CONFORT - DIMENSIONNEMENT ET PERFORMANCE

COMMENT ASSURER DES CONDITIONS DE CONFORT ACCEPTABLES DANS LES BATIMENTS TERTIAIRES?

Julie Willem
ATENOR

Atic
for HVAC professionals

01 Archilab
Development model

02 Architecture
What are the building implications?

03 Technology
What are the technical implications

04 Sustainability
What are the environmental implications?

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ACTING FOR CITIES

An **urban**
sustainable
international
developer

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An urban **sustainable** international developer

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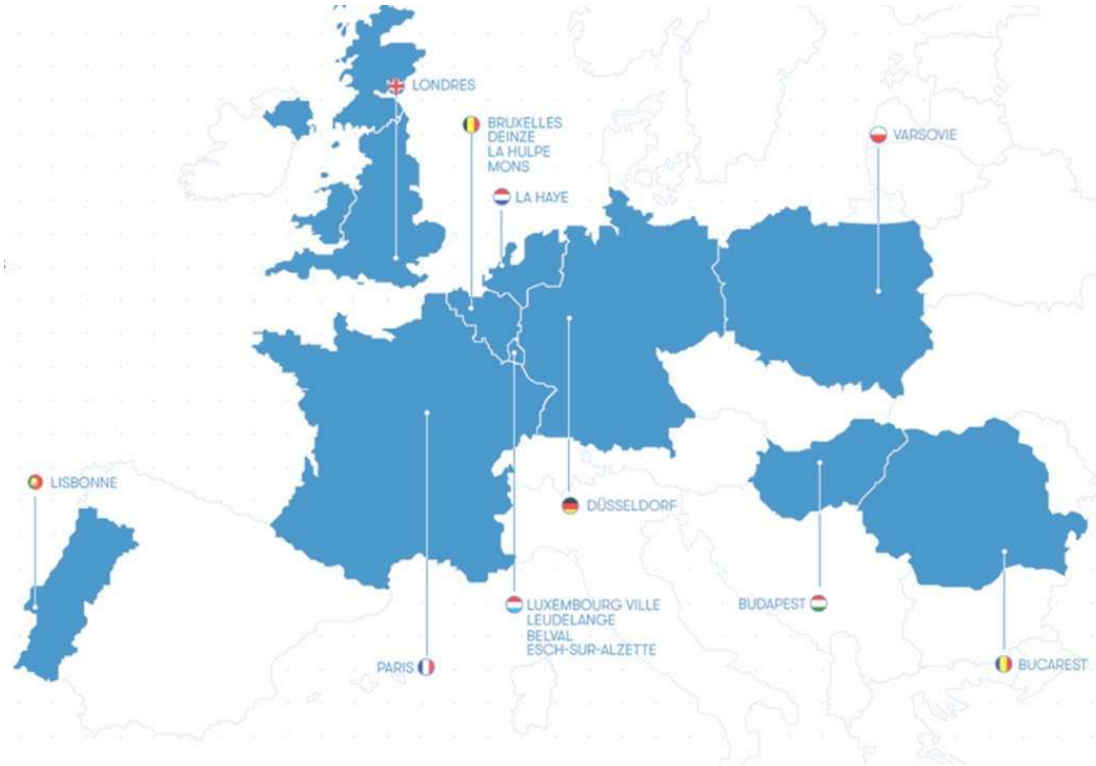

An urban sustainable **international** developer

An urban sustainable international **developer**

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Is the practical way Atenor affirms itself as an urban sustainable international developer.

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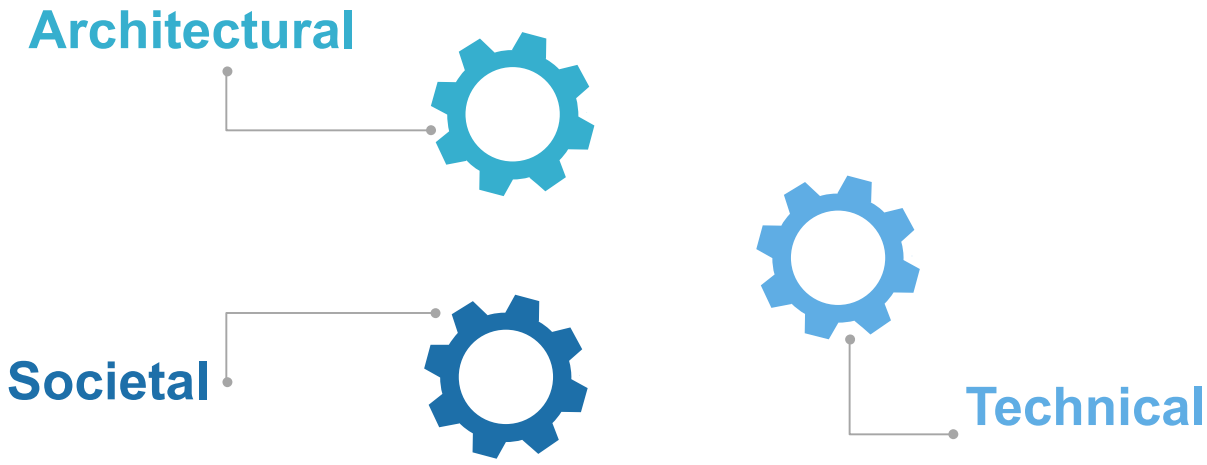

Architectural
quality

- ▶ Architectural **trends**
- ▶ Urban & architectural **projects**
- ▶ Architecture **awards**
- ▶ Trending architectural **firms**
- ▶ New materials and **design**
- ▶ Design **competitions**
- ▶ …


XDGA competition **City Dox**

Technical
innovation

- **Proptech's** & Smart building technology
- renewable **energy** technologies
- **Carbon** absorption and neutrality
- District heating/cooling
- **Passive** cooling
- Labels and **certifications**
- **…**

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Technical
innovation

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societal
evolutions

- ▶ New ways of **working**
- ▶ **Groundfloor** activation
- ▶ Coworking & coliving
- ▶ Urban **density**
- ▶ **Trends** & evolutions
- ▶ Living, working, shopping **habits**
- ▶ Biophilic impact
- ▶ **…**

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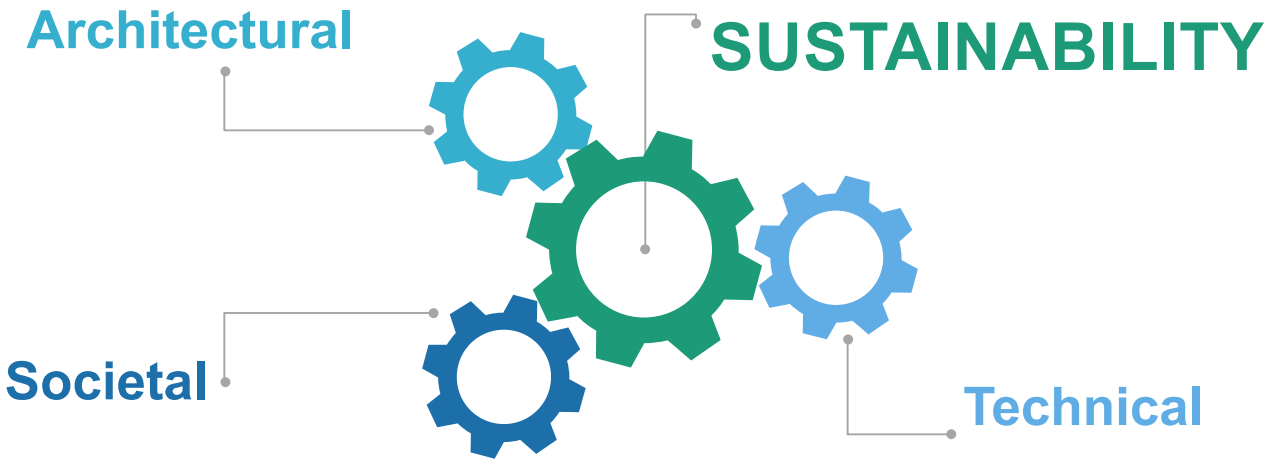


