

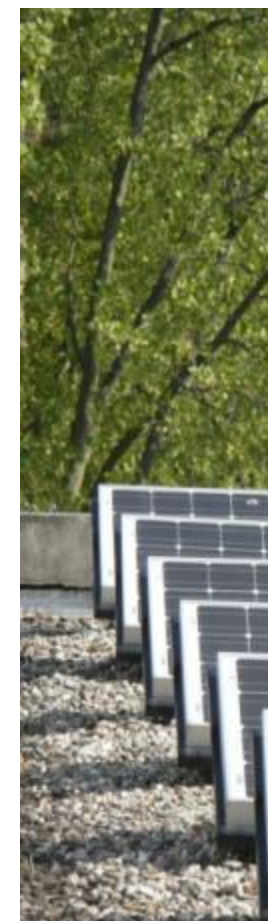


Lyon-Confluence Planeamento sustentável na prática

Workshop sobre Planeamento Urbano Solar

Bruno Gaiddon

29 Mai 2012



Content

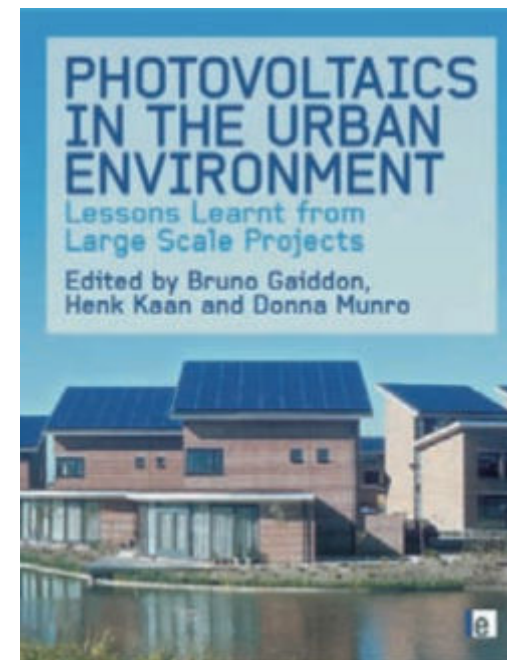


- **Introduction**
- **Overview of the Lyon-Confluence project**
- **Phase 1 : CONCERTO - First Energy Efficient buildings**
- **Eco-refurbishment of the existing district**
- **Phase 2 : WWF One Planet Living initiative**
- **Conclusion**

Hespul



- **Not-for-profit organization**
(established 1991 - 25 employees - Lyon, France)
- **Promotion of Energy Efficiency and Renewable Energy Systems**
- **Local, national and international activities**



