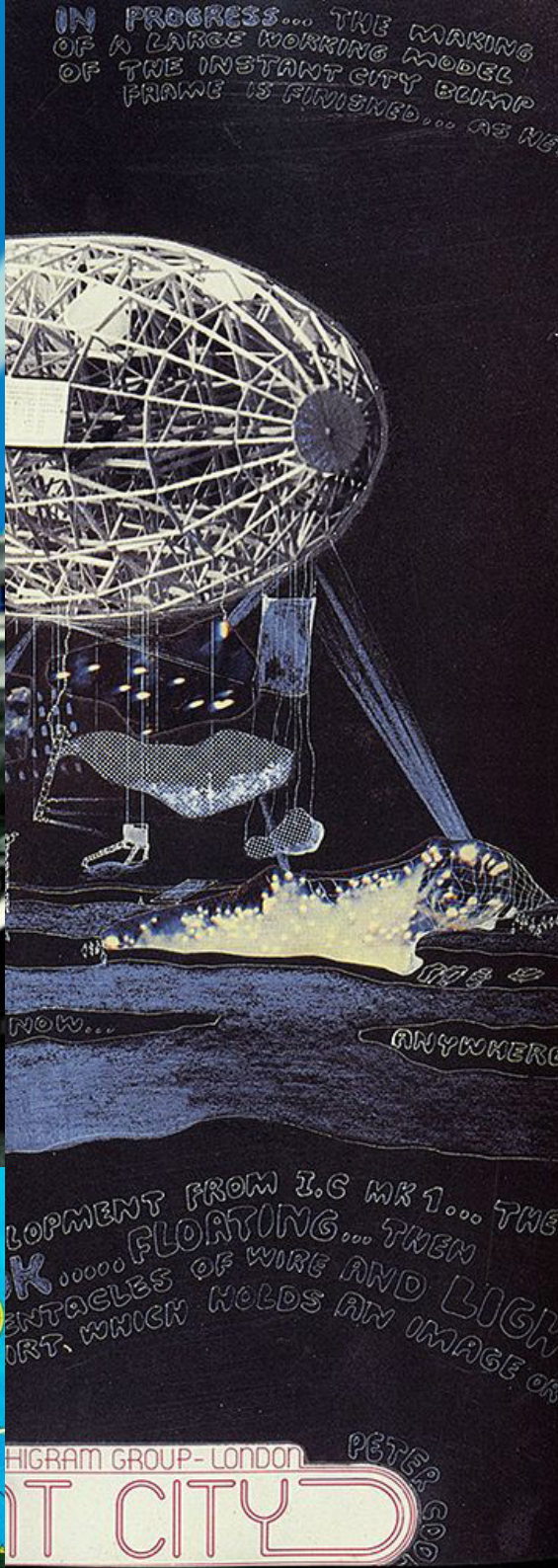
Instant City Airships
1970




5


4


3
2
16
15


IN PROGRESS... THE MAKING
OF A LARGE WORKING MODEL
OF THE INSTANT CITY BLIMP
FRAME IS FINISHED... AS NE
NOW...
ANYWHERE
OPMENT FROM I.C MK 1... THE
K..... FLOATING... THEN
NTACLES OF WIRE AND LIGH
IRT, WHICH HOLDS AN IMAGE OR
HIGRAM GROUP - LONDON
PETER SO
T CITY

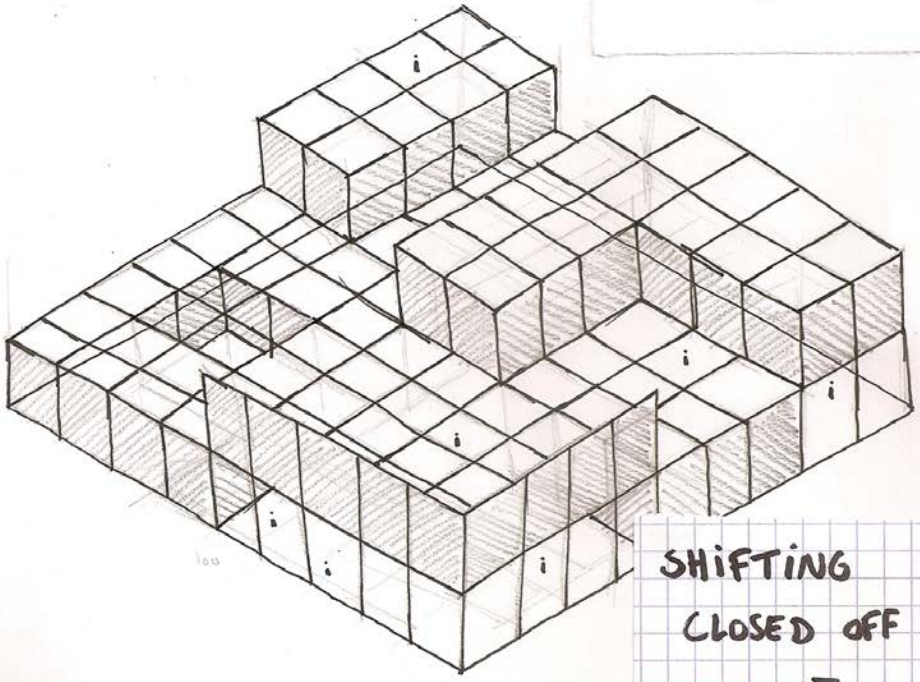
SOCIAL
MOVEMENT
STRUCTURAL

closed off private functions - open community space

grid moveable Rotateable Wall/Roof systems

private
vs communal

Moving units



SHIFTING
CLOSED OFF PROGR.
—
OPEN COMMUNITY
SPACE

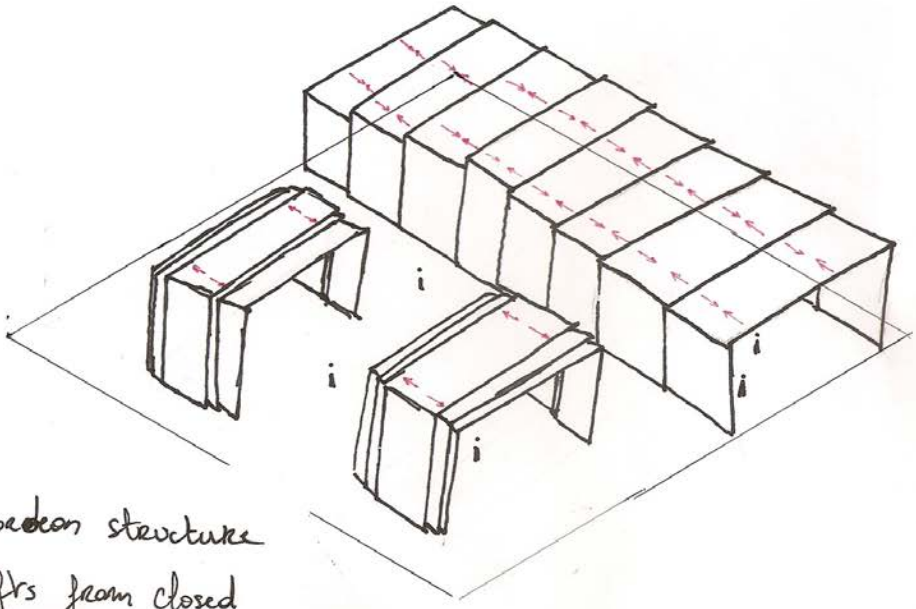
ACCORDEON CITY

Open VS Build
movement
MULTI FUNCTION
FLEXIBILITY

Modular structures

Moving units

Can we generate the benefits of open public spaces with this system? Closed programs/mass shift to smaller scales and open up the public areas.



Accordeon structure
shifts from closed
shelter space to open
units


ZONE

PULL UP CITY

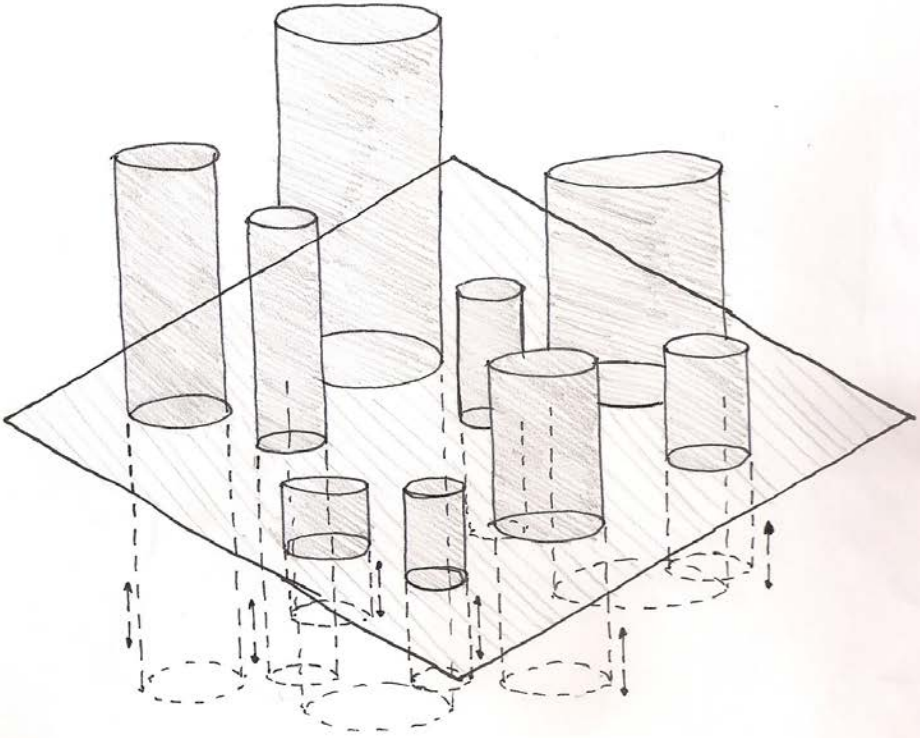
STATIC
OPEN VS BUILD
PUSH DOWN
PULL UP
BUILDING SCALE

UNIVERSAL TUBES OF DIFFERENT SIZES ?

EACH TUBE A FUNCTION ?

BURRIED TUBE
= OPEN SPACE

PULL YOUR CITY OUT
OF THE GROUND



STRUCTURE

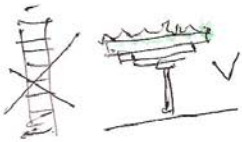
MULTI FUNCTION

DENSIFY FROM THE TOP

~~MATES~~ MODULES

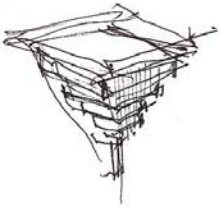
EXPANDING

NARROW IT DOWN



DENSIFY FROM THE TOP

caterpillers?



NAKA GIN CAPSULE TOWER

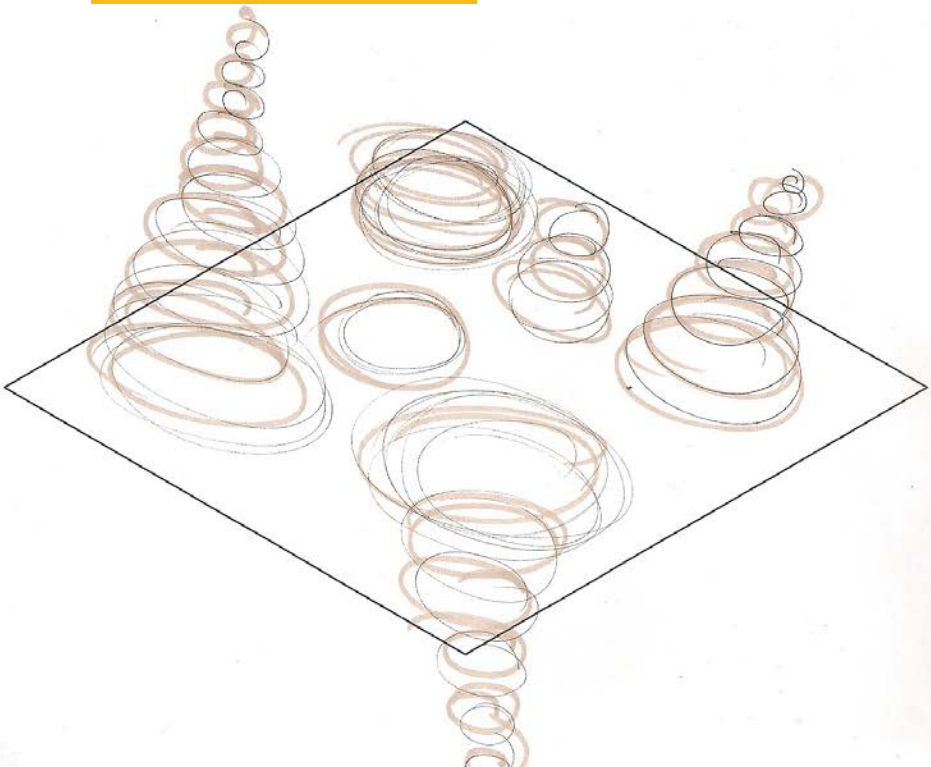
PARASITE ARCHITECTURE

popup city

OPEN VS BUILT

pop up
MOVING
TEMPORARY
ADAPTABLE to people

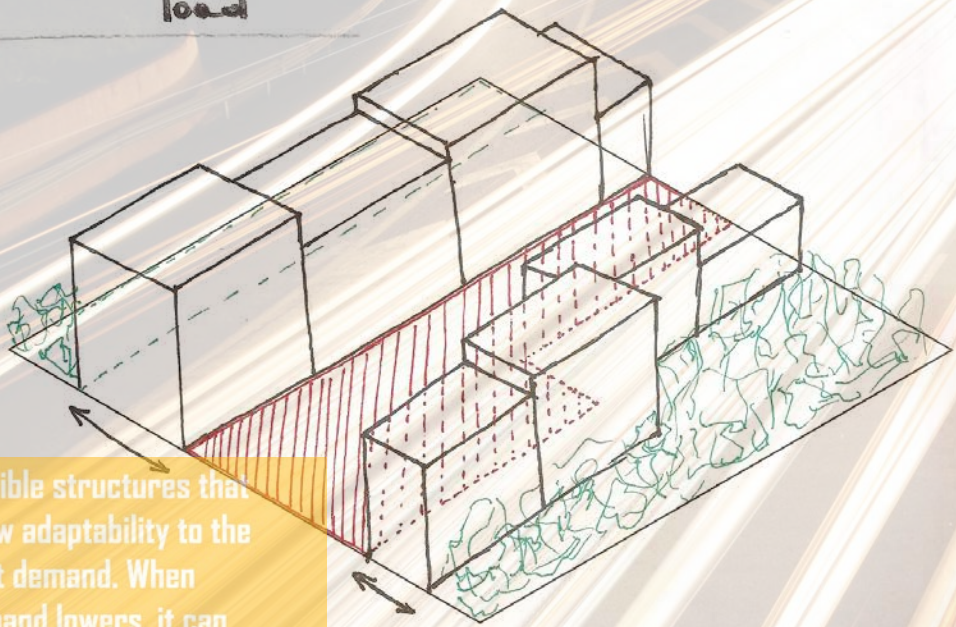
What if we could simply deconstruct structures when we stop using them and reconstruct them when they are once again needed? What kind of structures allow that?