Smart & Flexible
WellBe
WellBe - Lisboa

Carbon Neutrality

Brussels BE

Atelier d'Architecture de Genval


Campus life
Varsovie PO
BREEAM®
OUTSTANDING
Grupa 5


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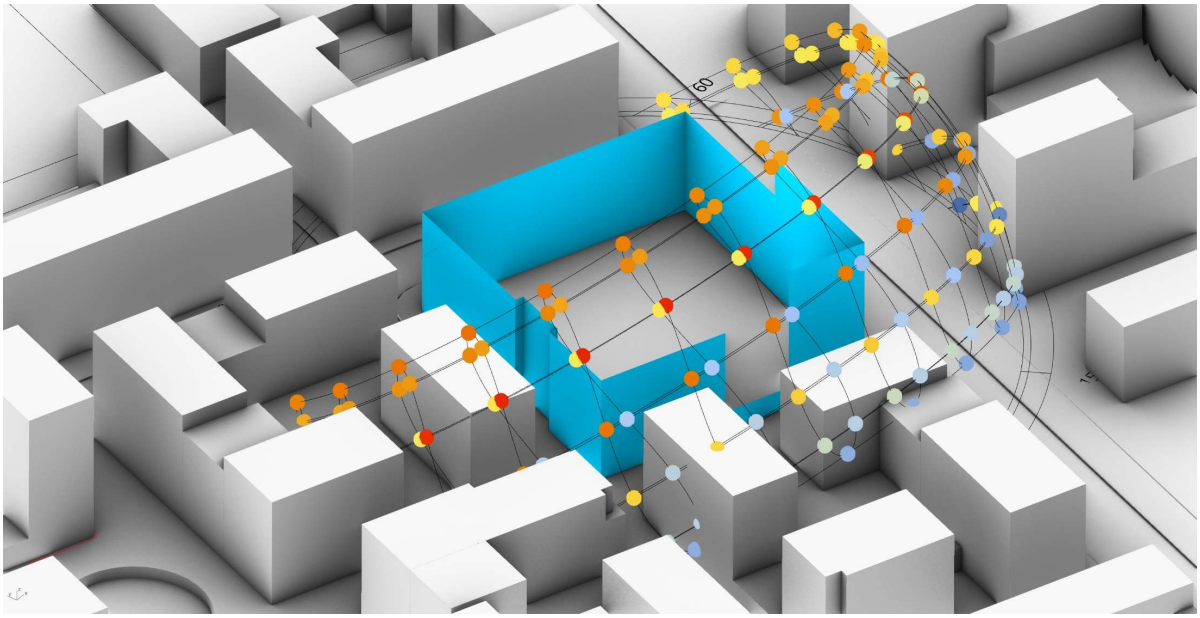
Smart & Flexible
Luxembourg LU
A2M & Moreno architecture

Architectural
quality

implantation – Central Square

Architectural
quality

concepts et composition de façade



études d'apport solaire au cours de l'année

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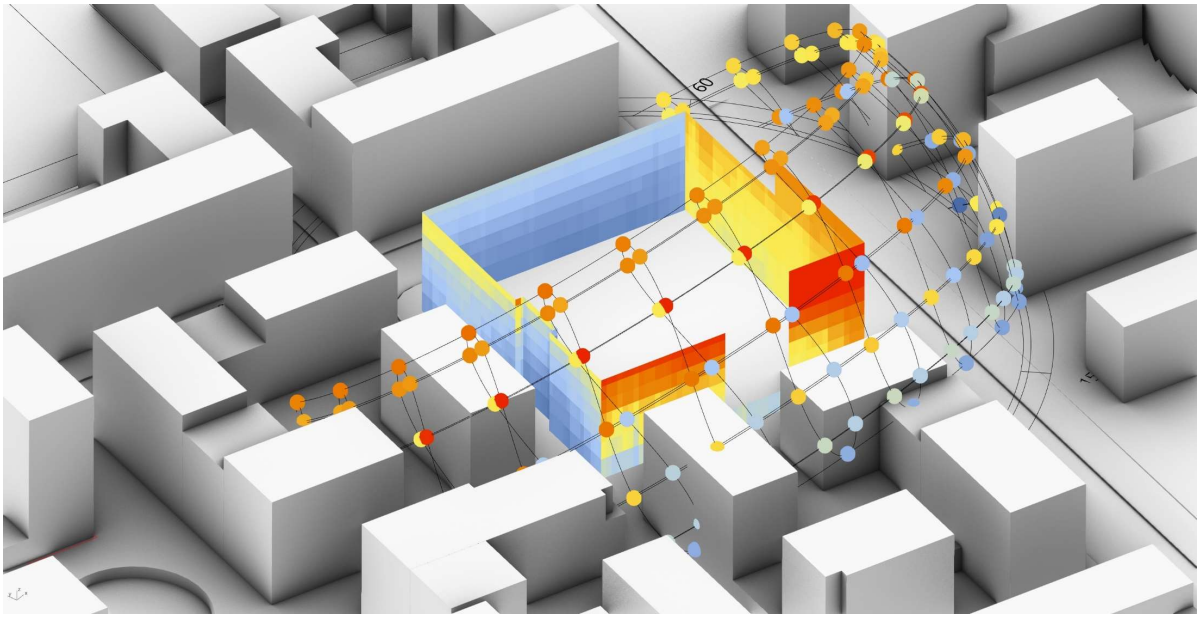
Architectural
quality

concepts et composition de façade



définition des différentes zones d'apport d'énergie solaire

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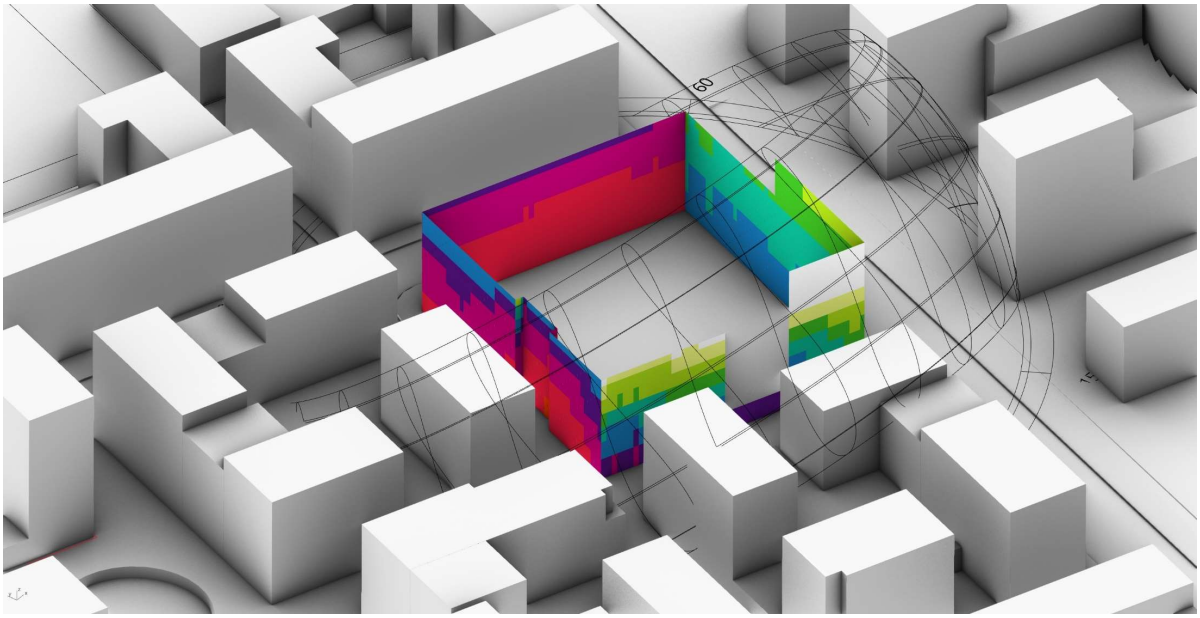
Architectural
quality