Rhône-Alpes Région



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Solar PV assistant of



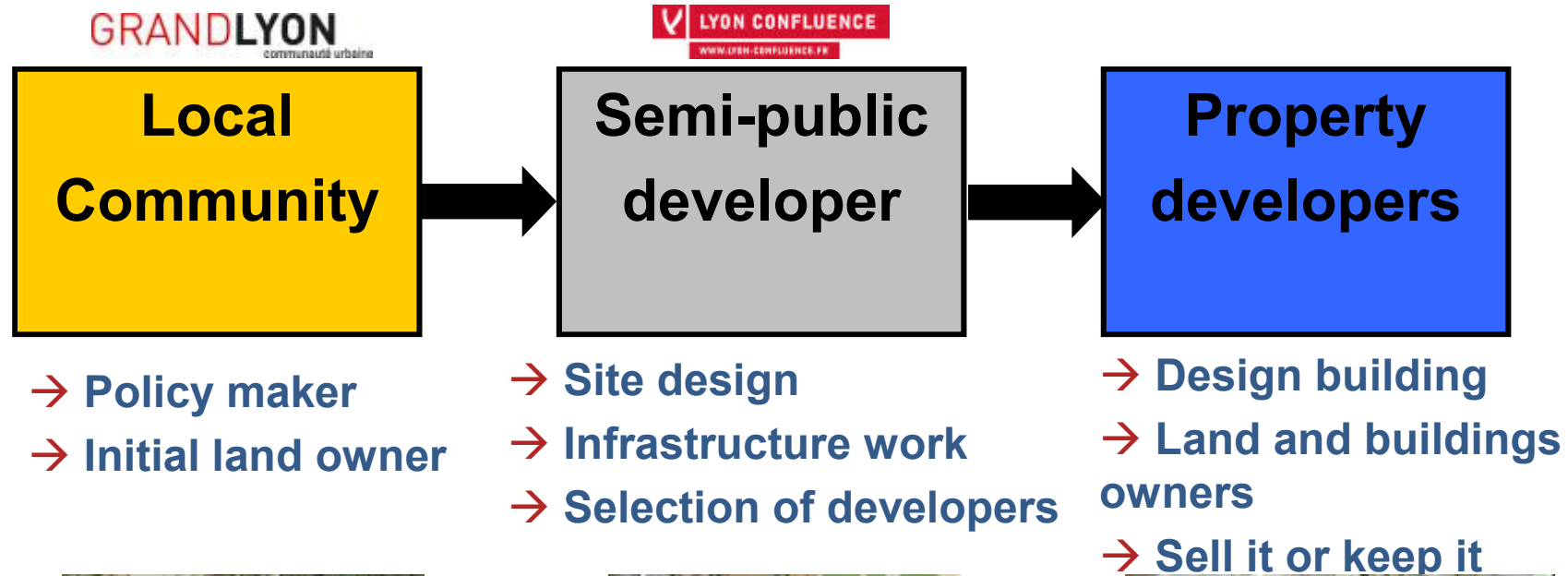
EU project assistant of



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Urban planning in France



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Lyon-Confluence

A major Urban project in Lyon - France



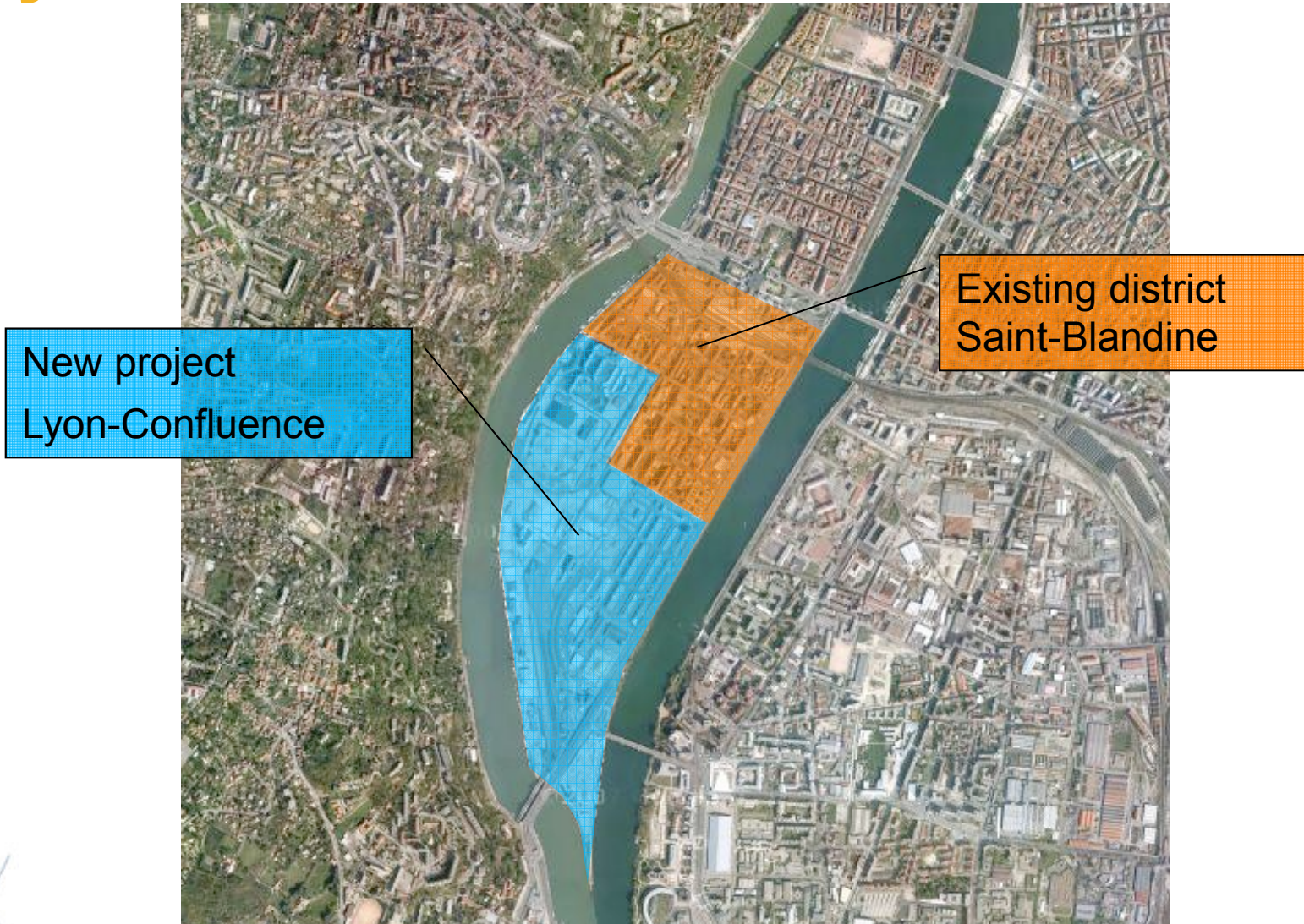
Objectives

- To enhance the urban area's functional centrality
- To offer the public a true urban project
- To encourage social variety
- **To make room for innovation and creativity**

Basic long-term statistics (2020)

- 150 hectares (70 renewed)
- 1,000,000 m² net floor area
- 20,000 residents (7000 in 2000)
- 22,000 jobs (7000 in 2000)

Lyon-Confluence



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Lyon-Confluence phase 1

First housing project

- 3 sections of estate - 79 000 m²
- Date of construction : 2007-2010
- High architectural quality
- European funded project (CONCERTO)