ROAD VS. NATURE CITY

Movement
Flexibility / Adaptability
Ecological

Percentage road/green according to population/user load



Flexible structures that allow adaptability to the built demand. When demand lowers, it can shift to public/private green space.

Take exactly the space you need, not a mm^2 more.

How compact can we go?

HOME o STATIC CITY

MULTIFUNCTIONAL MATERIALS

FLEXIBILITY → BIG SCALE

ADAPTABILITY

OPEN

DESIGN

PROGRAMABLE GROWTH

LIVING CITY

THICKNESS OF THE WALL OPTIMALISATION

NANOMATERIALS

· NANOTECHNOLOGY

PROGRAMABLE GROWTH

MATERIALS - MUSCLE STRUCTURE

PLATON CAVE 2.0

METABOLISM

FLEXIBLE MUSCLE STRUCTURE

LIVING POD ARCHIGRAM

1966

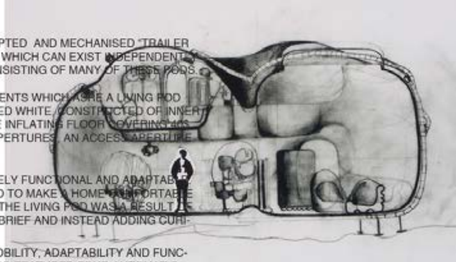
LIVING POD, DAVID GREENE

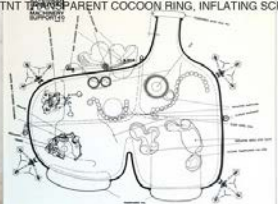
THIS IS A SPECULATIVE DESIGN PROPOSAL FOR A SCULPTED AND MECHANISED "TRAILER HOME". THE HOME CAN BE DESCRIBED AS A LIVING POD WHICH CAN EXIST INDEPENDENTLY OR CAN BE PLUGGED INTO A MODULAR STRUCTURE CONSISTING OF MANY OF THESE PODS.

THE HOUSE CONSISTS OF TWO MAJOR DESIGN COMPONENTS WHICH ARE A LIVING POD AND ATTATCHED MACHINES. THE POD WAS TO BE PAINTED WHITE, CONSTRUCTED OF INNER BONDED SANDWHICH OR INSULATION, A MULTI PURPOSE INFLATING FLOOR COVERING 40% OF THE OVERALL FLOOR AREA, 12 SUPPORT NODES, 4 APERTURES, AN ACCESS APERTURE INCORPORATING VACCUM FIXED SEALS.

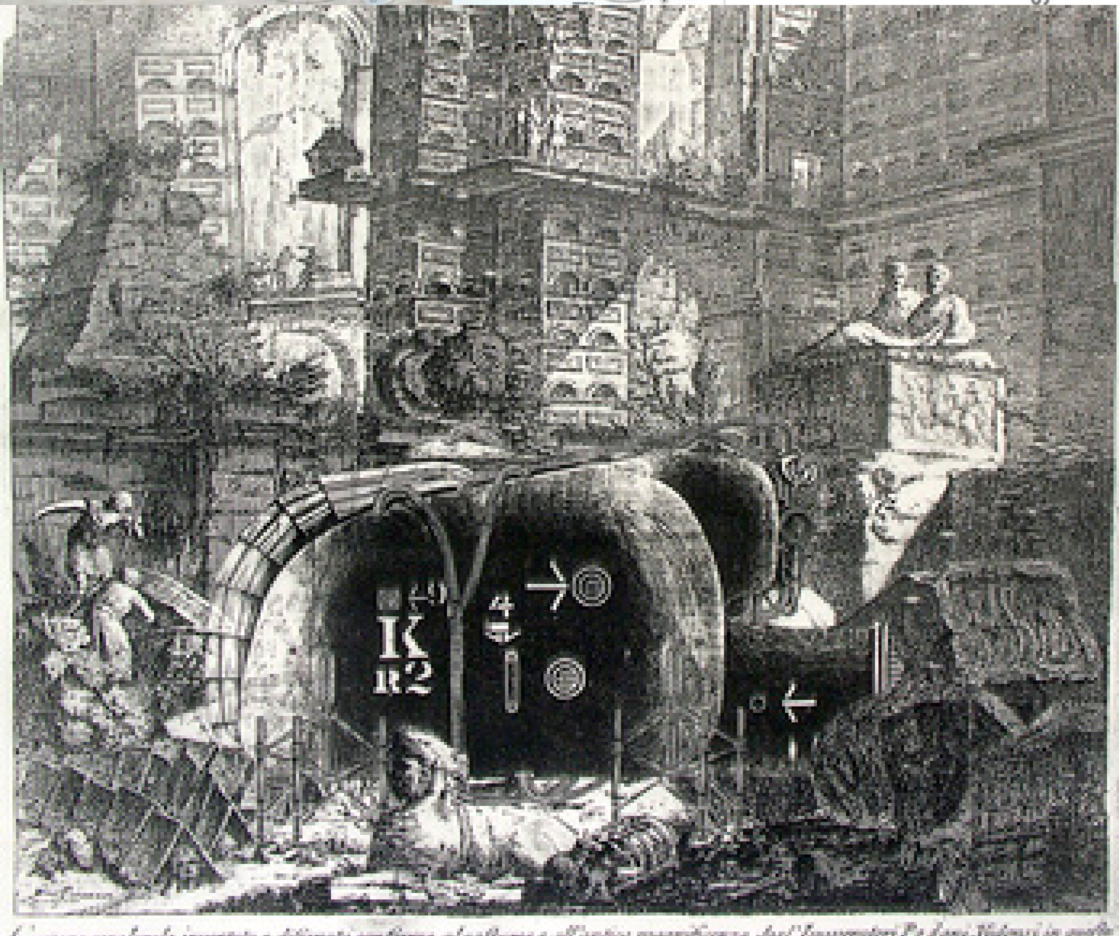
THE LIVING POD IS RELATIVELY SMALL, BUT IS EXTEREMELY FUNCTIONAL AND ADAPTABLE. THE POD TRIES TO INCORPORATE EVERYTHING WE NEED TO MAKE A HOME COMFORTABLE AND AS SELF CONTAINED AS POSSIBLE. THE DESIGN OF THE LIVING POD WAS A RESULT OF "REJECTING PERFORMANCE AND SECURITY IN A HOUSE BRIEF AND INSTEAD ADDING CURIOSITY AND SEARCH"

THE PURPOSE OF THE LIVING POD WAS TO INCREASE MOBILITY, ADAPTABILITY AND FUNCTIONALITY FOR THOSE WHO OCCUPIED THE POD. THE POD FEATURED FOUR AUTOMATIC SELF-LEVELLING SECTIONALIZED SLIDING APERTURE SEALS WITH MOTORS, TRANSPARENT ENTRY SEAL WITH RAMP AND HYDRAULICS, TWO WASH CAPSULES WITH ELCTROSTATIC DISPOSAL, AIR ENTRY, TOTAL AUTOMATIC BODY CLEANING EQUIPTMENT, ONE WITH TOTAL BODY IMMERSION POSSIBILITY, TWO ROTATING SILOS FOR DISPOSABLE TOILET AND OTHER OBJECTS, VERTICAL BODY HOIST, CLIMATE MACHINERY FOR TEMPERATE ZONE, NON-STATIC FOOD DISPENSER WITH SELF-COOK MODIFICATIONS, NON-STATIC MEDIA AND WORK MACHINE WITH INSTATNT TRANSPARENT COCOON RING, INFLATING SCREENS TO SLEEP MATS.

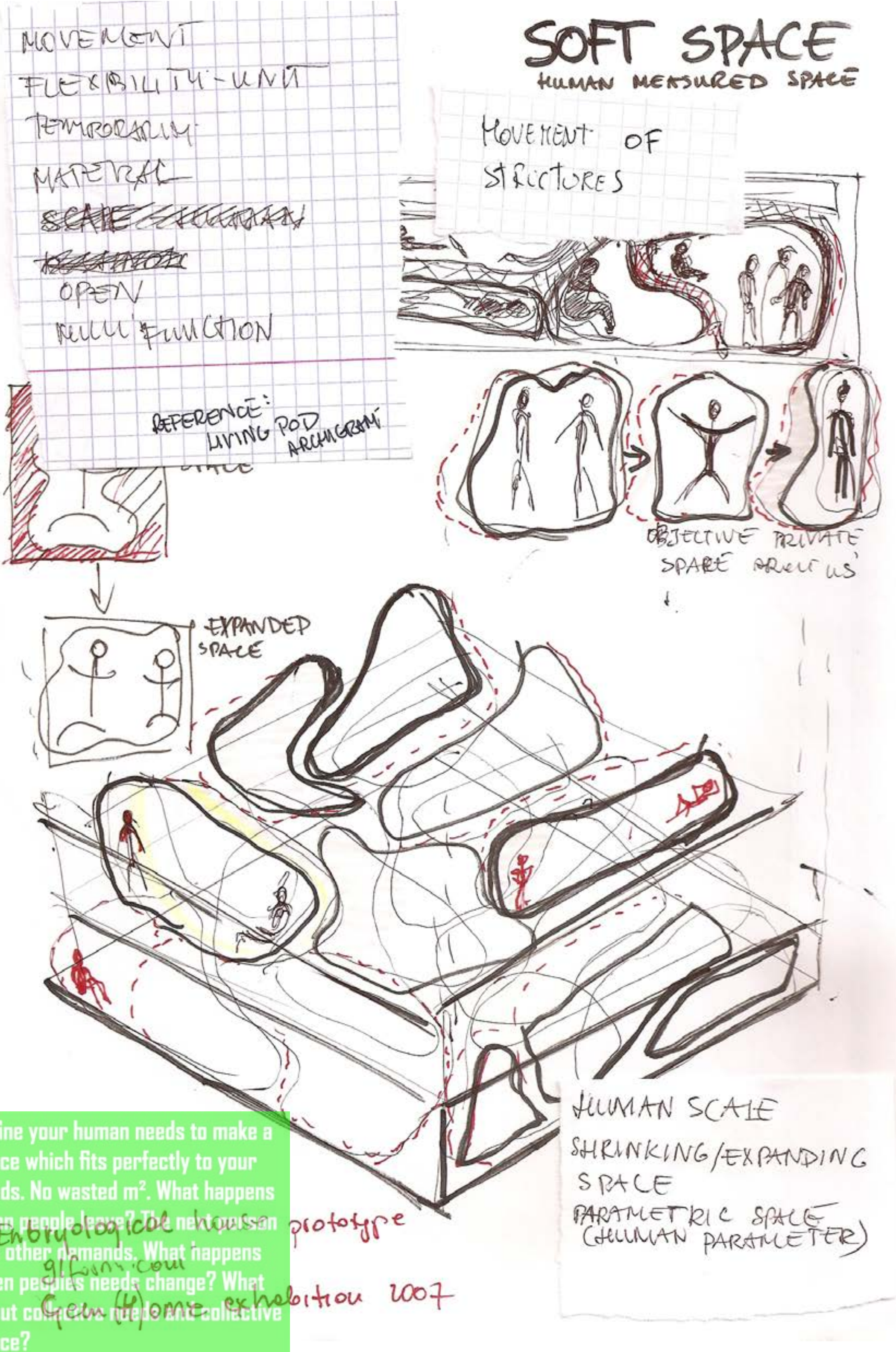




FRAME EFFICIENT COMPACT SUPPORT HABITABLE GEOMETRY LIVING BURROWING ENGINEERED DIFFERENT HOUSE STACKING STRUCTURE NODES CURVED LEGS CONCEPTUAL ARCHIGRAM MECHANICS ROUND TWELVE CAPSULES SHELL SEALS

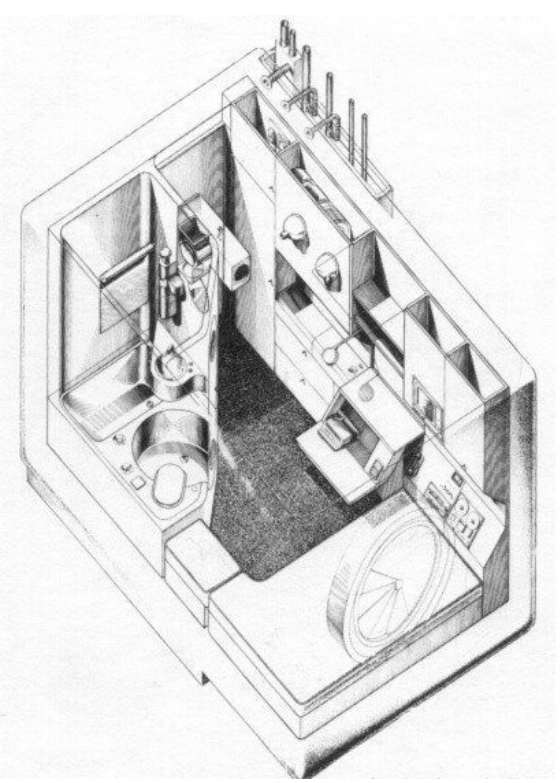


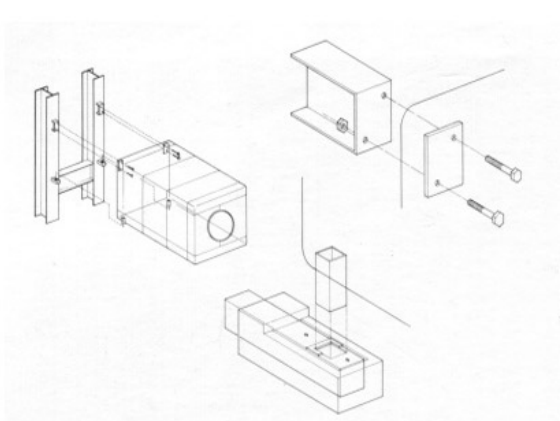
Camera sepolcrale inventata e disegnata conforme al costume e all'antica magnificenza degl'Imperatori ... in quelle le Nicchie e Vasi, ne' quali collocavansi le ceneri de' Servi, de' Liberti e di qualunque altro della Famiglia. Vedesi ben conservato il sepolcro, in cui stanno riposte le ceneri dell'Imperatore e Imperatrice di lui Moglie. In qualche lontananza comparisce ancora una Piramide, la quale potè forse servire di sepolcro a qualch'altro ragguardevole Personaggio della Casa Imperiale.

