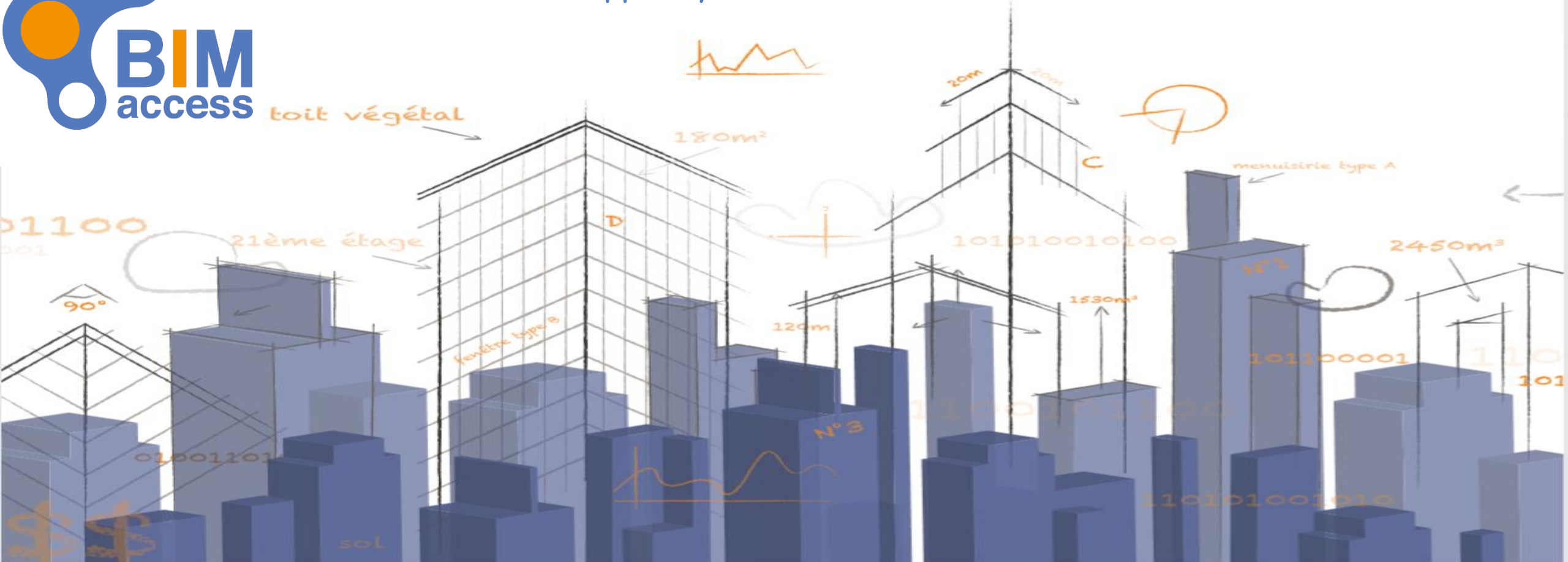




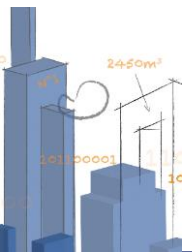
« Support your BIM transition »

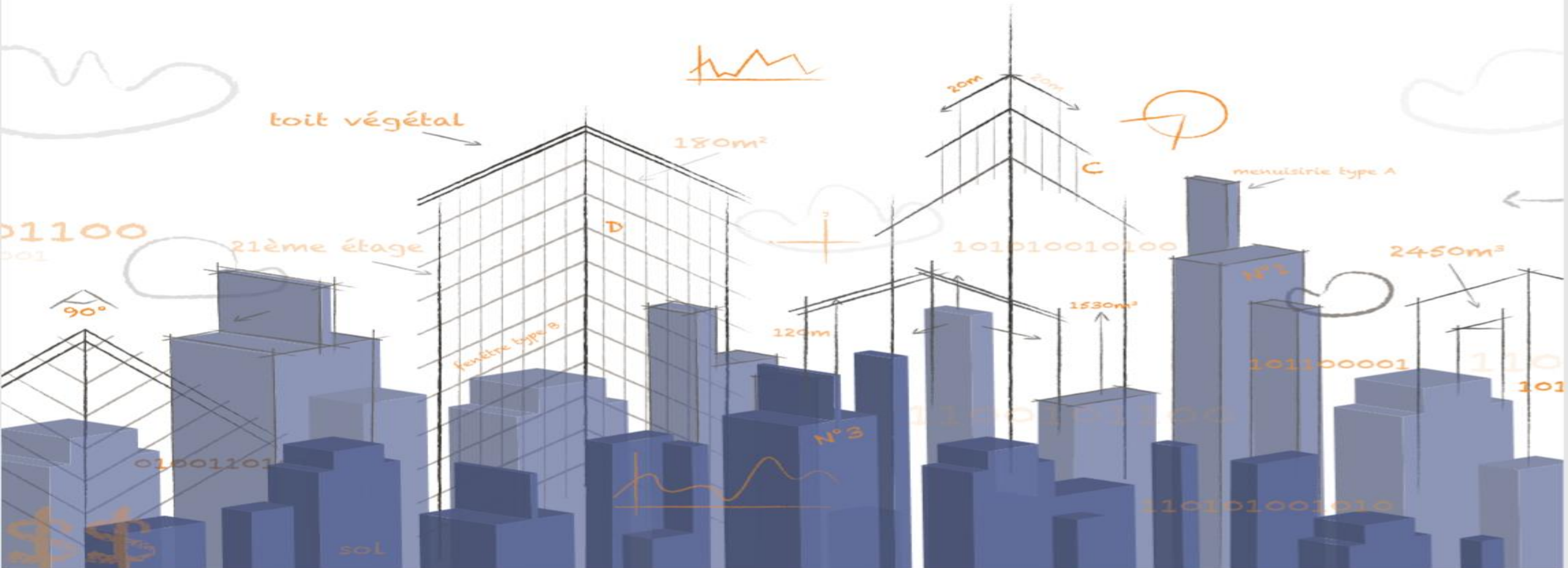


# BIM & Facility Management

# Agenda

- 🔗 BIMaccess in few words
- 🔗 Our **vision** of BIM and methodology
- 🔗 Presentation of **BIM-FM project at eHnv**
  - Steps
  - Highlights
- 🔗 **Questions**





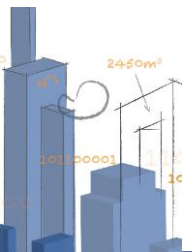
# BIMaccess, in few words

# BIMaccess, in few words

- Since the creation in 2019, we provide **support and advice** in your transition to **Building Information Modeling (BIM)**.
- Since the creation in 2019, we provide **support and advice** in your transition to **Building Information Modeling (BIM)**.
- That's the reason why we want to help you to **specify your needs, achieve your objectives** and **enhance the value of your buildings and your data assets**.



Our target → **Operation and Maintenance**



# Our technical skills

BIMaccess base its work on validated standards and working methods, both in **Switzerland** and **internationally**:



**BAUEN DIGITAL SCHWEIZ**  
BÂTIR DIGITAL SUISSE  
COSTRUZIONE DIGITALE SVIZZERA  
CONSTRUIR DIGITAL SVIZRA

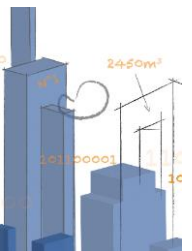
Home of



ISO 19650-1:2018

ISO 19650-2:2018

ISO 19650-3:2020



# Our references

They trust us...

