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Dipartimento di Progettazione architettonica e di Disegno industriale
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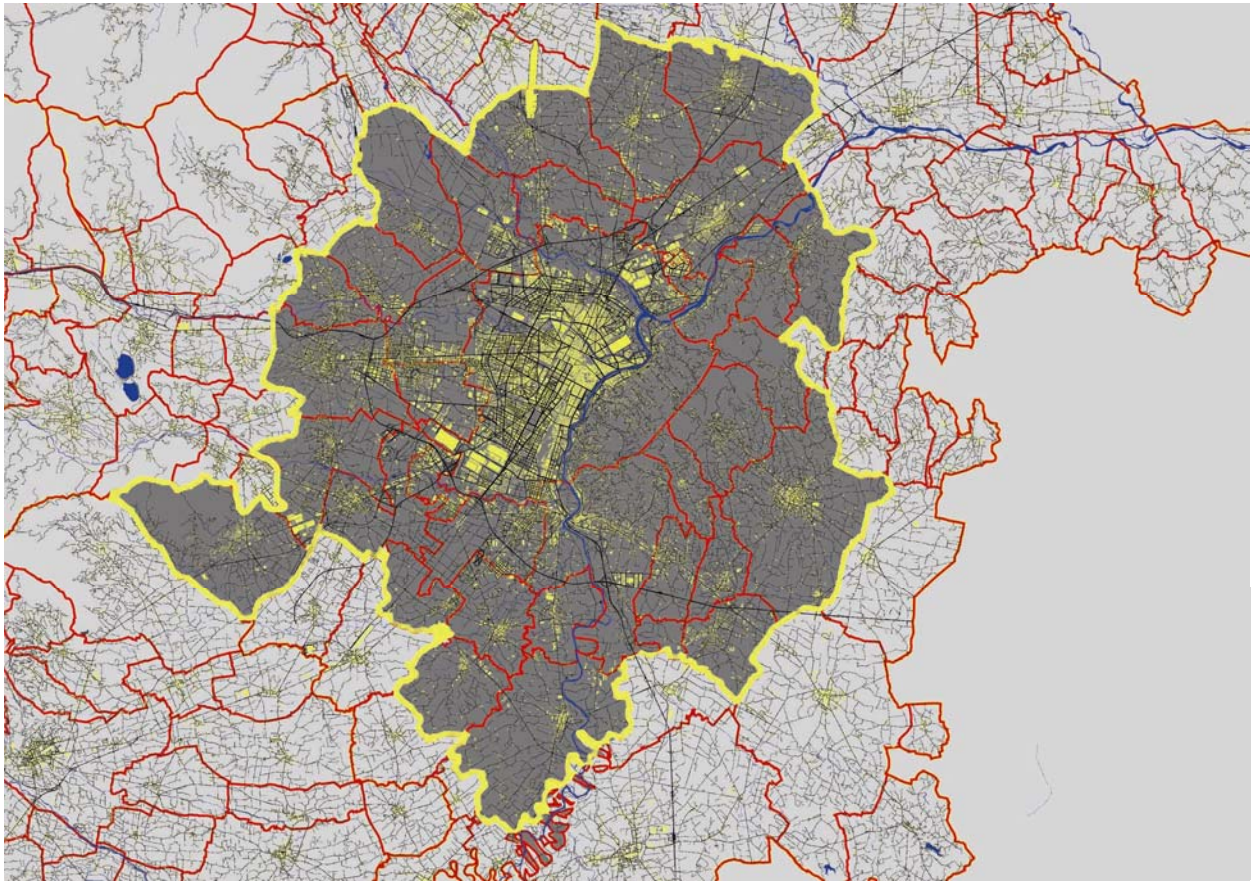
Study area



34 Municipalities | 872,396,267 m^2 | 658,110 Jobs | 638,785 Households

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Main data

- **Households data**
- **Jobs data**
- **Geographic data**

The base year for Torino is 2001, because consistent data is available for jobs, household and parcels.

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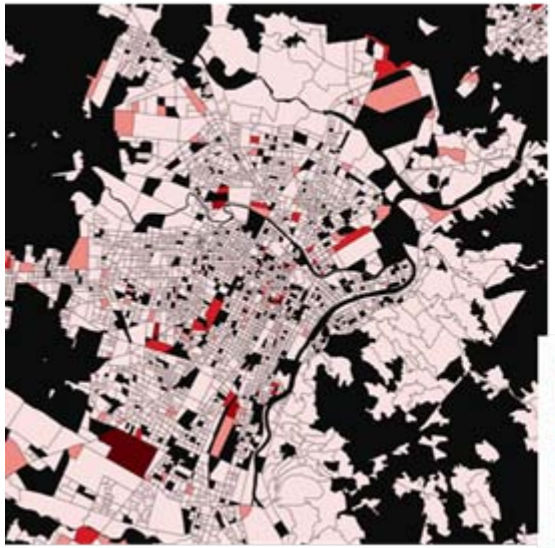
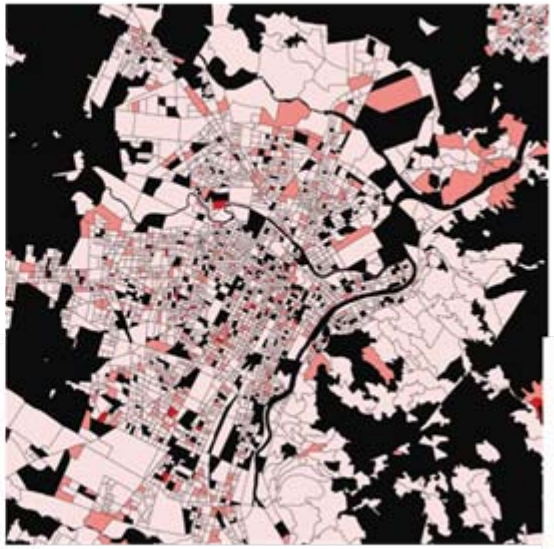
Census Data - Households and Jobs





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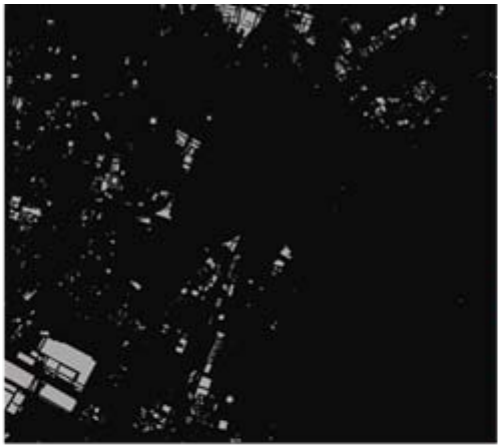
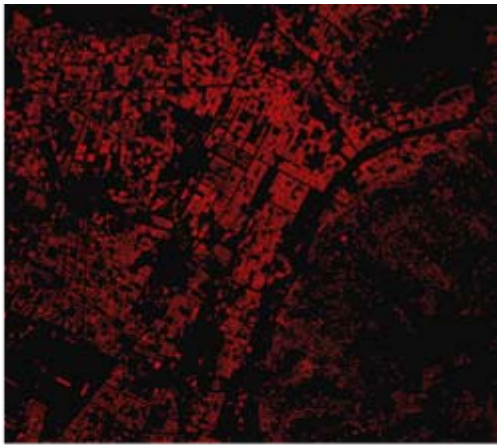
Maps