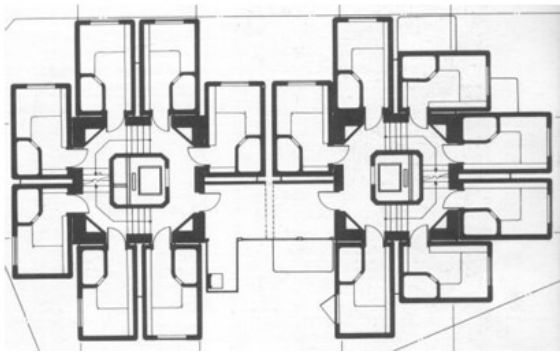


Define your human needs to make a space which fits perfectly to your needs. No wasted m^2. What happens when people leave? The next person has other demands. What happens when peoples needs change? What about collective needs and collective space?


Nagoya
ポプラ
たばこ
ATM
ポプラ
こどもの遊び場
通行止








TOKYO
CAPSULE
HOTEL
304
303

Integrate the green without losing $m^{2\prime}$s to build.
Can we have both?

GREEN WALLED CITY

MATERIALS

~~[illegible]~~

~~ECONOMICS~~

ECOLOGICAL

STRUCTURE

Multifunction

PLANT BASED WALLS

SKELETAL STRUCTURE

ALTERNATIVE REDISTRIBUTION OF FOOD

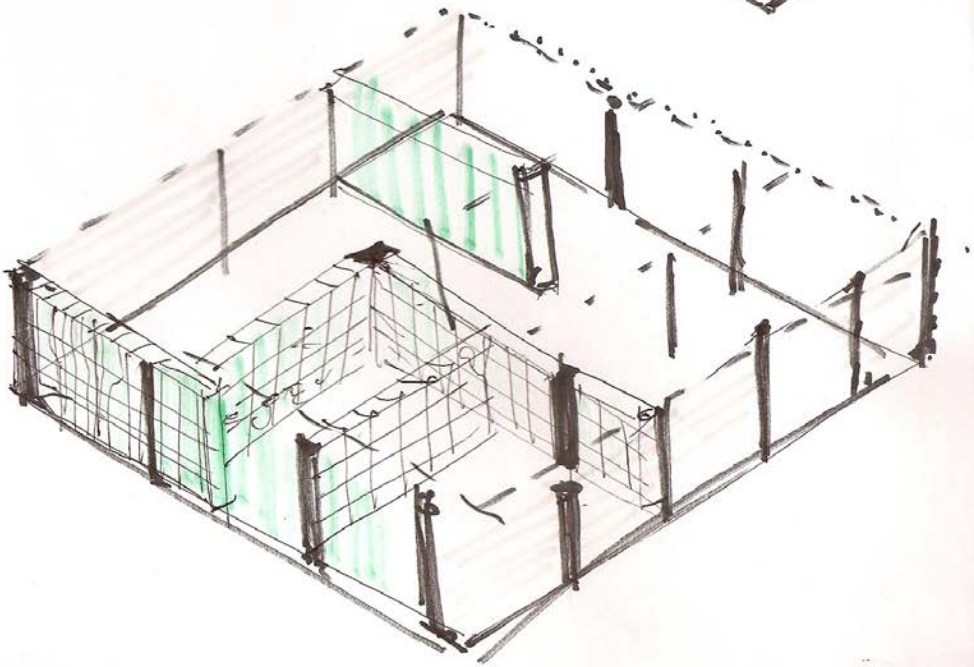
'UCTURE

THROW AWAY THE W

PLANT BASED WALL

reconfiguration

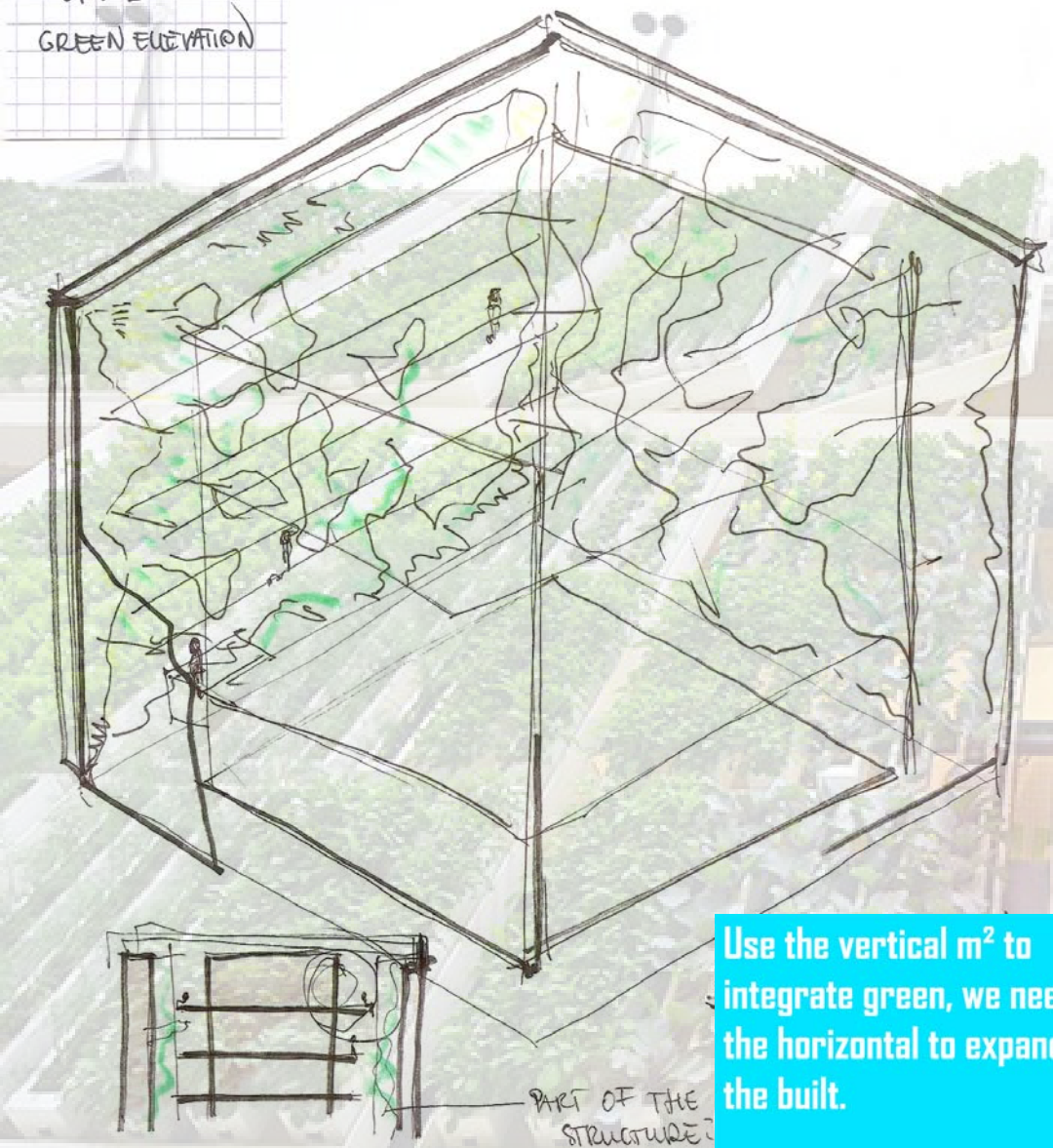
Integrating the green in our structures so we can build m² without losing space for green.



STRUCTURE
MATERIALS
ECOLOGICAL

VERTICAL GREEN WALL
INSIDE/OUTSIDE SPACE
GREEN ELEVATION

SO YOU WANT A PARK
INSIDE/OUTSIDE



Use the vertical m^2 to integrate green, we need the horizontal to expand the built.

GREENHOUSE CITY

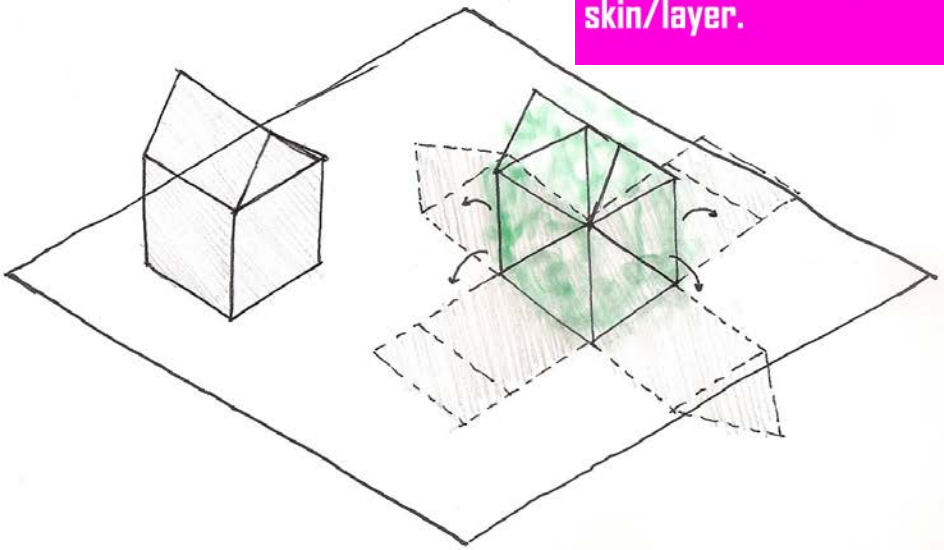
VERTICAL FARMING
FOOD
BUILDING SCALE
FOLDING FACADE
DOUBLE SKIN
STATIC
MULTIFUNCTIONAL
URBAN FARMING

EMPTY STRUCTURES BECOME GREEN

ABANDONED SPACES SHED THEIR 'SKIN' TO BECOME 'GREENHOUSES' FOR FARMING & GREEN PURPOSES

↳ YOU CAN REOCCUPY IT BY HARVESTING THE 'GREENHOUSE' AND REATTACHING THE 'SKIN'

Structures that can shift from living space to green space and vice versa by shedding a skin/layer.

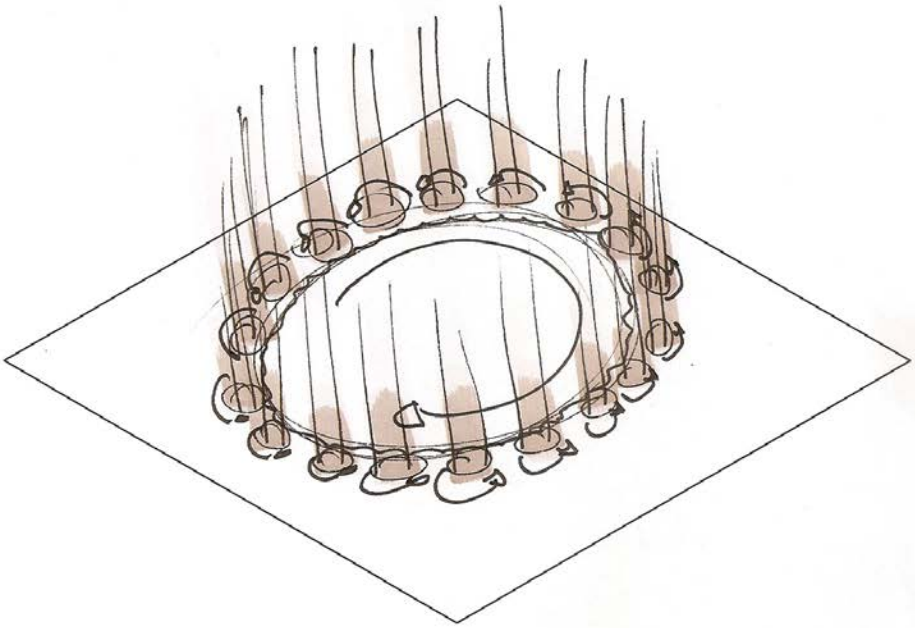


Other ways of expanding into infinity.
Ever building, ever growing, ever spreading.