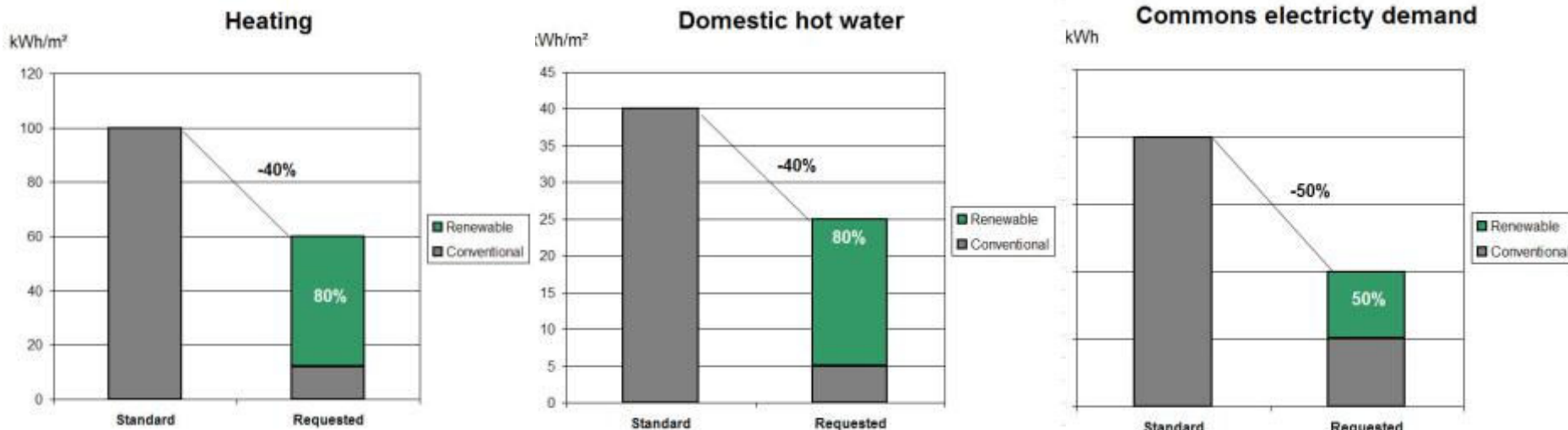
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Lyon-Confluence phase 1



The urban innovation (2003) : the international design competition included a section on energy efficiency and renewable energy systems !



Lyon-Confluence phase 1



First housing buildings

Section A

Nexity Apollonia
Tania Concko



Section B

Marignan Bouwfonds
Massimiliano Fouksas



Section C

ING Real Estate
MVRDV



Lyon-Confluence phase 1



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Lyon-Confluence phase 1

Lyon-Confluence A, B and C plots



Wood chip boilers
2 MW



Solar thermal systems
760 m²



Photovoltaic systems
250 kWc

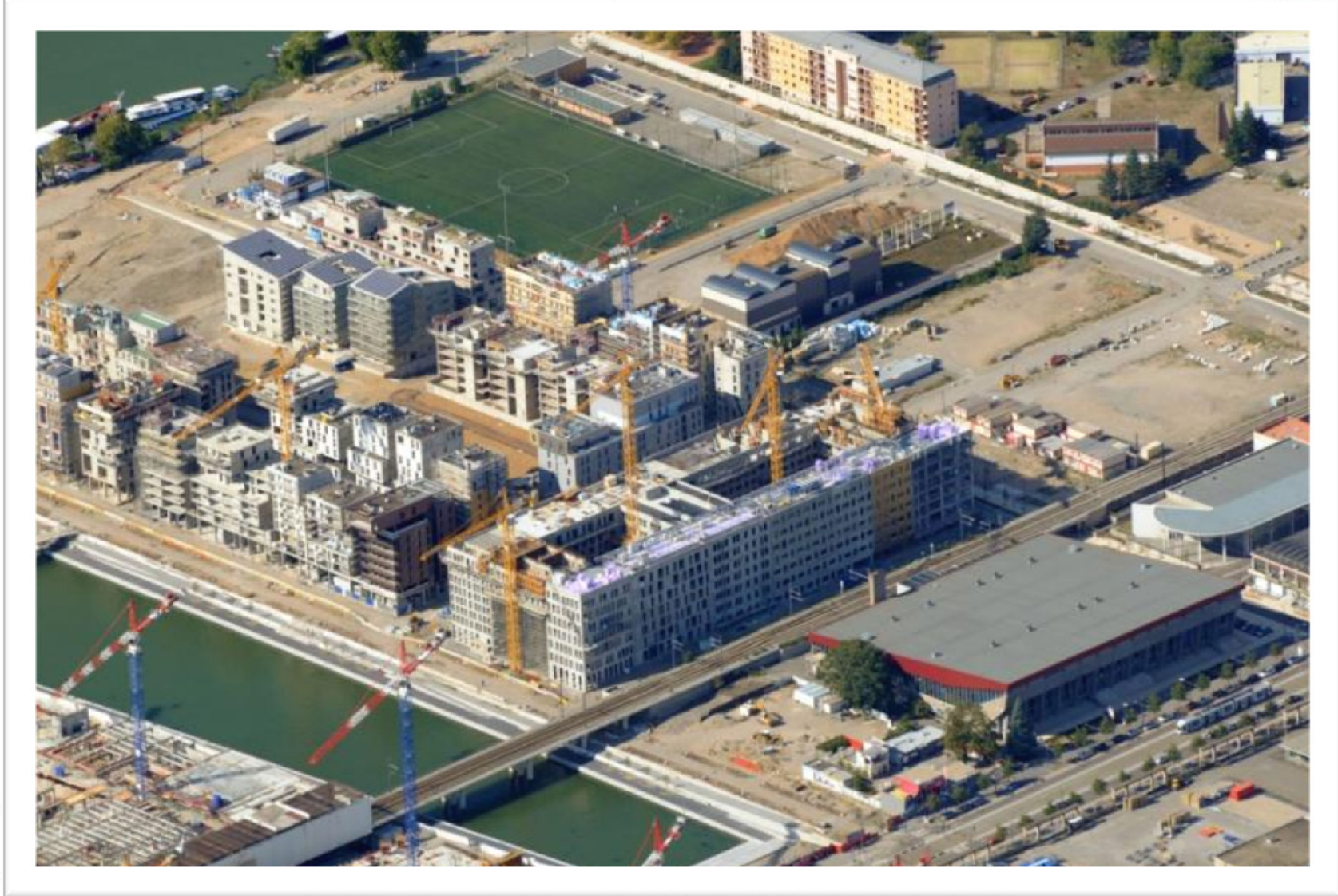
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Wood chip boilers