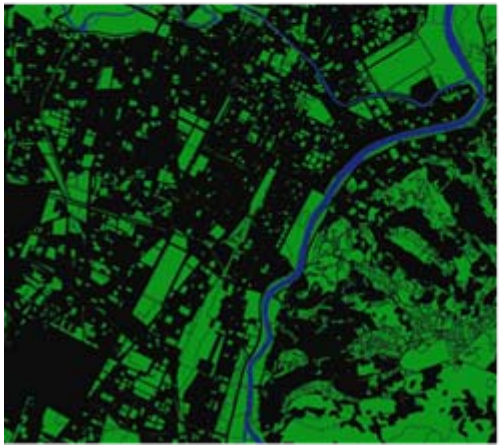
Roads



Industrial Areas

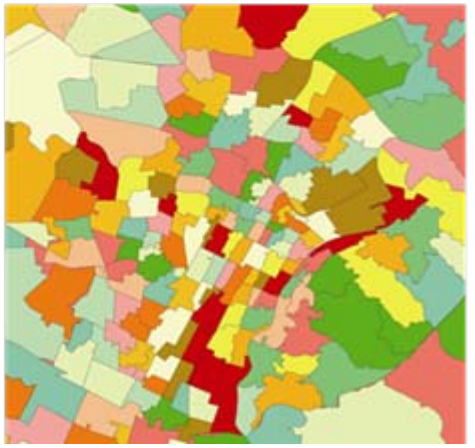


Residential Areas



Public Spaces

Plan Types



Traffic Analysis Zones

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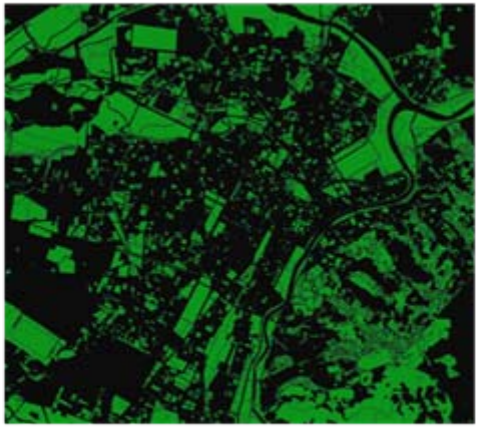
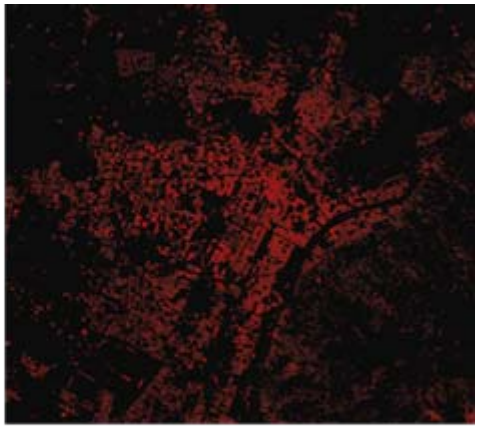
Gridding process

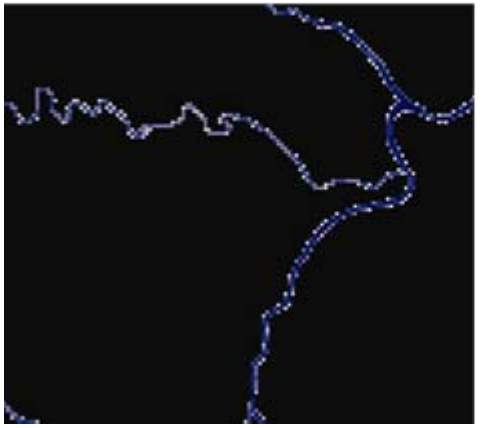
Streams

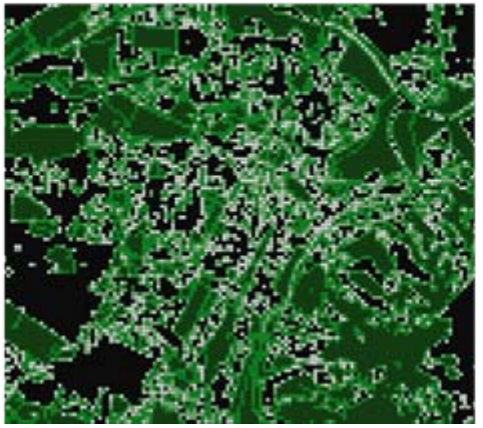


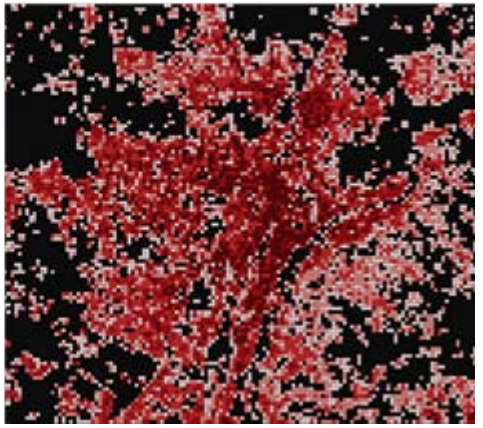
Public Spaces



Residential Areas







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Data-gathering for Urbansim application

DATA DESCRIPTION	SOURCE	AGENCY
Land Use Town Plan	Town plan of the city	Municipality of Turin County of Turin
	Land Use Map of the province	
	Infrastructures Map	
Development	Building activities	Building Archive
	Residential units	National and Municipal Statistical Institute
Real Estate	Real Estate Observatory	Municipal Taxes
Mobility	Traffic Urban Plan	City of Turin
	Travel data	
	Public trasportation data	
Population	13° Census of population (1991) 14° Census of population (2001)	National and Municipal Census
Employment	7° Census of industry and services (1981) 8° Census of industry and services (1991)	
Business	7° Census of industry and services (1981) 8° Census of industry and services (1991)	