Rotating City

Movement
Flexibility
Technology

In constant movement
Multiple circles
Multiple positions
(Semi) Mobile

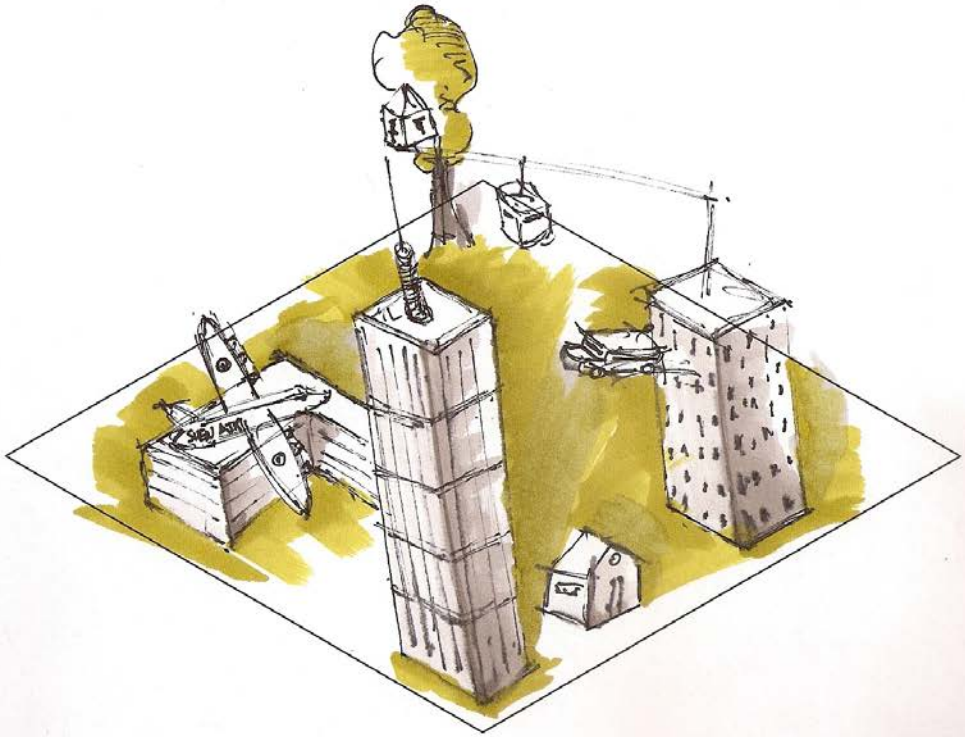


Reclaimed city

Build with found materials

materials
Build
Social needs
Recycling

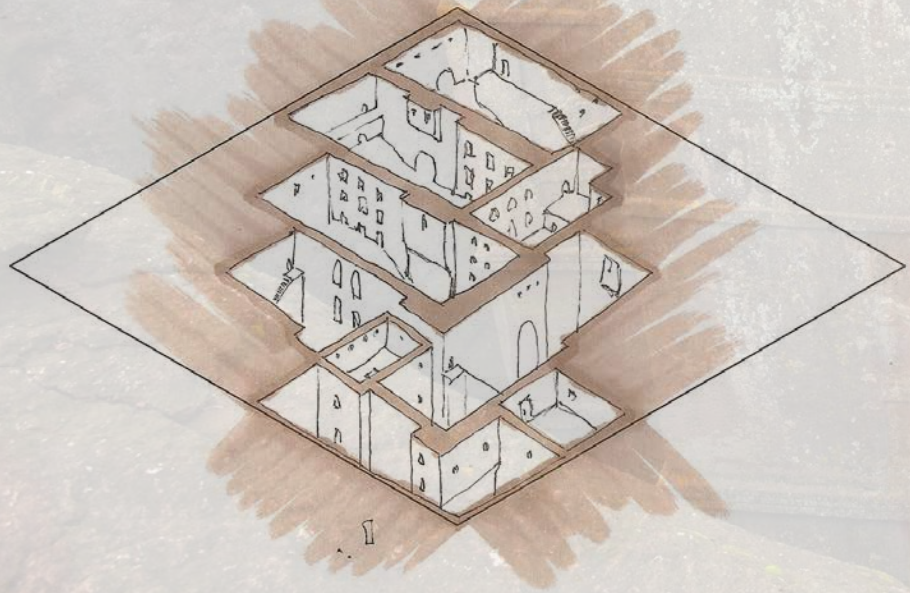
RECLAIMED
BUILD STRUCTURE
GREEN
Apocalyptic



Sunken city
goes till Middle Earth

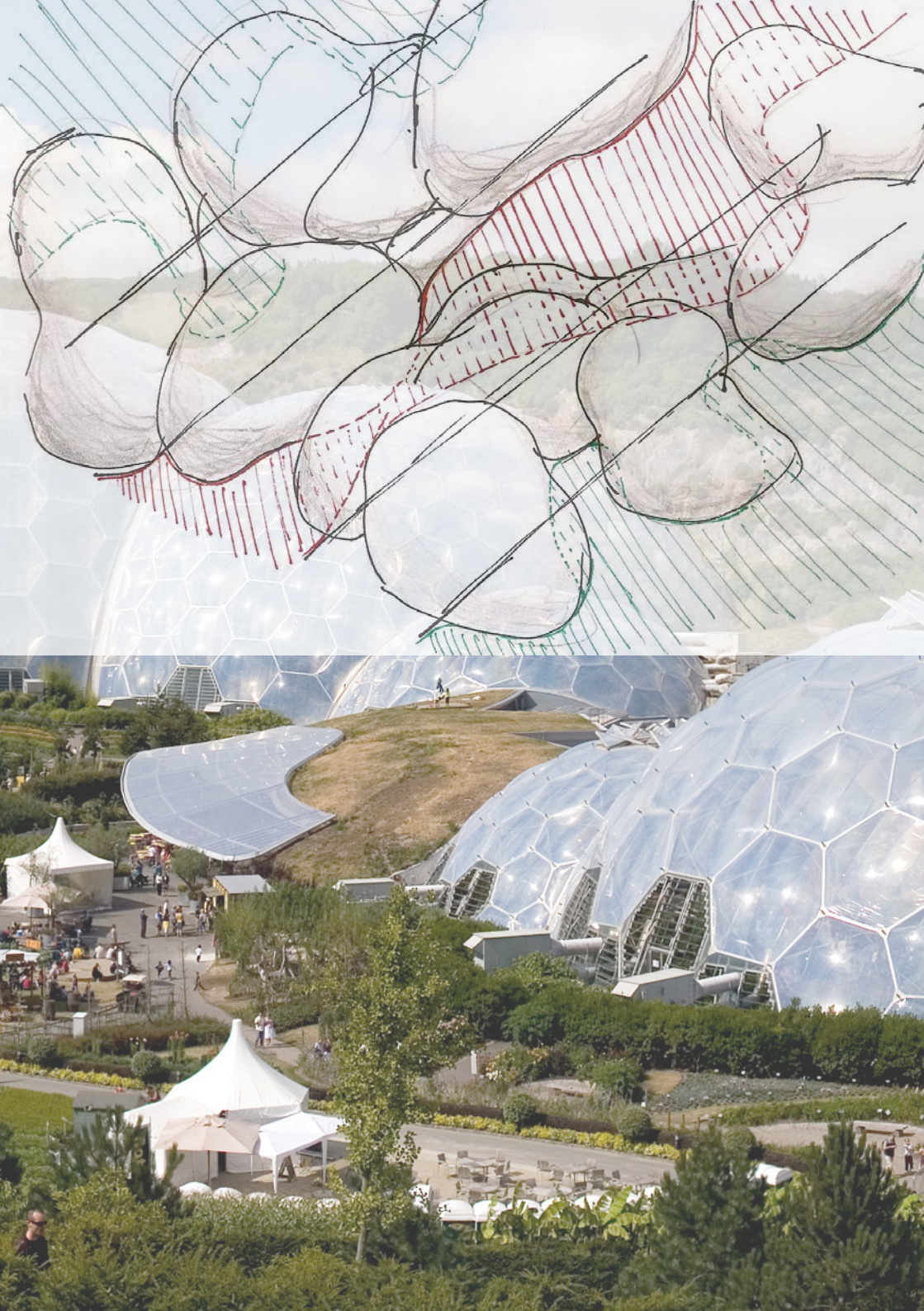
OPEN VS BUILT

UNDERGROUND
EVER EXPANDING
FIXED STRUCTURE
MASSIVE

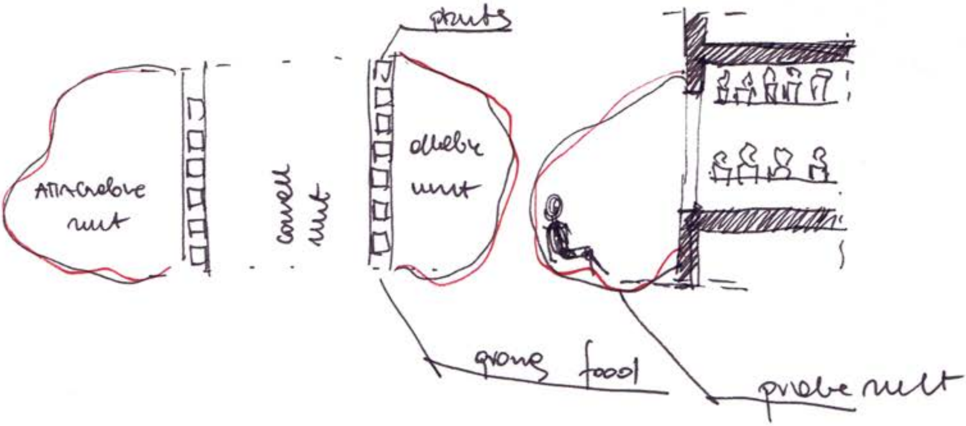


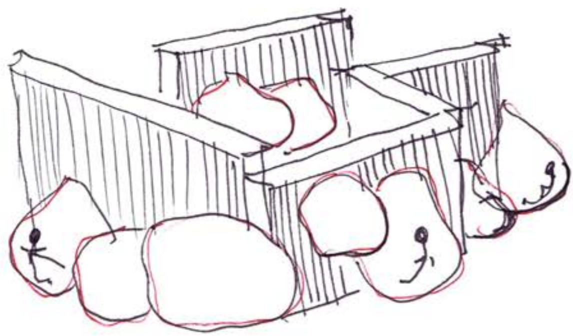
Remixes. Looking to multiply the benefits. Destroy? Enhance? Compromise?

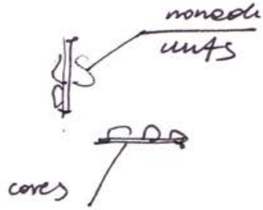

FUNGUS CITY



GREEN / SOCIAL / NOMADIC







Common units with green roofs
with attachable private and flexible
human social units