## Tertiary

EPFL



## Industry



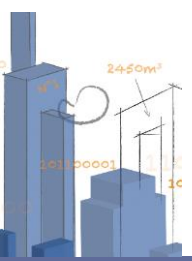
Watch industry in Geneva

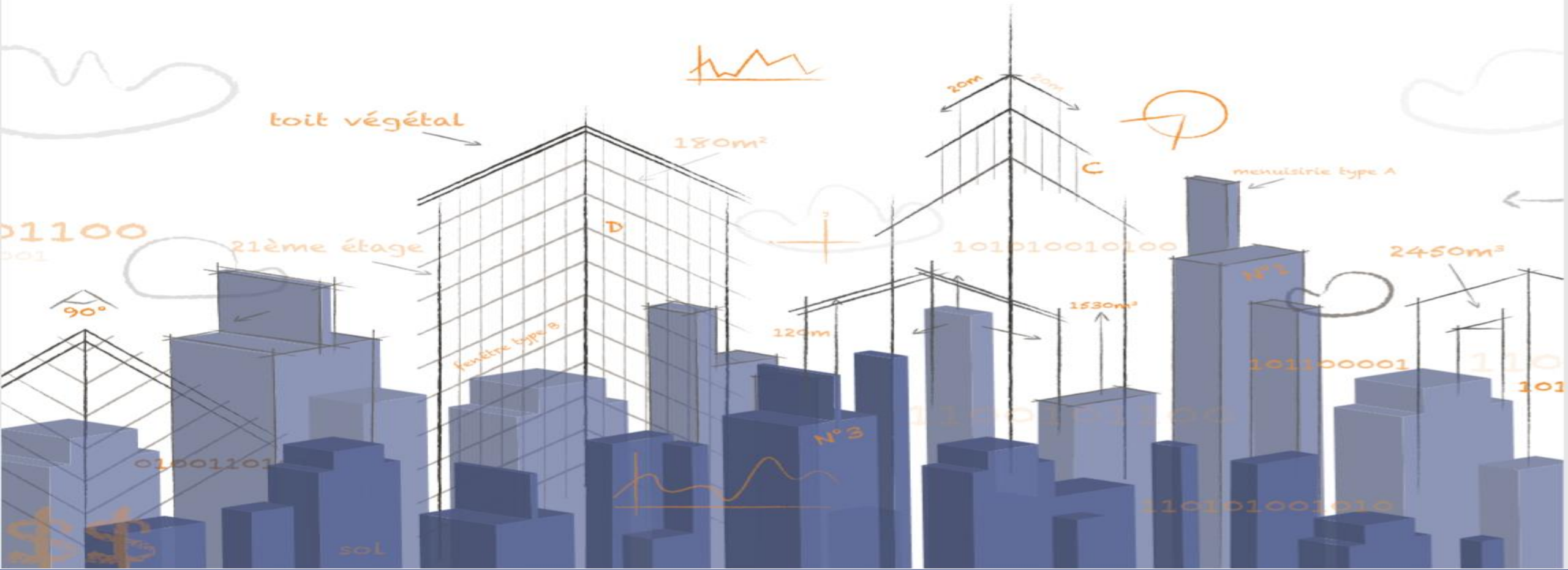


## Healthcare



Etablissements Hospitaliers du Nord Vaudois

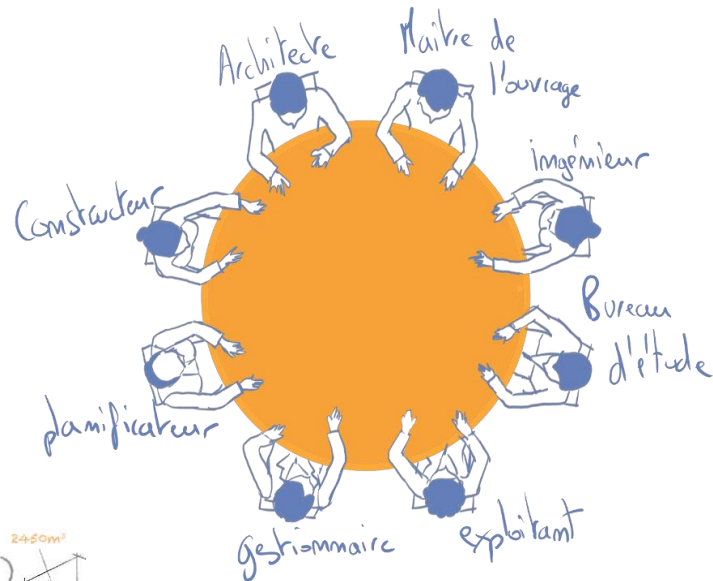




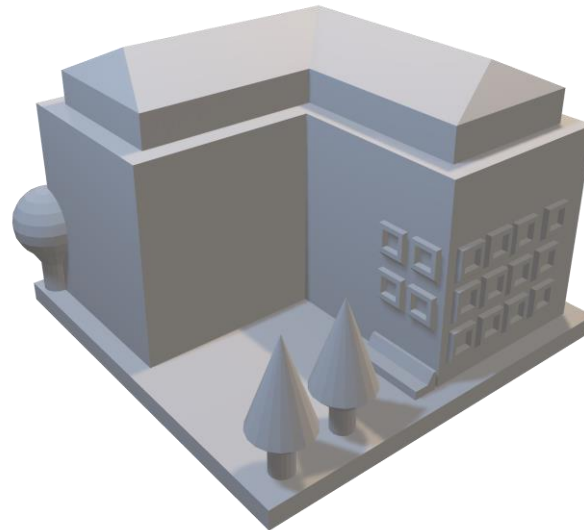
# Our vision of BIM

## BIM...what is it ?

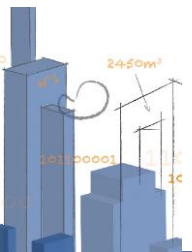
A collaborative process



3D model



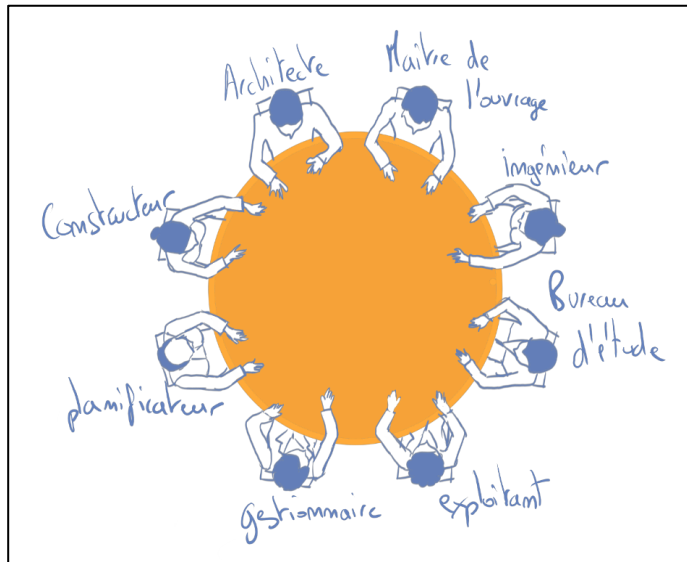
Data





# BIM challenges

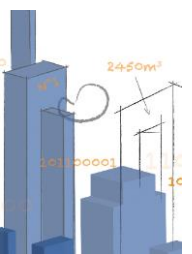
- 🔗 **Collaborative process** using 3D models filled with information, allowing the optimization and the valorization of the building throughout its life cycle.
- 🔗 The BIM brings new perspectives in the sectors of :
  - Design and Construction,
  - but also in the **Operation and Maintenance** of our buildings and infrastructures.



## COMMON DIGITAL REFERENCE

**BIM is not just a 3D model!**

Without **unified, structured, scalable and usable information**,  
BIM loses its real benefits.

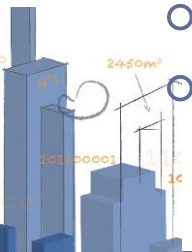
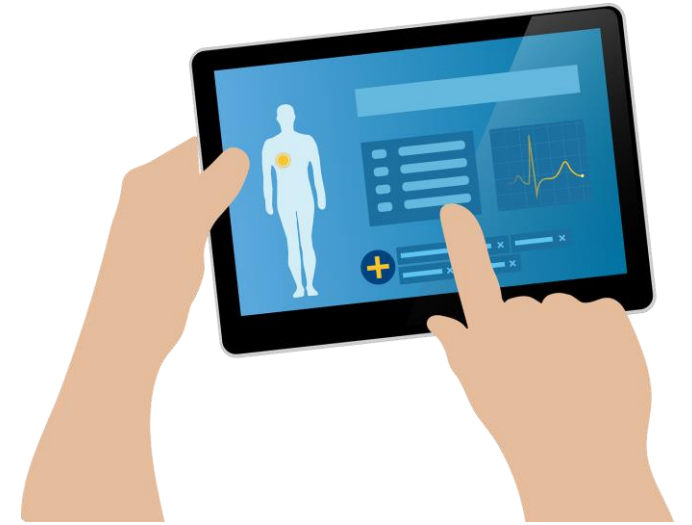


# Analogy: The Electronic Health Record (EHR)

- 🔗 **Agregate the patient's medical data** (images, analyses, reports, history of interventions and medical prescriptions...etc...) in **one support**.
- 🔗 Benefits:
  - **all the health professionals** have access to the **same data**
  - This database is **updated throughout the patient's medical life**.

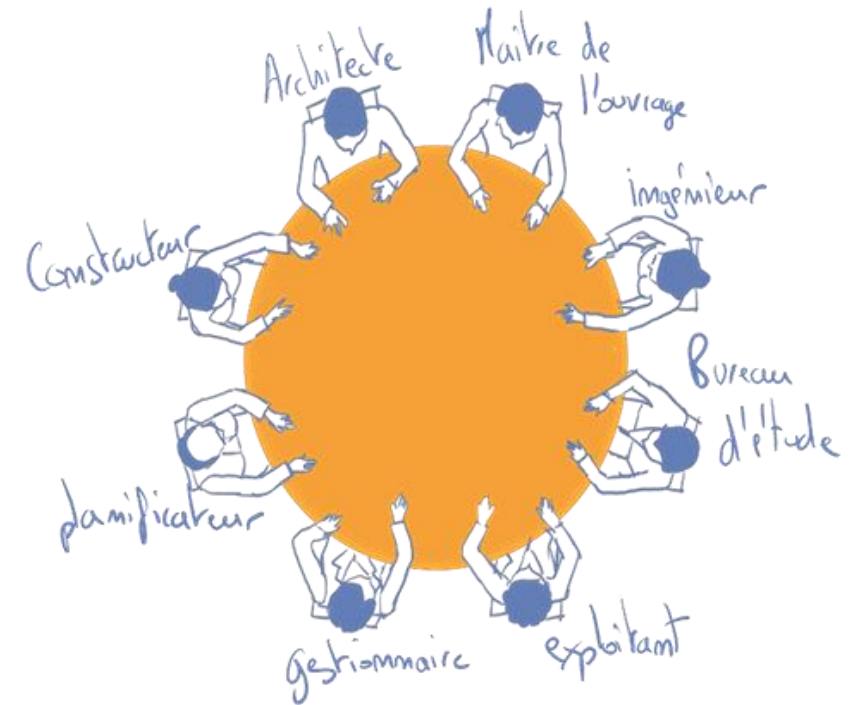


- 🔗 BIM works the same way,
  - Not only a 3D model of the building
  - Database **fed with useful data for each phase of the life cycle**
  - It is a tool that must be designed to be integrated into the information system of the **health care facility**.

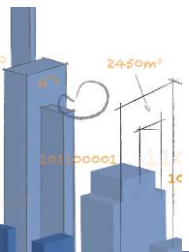


# Our vision of BIM

- 🔑 BIM must **bring all the players of a project** together around the table and get them to **share the same vision**, common objectives that are known to all.
- 🔑 For that, it is necessary to:
  - **Document** the collaborative environment,
  - Specify the **BIM objectives and use cases** as early as possible "why do we need BIM?"
  - **Establish a framework** that will serve as a guide and support for the participants, giving a global and common vision that will have an impact on the entire life cycle management of your buildings and assets.

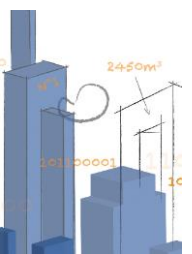
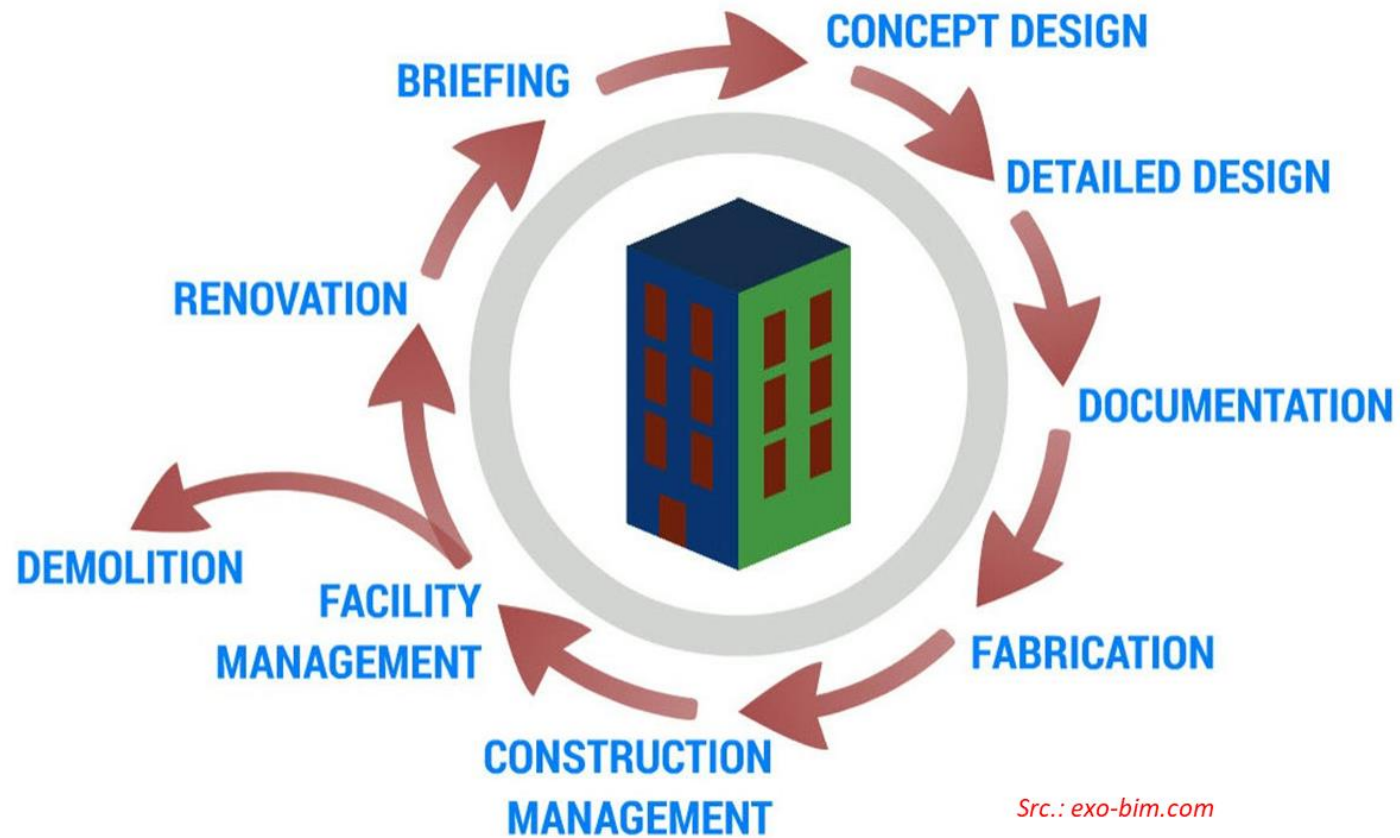


**BIM for “Better Information Management”**



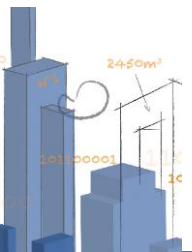
# Our vision of BIM

🔗 The building life cycle as represented on Internet...