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Travel Model

Turin Metropolitan Area

261 Zones

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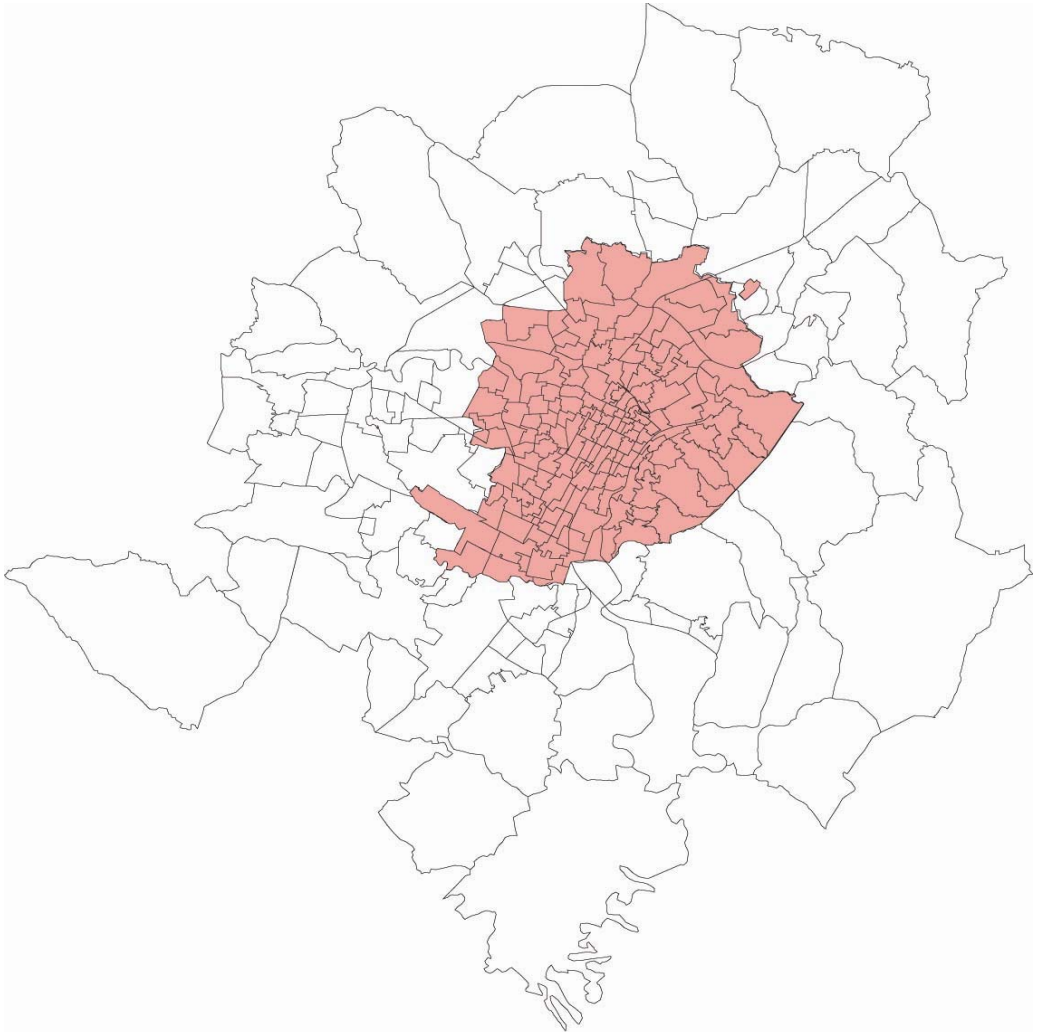
Travel Model



City of Turin

166 Zones

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Travel Model

Metropolitan Area

95 Zones

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Input Data

DISPONIBILITA_AUTO : Tabella

CODZONA	PATENTATIF	AUTOF
1	1.8345588235	1.4227941176
2	1.8345588235	1.4227941176
3	1.6887608069	1.2910662824
4	1.8345588235	1.4227941176
5	1.6887608069	1.2910662824
6	1.6868475992	1.3089770355
7	1.8345588235	1.4227941176
8	1.8345588235	1.4227941176
9	1.7379518072	1.3162650602
10	1.7379518072	1.3162650602
11	1.7379518072	1.3162650602
12	1.7379518072	1.3162650602

ZTL : Tabella

CODZONA	GRUPPO	ZTL
65	D_FUORI	0
66	D_FUORI	0
67	D_FUORI	0
68	D_FUORI	0
69	D_FUORI	0
70	D_FUORI	0
71	D_FUORI	0
72	D_FUORI	0
73	D_FUORI	0
74	D_FUORI	0
75	C_COR	0
76	C_COR	0
77	C_COR	0

VALORI_IMMOBILIARI : Tabella

CODZONA	PMEDIO
1	1400
2	1400
3	1400
4	1400
5	1535.5260849
6	1404.0310781
7	1400
8	1468.3685675
9	1400
10	1399.9042458
11	1400
12	1541.0930306
13	1591.6392565
14	1662.1328235

OD_FUT : Tabella

ORIG	DEST	SEG	VAL
2	55	TORINORecarsi al lavoro	94
2	78	TORINORecarsi al lavoro	82
2	118	TORINORecarsi al lavoro	86
2	121	TORINORecarsi al lavoro	95
2	510	TORINORecarsi al lavoro	126
3	27	TORINORecarsi al lavoro	127
3	36	TORINORecarsi al lavoro	183
4	7	TORINORecarsi al lavoro	115
4	40	TORINORecarsi al lavoro	180
4	104	TORINORecarsi al lavoro	137
5	34	TORINORecarsi al lavoro	116
5	37	TORINORecarsi al lavoro	164.26964087
5	59	TORINORecarsi al lavoro	125

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Output Data

R_SP_LOGSUM_CAT : Tabella

ORIG	DEST	ID_CAT	LOGSUM
2	4	2	0.8199129
2	40	2	0.8047064
2	55	1	0.3063046
2	78	1	0.231906
2	86	3	0.03799544
2	118	1	0.2795196
2	121	1	0.2930814
2	510	1	0.7137052
3	10	2	0.734717
3	27	1	0.6280869
3	36	1	0.5899123
3	49	3	0.1040987
4	7	1	1.09479
4	40	1	0.8178016
4	104	1	0.3016511
5	12	3	0.9307241
5	13	3	1.14239
5	34	1	0.7233114
5	35	3	0.3493566
5	37	1	0.6846208
5	37	2	0.7427137
5	49	2	0.7471701
5	55	3	0.09444466
5	59	1	0.440327
5	65	1	0.5989014
5	103	1	0.2903004
5	144	1	0.361936
5	1570	1	0.4971771
6	37	1	0.6630091
6	49	2	0.7545186

R_SP_MATPRI_CAT : Tabella

ORIG	DEST	ID_CAT	VIAGGI
2	4	2	108.6033
2	40	2	30.97941
2	55	1	46.52104
2	78	1	24.87368
2	86	3	32.66689
2	118	1	47.39183
2	121	1	54.22567
2	510	1	75.83862
3	10	2	25.33028
3	27	1	88.74232
3	36	1	118.0707
3	49	3	54.19259
4	7	1	66.85633
4	40	1	121.5579

R_SP_MATPUB_CAT : Tabella

ORIG	DEST	ID_CAT	VIAGGI
2	4	2	389.731
2	40	2	107.2634
2	55	1	43.33859
2	78	1	54.91257
2	86	3	53.42576
2	118	1	34.3903
2	121	1	35.94825
2	510	1	43.41175
3	10	2	144.4153
3	27	1	30.35961
3	36	1	54.42104
3	49	3	48.98427
4	7	1	42.19345
4	40	1	47.62344

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Research status

ACTIVITY	STATUS		
Data-gathering	●		
Base-year database	●		
Data consistency	●		
Travel model definition	●		
Model test		●	
Model calibration			●
Model vaidation			●
Scenario definition		●	