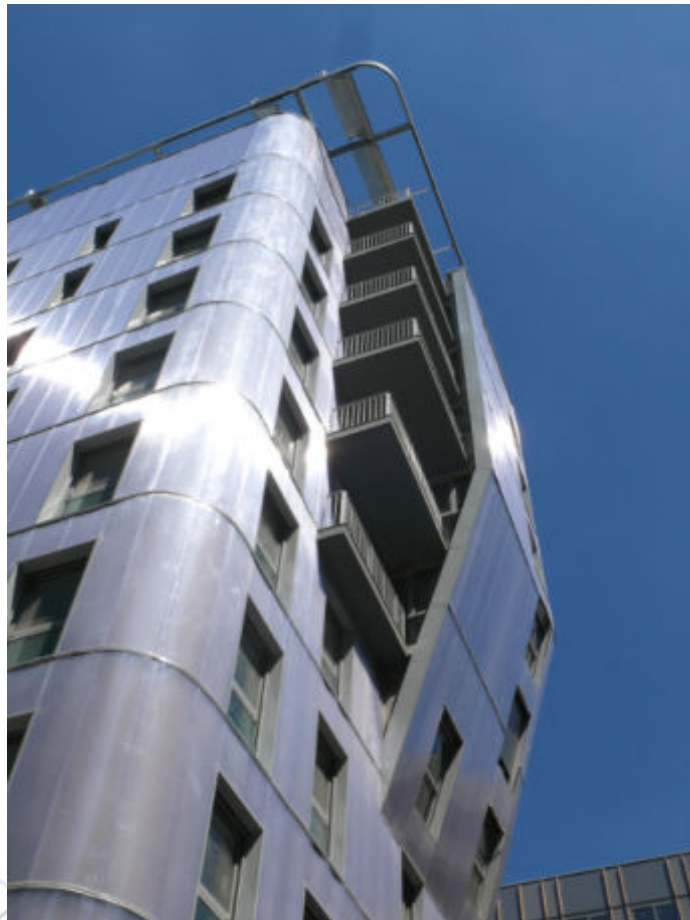
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Solar thermal



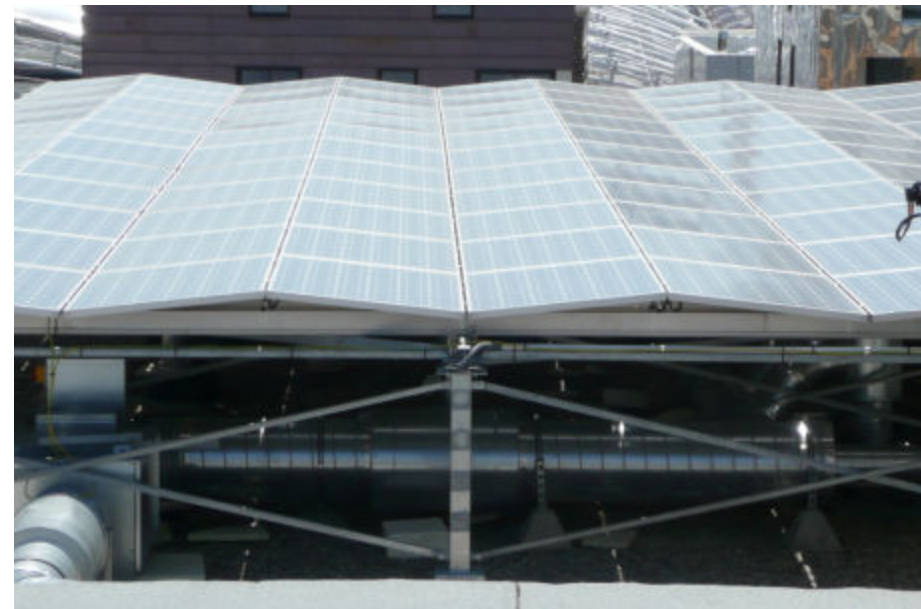
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Photovoltaic systems



