Made in Southworks

The plug-in production city

P5-presentation - Dmitri Borisovitch Levin 1502999

Mentors:

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Date: 19-12-2014
Presentation content

Masterplan
Presentation content

Masterplan

Project
Presentation content

Masterplan

Project

Conclusion
MASTERPLAN
What is Chicago?
South Chicago
CRIME
VACANCY
Why is this happening?
Non functional urban system

Monofunctional low density urban sprawl
Typical American city monofunctional urban sprawl
We have to do it differently!
Opportunities!

- Bring back manufacture in a new way

Chicago Southworks
Opportunities!

- Bring back manufacture in a new way
- Concentration as a answer to shrinking
Opportunities!

- Bring back manufacture in a new way
- Concentration as a answer to shrinking
- A new model of urban high density
MADE IN SOUTH WORKS

SOUTH WORKS
CHICAGO

Manufacture node
Taking advantages from the best qualities of the site
Connectivity as the backbone of development
Flexible growth along the infrastructural backbone
Urban rules as a guide for the masterplan design
- Concentration/density

Reaction on the non functional urban sprawl

Low density monofunctional urban sprawl → High density multifunctional urban system
- Concentration/density
  Reaction on the non functional urban sprawl

- Bottom up freedom
  As is done by urban rules
- Concentration/density
  Reaction on the non functional urban sprawl

- Bottom up freedom
  As is done by urban rules

- Creation of a new urban model
  The manufacture community
Point of interest for many architect for a long time
Fun palace - Cedric Price
Spatial city - Yona Friedman
!Unbuildable, utopian, megastructures!
I have to do it differently!
Question:

How to define and design a *practical* system that can facilitate the high dense program, provide space for bottom up freedom and benefit the manufacture community?
PROJECT
How *did* and how *do* people live?
Before industrialisation

Agricultural society

House
Work
“Leisure”

After industrial revolution

Work
Private or public transportation
Central functions
Leisure
Rising commute time
- High and still rising energy expenditures 
  (money and environment)
- High and still rising energy expenditures (money and environment)

- It makes people unhappy (time spent in traffic is lost of quality time)
- High and still rising energy expenditures (money and environment)

- It makes people unhappy (time spent in traffic is lost of quality time)

- Loss of time is negative for the personal development (you can not invest in your self because of lack of time)
Current trend:

Work from home
The problem is
A new configuration is desirable!

Home + Small scale manufacture = New configuration
The living-producing unit model
The 5 principles of the living-producing unit

1- Differentiation

According to impact in order not to endanger productivity and liveability
The 5 principles of the living-producing unit

1- Differentiation
   According to impact in order not to endanger productivity and liveability

2- Share of common amenities
   Building services, distribution ...
1- Differentiation
   According to impact in order to not endanger productivity and liveability

2- Share of common amenities
   Building services, distribution ...

3- Unification
   Unify the work and living space but keep point 1 in mind
The 5 principles of the living-producing unit

1- Differentiation
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2- Share of common amenities
   Building services, distribution ...

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   Unify the work and living space but keep point 1 in mind

4- Smart building configuration
   This can benefit the building use and the share of amenities
The 5 principles of the living-producing unit

1- Differentiation
   According to impact in order to not endanger productivity and liveability

2- Share of common amenities
   Building services, distribution ...

3- Unification
   Unify the work and living space but keep point 1 in mind

4- Smart building configuration
   This can benefit the building use and the share of amenities

5- Flexibility as accommodation for future changes
   In order to meet the changing needs of the users
Who is the user?
Best suitable for:

Entrepreneurs and small to medium business owners with the focus on production
- Many of them are ‘in the same boat’
- Improves quality of life
Knowledge & experience
- Exchange of knowledge and experience
- Lower energy expenditures and save of money
- Social benefits
The living-production unit quantified
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Avarage:

דים:

- Housing - 75m² to 100m² (smaller possible if needed)
- Production - 20 m² to 200m² (no room for bigger)
Internal typologies of combination living-producing

Integrated

Separated
Flexible configuration of units
Flexible configuration of units

= structural framework
Creation of spacial quality

Stacking of blocks creates public space inbetween
Let’s zoom out
Light rail connection

Retail strip
Sun penetration

Max of 4 floors and use of courtyards
Internal circulation
The use of internal public space

Usual community

Plug in production city community

Community

“Community building”
Group activities (exmpl sport lesson)

Recreational activities (exmpl movie night)

Social interaction (green hangout spots)

A flexible use of public space...
Social interaction

Diversation of public space and gardening
Gras (turf gras)
Groellaag: grond (100mm)
Filter laag (2,5mm)
Drainage laag 40mm (Floradrain® FD 40-4)
Bescherm laag 2,5mm
Aluminium plaat 1,5mm
Rand profiel
Aluminium frame met rubber anti slip
Drainage laag hoofdconstructie
Draag constructie
Gras gazon unit
Tuin unit
How can one build in the Plug-in Productioncity?
Unit spots

- Unit spots show the area where units can be placed if they obey the building guidelines.