- ● completed
- ● in progress
- ● to do

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Team

GIS Data Elaboration

Arch. Paolo Foietta
Dott. Andrea Ballocca

Scenario Definition

Arch. Giuseppe Gazzaniga
Prof. Franco Corsico

Arch. Francesco Guerra
Arch. Elena Masala

Model Implementation

Luca Caneparo LAQ-TIP

Dr Francesco Guerra
Arch. Elena Masala
Dr Damiano Gardiman
Dr Luigi Hosquet

UrbanSim TORINO PROJECT

Travel Model
Prof. Vito Mauro

Ing. Pier Luigi Gentile
Ing. Enzo Bason
Ing. Francesco De Florio

Estimation Process

Prof. Bruno Contini

Prof. Matteo Richiardi
Dott. Luca Milanetto

Modeling tool

Prof. Lamberto Rondoni

Land Price and Real Estate Model

Prof. Rocco Curto

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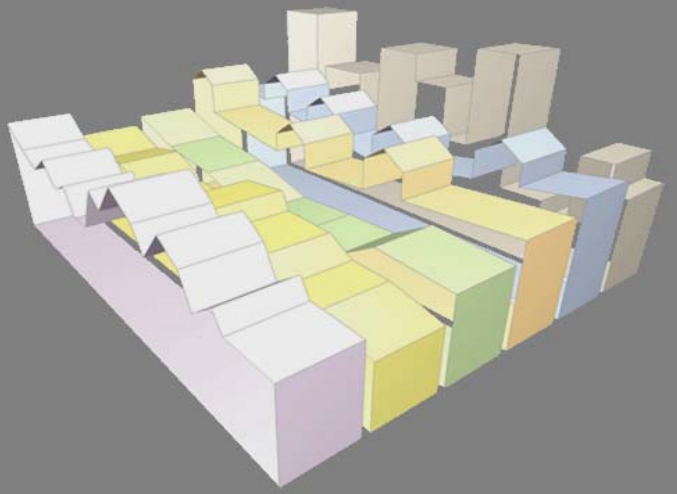
DITER - Dipartimento InterAteneo Territorio

Visualising Urban and Regional Scenarios

laq/tip

laboratorio alta qualità
progetto territoriale integrato



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Dynamic

the model can be easily updated, thus, its evolution depends on the interactions of designers, planners, decision-makers and citizens.

Generative

because its morphologies are not modelled but generated.

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the workflow
temporal task – ca simulation
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The system implements a generative description – a.k.a. *workflow* – where *datasets* are associated to *tasks* to perform on that data.

WORKFLOW

TASK 1

DATASET 1

DATASET 2

DATASET 3

...

TASK 2

DATASET 1

DATASET 4

...

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DATASETS

Datasets are both input and ouput of the system. They are georeferenced, and can be aerial/satellite photos, shapes and also string tables.

↓

GIS technology

Urban and regional datasets, intended as structured data describing a reality, often already exist, but they are spread over different formats, sources and ownerships. Therefore we have been developing a method able to read and correlate these data coming from various authorities.

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TASKS

To compute a task, it is necessary to group and relate different datasets, both in input and output. Tasks are especially powerful when they integrate generative procedures in a hierarchical structure.

SCALE HIERARCHY

SPATIAL HIERARCHY

TEMPORAL HIERARCHY

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SCALE HIERARCHY

to define objects by their dimensions

→ LOD

SPATIAL HIERARCHY

to define position of the objects in the space

→ georeferenced data

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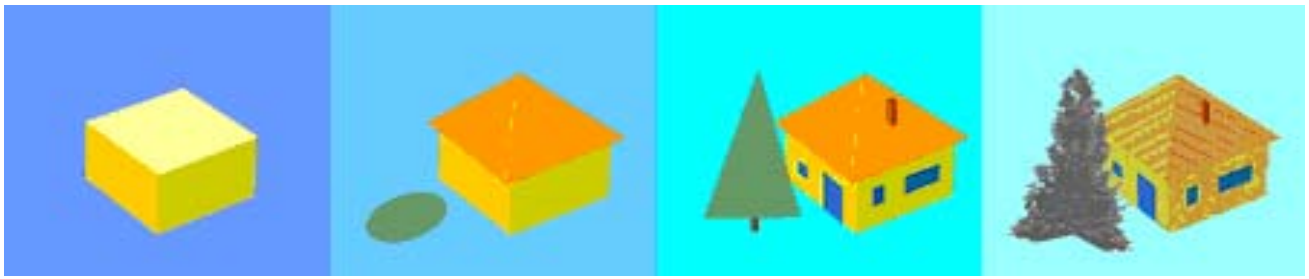

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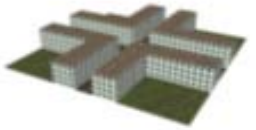
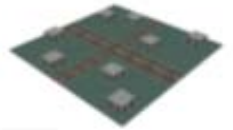
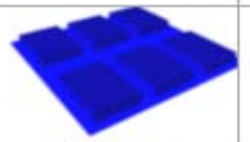
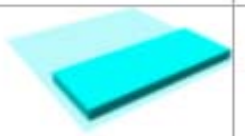
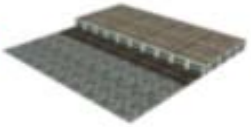
VAL DI SUSA land use 3D models

Table 1 Land use and corresponding 3D models

Land Use	Symbolic Typology	Photo-Realistic Typology	Heights
Residential continuous dense urban fabric			12m
Residential continuous medium-dense urban fabric			9m
Residential discontinuous urban fabric			7m
Residential discontinuous sparse urban fabric			6m
Industrial areas			6m
Commercial areas			6m
Public and private services			6m