PLUG IN YOUR HOME

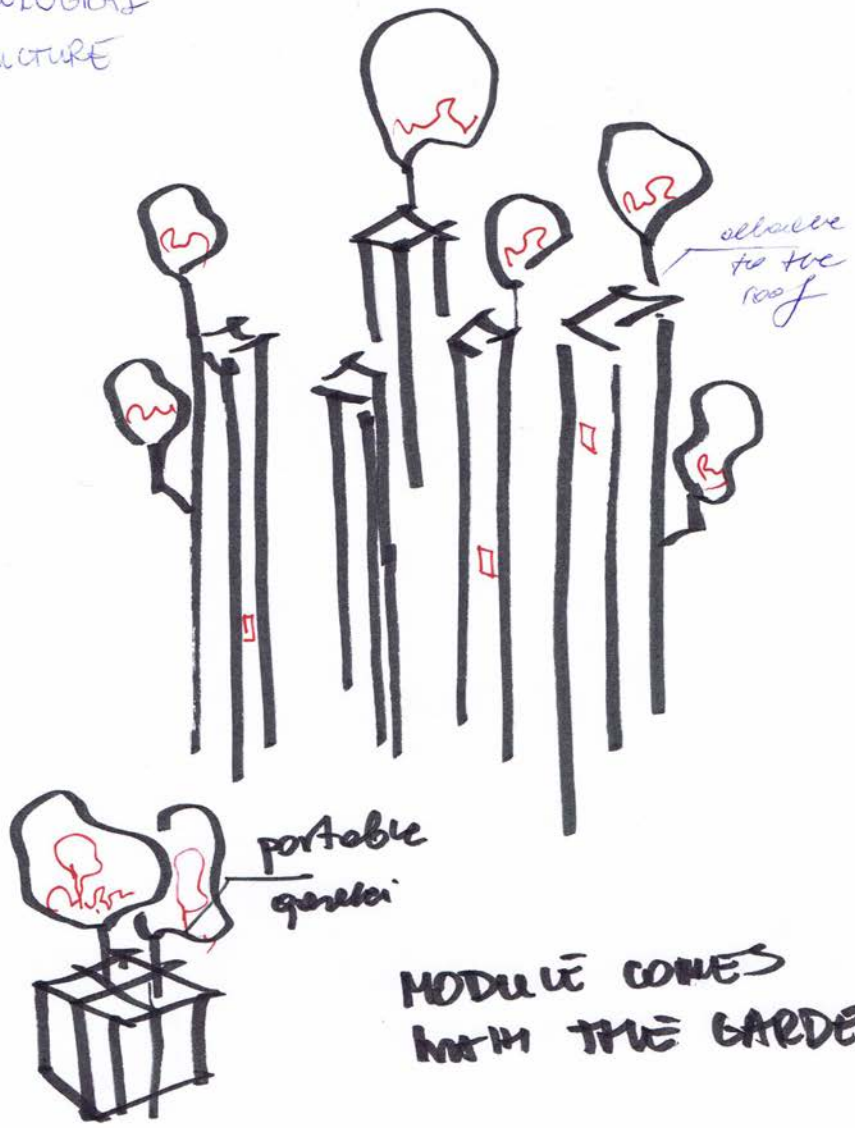
BUIL~~DING~~ => SHELL

- NOMADIC
- GREEN WALLS
- HUMAN SCALE
- NOMADIC

FLYING GARDEN

FLOATING BLOBS + GREEN WALLS = VERTICAL FARM

STATIC
OPEN VS BUILD
ECOLOGICAL
STRUCTURE



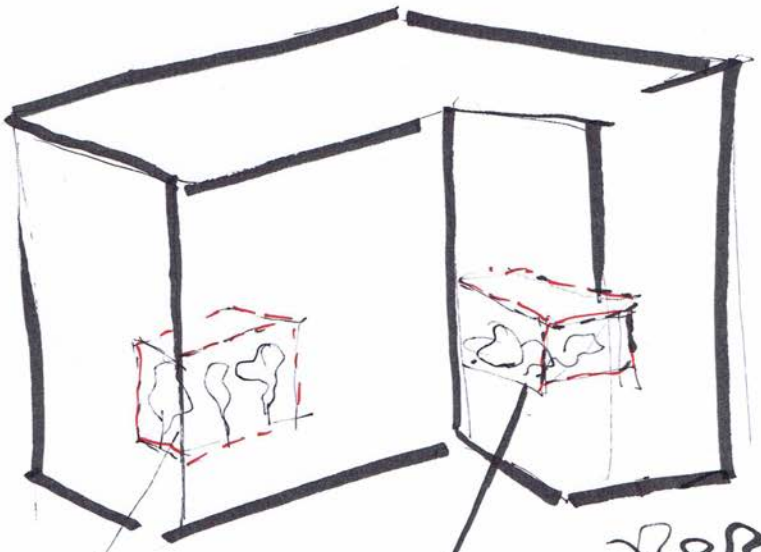
MODULE COMES WITH THE GARDEN

BACK TO THE HILL

shrinking
repurposing
biosystem

SOCIAL
ADAPTIBILITY
MULTI FUNCTION
GREEN

repurposing vacant spaces as green land



ABANDONED SPACE
↓
GARDEN

biosphere

HUMAN / NATURE

VACANT SPACES
⇓
GREEN SPACES

CO-EXISTENCE OF SPECIES

URBAN BLOCK = 50% NATURE
50% HUMAN ENVIRONMENT

HOW GREEN CAN WE GO?

REAL TIME CITY

PROGRAMMED CITY

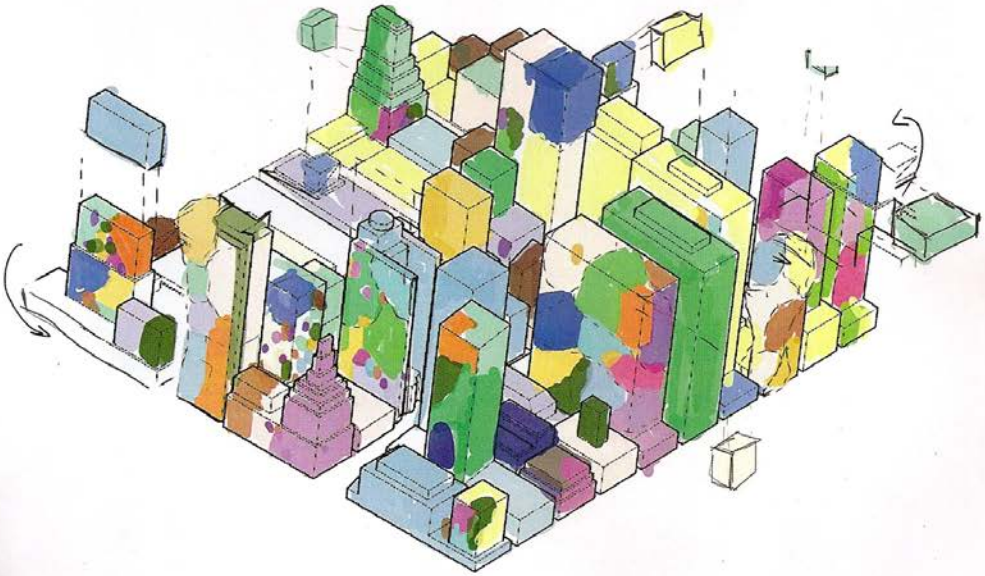
REAL TIME
// DATA EXCHANGE
TEMPORARY
SOCIAL
BUILD

NOT ENOUGHT SPACE
↳ DIVIDE
REDISTRIBUTE
ADD

TOO MUCH SPACE => SELL

ABANDONED

SPACE
=
TRANSFORM QUICKLY



AMAZONSPACE.COM

① How much space you wanna buy?

- A: $105 m^3$
- B: $45 m^3$
- C: $300 m^3$
- D: x
- E: y

```
int sum(int table[x])
{ int sum=0;
  for(i=0;i<x ;i++)
  {
    sum = sum + table[i]
  }
  return (sum);
}
```

Let's generate a block!

Total sum of $8450 m^3$

HOW MUCH SPACE DO YOU NEED

BUY M3 OF SPACE

EVERYONE HAS A RIGHT TO OWN SPACE

GENERATING # STRUCTURES

Interactive city plan

unused space

real time

MAPPING THE SPACE IN THE CITY REAL TIME

ARCGIS?

ONLY FOR TEMPORARY USE!

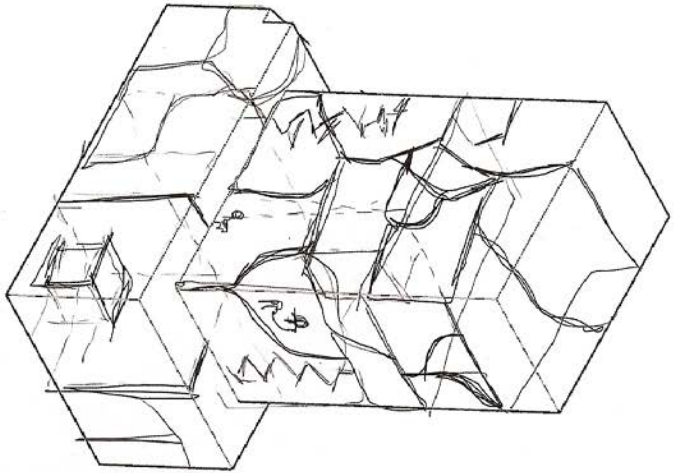
FIXED ~~X~~ SPACE

FLEXED SPACE

JEIT ASSEMBLING SPACE / MATERIALS

BUILDING

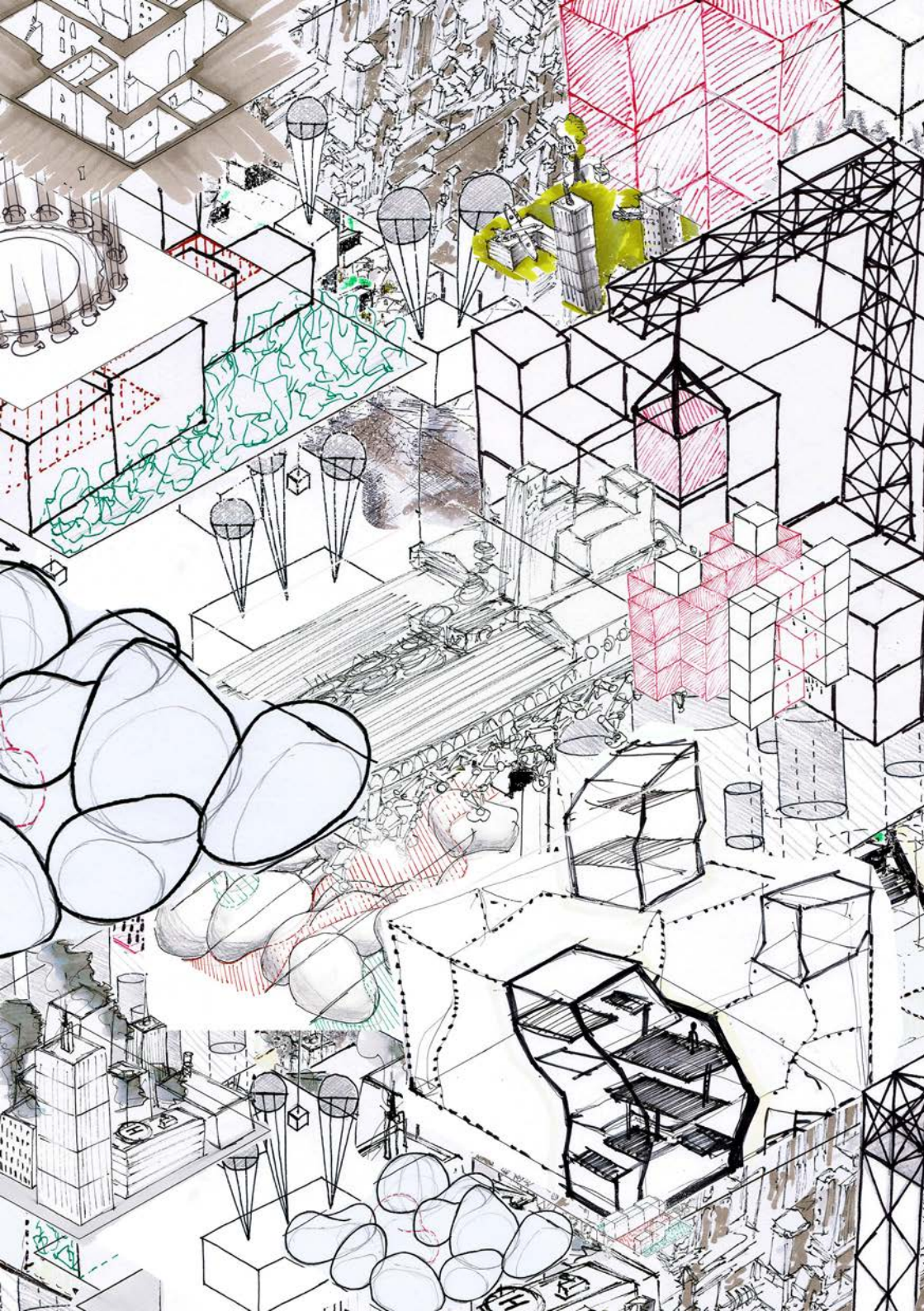
FABRICATING

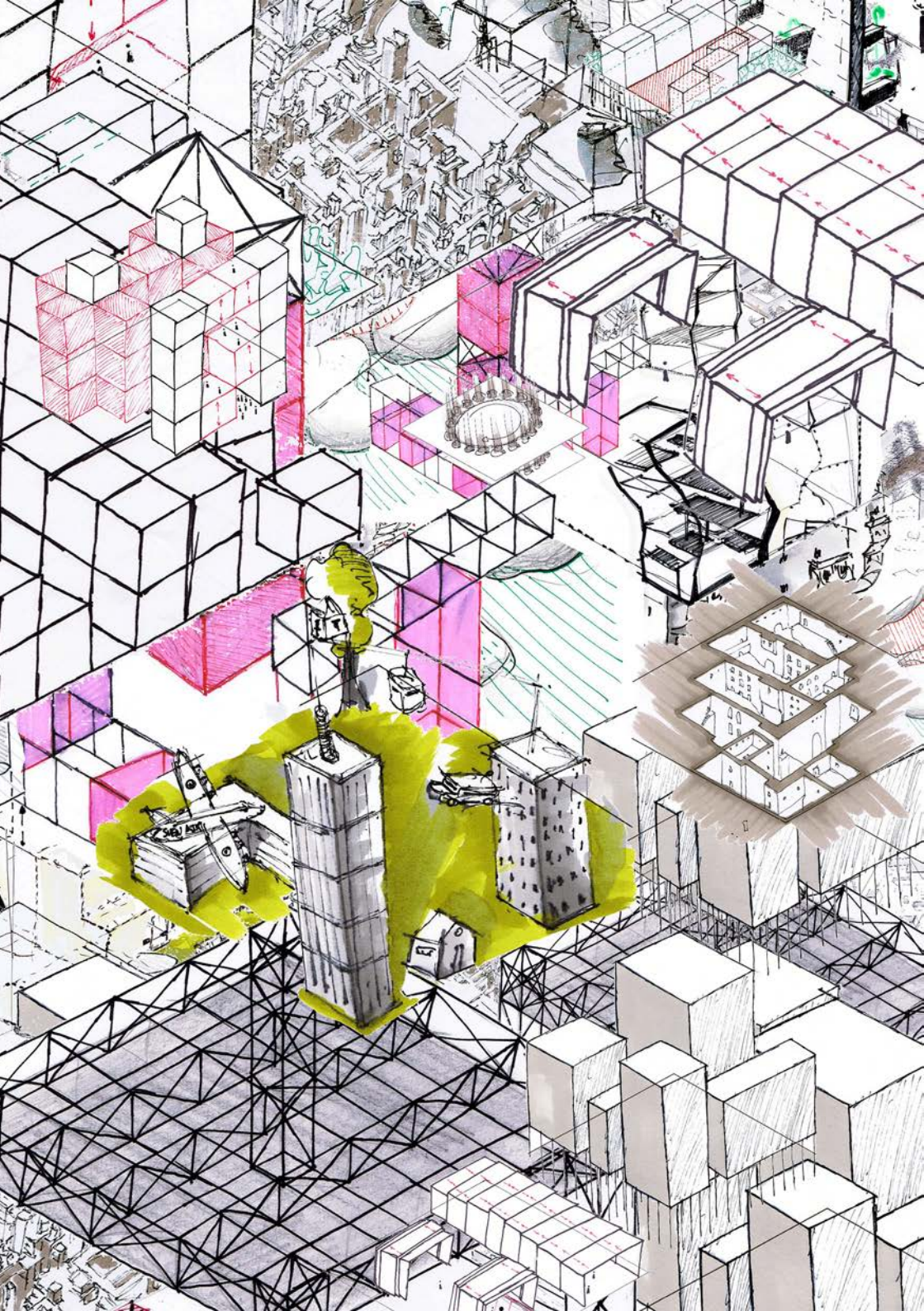


one prototype

can't awnser the different
fluctuations of density
in the city, as this constant
movement is too complex
to be solved by one system.
we need to combine
these systems
in a smart way
tomatch the
complexity
of

the city.