concepts et composition de façade



optimisation des différents panneaux de façade

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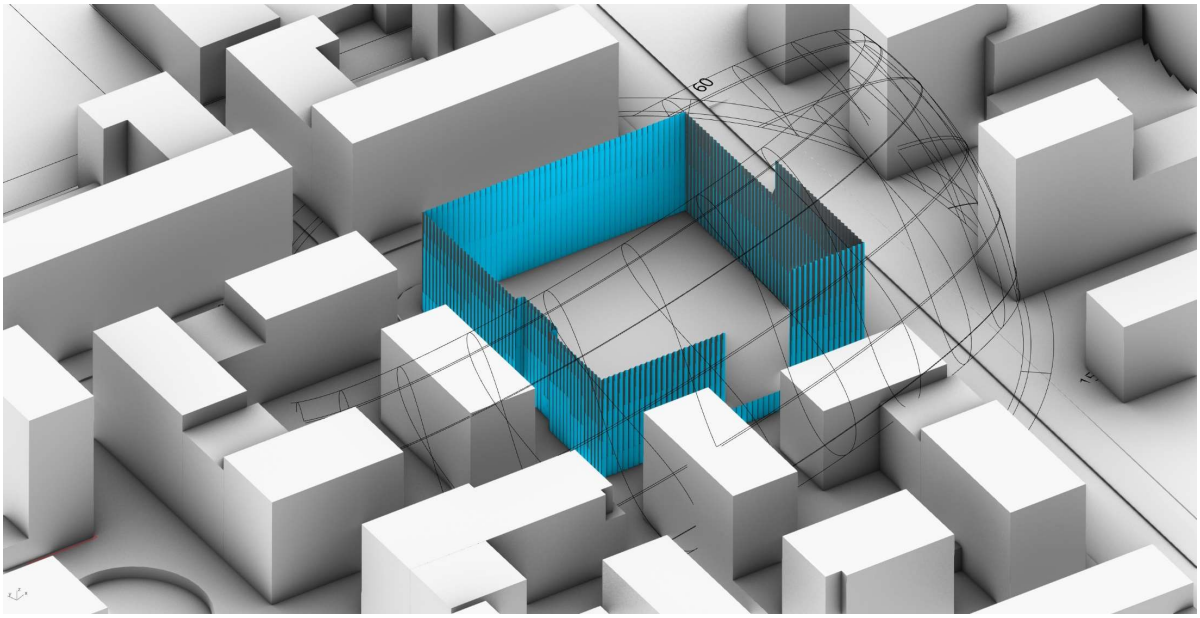
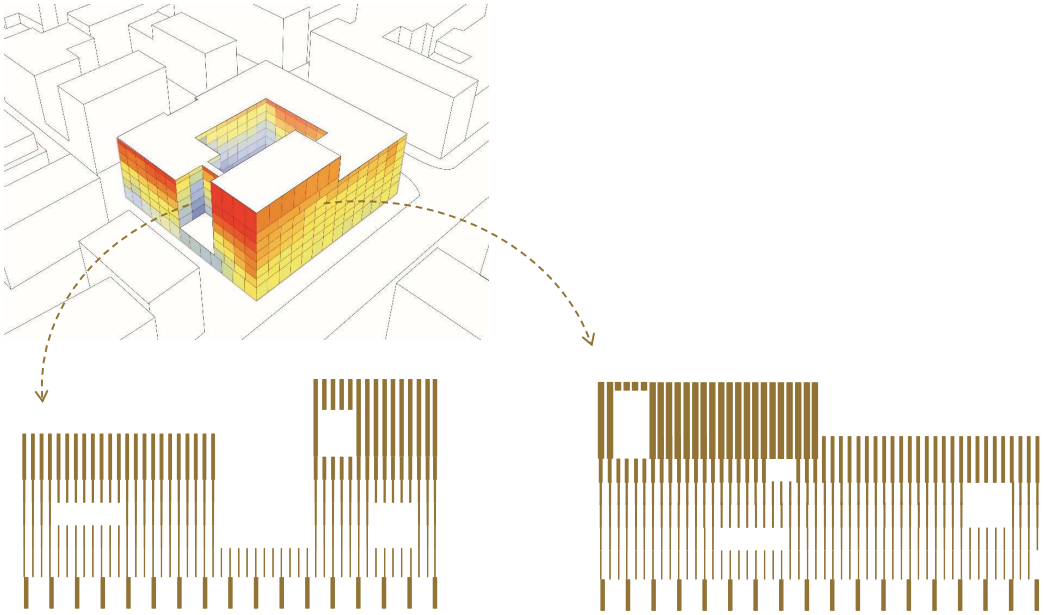
Architectural
quality

concepts et composition de façade



résultat final

Architectural
quality



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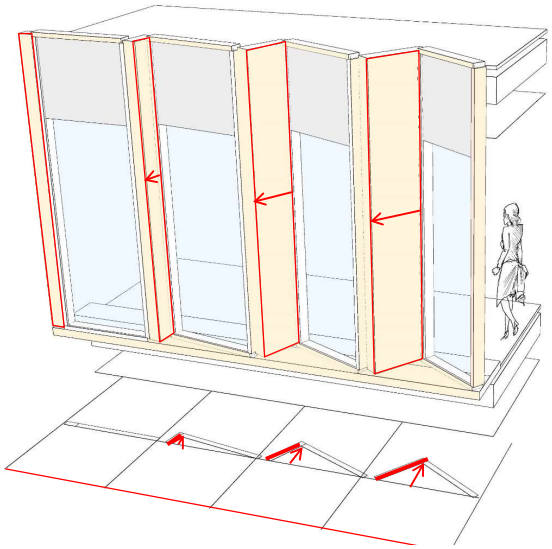
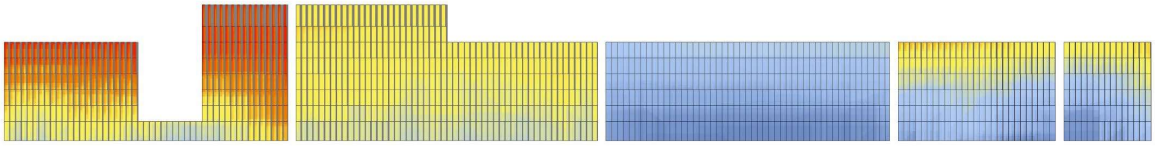
Architectural
quality

concepts et composition de façade



faible rayonnement solaire

rayonnement solaire élevé



rue piétonne | rue Porte de France | Boulevard des Lumières | rue Jane Adams

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Architectural
quality

Façade rue piétonne

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square 42
A2M & Moreno architecture

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societal
evolution

Flexibility ?

MEP conception

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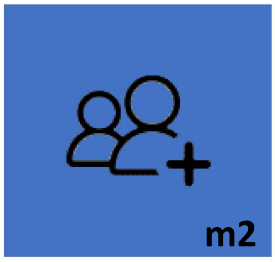
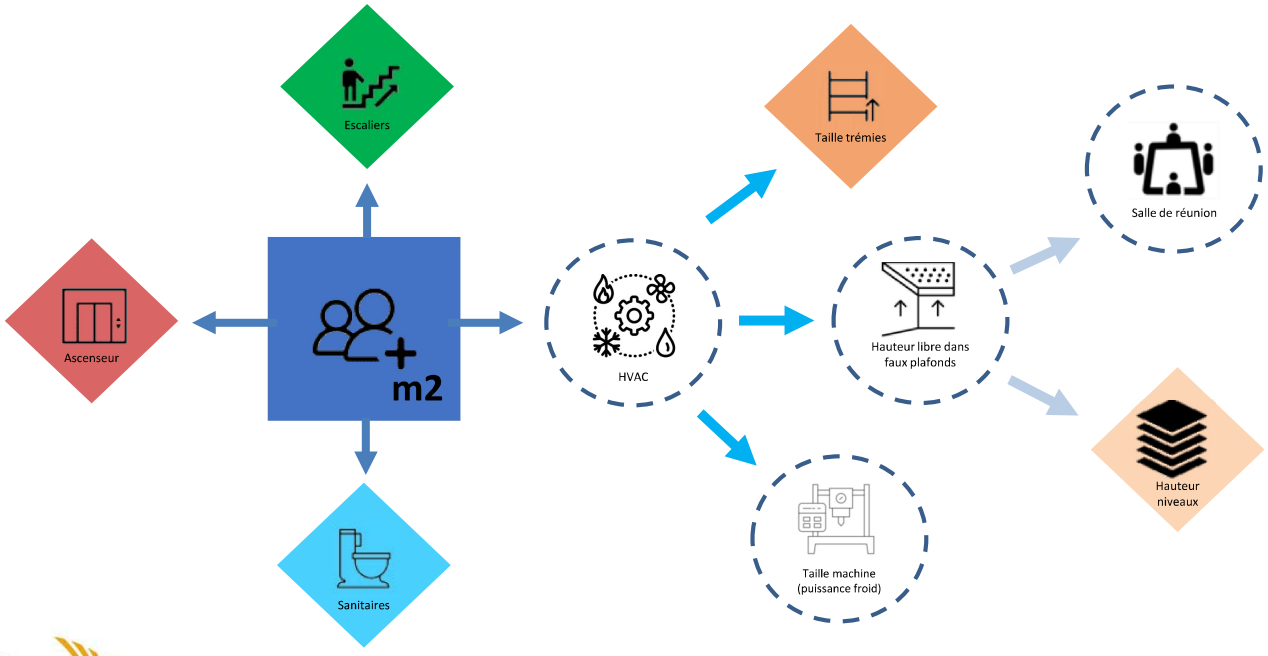
societal
evolution