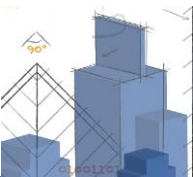
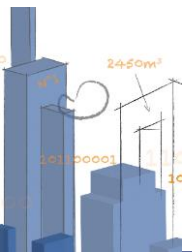
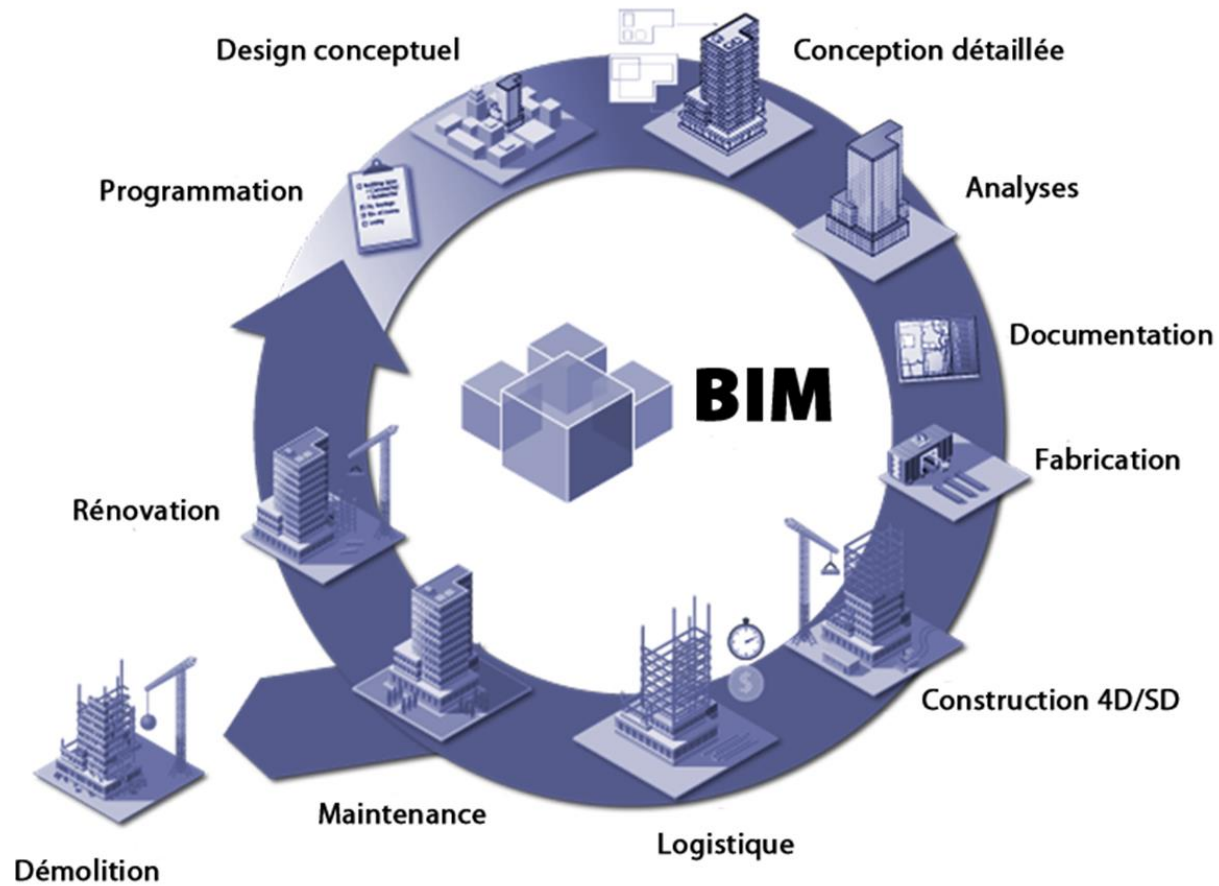
# Our vision of BIM

🔗 The building life cycle as represented on Internet...



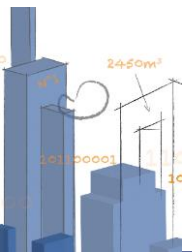
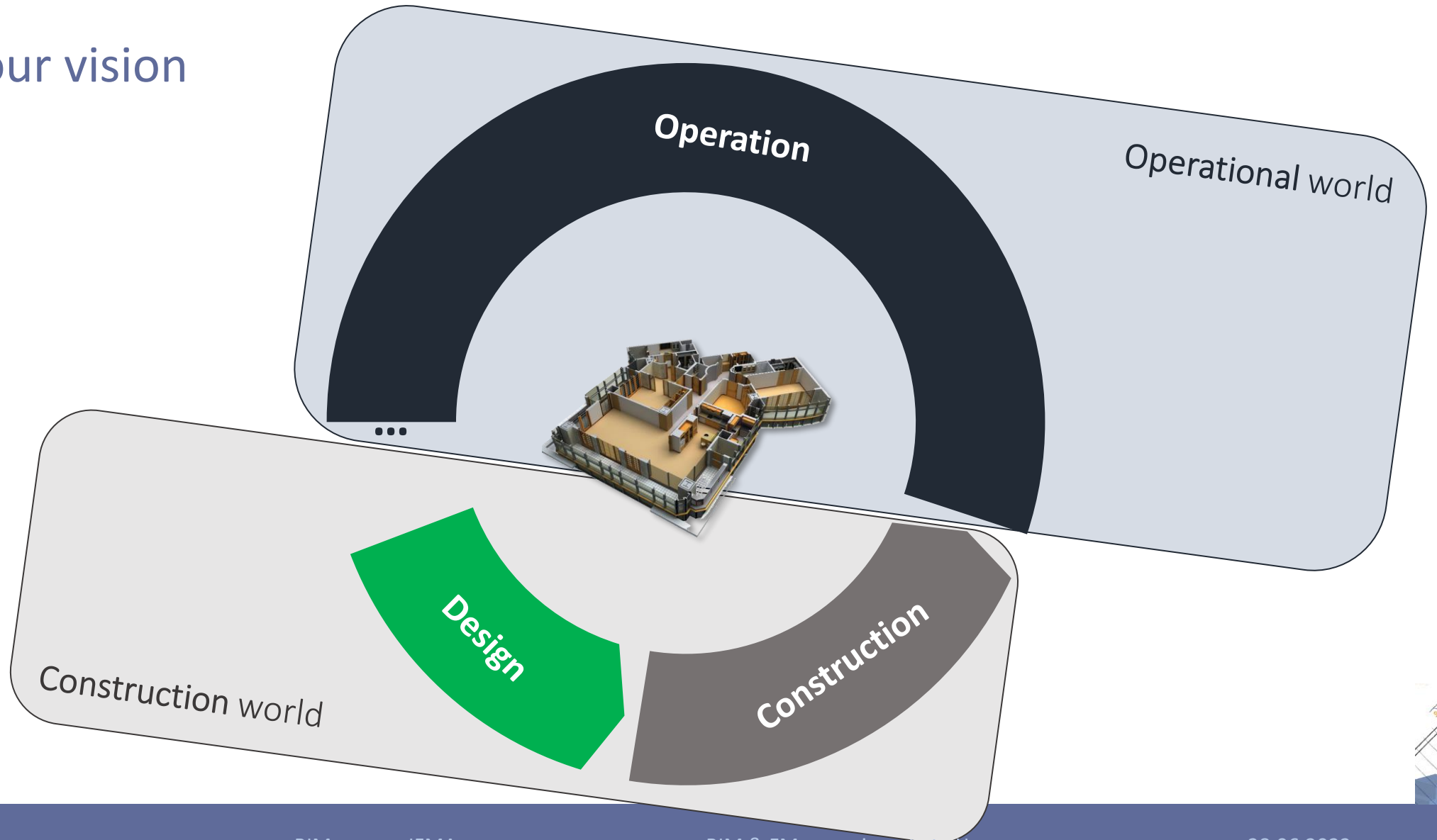
# Our vision of BIM

🔗 The building life cycle as represented on Internet...