profiling system introduction
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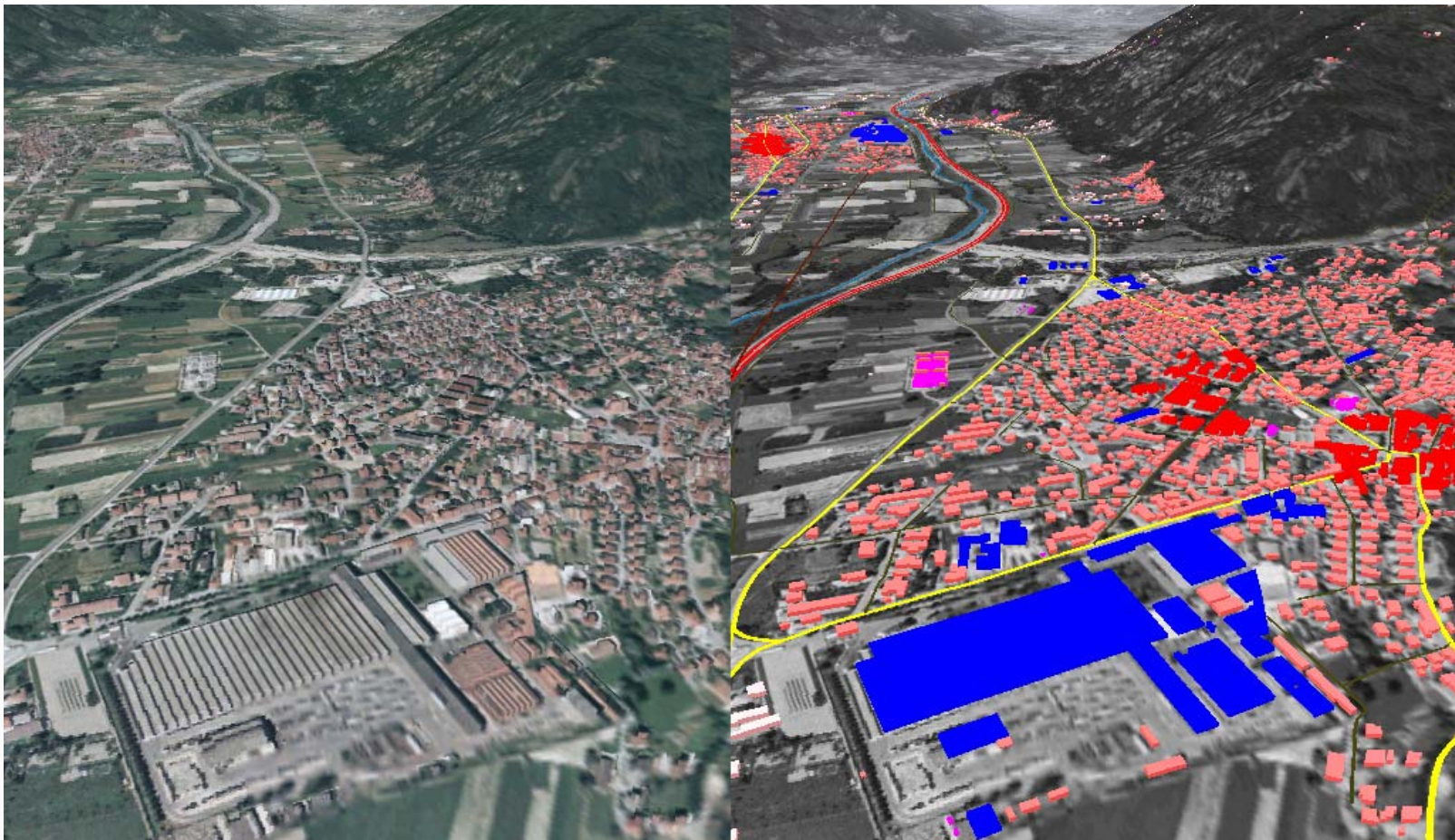
2 viewports exploration



modelling systems for urban
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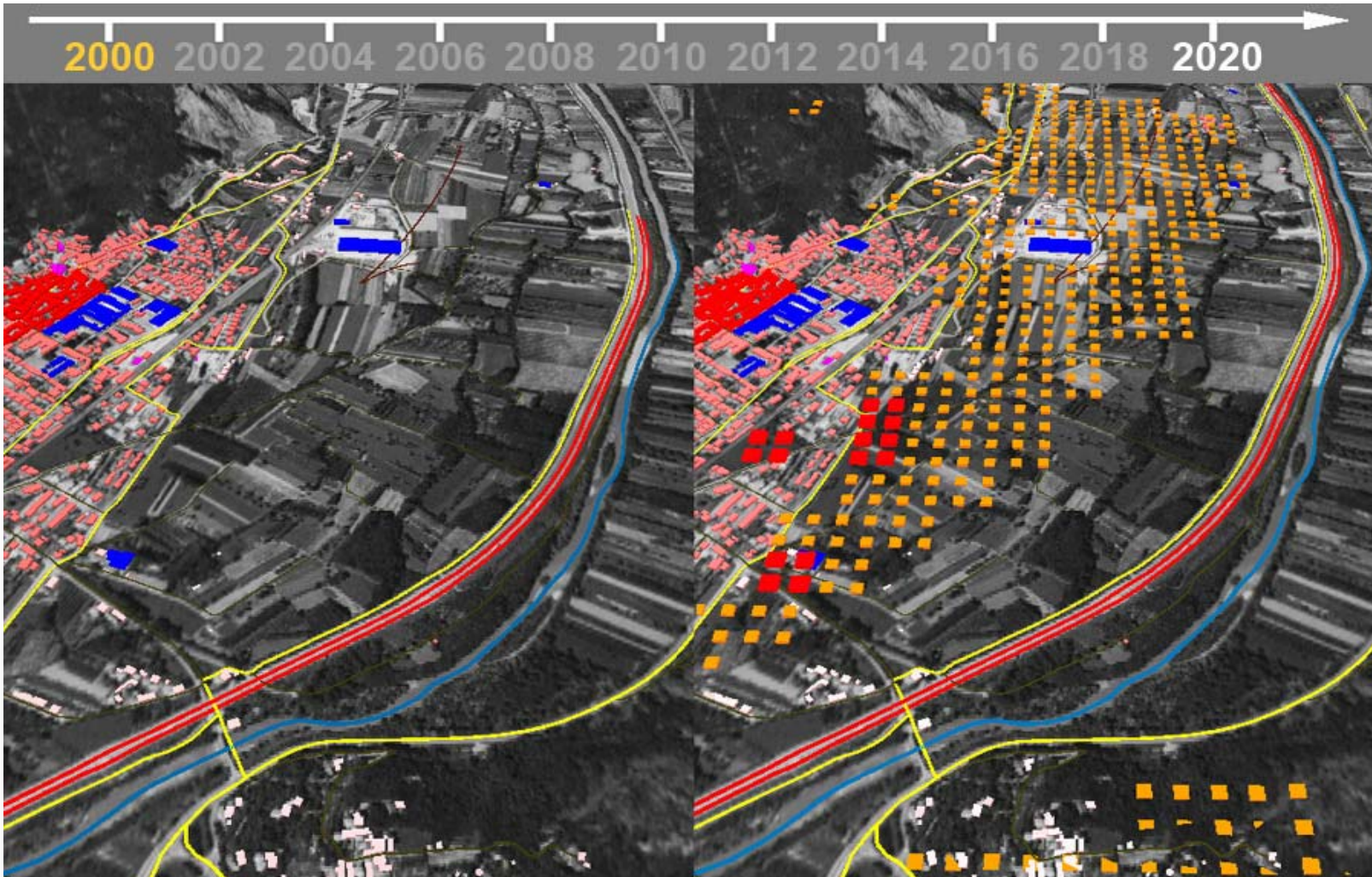
discrete temporal exploration



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immersive and interactive navigation

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immersive and interactive navigation