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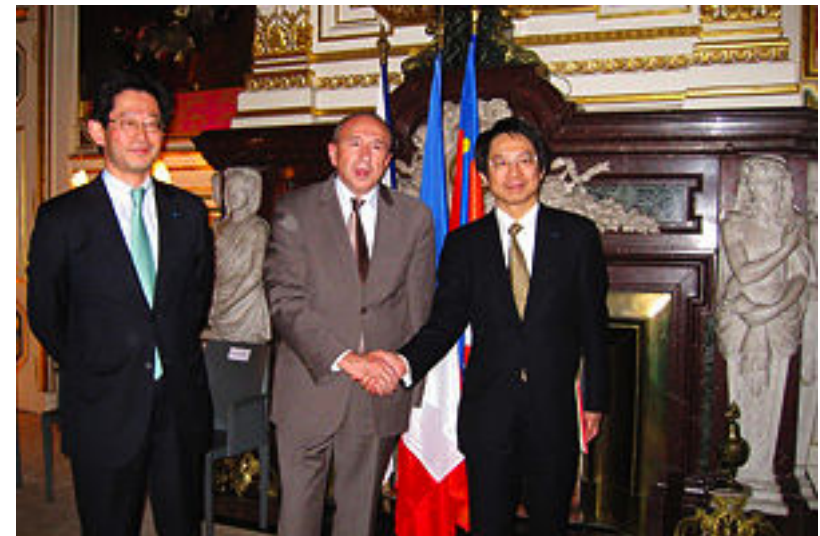
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Lyon Confluence Phase 1



- The New Energy Development Organisation of Japan (NEDO) is undertaking a large Smart Community project in Lyon
- Toshiba has been selected to implement this project
- Demand response, RES, EV, Smart building, community management system, ...



Lyon-Confluence phase 1



Lyon-Confluence P plot : a 12 000 m2 Zero Energy Building

Developers : Bouygues immobilier/SLC
Architects : Kengo Kuma & associates/CRB architects
Industrial partnership : Toshiba corporation - Japan



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Lyon-Confluence P plot : a 12 000 m² Zero Energy Building



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Eco-refurbishment of the existing district



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Eco-refurbishment of the existing district



Sainte-Blandine District

7000 inhabitants

300 buildings - 60 ha



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Eco-refurbishment of the existing district



“Cité Perrache” social blocks

- 7 buildings from 1934
- 275 dwellings
- Floor area : 13 900 m²
- Present consumption : 291 kWh/m²/year
- **Target : 79 kWh/m²/year (-76%)**



Eco-refurbishment of the existing district

Photovoltaic potential study

Solar Cadastre



PLAN CLIMAT GRAND LYON

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35 rue Smith			
Surface	16 m ²	Type de couverture	toit terrasse
Orientation (0° = Sud)	Sud-Ouest (29°)	Aides mobilisables	Crédit d'impôt + Tarif d'achat
Puissance crête estimée	2 kWc	Production annuelle estimée	1975 kWh