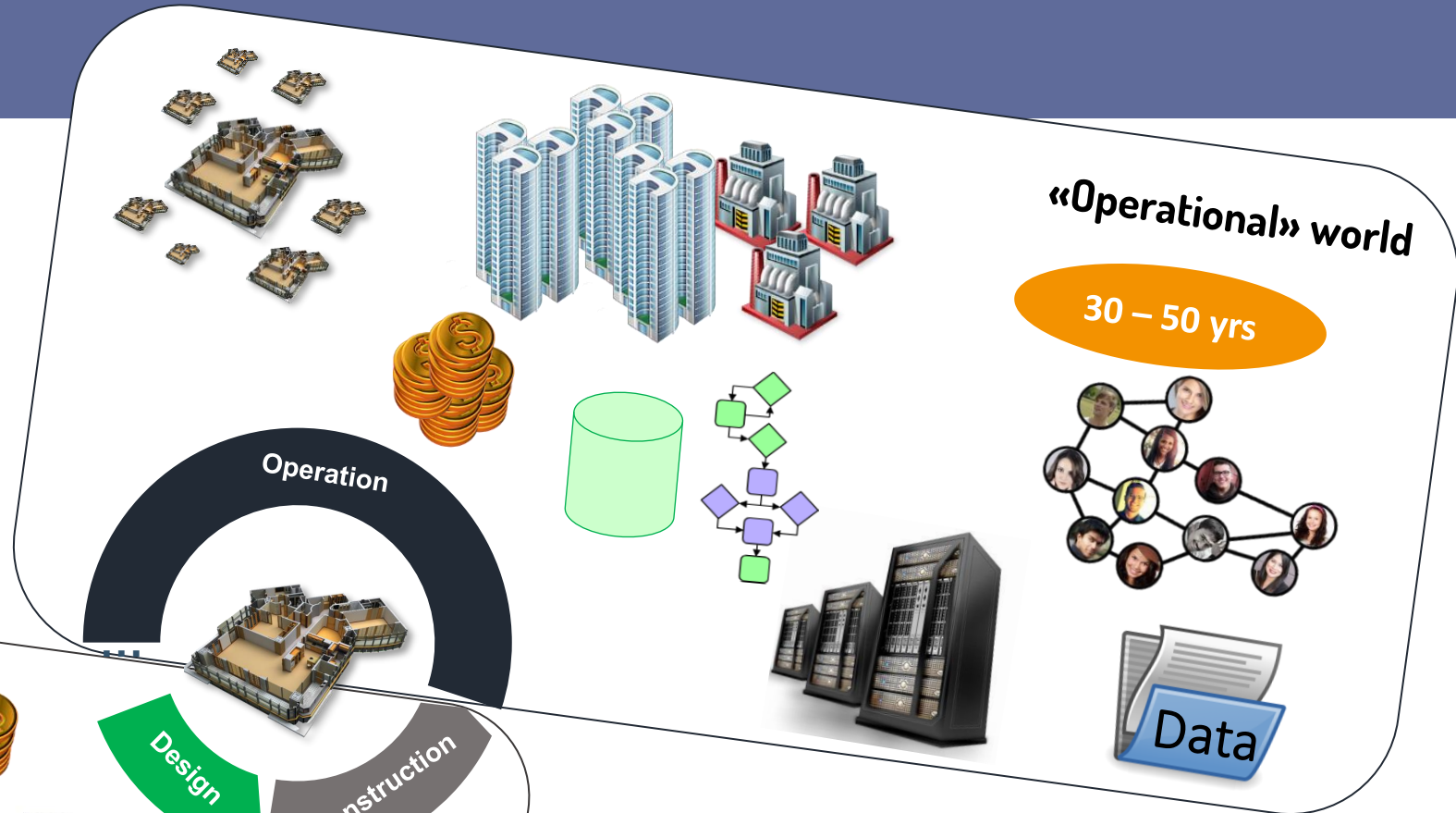
# Our vision of BIM

...and our vision



# Our vision of BIM

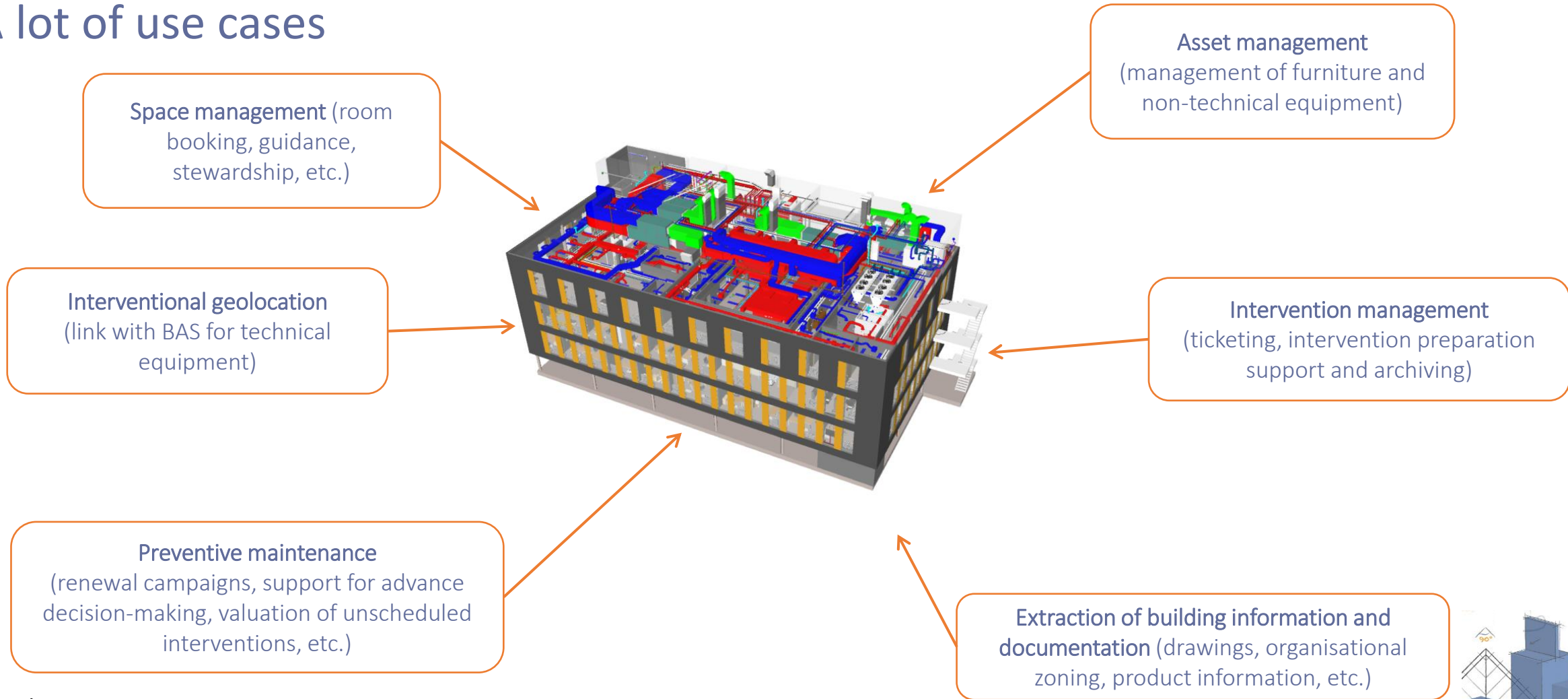
🔗 Few breaking points...



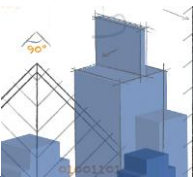
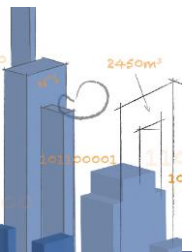


# Our vision of BIM

## A lot of use cases

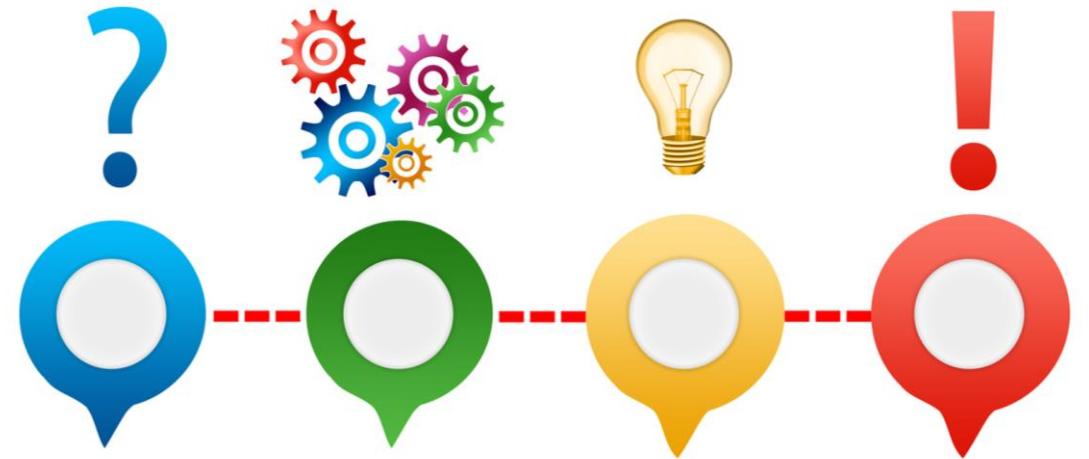


Bâtiment Le Lierre – eHnv

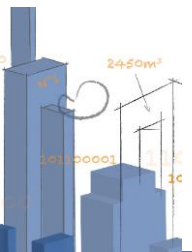


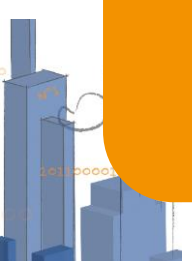
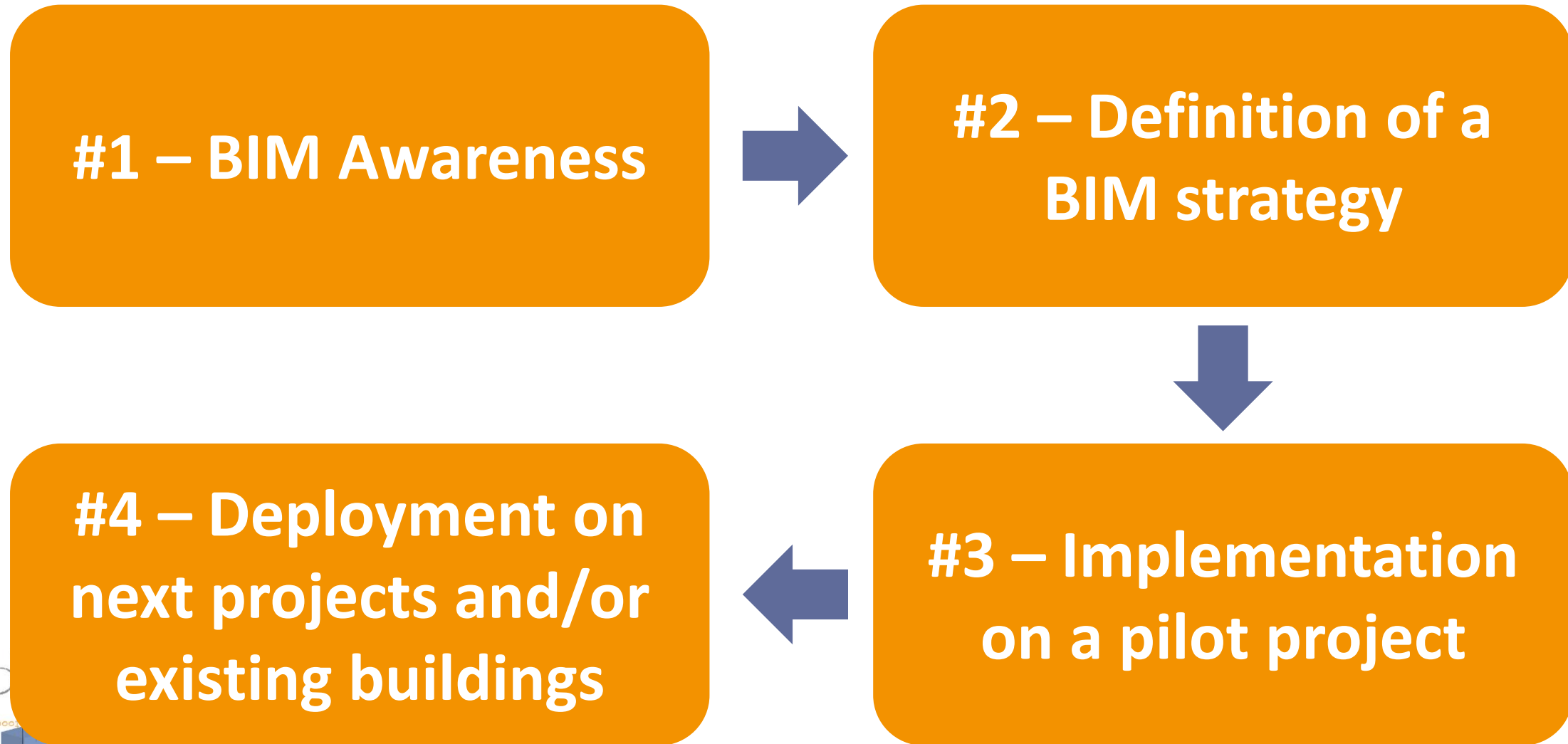
# Our vision of BIM

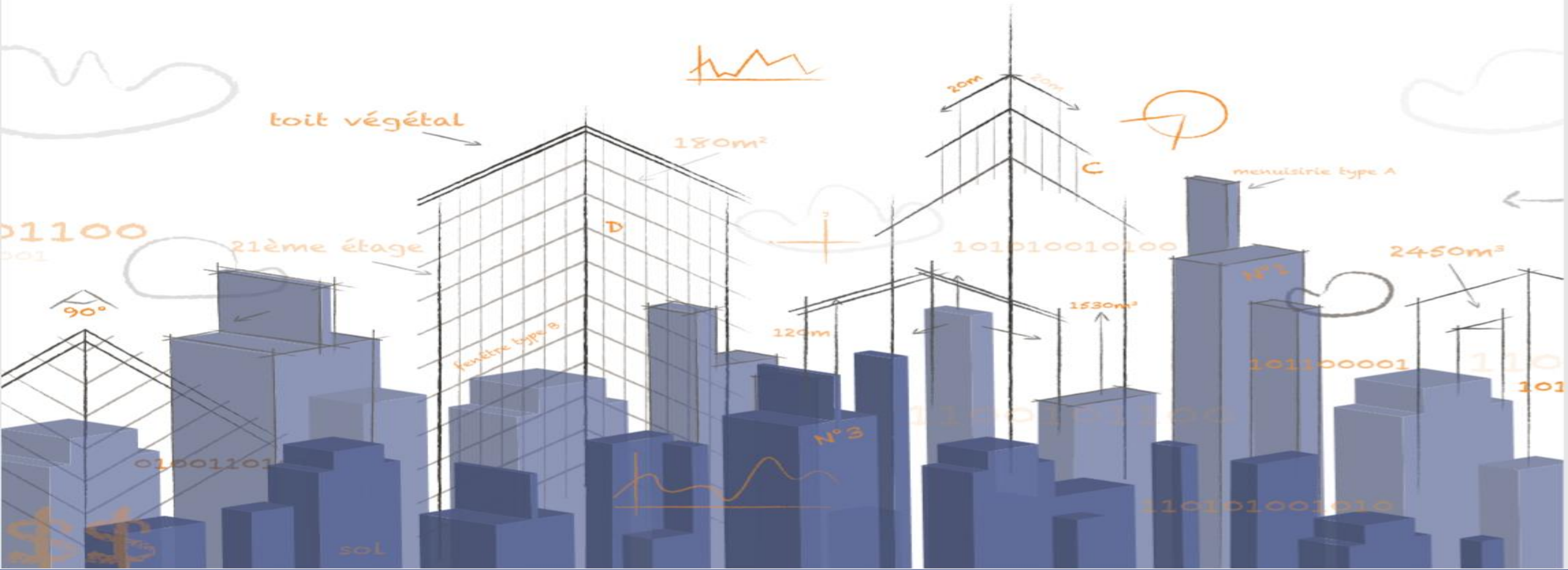
- 🔗 Keep Pragmatic
- 🔗 Start with use cases that represent real added value for the institution
- 🔗 Do not try to do too much, too quickly,
- 🔗 Develop skills,
- 🔗 Include users as early as possible in the project.