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modelling system introduction
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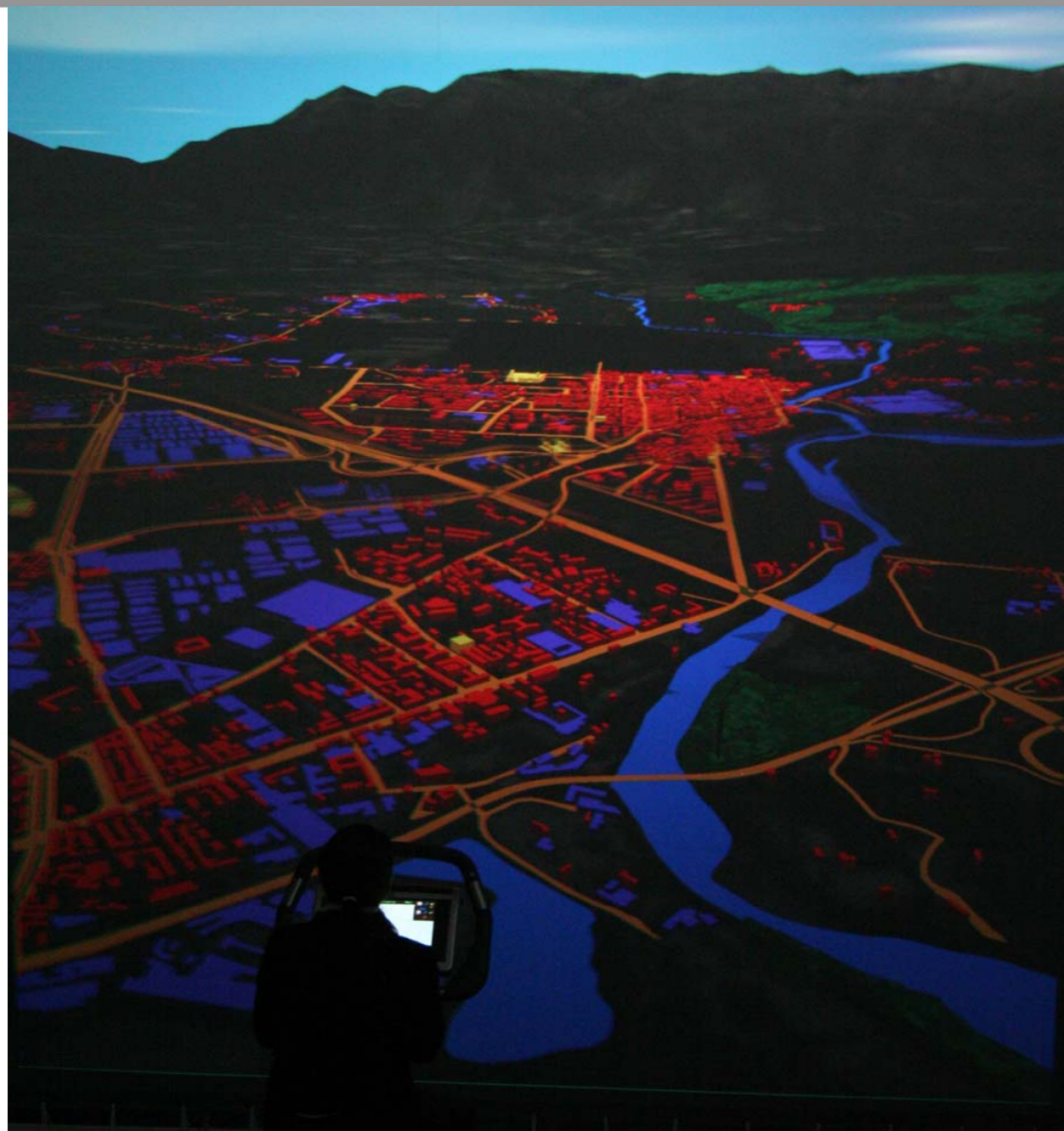

Politecnico di Torino

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Generating Urban Morphologies from Semantics

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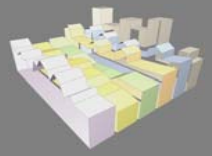
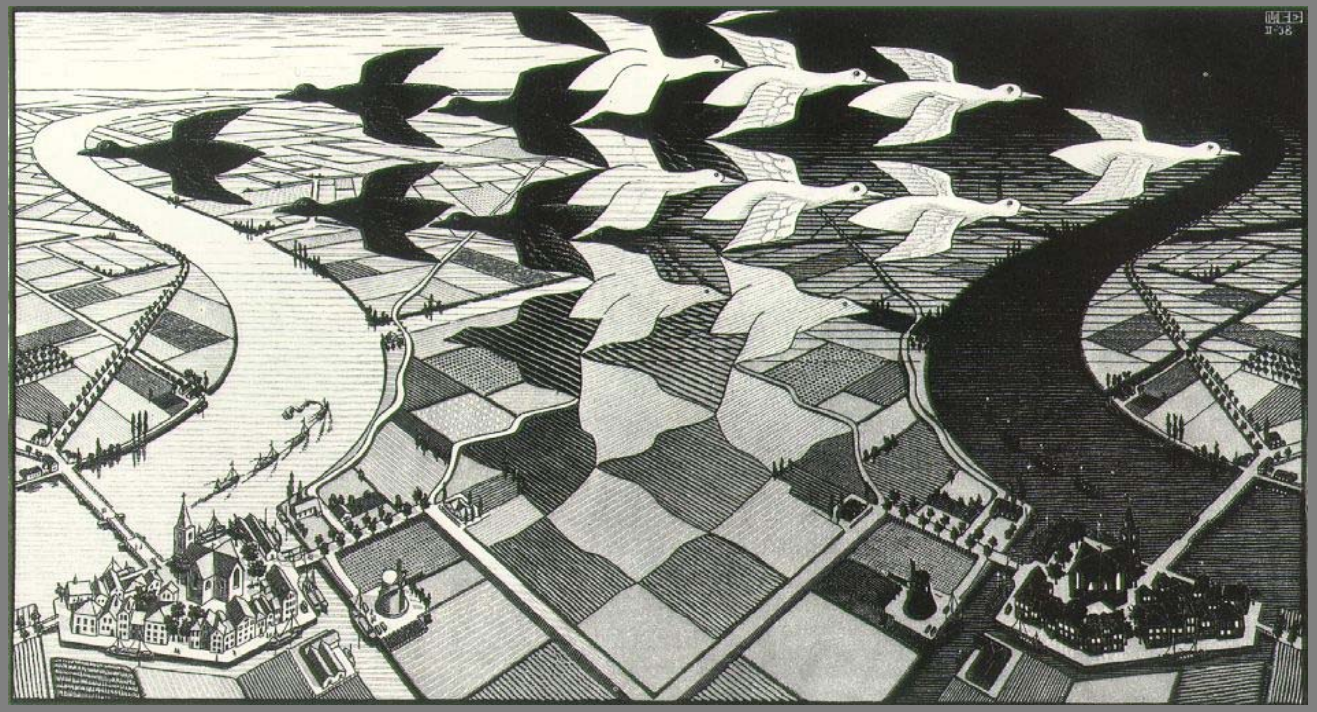
Mattia Collo
Davide Di Giannantonio
Vincenzo Lombardo
Alfonso Montuori
Stefano Pensa