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PV potential study

Sainte-Blandine District



Housing



Medium theoretical potential
Medium mobilizable potential

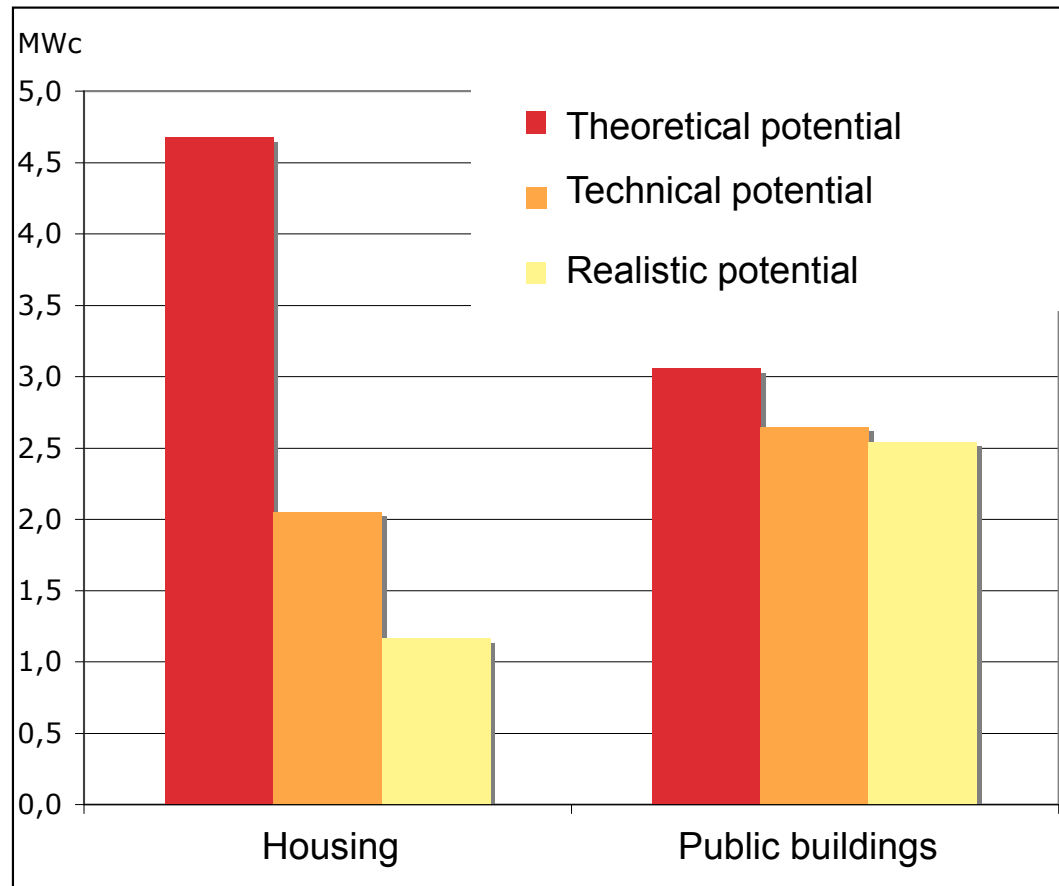
Public buildings



High theoretical potential
High mobilizable potential

PV potential study

Sainte-Blandine District



Lyon-Confluence phase 2



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Lyon-Confluence phase 2



**Architects/urbanists : Herzog & De Meuron
associated with Michel Desvignes**



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Lyon-Confluence phase 2



- Sustainable action plan
- Signed in November 2011
- WWF, Grand-Lyon and SPLA Lyon-Confluence
- One planet living initiative



Lyon-Confluence phase 2



Sustainable action plan addresses 10 topics:

- Zero carbon,
- Zero waste,
- Sustainable mobility,
- Sustainable and local building material,
- Sustainable and local food,
- Sustainable water management,
- Biodiversity,
- Culture and local heritage,
- Equity and economic development,
- Quality of life and well being.

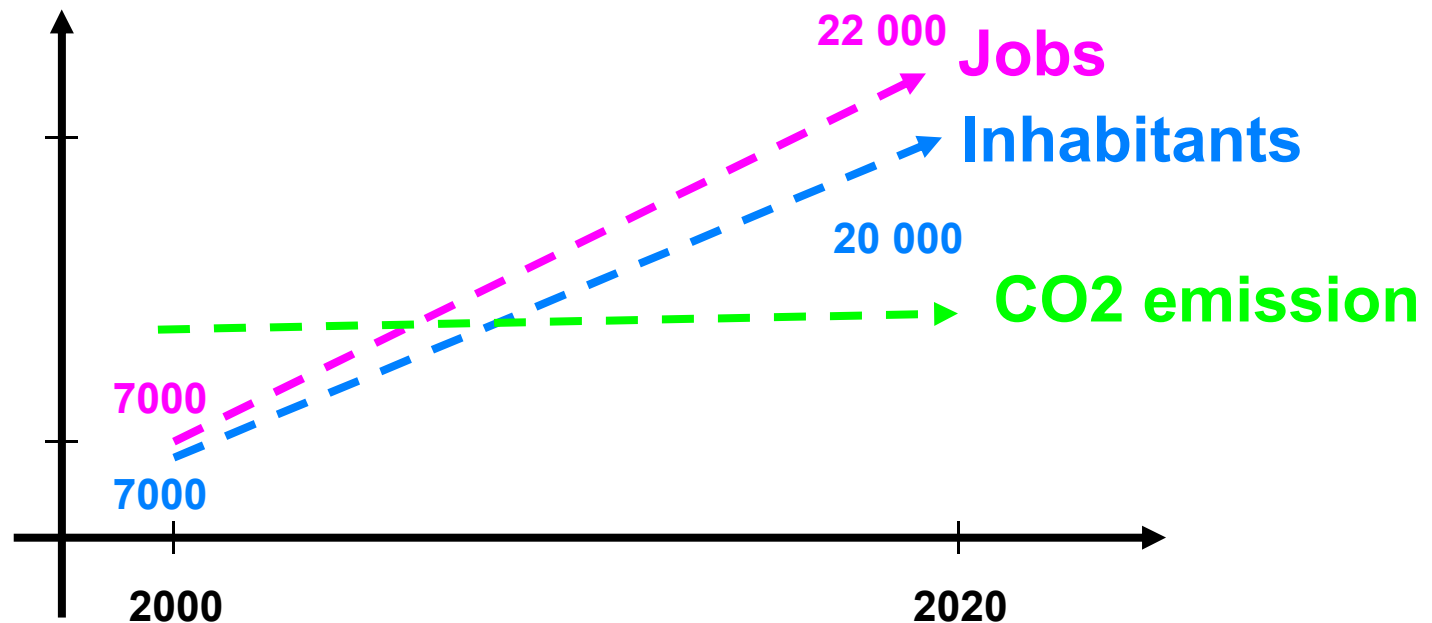


Lyon-Confluence phase 2



Sustainable action plan

Zero carbon objective : “Stabilisation of the Greenhouse gases emission to the 2000 level by 2020”



Lyon-Confluence phase 2



Sustainable action plan

Zero carbon objective :