## SmartLeanBIM







## BIMaccess methodology applied to eHnv

# eHnv – Etablissements Hospitaliers du Nord Vaudois

## eHnv in few figures

- o 1700 employees
- o 5 sites, including **4 hospitals**
- o 246 acute care hospitalization beds
- o 89 rehabilitation beds



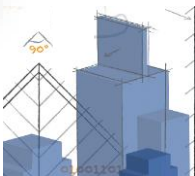
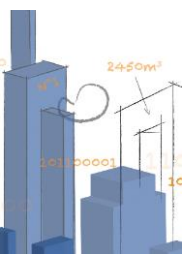
Hôpital d'Yverdon-les-Bains – eHnv



Hôpital d'Orbe – eHnv



Hôpital de Saint-Loup – eHnv



## 🔗 Few projects launched :

### ○ FuturY

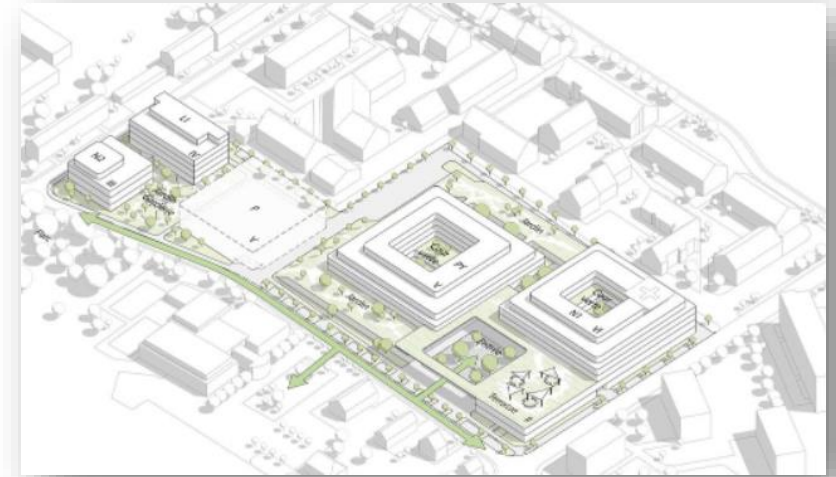
- Reorganisation, demollition and reconstruction of a new hospital
- Size : **191 beds** and **25'000 m<sup>2</sup> usable surface**

### ○ FuturO

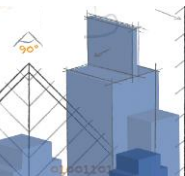
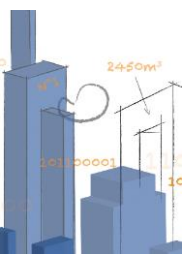
- Construction of a new hospital for treatment and readaptation care
- Size : **90 beds**

### ○ FuturP

- Construction of a **parking** and **daycare**
- Size : **400 places**



Projet FuturY – Hôpital d'Yverdon-les-Bains – eHnv



## 🔗 Needs for projects ongoing

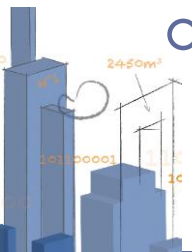
- Questions from constructor regarding BIM needs → provide **BIM specification**

## 🔗 BIM as an **answer to the institutional program «eHnv of the futur»**

- Wish to use technology to benefit the organization
  - BIM, through digital data management, can provide :  
**Quality of service and Efficiency**

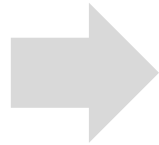
## 🔗 Solution :

- Involve BIMaccess to support eHnv in this transition
- Implementation of BIMaccess methodology to experience BIM for Facility Management



# #1 – Training and awareness of BIM challenges

**#1 – BIM Awareness**



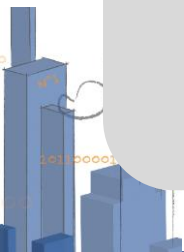
**#2 – Definition of a BIM strategy**



**#4 – Deployment on next projects and/or existing buildings**



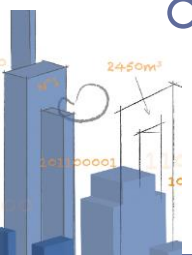
**#3 – Implementation on a pilot project**



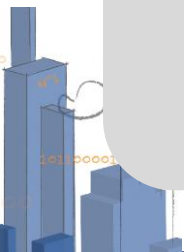
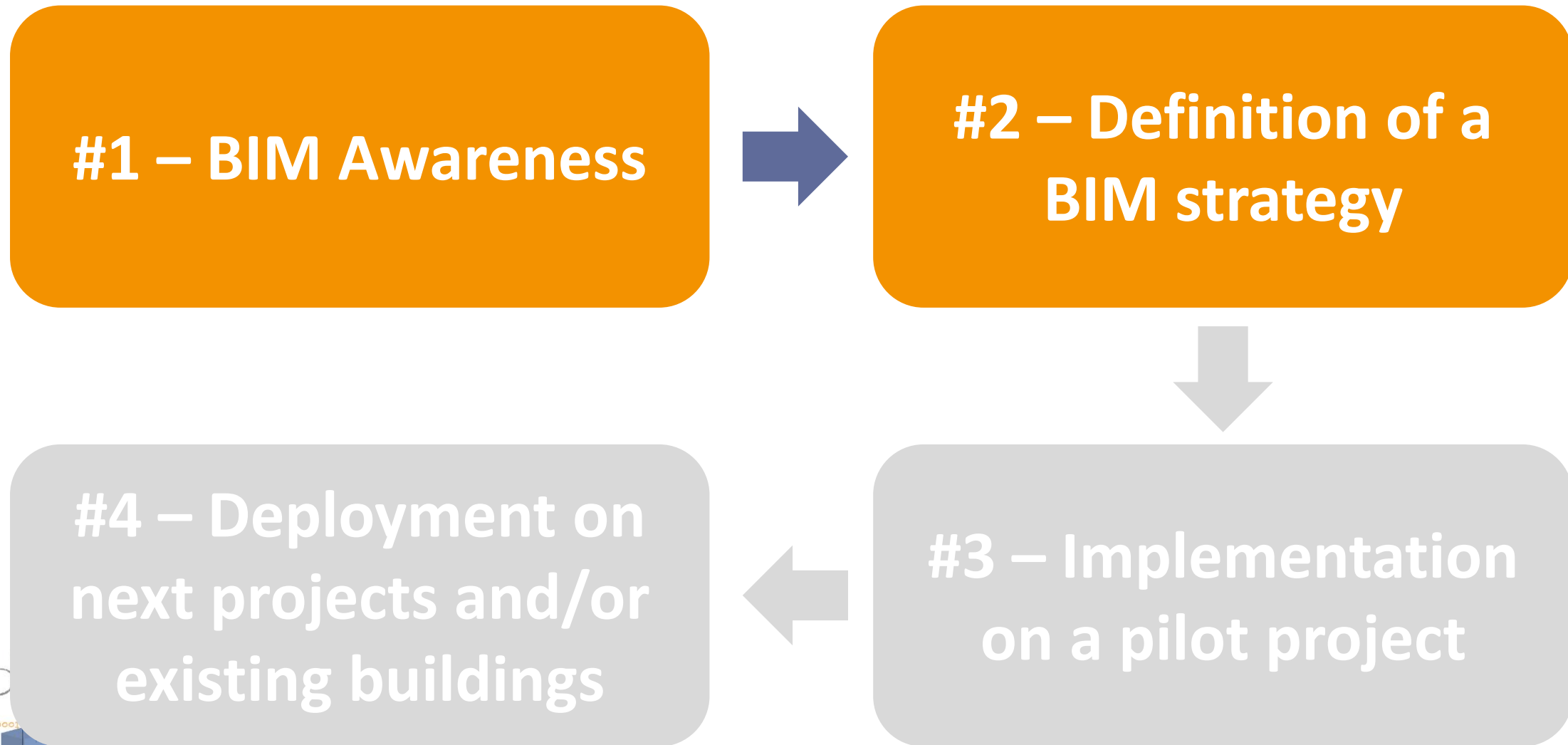


# #1 – Training and awareness of BIM challenges

- Few training sessions organized
- Participants :
  - Directors and project managers
  - Facility managers and futur BIM users
- Goals
  - Discover possibilities of BIM
  - Understand BIM benefits for organisation and day-to-day work
  - Be aware of impacts on ressources, organisation, logistic
  - Understand (possible) BIM complexity and challenges for implementation
  - Give the keys for coming decisions to take regarding BIM

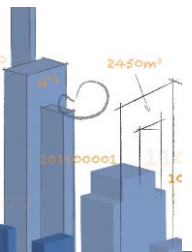
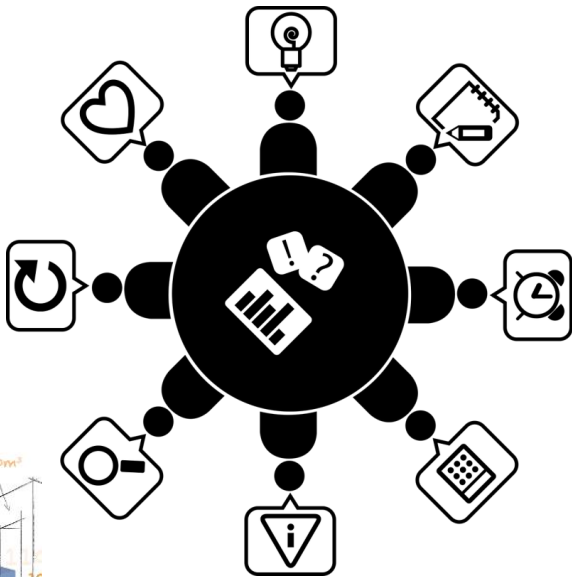