laq/tip

Laboratory of high quality territorial integrated project



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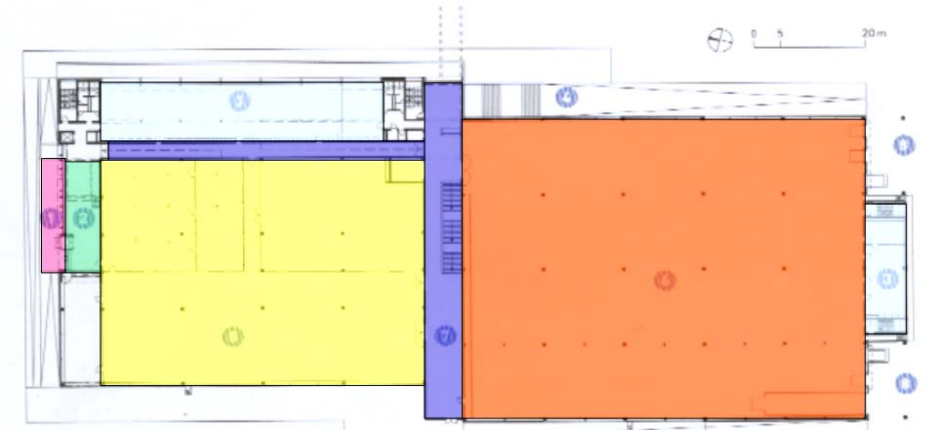
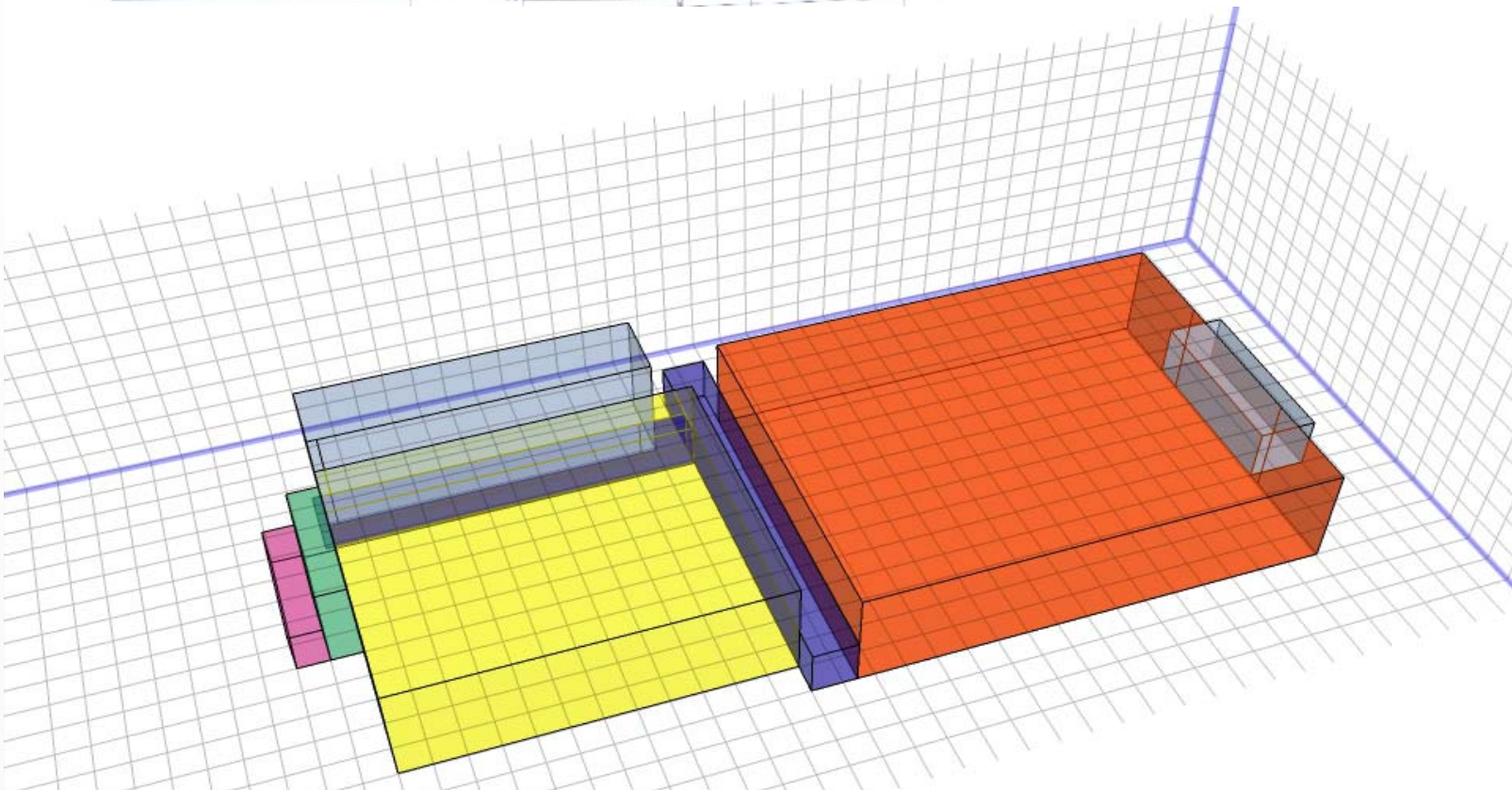
Case project