- Unit spots can be adapted in time, can be shared by multiple owners, can be connected vertically and can be merged if needed and possible according to building rules.

- Are formed to organize the units functionally.
Space to change/densify

- Existing units can use the hatched area to enlarge their internal space if needed.

- If an owner leaves the Plug-in City space could be used to adapt the empty unit to match new needs (no need to demolish completely).

- This means that the density can increase from 2.7 FSI -> 3.05 FSI (including retail strip).
1) Main circulation routes leading to lifts should be accessible from all units (min dimension of main route is 2.5m width and a 2.0m width for secondary routes)

The main circulation route can change in time
Max of 15m long when using this minimum width of 2.0m
2) Around the court yards 50% free space must be available for light penetration and active public space
3) Stairs have 2.5m free access space, lifts have free access space of 5x5m and both have to be connected to the main building circulation
Buildin rules

4) Use of available plug in building system
Free use of materialization within the system possible
Buildin rules

5) Building is only permitted within the assigned spots and with approval by the community

See Plug-in Network procedure and spots documents
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See Plug-in Network procedure and spots documents
Self governance

Transparency

Responsibility
Let’s have a drink at 22.00?

Good idea, see you on 4th floor!
Plug in procedure

1) Become member of Plug-in Network

2) Possibilities and needs are explored in corporation with community (through Plug-in Network)

3) A development spot is assigned to owner (or approvement of adaptation)

4) Designing and assessment phase, if design is approved than:

5) Buy material and planning with use of Plug-in Network

6) Building phase

7) Living/working phase

8) Future adaptations
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Structural
Grid zoning principle
Grid react on urban conditions of the direct environment

Grid zoning principle

The grid react on urban conditions of the direct environment
The grid reacts on urban conditions of the direct environment.

Grid zoning principle

Constructive grid of 5m x 5m and design grid of 2,5m bij 2,5m
Semi rigid braced steel frame
Expansion joint

Room for expansion on green axis and rigid on red axis
Climate
Usually climate systems form a restriction in design freedom and flexibility.
In the Plug-in Production city climate systems form no restrictions, they stimulate flexibility.
A pair of columns provide all the resources for the climate system
A pair of columns provide all the resources for the climate system
Complete system in a interior space

- Air exhaust (interior)
- Exhaust air collector connection to energy column
- Electricity and data distribution (to electrical distribution board)
- Hot and cold water supply
- Sewer water collector connection to downcomer (Water column)
- (To Viega Mana bloc)
Thermal heat storage (cold)
Thermal heat storage (warm)
Cross ventilation and/or Mechanical exhaust (through energy column)
Solar panels generating additional energy
Heat exchange from exhausted air and solar panels
Water (hot/cold) distribution through water columns
Electricity and data distribution through energy columns
Rainwater collection through water columns
Electric floor heating (plug in possibilities for flexibility)
Internal used air exhaust through energy column
City heating from the industry
Service space
Gray water treatment in constructed wetland
Green coverage on construction to enhance bio activity
Internal use air exhaust through energy column
Building system
Flexible building parts that can be easily adjusted to enhance maximum flexibility
Main principles of the facade panel system:

- The panels are lightweight and can be placed by two people on a easy way (no need for cranes)
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- The panels are lightweight and can be placed by two people on a easy way (no need for cranes)

- The panels facilitate internal and external flexibility and freedom in configuration of use

- The panels should give space for diversity and expression on a certain level
Material use:

Metal

Wood
CONCLUSION
Home + Small scale manufacture = Plug-in production city
Home + Small scale manufacture = Plug-in production city

New configuration

Flexibility
Home + Small scale manufacture = New configuration

Plug-in production city

Sense of community

Flexibility
Home + Small scale manufacture = Plug-in production city

New configuration

Sense of community

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Home + Small scale manufacture = Plug-in production city

New configuration

Flexibility

Sense of community
The Plug-in production city
Questions???