## #2 – Definition of a BIM strategy



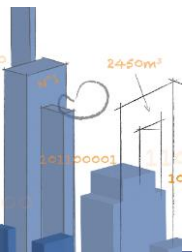
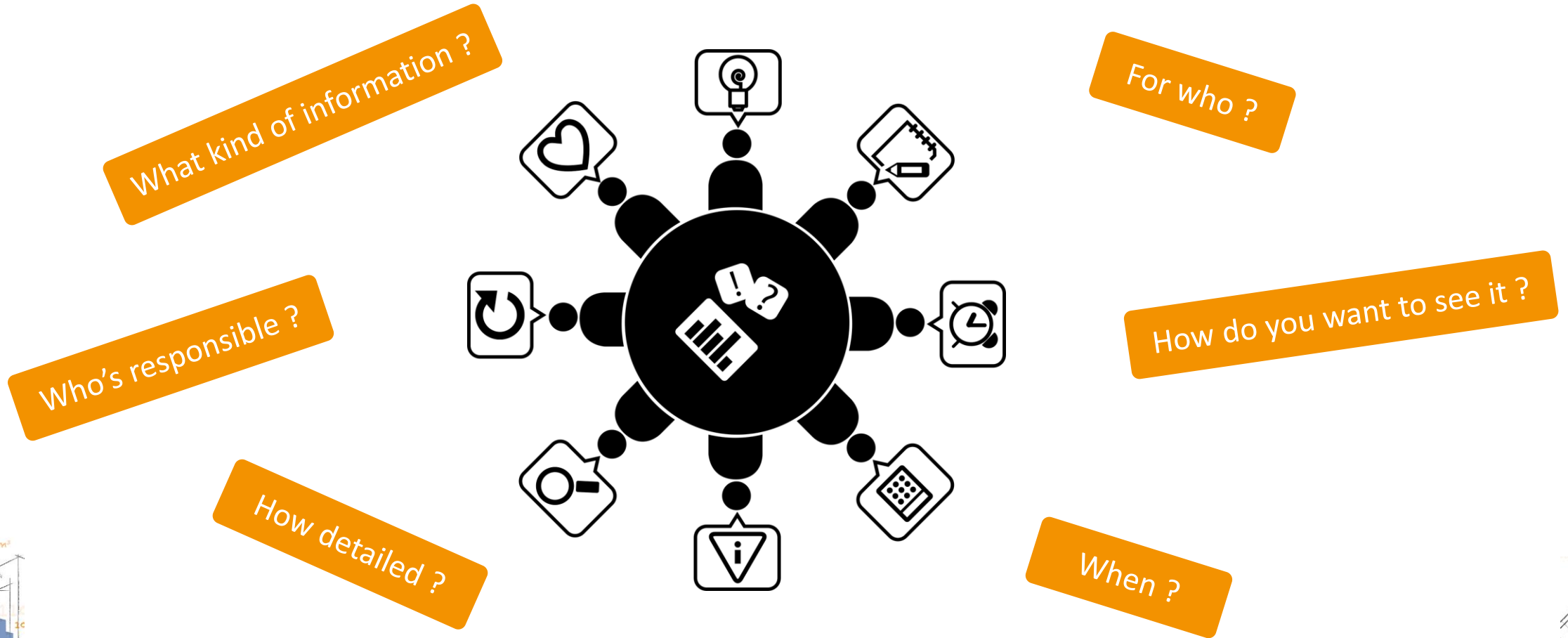
## #2 – Definition of a BIM strategy

- Identification of the needs of users involved in facility management
- Definition of a data management strategy
- Drafting of BIM documents (strategy, information level, BIM specifications, etc.)



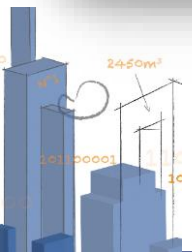
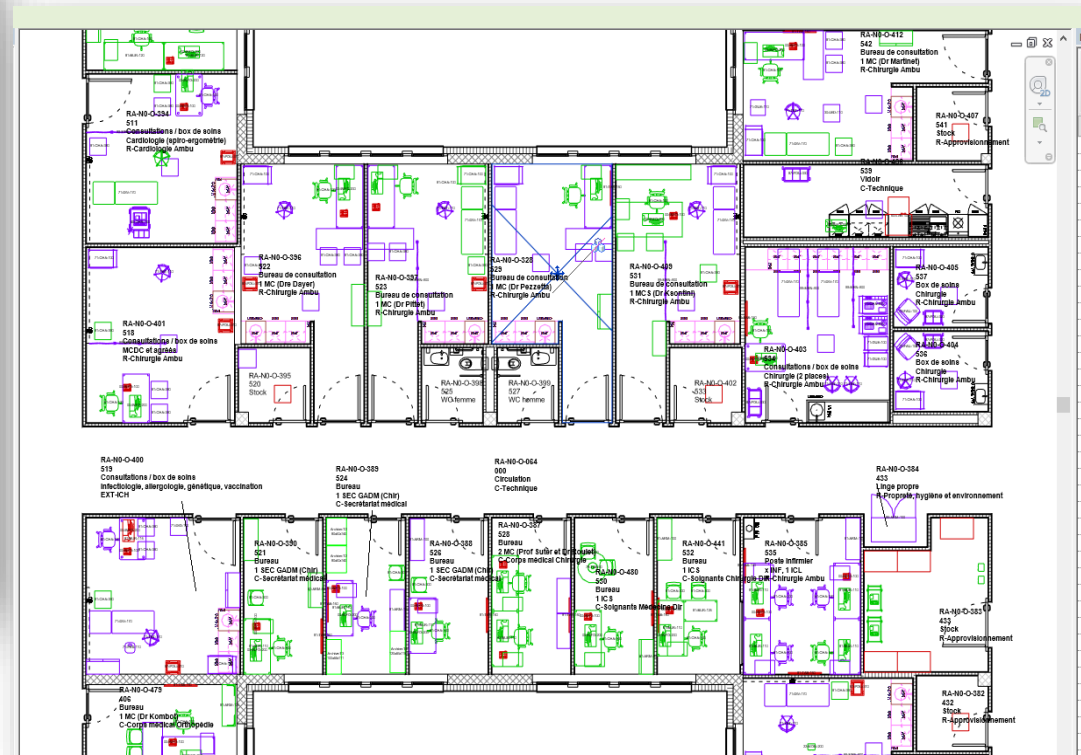
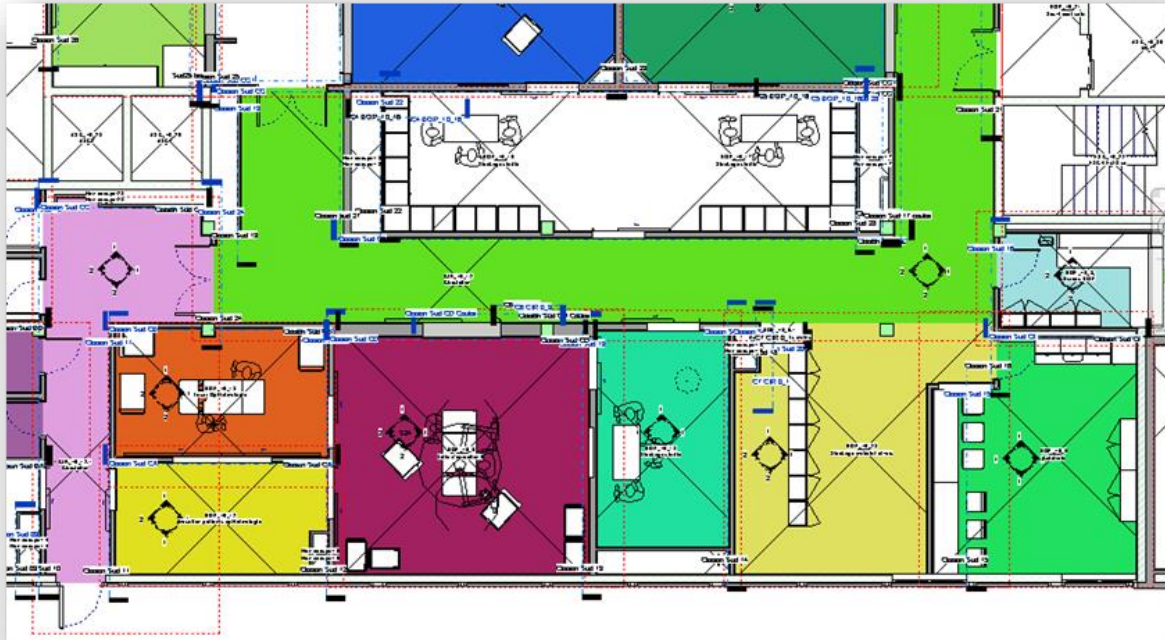
# #2 – Definition of a BIM strategy