- **Contexte - Evolution du marché**
  - Utilisation plus flexible
  - Lieu de collaboration
  - Modification profonde de l'organisation des bâtiments

➢ mutualisation des espaces
➢ échelle du public au privatif

Technical
innovation



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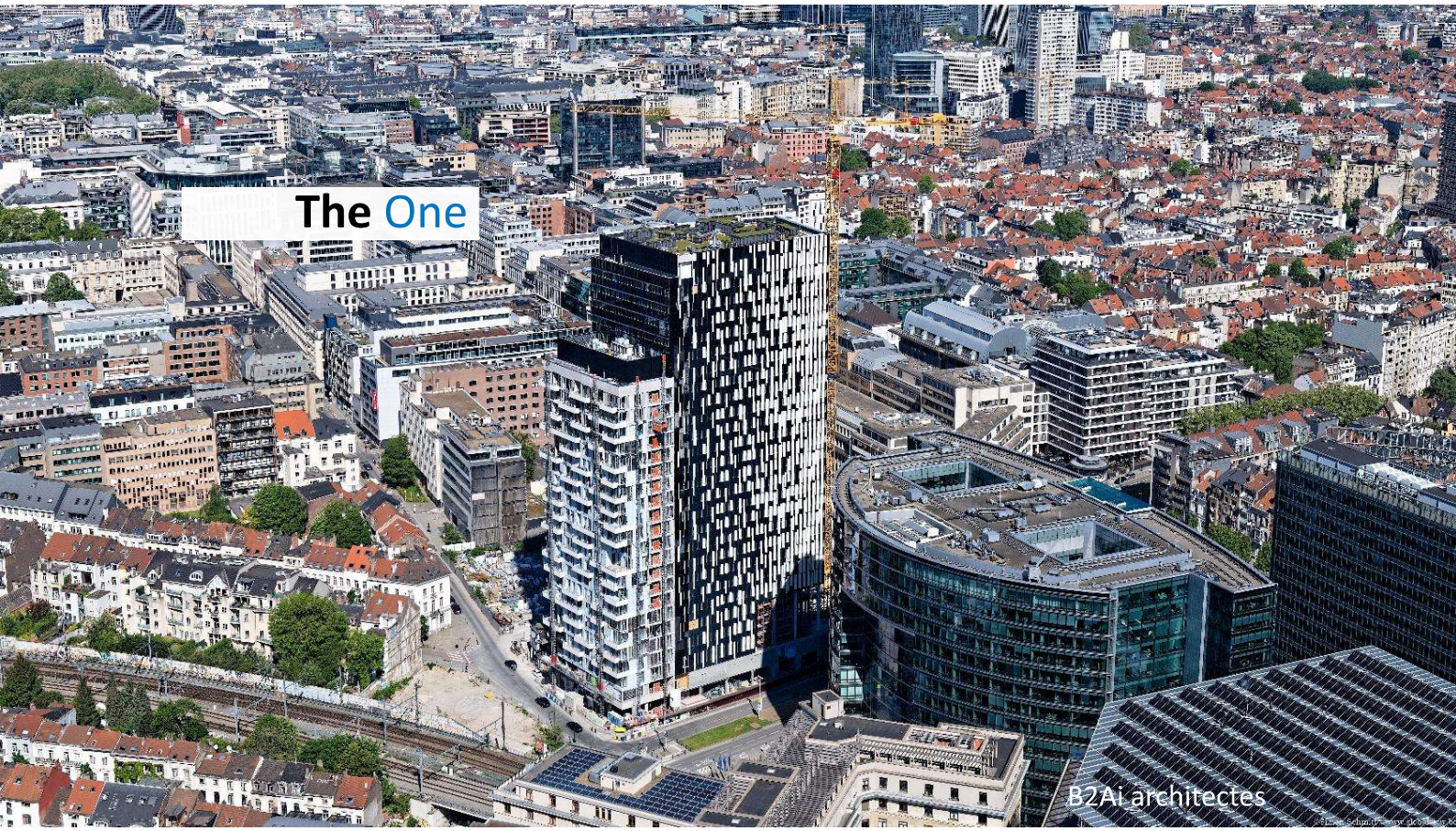
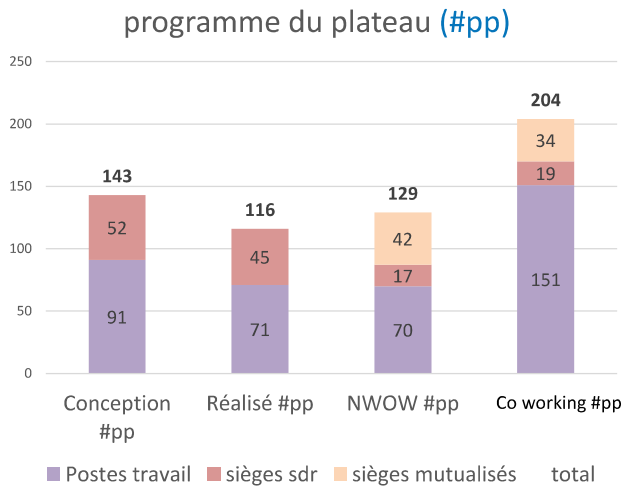

The One
B2Ai architectes

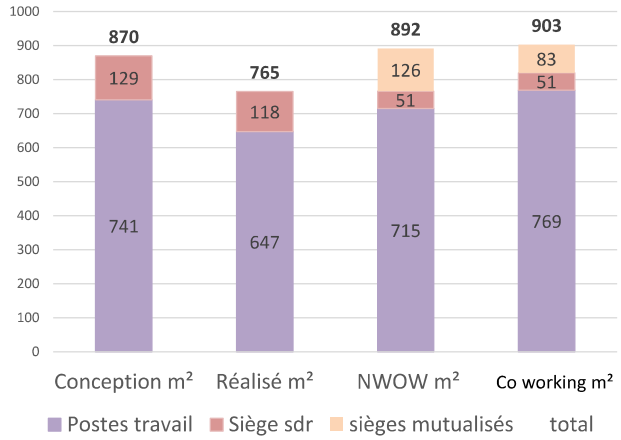


Comparatif conception

Utilisation	m² GLA / pers
Conception	9
Réalisé	11
NWOW	10
Co working	6

Technical
innovation

programme du plateau (m²)