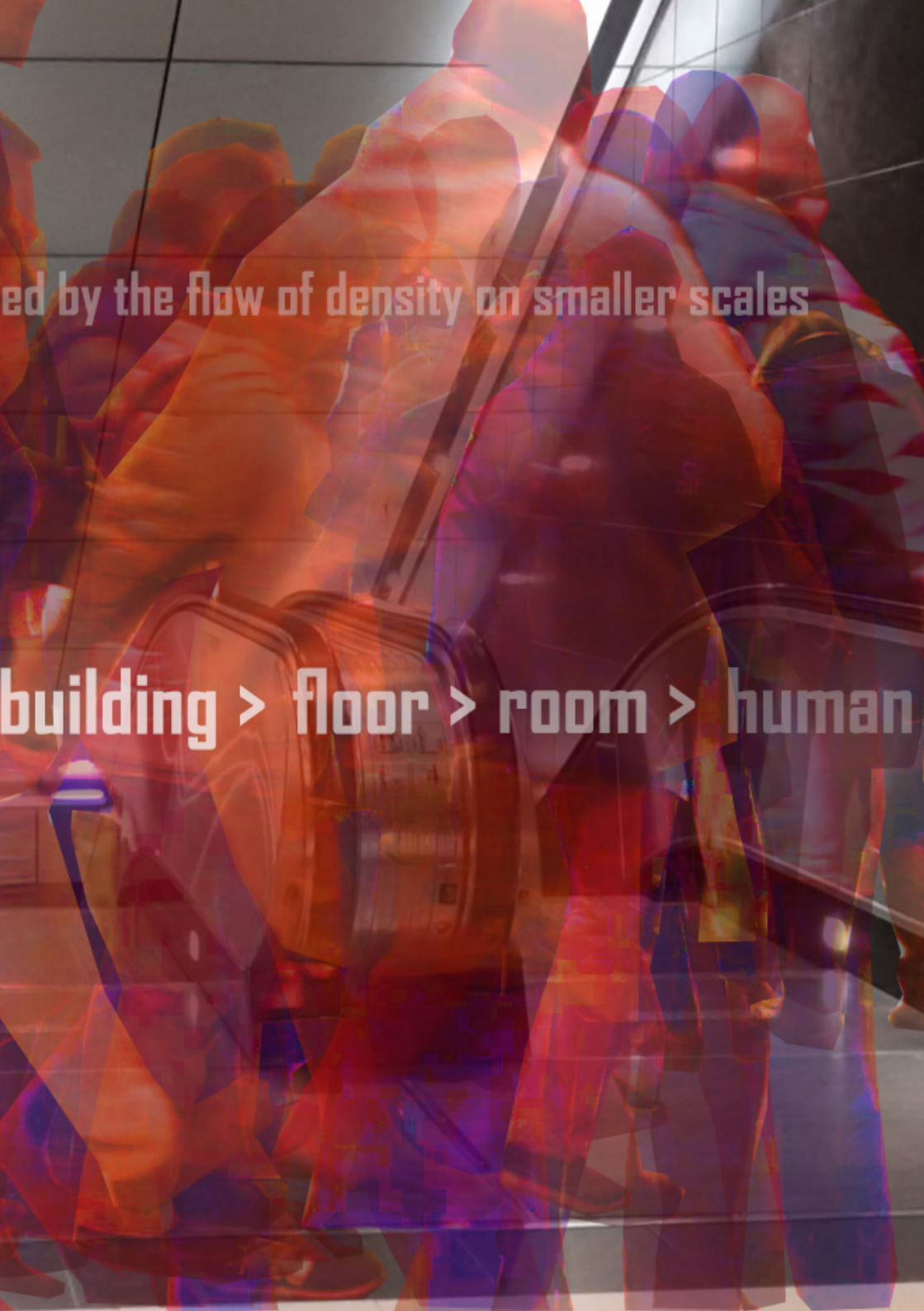





The city isn't a singleminded
in need of multiple appro


entity, it's a complex system
aches to various problems


The flow of density in the city is influenc
City > neighbourhood > street >

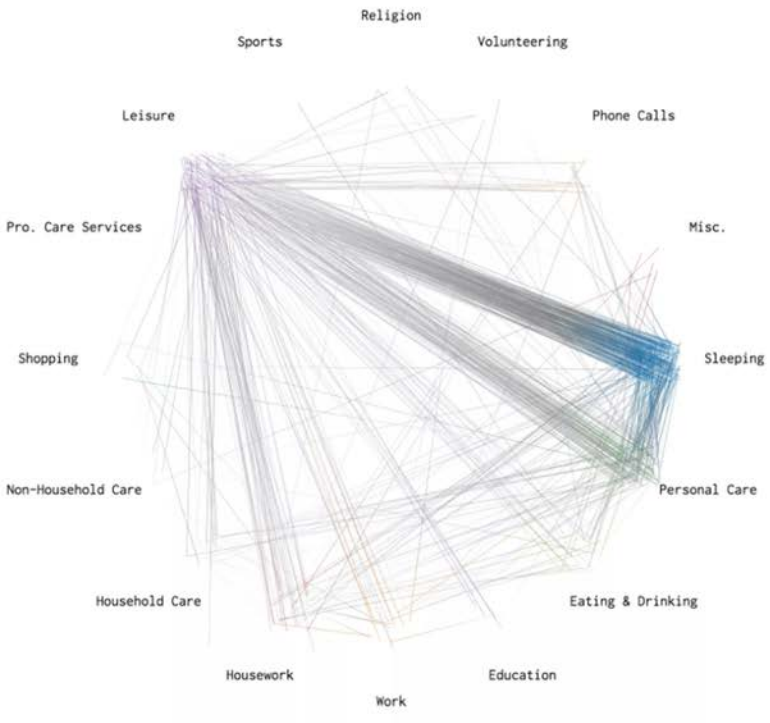

ed by the flow of density on smaller scales
building > floor > room > human

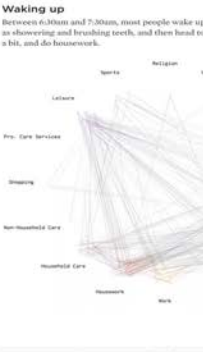

The flow intensity in the city is influ
CITY < Region < Count

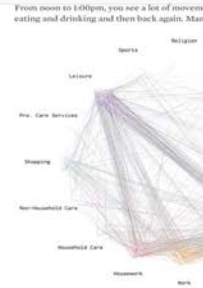

t by the flow of density on smaller scales
ry < Continent < World

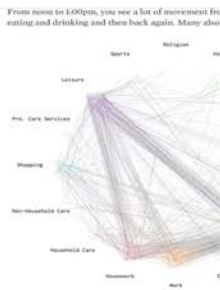
Winding down

Between 10:00pm and midnight, people wind down for the day, shifting from leisure to personal care and eventually going to sleep.

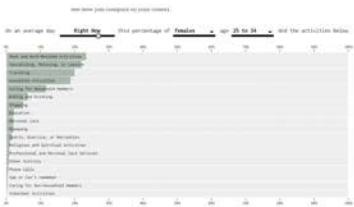


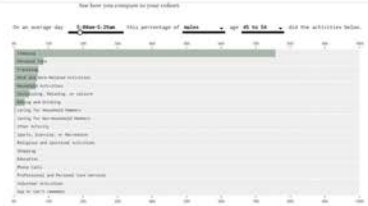






how much time do we spen





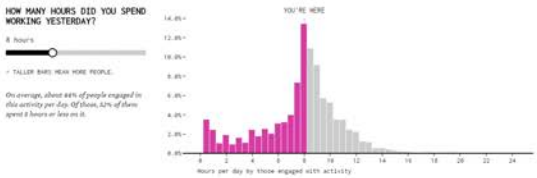
what i

time/m²

flow

density distribution

density of a building per hour

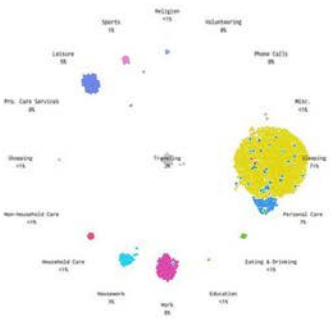


d on m²?

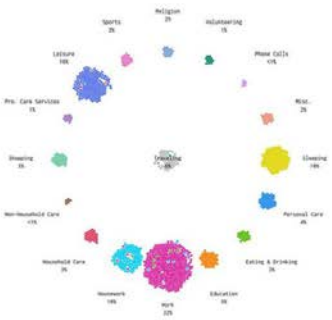
is a density of m² per hour?

DENSITY/HOUR/FUNCTION

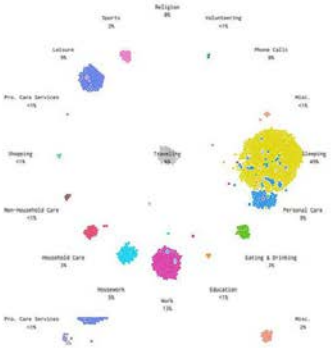
6:00am



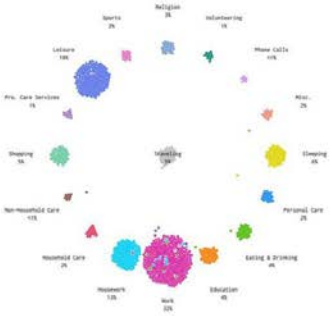
10:00am



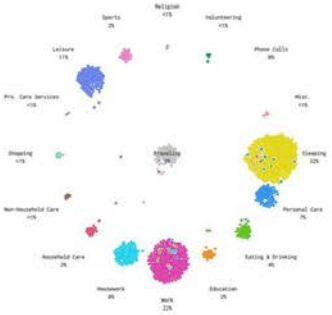
7:00am



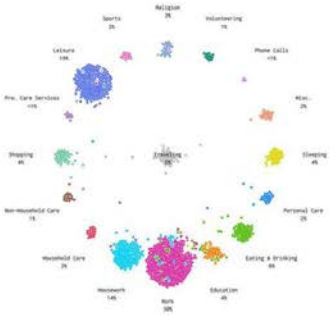
11:00am



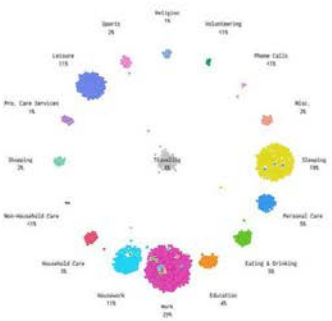
8:00am



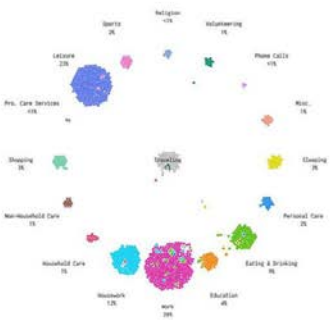
12:00pm



9:00am



1:00pm



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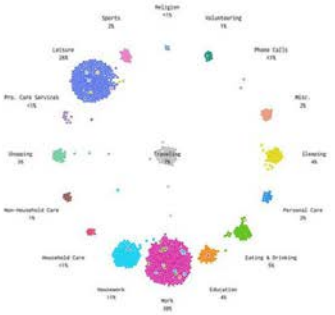

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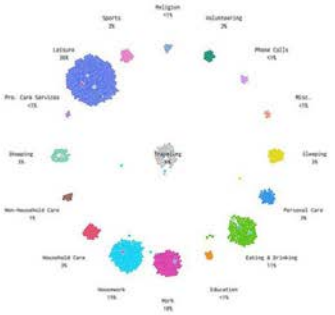

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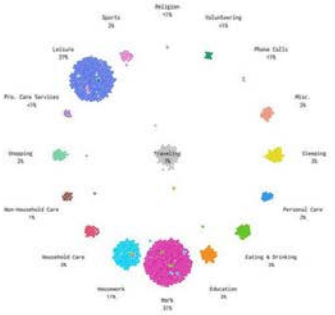

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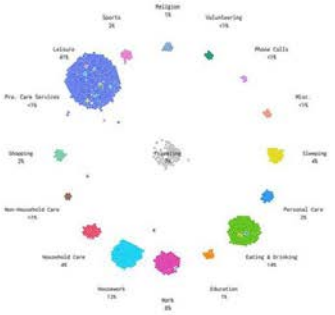
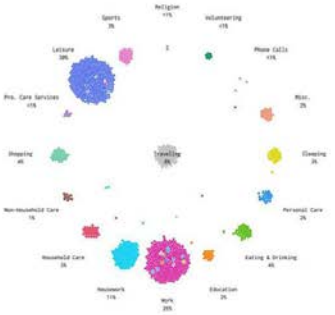
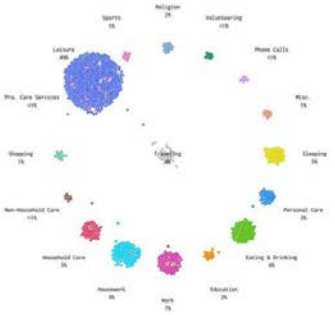


4:00pm



8:00pm



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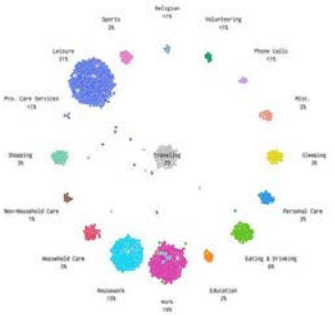