🔗 Identification of users' needs involved in facility management



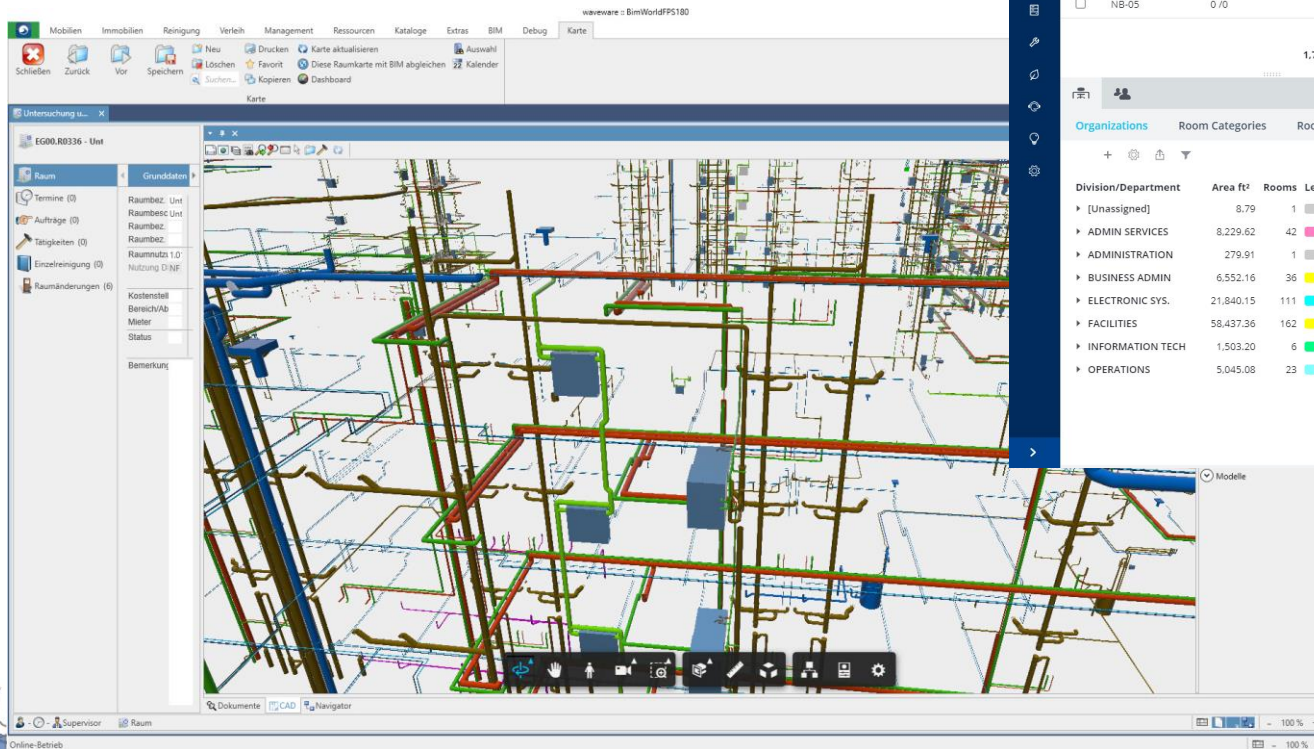
# #2 – Definition of a BIM strategy

## Production of 2D plans from the BIM model

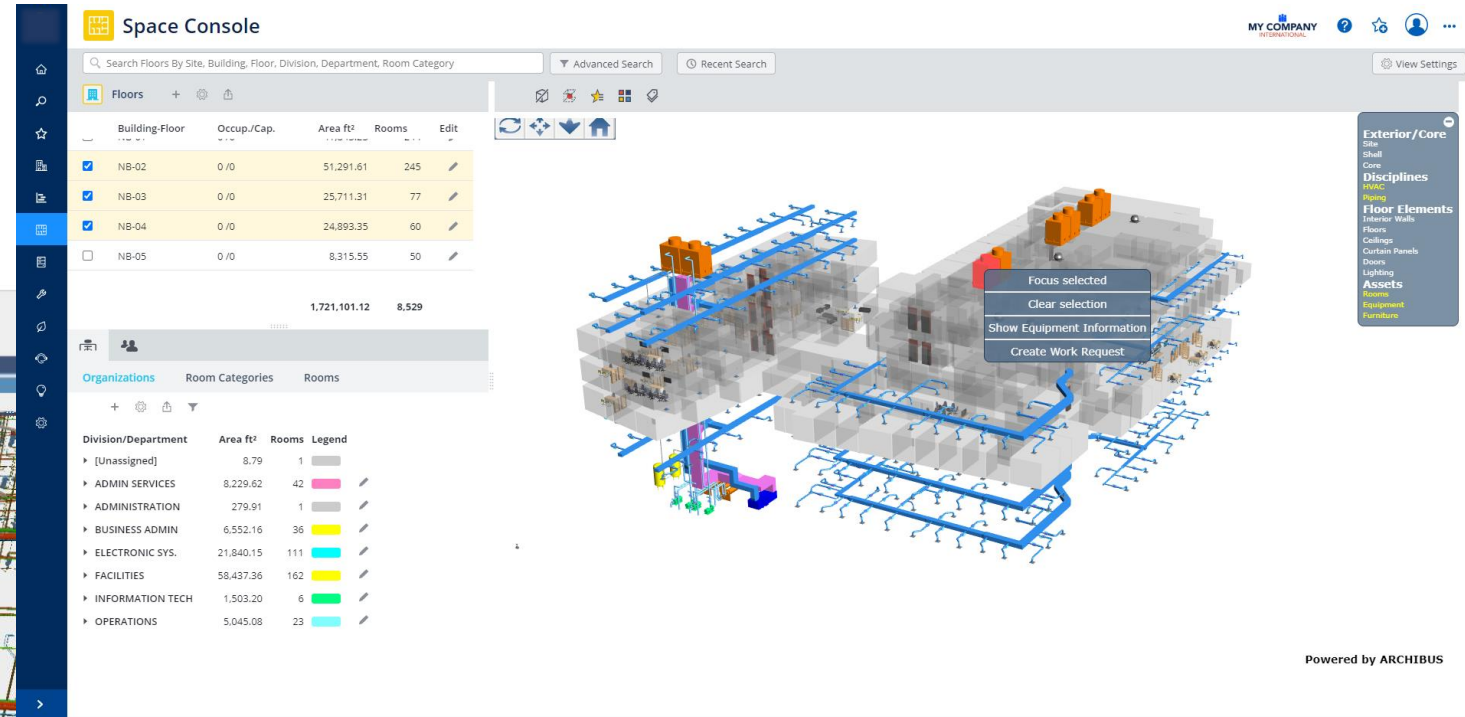


# #2 – Definition of a BIM strategy

## Maintenance management



Source : <https://www.loyhutz.de/>



Powered by ARCHIBUS

Source : <https://www.softwareadvice.co.uk/>

# #2 – Definition of a BIM strategy

## Space management

**Space Console**

Search Floors by Site, Building, Floor, Division, Department, Room Category

BOSMED 01 - Highlight Rooms By Divisions

Building-Floor	Occup./Cap.	Area Ft²	Rooms	Edit
AB-01	0/127	44,362.89	207	
AB-02	0/127	44,391.80	208	
AB-03	0/127	44,362.89	207	
AB-04	0/127	44,362.87	207	
AB-05	0/127	44,392.16	208	
		<b>1,721,101.12</b>	<b>8,899</b>	

Organizations Room Categories Rooms

Division/Department	Area Ft²	Rooms	Legend
[Unassigned]	1,125,024.99	5,039	
ACCESSORIES	3,556.00	79	
ADMIN SERVICES	25,321.39	232	
ADMINISTRATION	5,496.14	64	
BUILDING SVCS	25,177.24	22	
BUS DEVELOPMENT	16,920.03	231	
BUSINESS ADMIN	11,411.37	66	
C-HUMANITIES	0.00	0	
C-MANAGEMENT	0.00	0	
C-SCIENTIFICS	0.00	0	

**Home**

1000 Technology Park Dr  
Billerica, MA  
Headcount: 522  
Capacity: 750

Boston Medical Center  
Boston, MA  
Headcount: 219

Exchange Center  
Philadelphia, PA  
Headcount: 61

Headquarters  
Philadelphia, PA  
Headcount: 63  
Capacity: 305

**Capital Programs - Budget Variance**

Programs with Largest Variance

- NewHQ: 23%
- Parking Expansion: 20%
- Z2107: 14%
- Jarvis Acquisitions: 14%
- Energy Management: 14%

**Capital Projects - Budget Variance**

Projects with Largest Variance

- PN-2011-CHICMAN-PROPACQ-0012: \$960K
- PN-2009-LONWARE-RENO-0153: \$889K
- PN-2008-I204-RENO-0166: \$116K
- PN-2007-LONOLD-LEASEOPT-0028: \$107K
- PN-2009-PLAZA-3-RENO-0187: \$105K

**Capital Programs - Allocated Funds**

Programs with Largest Funding

- Test Facility: 750,00M
- Energy Management: 20,00M
- Administrative: 20,00M
- 2007 Cind Center: 10,68M
- 2009-2011 RE Adjustments: 3,50M

**Capital Projects - CAPEX**

Project Types with Largest Expenditures

- Move: \$87,150,322
- Site Work: \$85,362,161
- ALL: \$84,200,604
- Property Disposal: \$83,675,924
- Renovation: \$77,294,703

**Alerts**

- 1 Leaves: Due this Week
- 1 Projects: 20% Schedule Variance
- 2 Regulatory Actions: Due This Week
- 2 Leases: Due this Month
- 1 Options: Due this Month

**Integrated Portfolio Metrics**

Metric	Value	Change per period / year	% of Target	Trend
Real Estate CapEx - Budget Variance	\$620K	-\$19K + / -\$124K +	87%	
Real Estate CapEx (per Gross Area)	\$1.03	\$0.19 + / \$0.38 +	117%	
Real Estate Op Ex	\$1,120M	-\$34M + / -\$224M +	93%	
Return on Assets (R)	37%	-1% - / 2% +	132%	

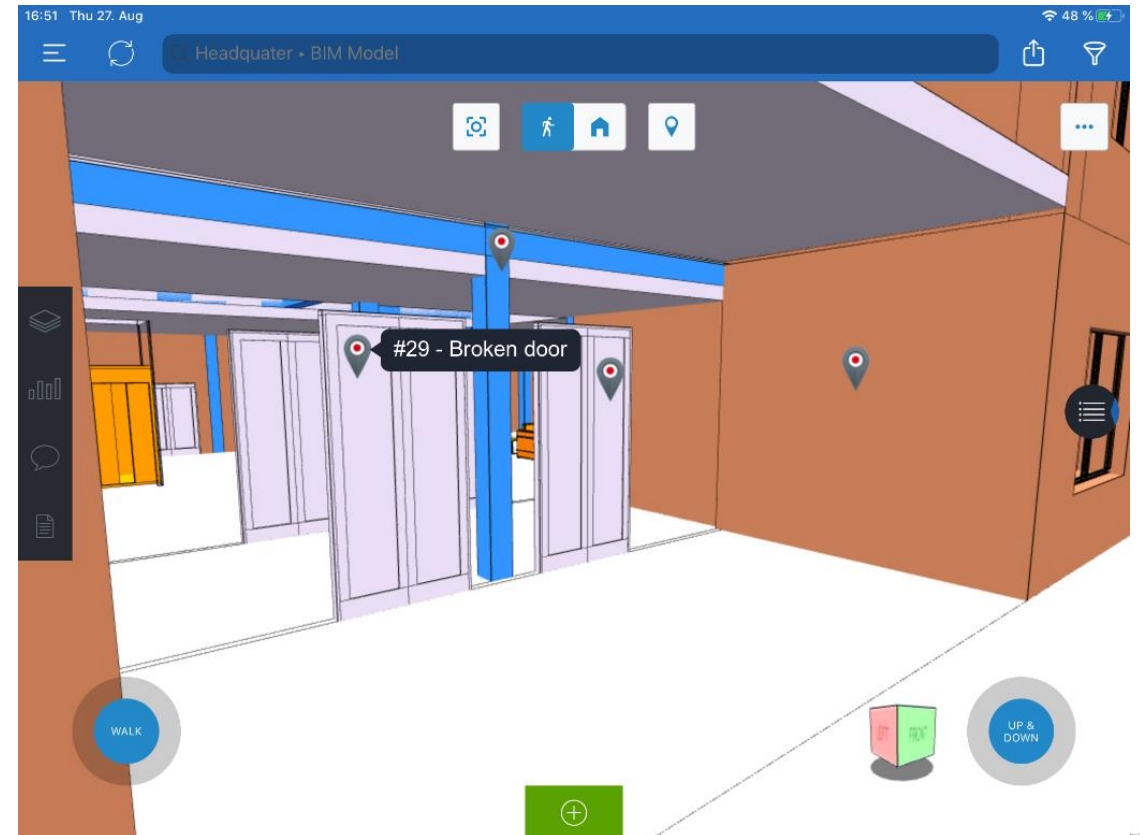
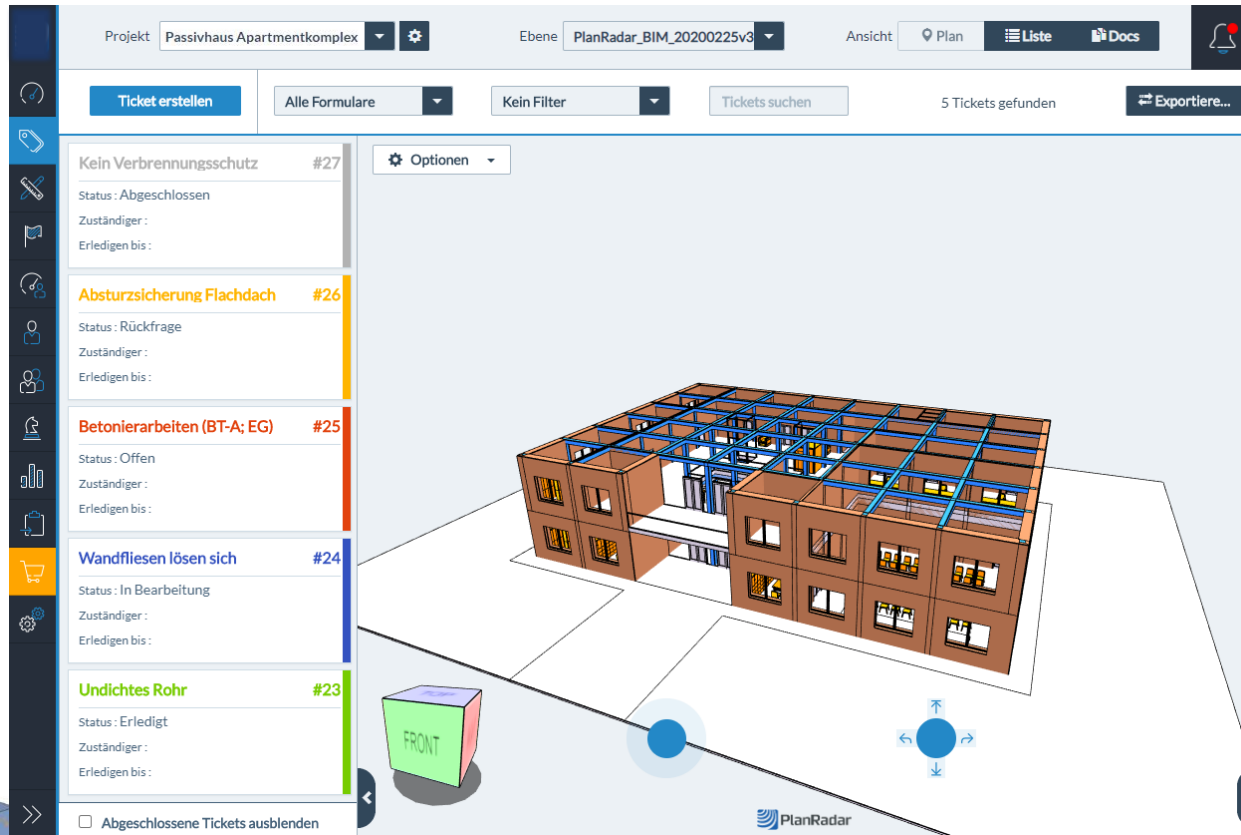
**Headcount / Capacity**