Comparatif conception

Utilisation	m² net / pers
Conception	6,1
Réalisé	6,6
NWOW	6,9
Co working	4,4

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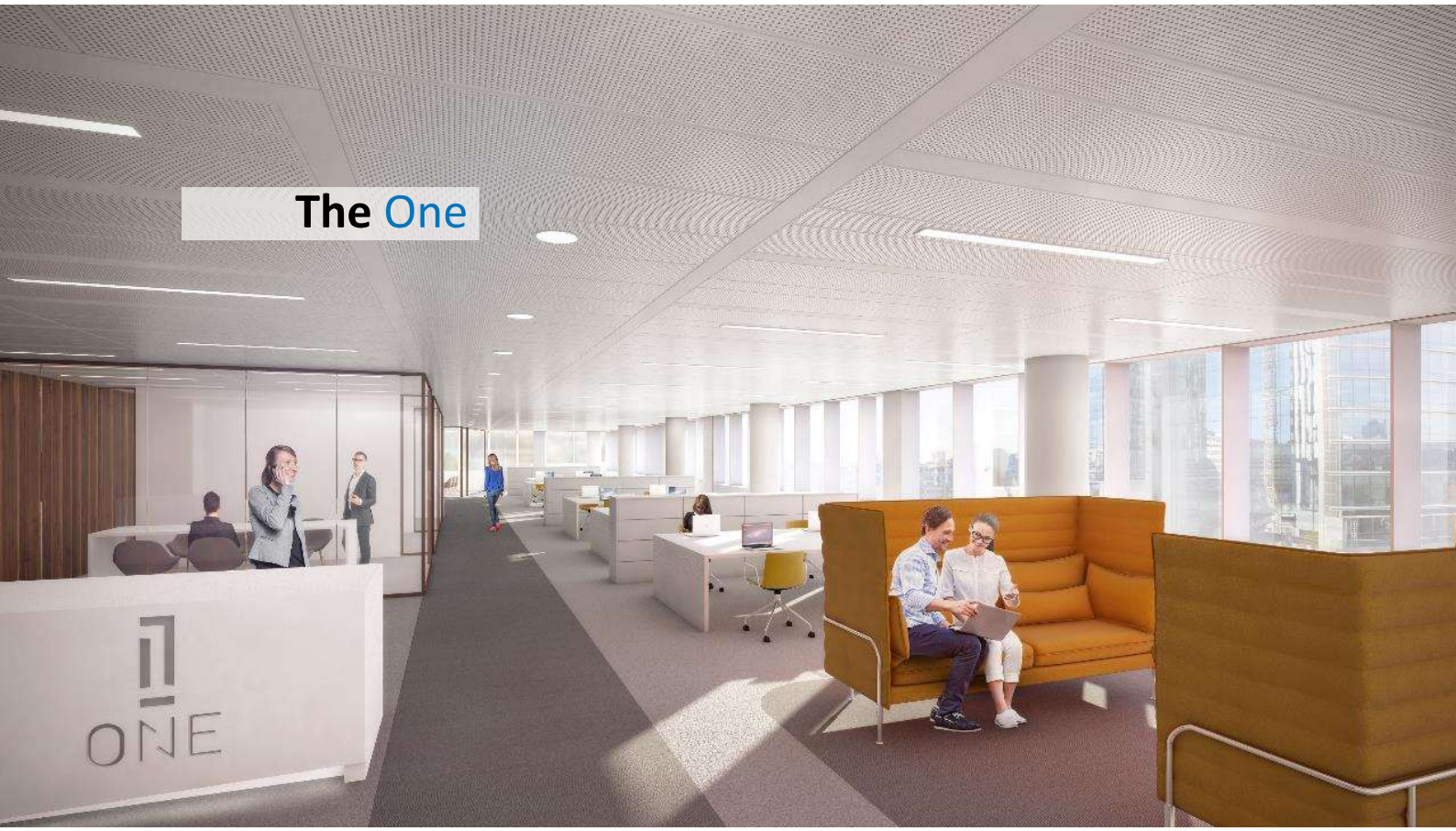
innovation

Hypothèses	
1 siège	6m² tapis net
Simultanéité	0,85

Hypothèses de conception

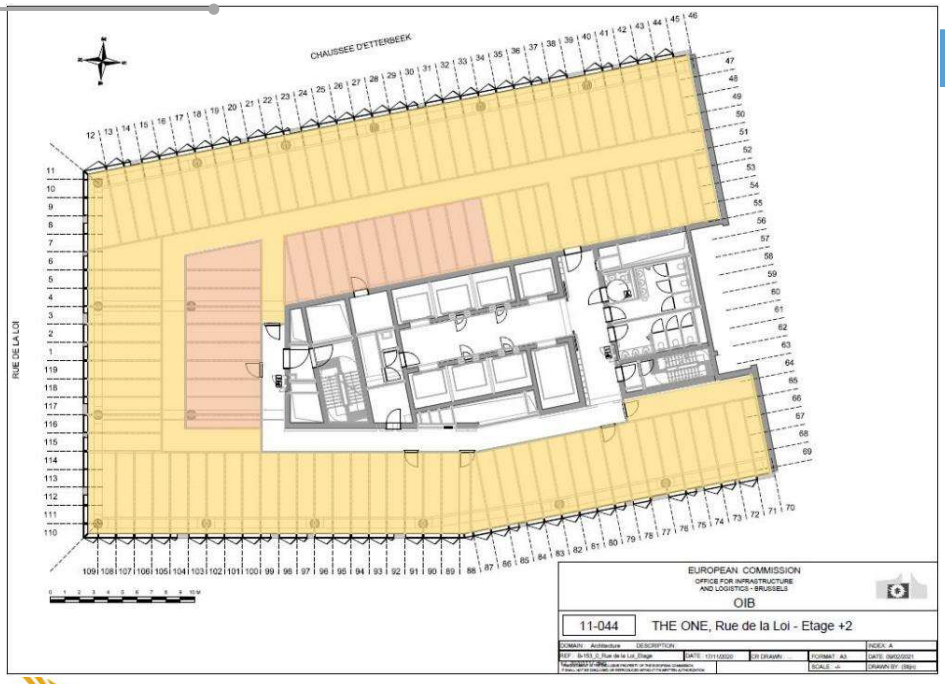
- Surdimensionner

- Full VAV?
- Grandes salles de réunion à mutualiser ?
- Dimensionnement pompier ! (escaliers)
- Calcul de trafic ascenseur


The One
ONE

Technical

innovation



The One

741 m²
1p/8m²
36m³/h/p

130 m²
1p/2,5m²
30 m³/h/p

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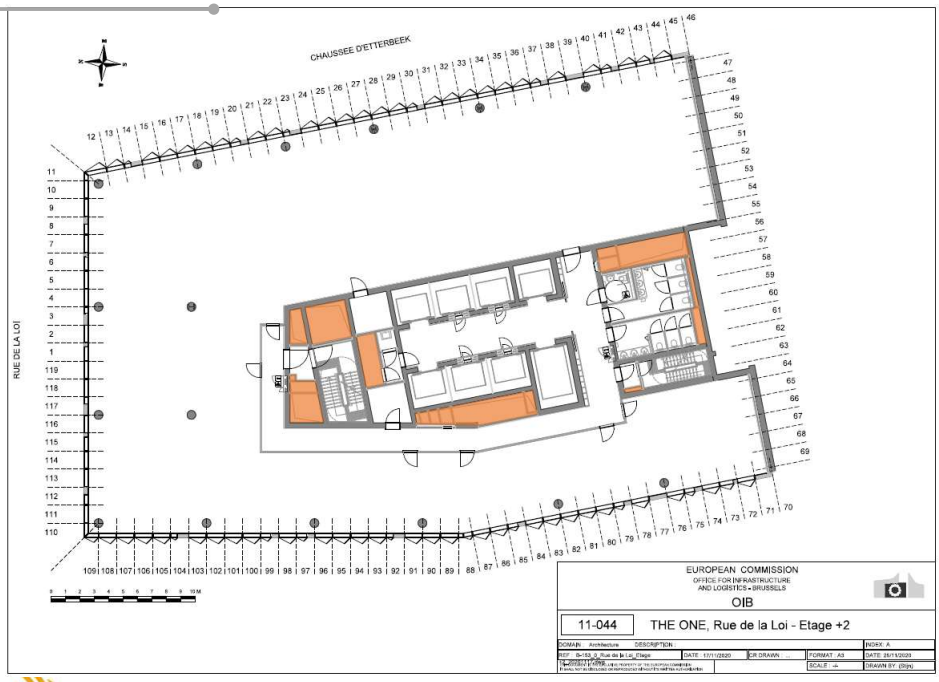