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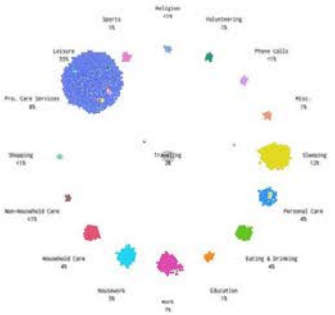
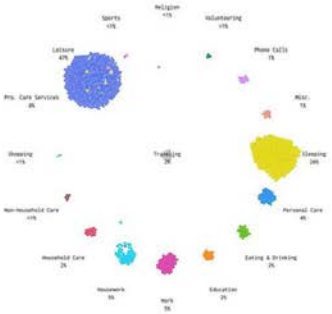
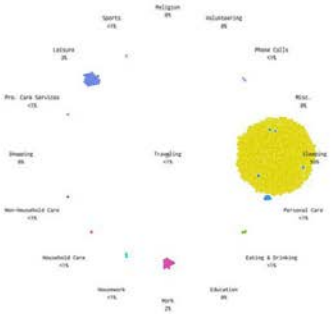


DENSITY/HOUR/FUNCTION

10:00pm



2:00am



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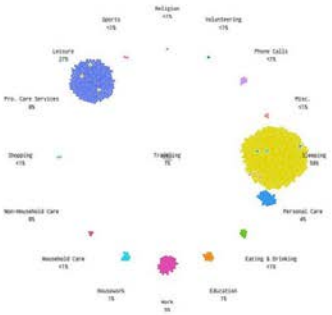
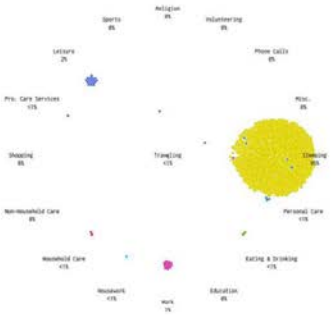
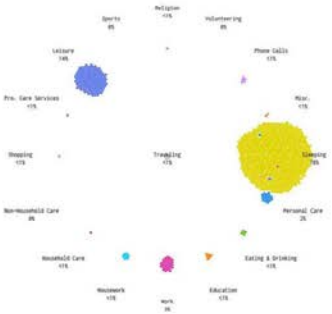


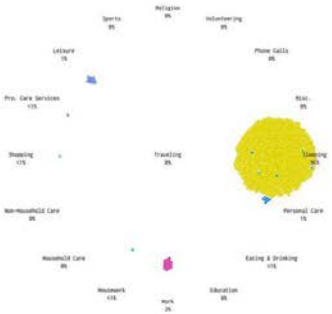
3:00am



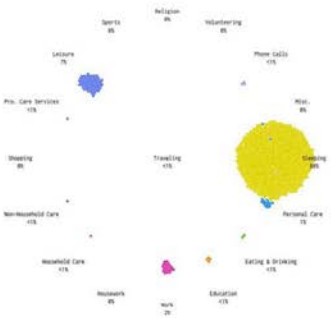
12:00am



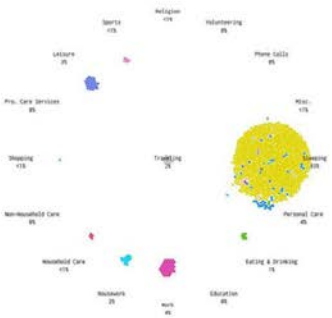
4:00am



1:00am



5:00am



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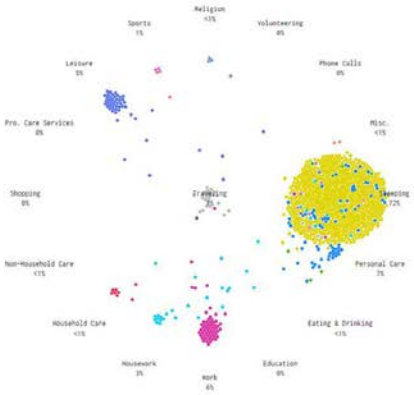

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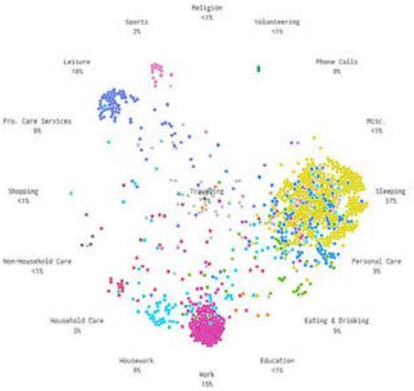

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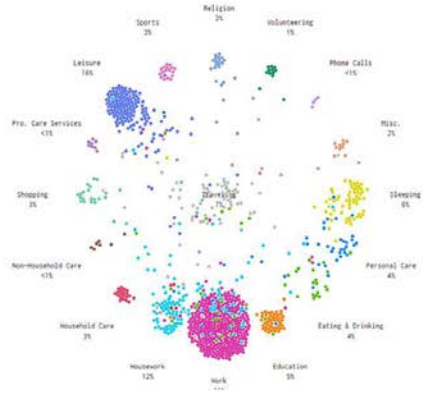
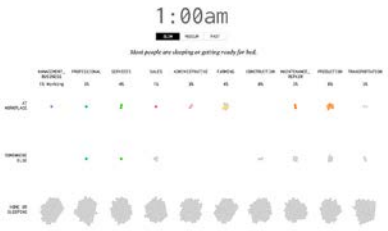
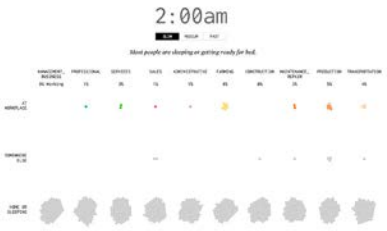


DENSITY/HOUR/WORKTYPE

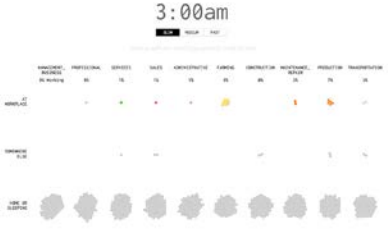
1:00am



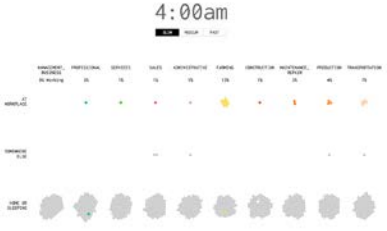
2:00am



3:00am

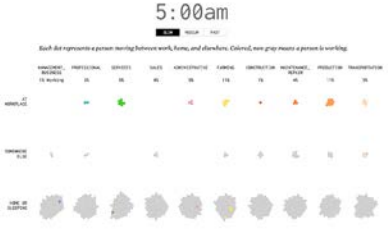


4:00am



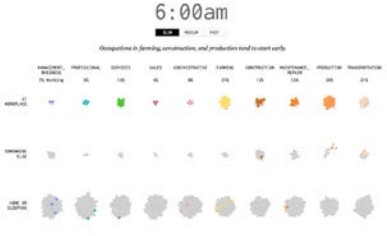
5:00am

Each dot represents a person moving between work, home, and elsewhere. Colored, non-gray means a person is working.



6:00am

Occupations in farming, construction, and production tend to start early.



7:00am

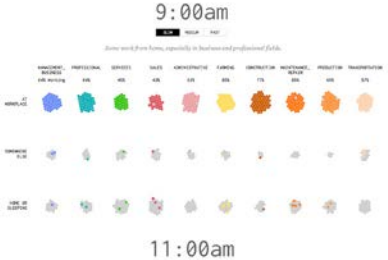
Occupations in farming, construction, and production tend to start early.

8:00am

Most people are at work or on their way.

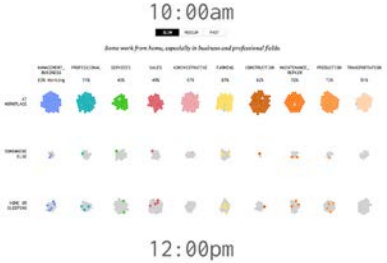
9:00am

Some work from home, especially in business and professional fields.



10:00am

Some work from home, especially in business and professional fields.



11:00am

Some work from home, especially in business and professional fields.

12:00pm

It's time for lunch.

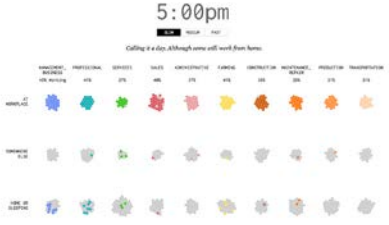
1:00pm

2:00pm

3:00pm

4:00pm

5:00pm



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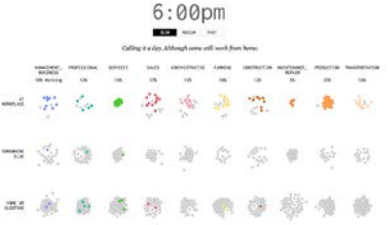

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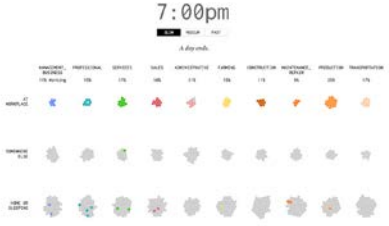

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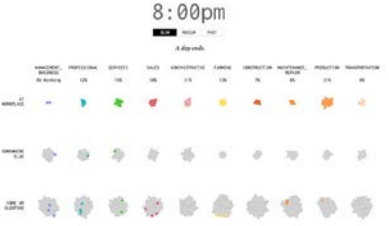

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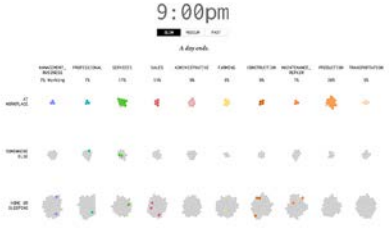

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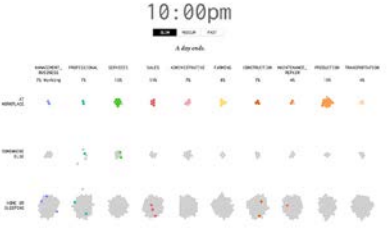

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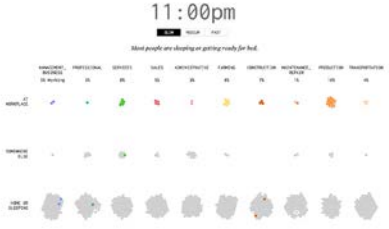

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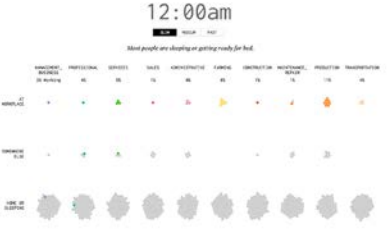
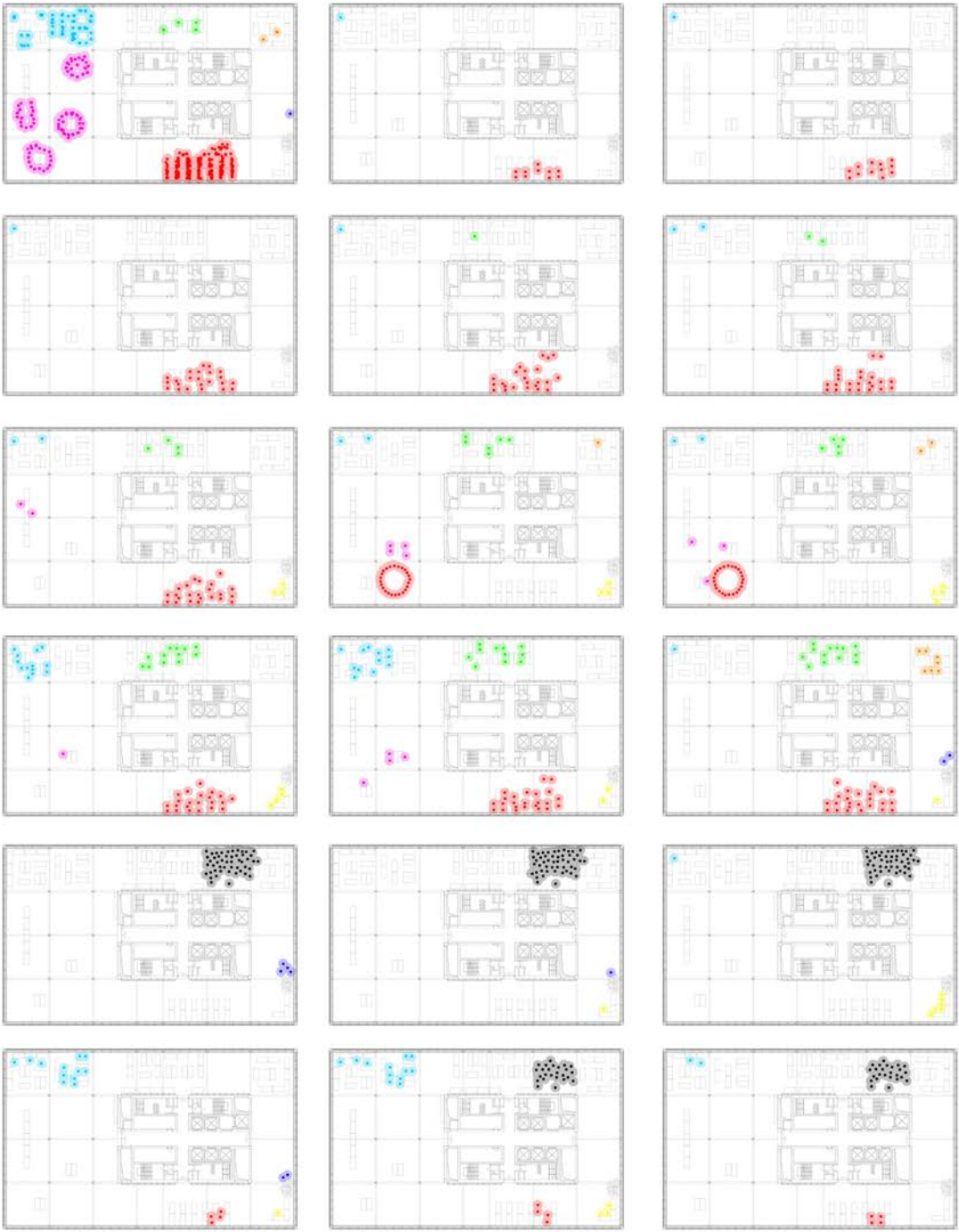
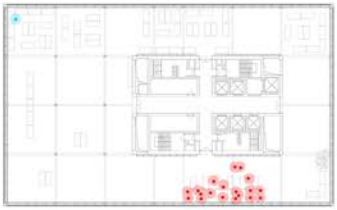