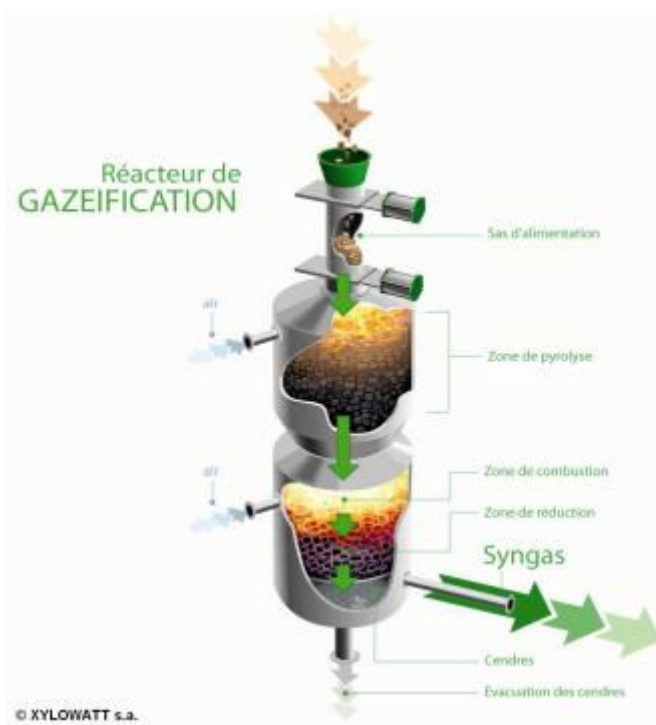
- Reduction of energy consumption - New guidelines for developer selection will set a zero energy target (similar to P plot)
- Increase of RES on-site production - project of a wood gas fired district heating

Lyon-Confluence phase 2



Sustainable action plan

Zero carbon objective : district heating project powered by a wood gas fired cogen (heat and power)



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Lyon-Confluence phase 2



Sustainable action plan

Sustainable mobility objective : “Lyon-Confluence : a walkable city” - Shared car park concept



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Sustainable action plan

Biodiversity objective : make wild animals stay on site (beavers, dragonflies, ...) - Massive use of trees and plants

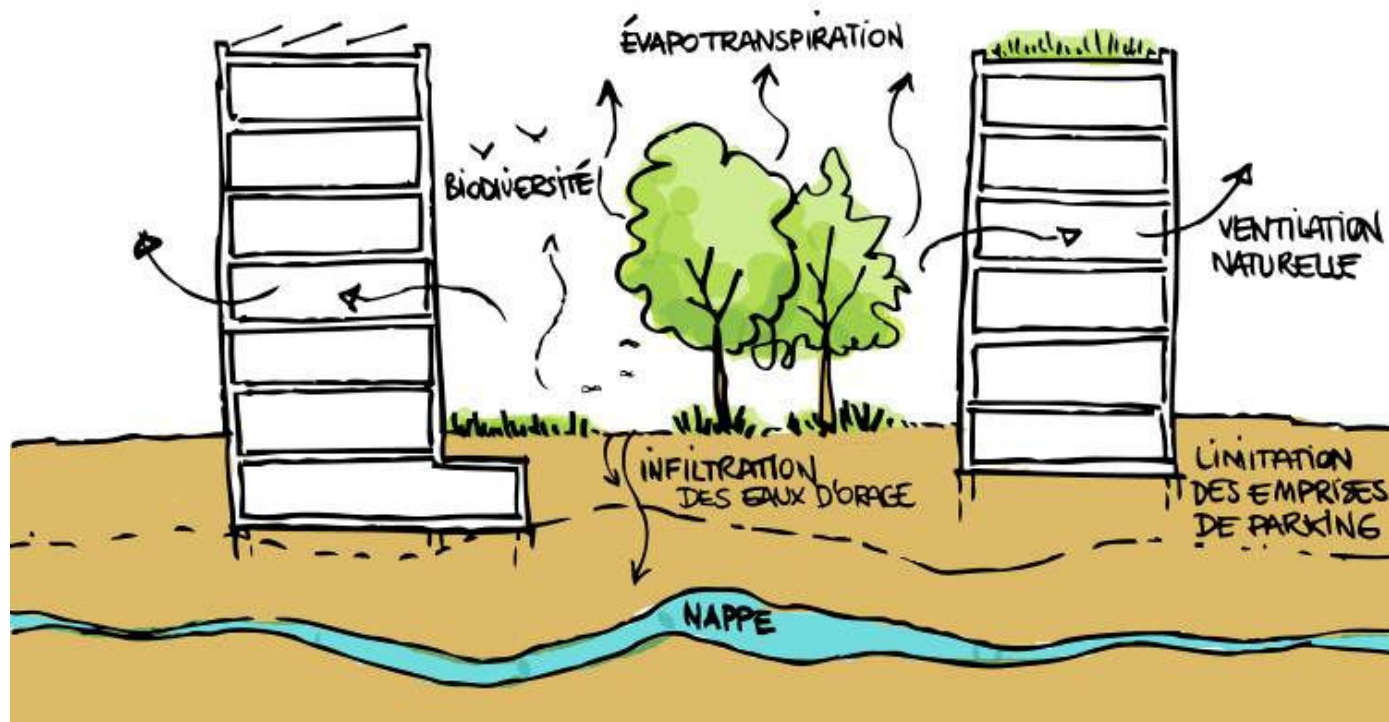


Lyon-Confluence phase 2



Sustainable action plan

Quality of life and well being objective : actions against the “heat island effect”



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Lyon-Confluence phase 2



Urban concept of first plots



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Lyon-Confluence - Key data



- **Phase 1**

- Started in 2003
- 41 hectares (17 of green spaces)
- Urban planner : Agence Grether - Paris
- Housing : 150 000 m² - 1 700 dwellings - 3 500 inhabitants
- Offices and shops : 250 000 m² - 7 000 jobs