Trémies

Surface : 4%

45 m² (net)

Total net : 756 m²
Total GLA : 1.266 m²
Total Brut : 1.275 m²

Taille trémies

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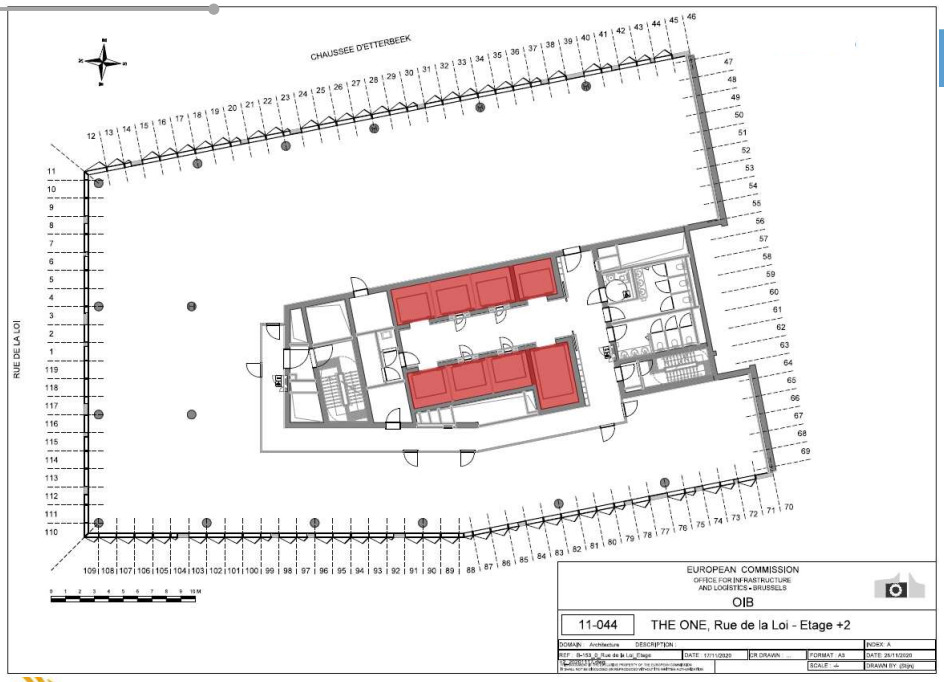

Ascenseurs

Surface : 5%

61 m² (net)

Total net : 756 m²
Total GLA : 1.266 m²
Total Brut : 1.275 m²

Ascenseur

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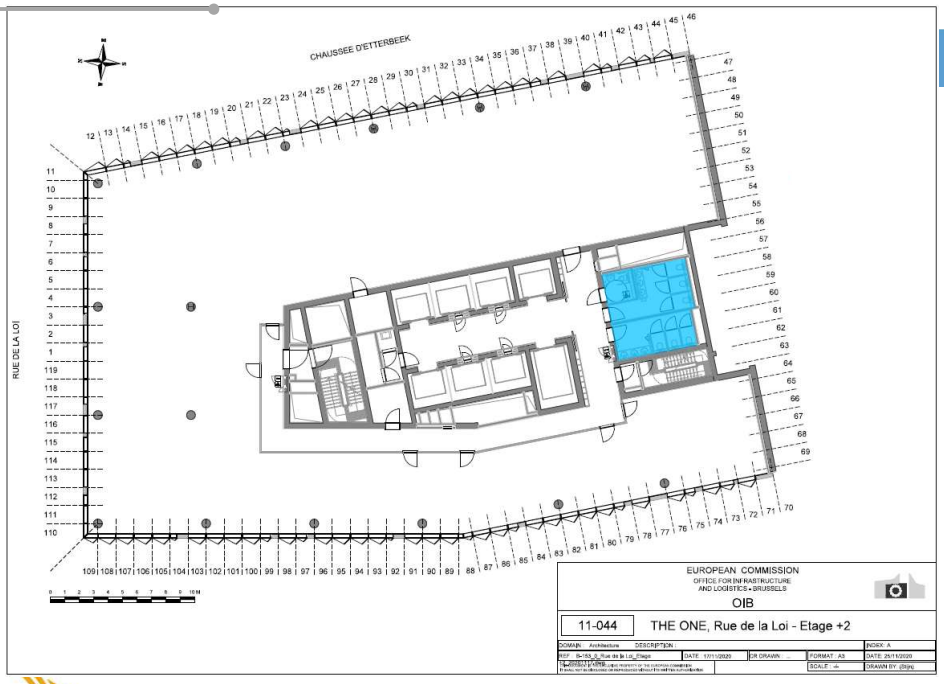
innovation



Sanitaires

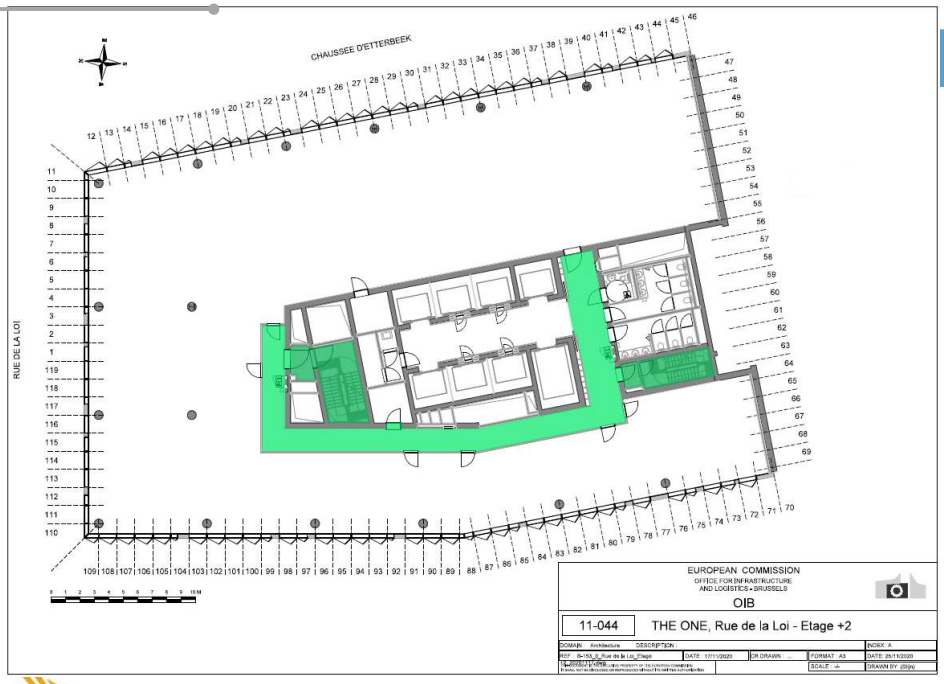
Surface : 3%

32 m² (net)

Total net : 756 m²
Total GLA : 1.266 m²
Total Brut : 1.275 m²

Sanitaires

Technical
innovation



Evacuation

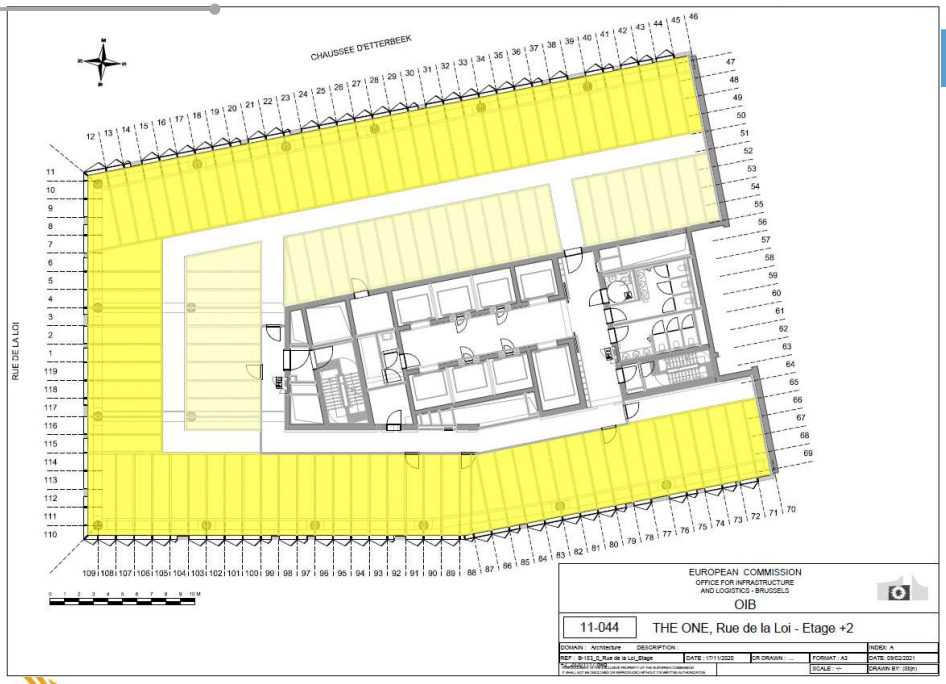
Surface : 9%

- 31,65 m² (net)
- 73,64 m² (net)