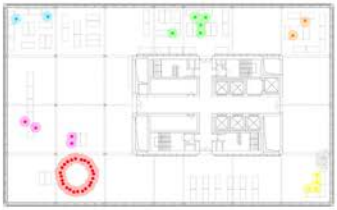
MAPPING THE 24TH FLOOR

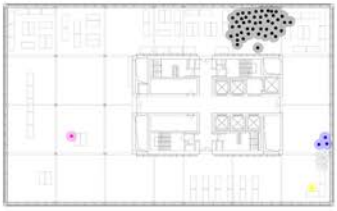
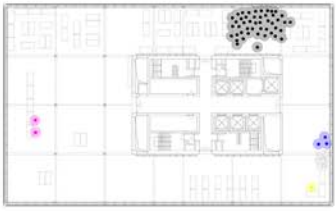
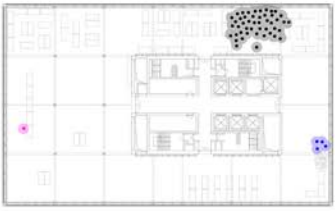
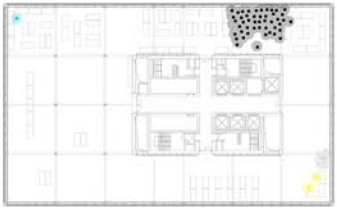
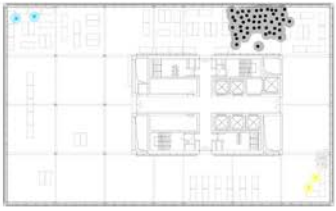


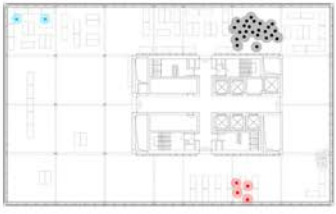


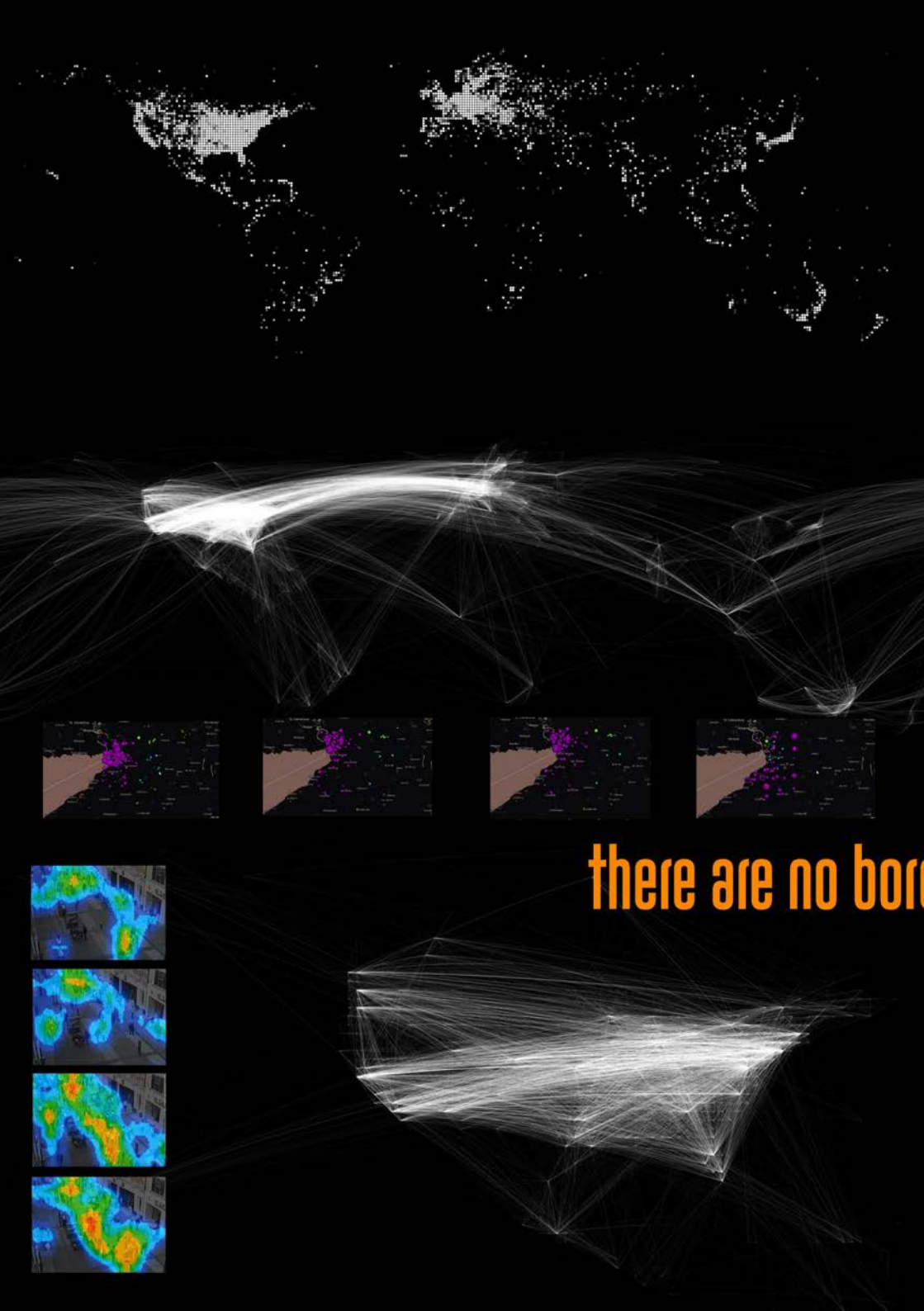




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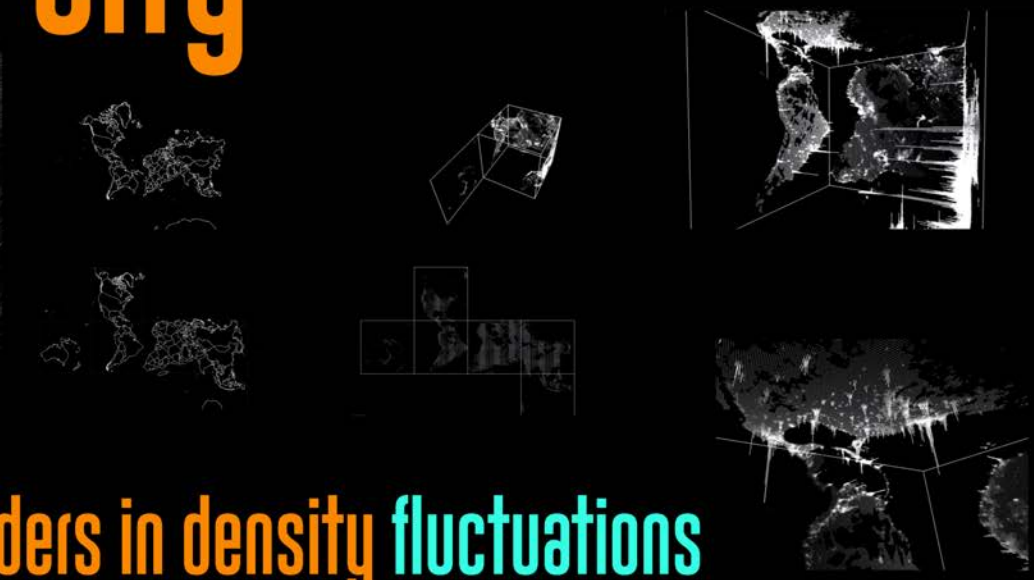
there is no such thing as a closed city



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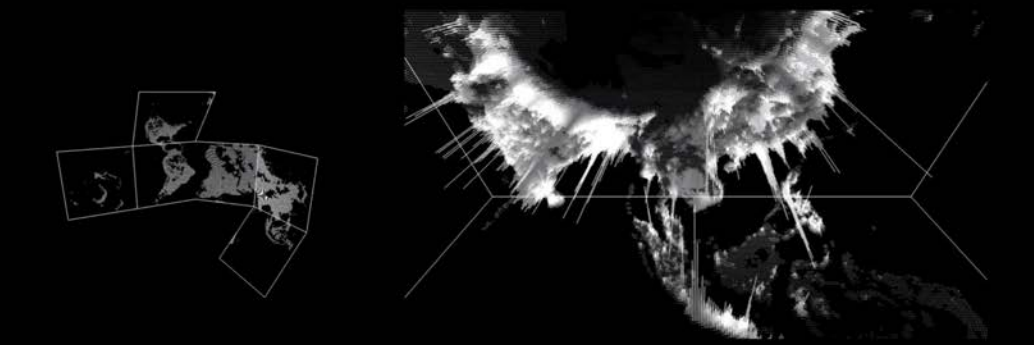

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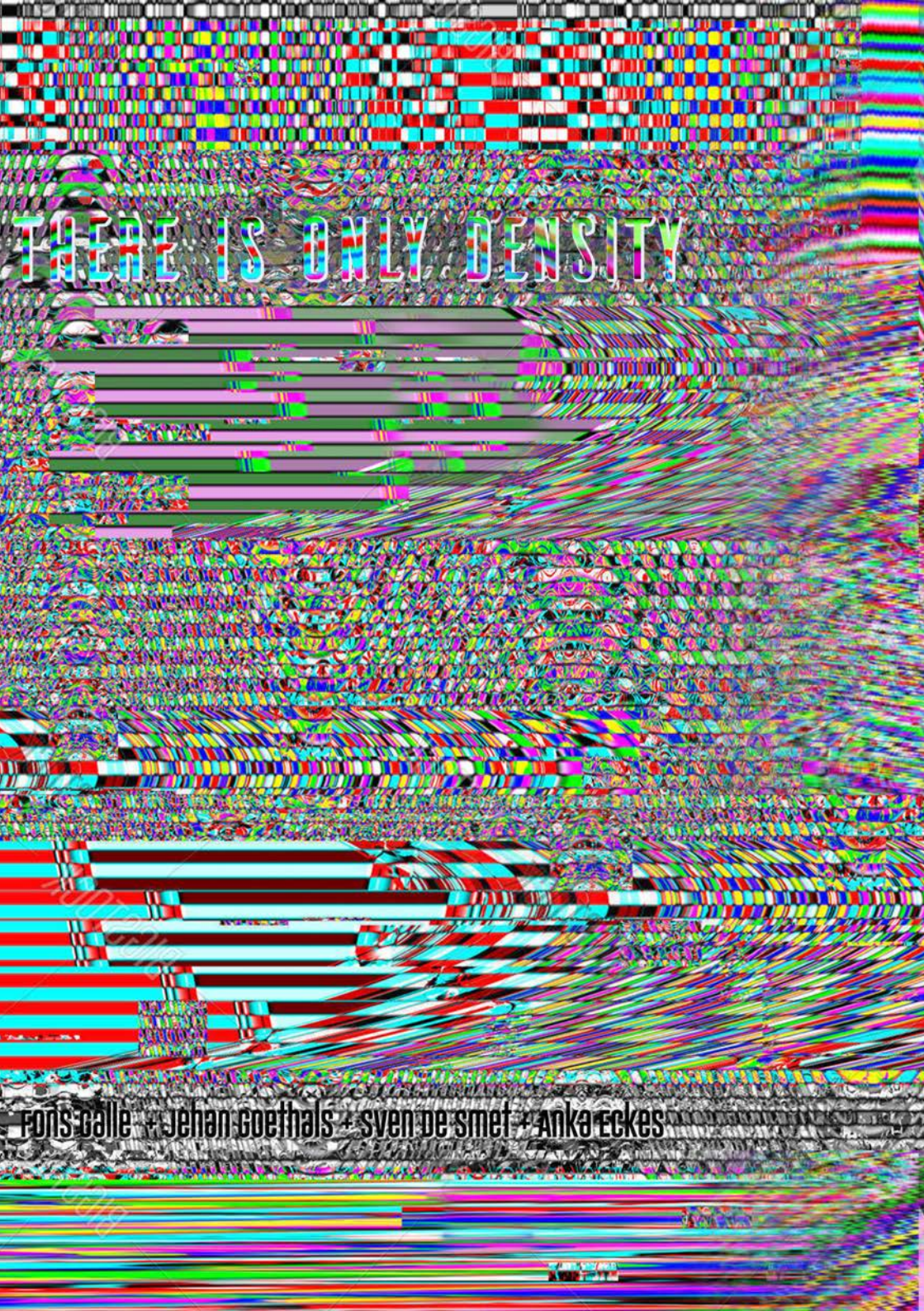
"Here is to starting


as a city on my density


THERE IS ONLY DENSITY
Fons Dalle + Jehan Goethals + Sven De Smet + Anka Eckes