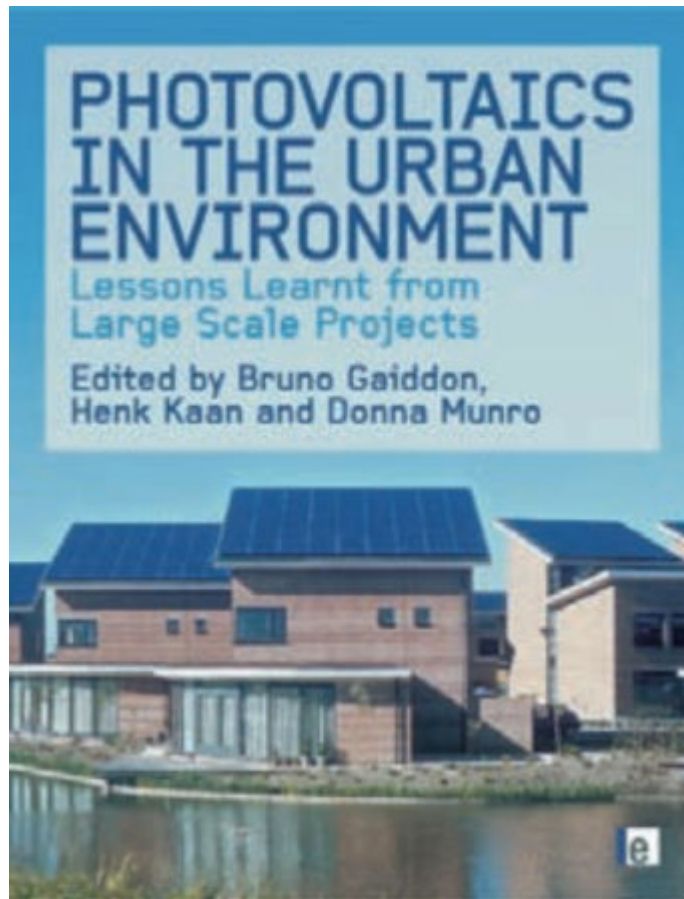
- **Phase 2**

- Started in 2010
- 35 hectares
- Urban planner : Herzog & De Meuron - Switzerland
- Housing : 160 000 m² - 2 000 dwellings
- Offices, shops and public equipments : 260 000 m²

- **Sainte Blandine**

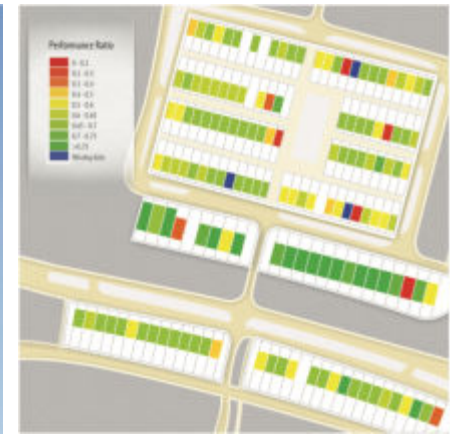
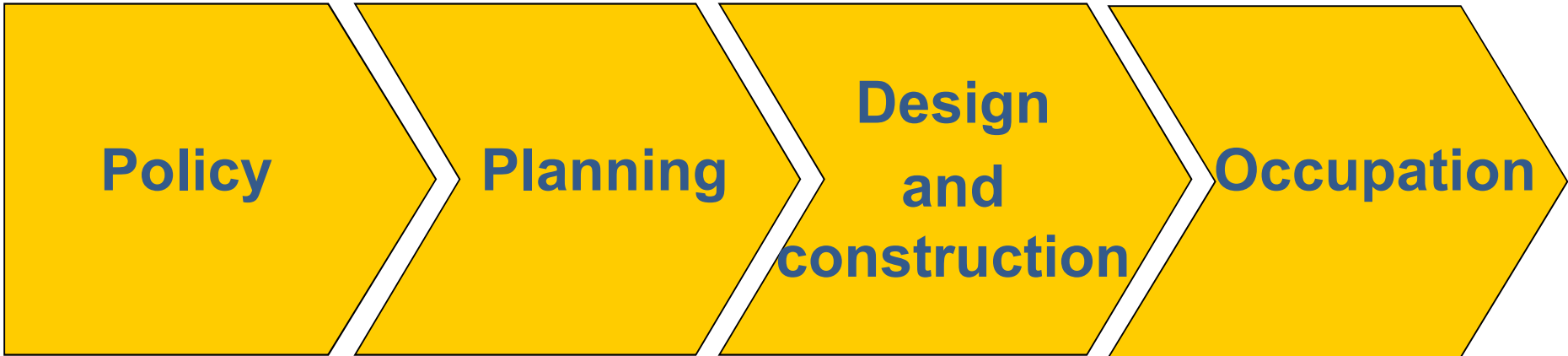
- Housing : 350 000 m² (existing buildings) + 45 000 m² (planned)
- Offices and shops : 200 000 m² (existing buildings) + 75 000 m² (planned)

Conclusion



With contributions from
Joana Fernandes (Lisboa E-
Nova) and Maria João
Rodrigues

Lessons learnt



Lessons learnt Policy stage

- Political commitment
- Obligations have a major impact
- Money helps but information is vital
- Challenging development sites lead to innovative projects
- Enthusiasm and one or several “champions” !





Thank you very much !

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