Total net : 756 m²
Total GLA : 1.266 m²
Total Brut : 1.275 m²

Technical

innovation



Bureaux

Surface : 64%

- 556 m² (net)
- 200 m² (net)

Total net : 756 m²
Total GLA : 1.266 m²
Total Brut : 1.275 m²

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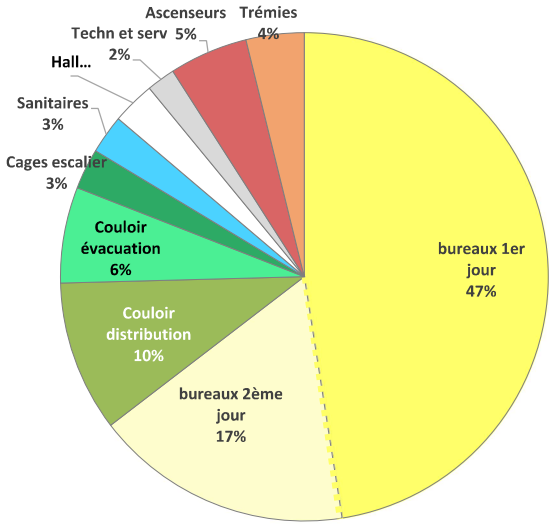
The One

Répartition des surfaces

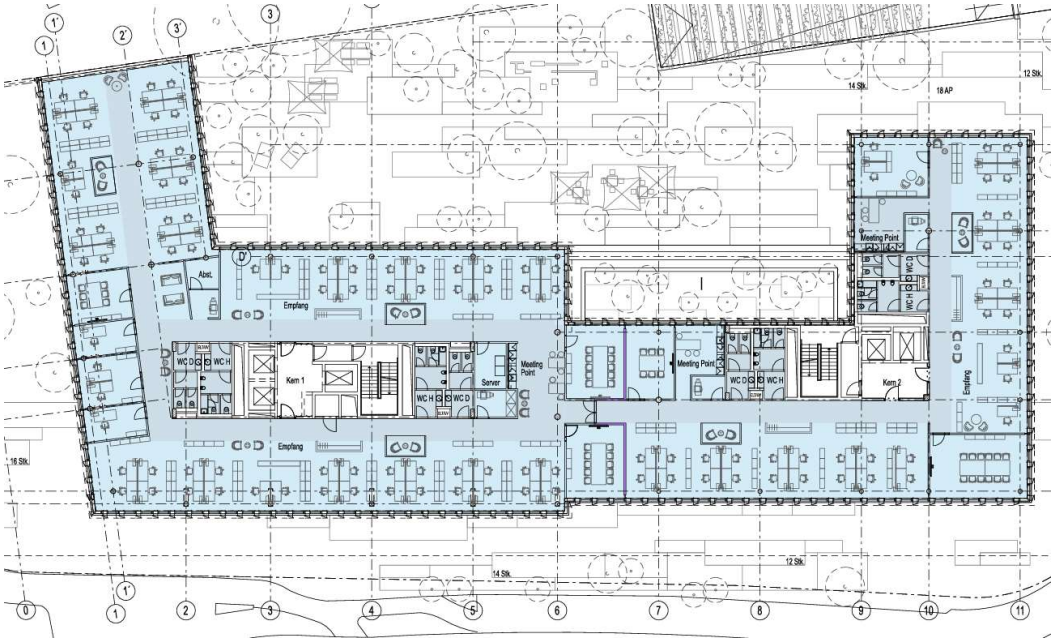
Surface nette (+2)	m²
Bureaux 1er jour	**556**
Bureaux 2ème jour	**200**
Couloir distribution	117
Couloir évacuation	74
Cages escalier	32
Sanitaires	30
Hall ascenseur	33
Techniques et services	22
Ascenseurs	61
Trémies	45
Total net	**1.170**
GLA	1.266
Brut	1.275

The One



"The One" in Brussels, Belgium,
Sustainability certificate: "Passiefbouw".

Germany Heinrichstraße



Occupation

Floor area :

Brut :	1.785 m²
Leasable :	1.535 m²
Net office :	1.156 m²
Net corridor :	256 m²

Persons :

Closed offices :	145 #

Calculation net office * 8 m²

Open plan :	117 #

Calculation net office incl. corridor * 12 m²

> New work :	149 #

Planned work- and meeting stations

Fire regulations :	< 400 #

20-200 persons per staircase (1,2 m width)

HVAC design :	149 #

Ventilation of 35 m³ / person / h

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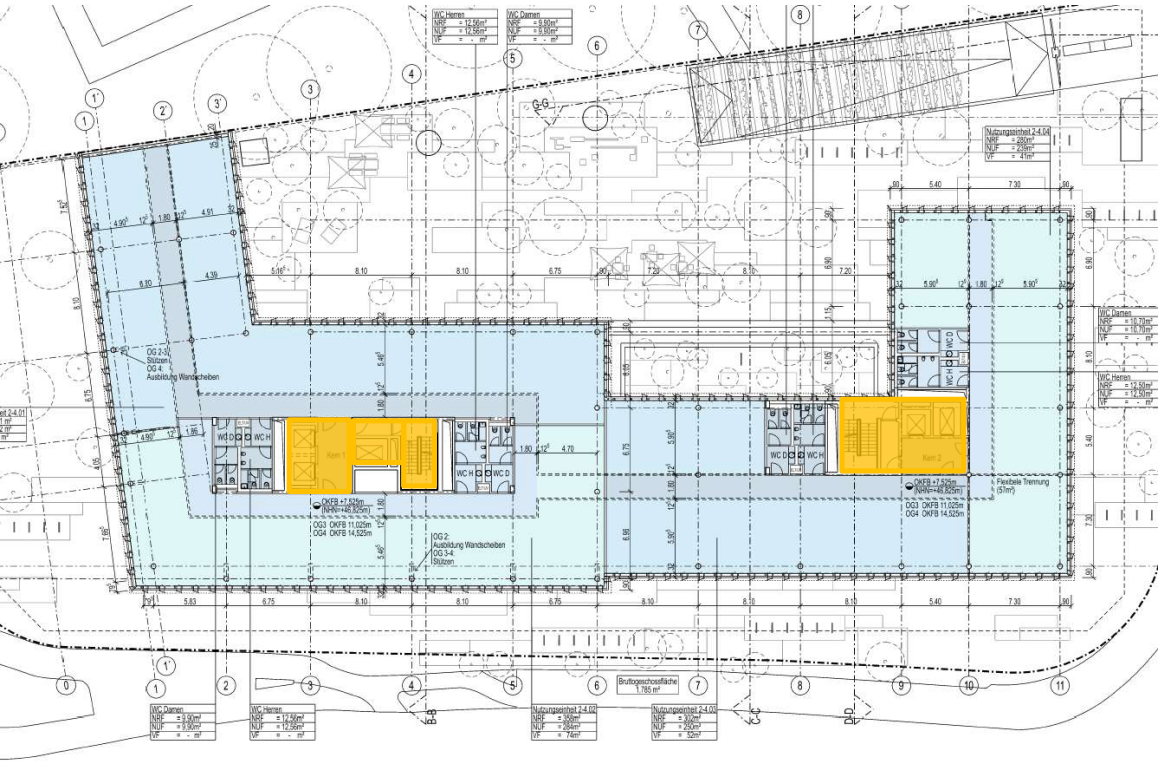