Laser machine tool factory



altri strumenti

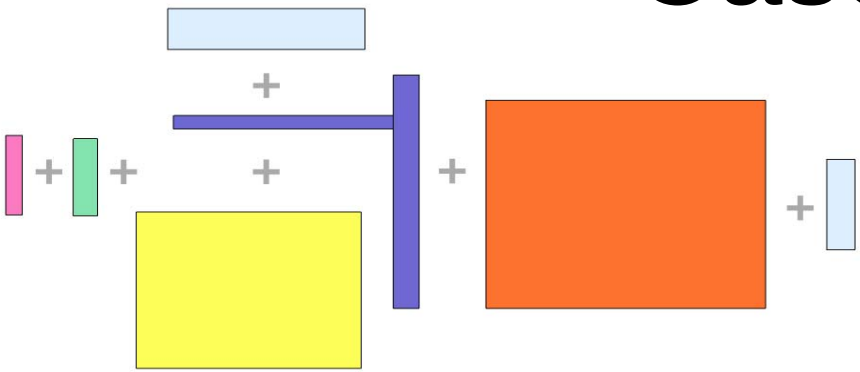
dipolonte

caso studio

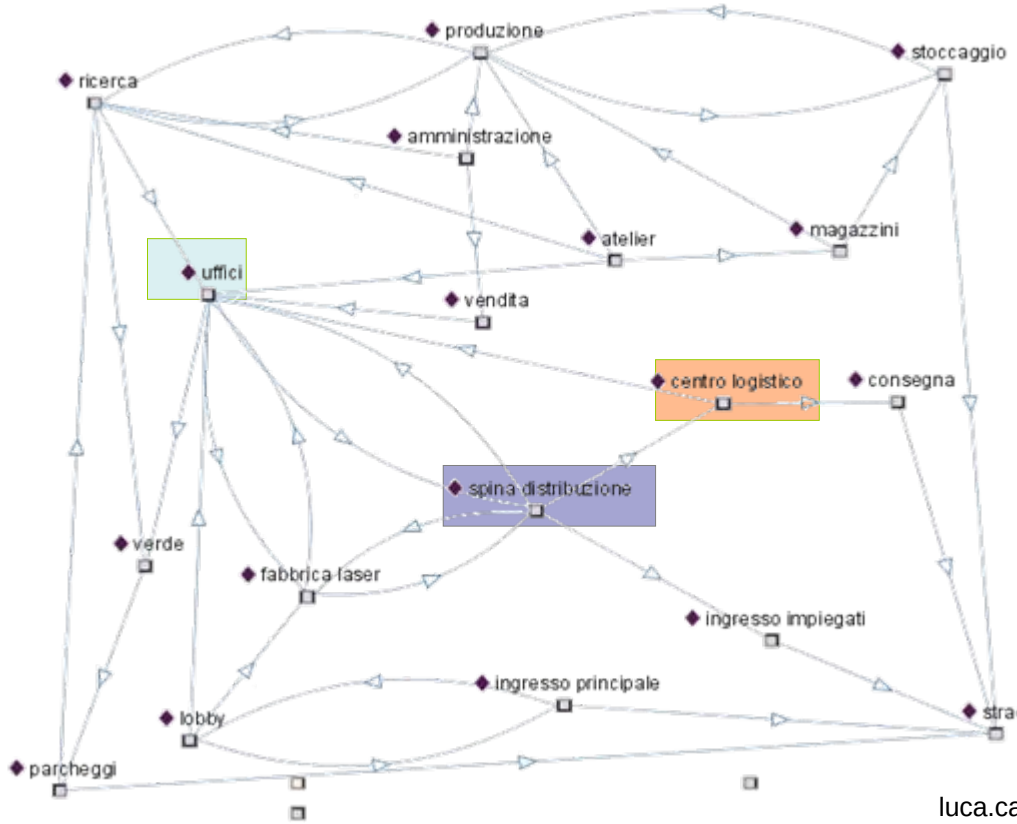
metaprogetto

valutatori

Case project



Laser machine tool factory



altri strumenti
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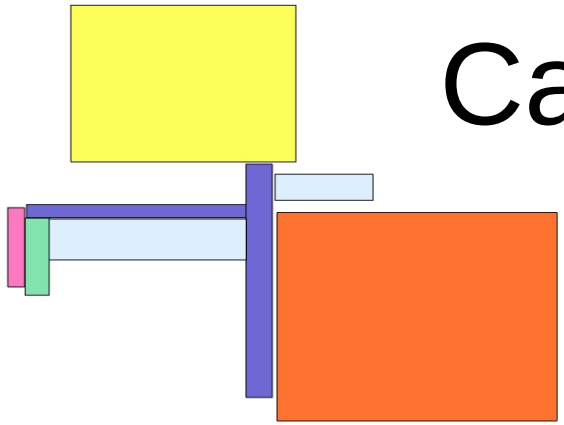
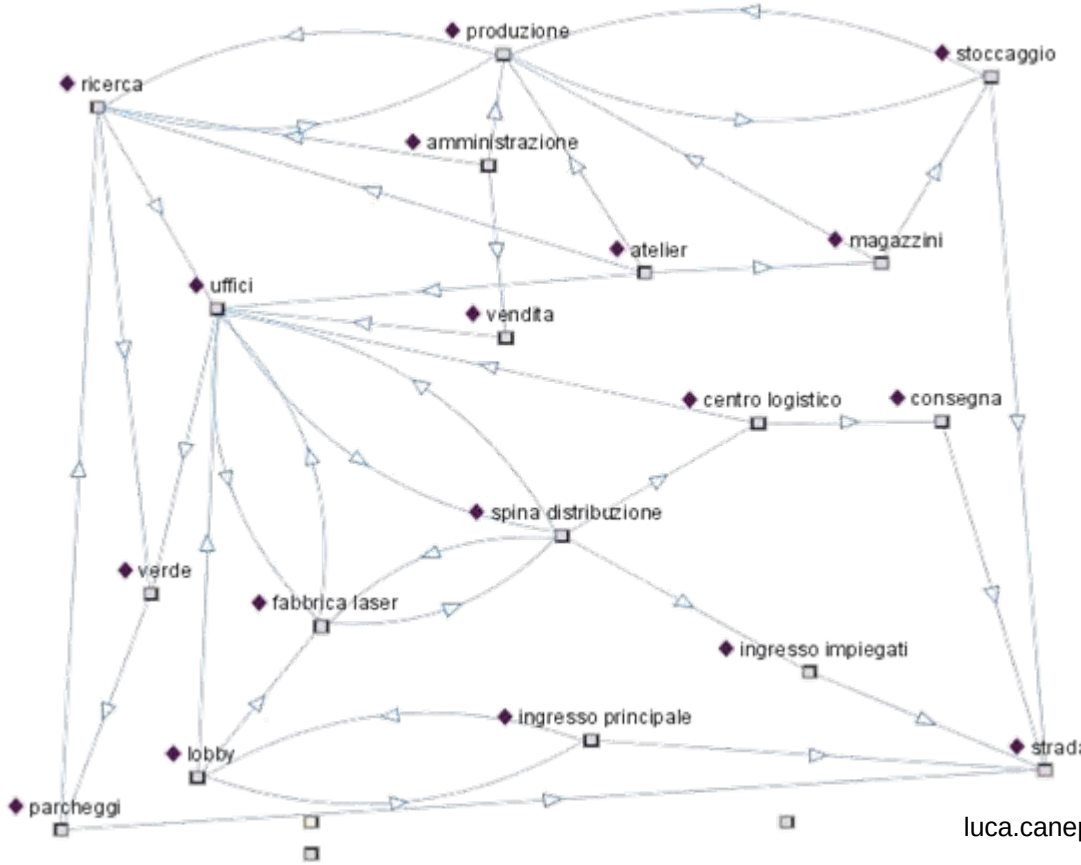


Case project

The relation between units is respected even if they have a different space position

The semantic give a flexibility in the generation of solutions. We can reach unaspected solutions



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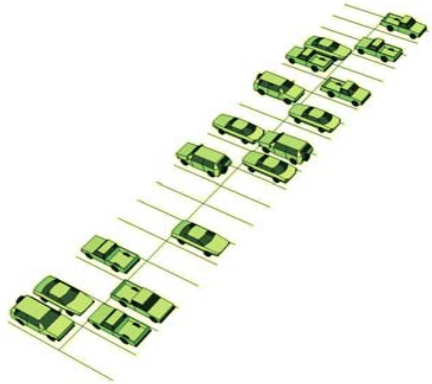
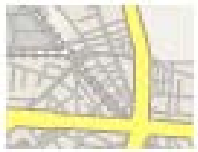
Typologies

detached house

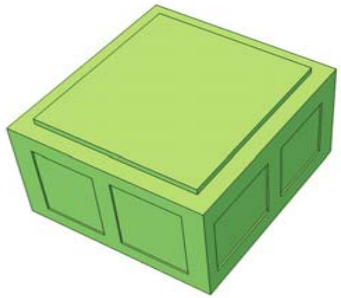
industry



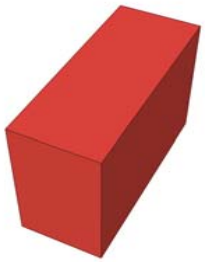
parking lot



street

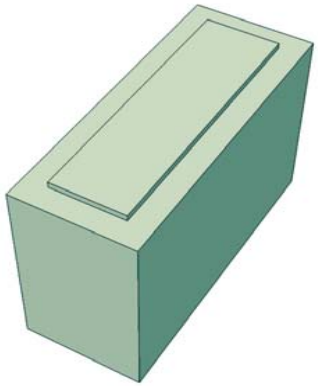


retail

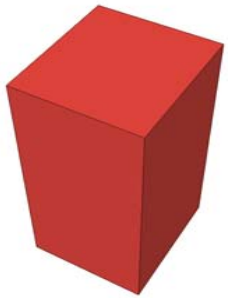


block

green



office



tower

typologies

residential

industry

tertiary

services

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