Circulation

Floor area :

Brut : 127,7 m²

Ratio to GEA : 7 %

Regulation stairs :

Escape way width : ≥ 1,20 m

Special, high-rise buildings

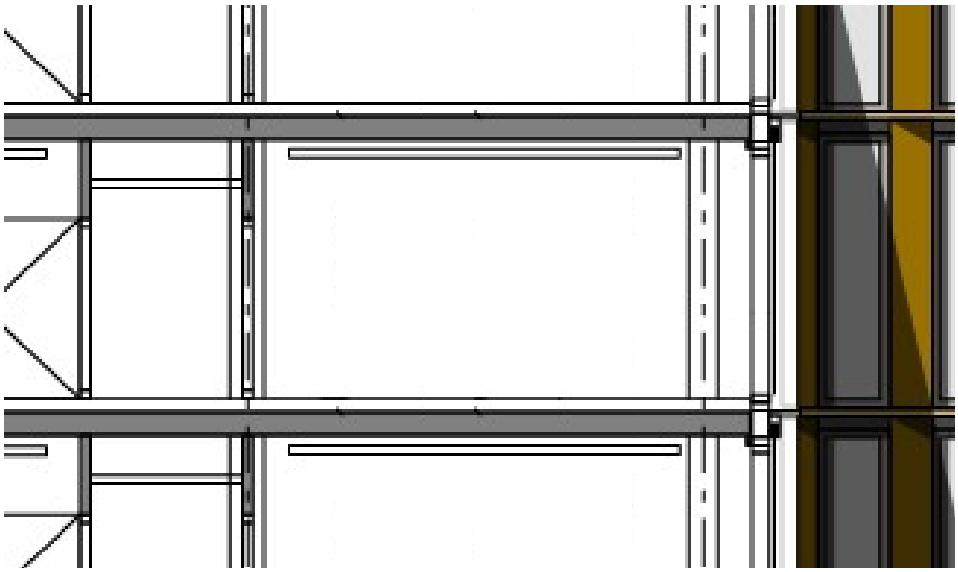
Corridor lock lenght : ≥ 3,0 m

High-rise buildings

Elevator :

Av. waiting time : 23,8 s

building



Regulation height :

Clear height : 3,00 m

Areas of > 100 m²

Shell & core :

- Suspended corridor ceiling incl. HVAC-installations
- Raised floors
- Suspended climate ceiling islands in offices

Fit-out :

- Raised floor installations
- Carpet
- Interior walls and wall finishings
- IT cabling

Poland Lakeside

Grupa 5

Occupation

Floor area :

Brut :	3.969 m²
Leasable :	3.618 m²
Net office :	3.468 m²

Persons :

Closed offices :	338 #

Daylight access taken into consideration

Open plan :	338 #

Daylight access taken into consideration

> New work :	579#

Planned work- and meeting stations

Fire regulations :	< 710 #

5m2 per person

HVAC design :	579 #

Ventilation of 40 m³ / person / h
6m2 /person

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Circulation

Floor area :

Brut :	414 m²
Ratio to GEA :	10 %

Regulation stairs :

Escape way width : ≥ 1,40 m
For more than 20 people

Corridor lock lenght : no requirements

Elevator :

max. waiting time : 30 s

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building

Regulation height :

Clear height : 2,75 m

Waiver for clear height obtained. Standard is ≥ 3,0m

Shell & core :

- Concrete slabs, façade, M&E connection points ended at building core
- Fully fitted out common areas

Fit-out :

- M&E installations to Tenant's area
- Raised floor
- Carpet
- Suspended ceiling
- Interior walls and wall finishings
- IT cabling

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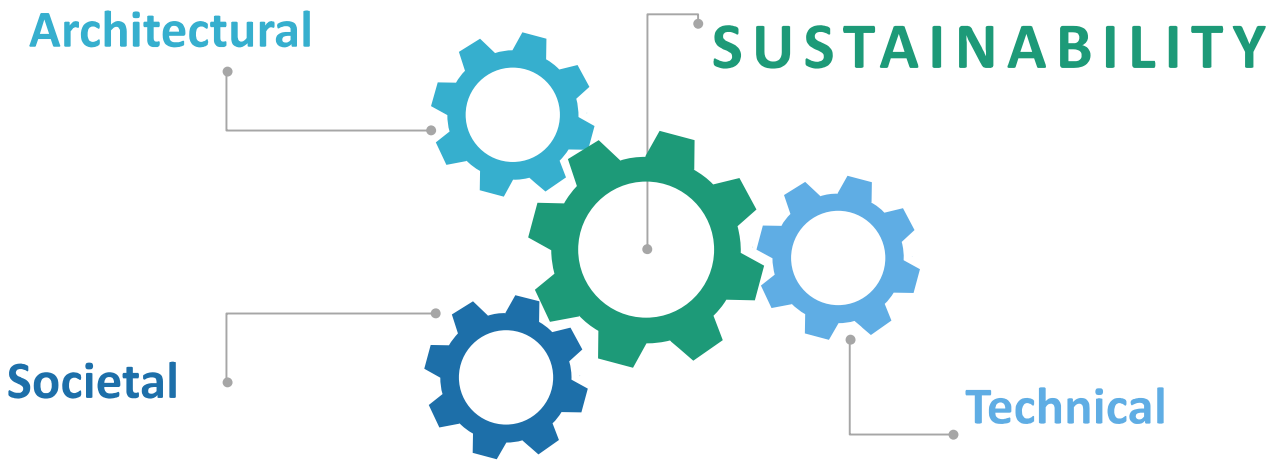
Architectural
SUSTAINABILITY
Societal
Technical

sustainability
strategy

- Certifications

Aiming for Oustanding -
at least Excellent

Core & Shell -
Gold or Platinum if tenant

sustainability
strategy

- Certifications

project

people

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sustainability
strategy

- Certifications
- Green Finance Framework

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for HVAC professionals

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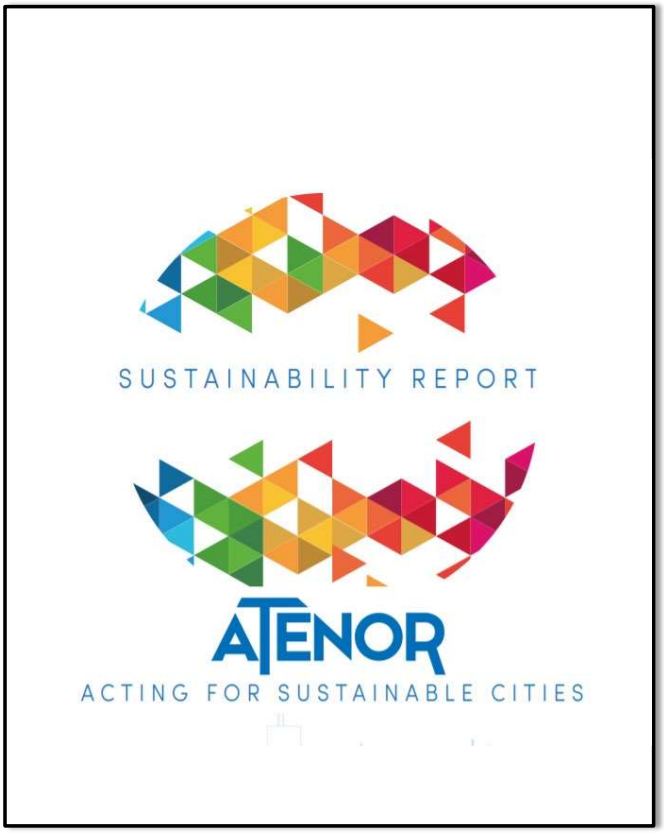
sustainability
strategy

- Certifications
- Green Finance Framework
- Sustainability report



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sustainability
strategy

Next Challenges

Covid 19 crisis
> **EU response**

Financial insecurity
> **Green deal**

Climate revolution
> **New ways of living**

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Thinking for cities