2159 / 4275

Source : <https://download.archsupply.com/>

# #2 – Definition of a BIM strategy

## Task management system (Ticketing)

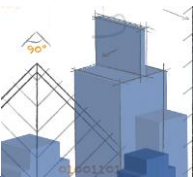
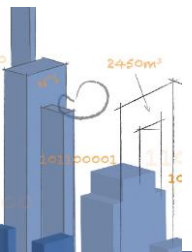
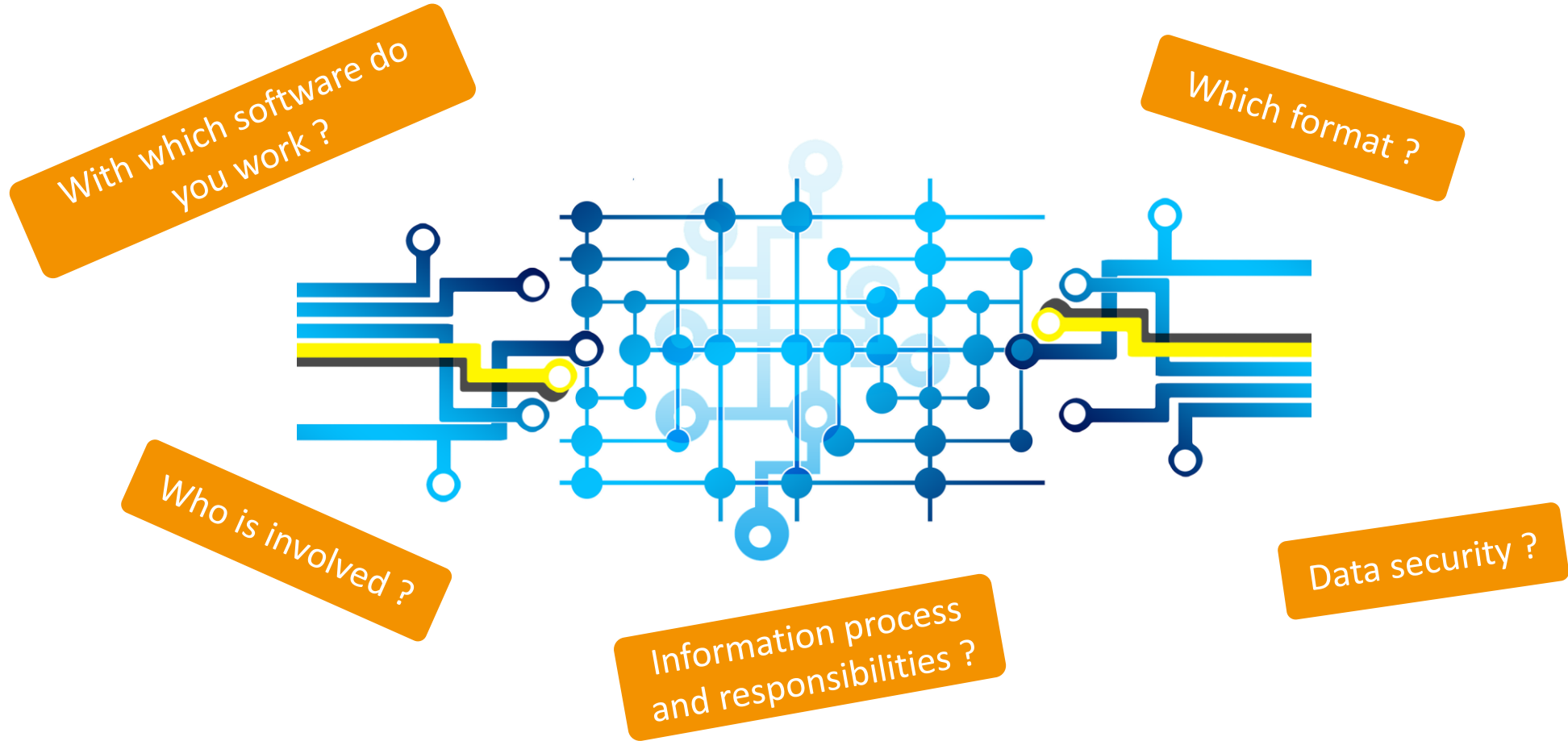


Source : <https://www.planradar.com/ch-fr/>



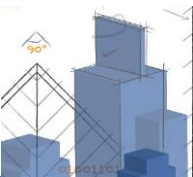
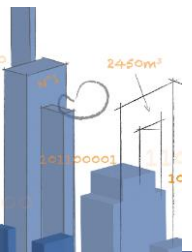
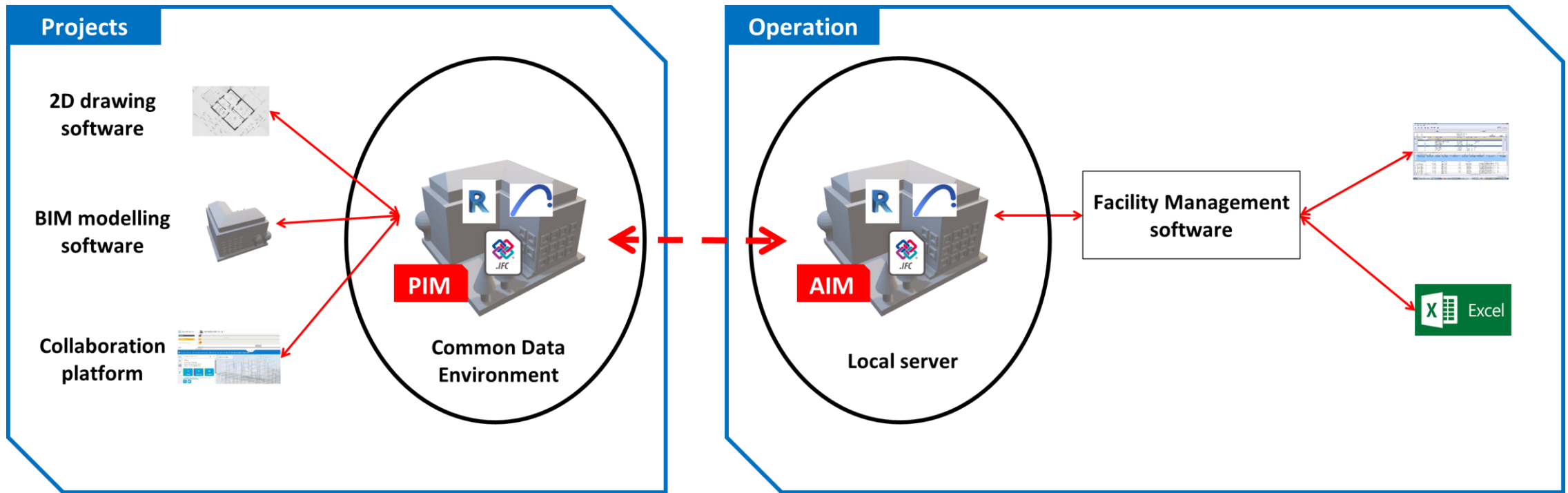
# #2 – Definition of a BIM strategy

## 🔗 Definition of a data management strategy : HOW



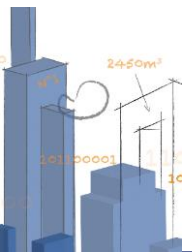
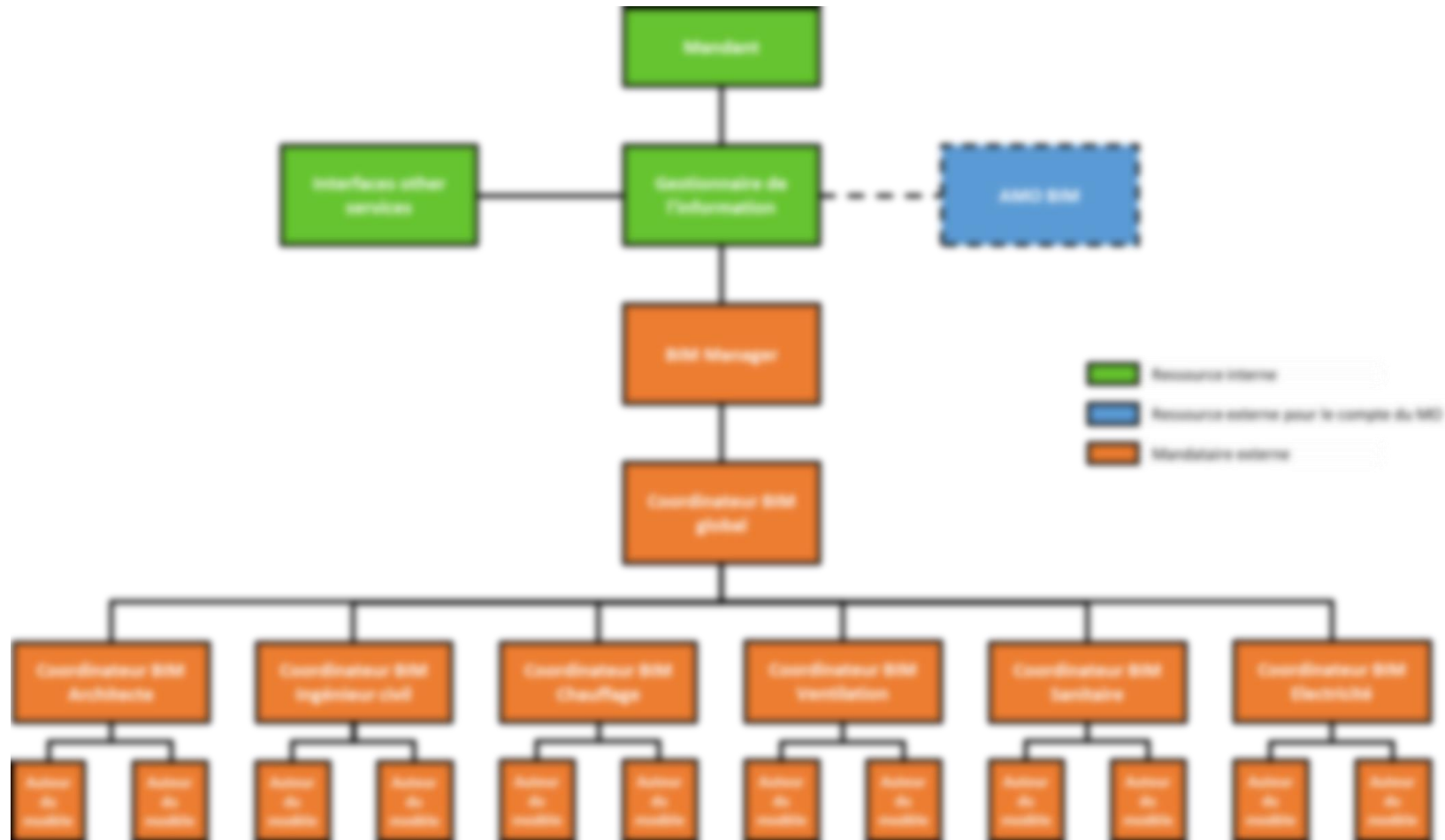
# #2 – Definition of a BIM strategy

## Definition of a data management strategy : HOW



# #2 – Definition of a BIM strategy

## 🔗 Definition of a data management strategy : WHO



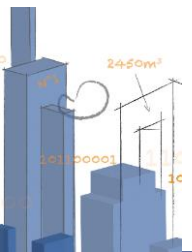
## #2 – Definition of a BIM strategy

🔗 Drafting of BIM documents (strategy, information level, BIM specifications, etc.)

○ Translation of needs into documents

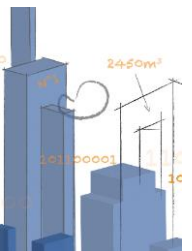
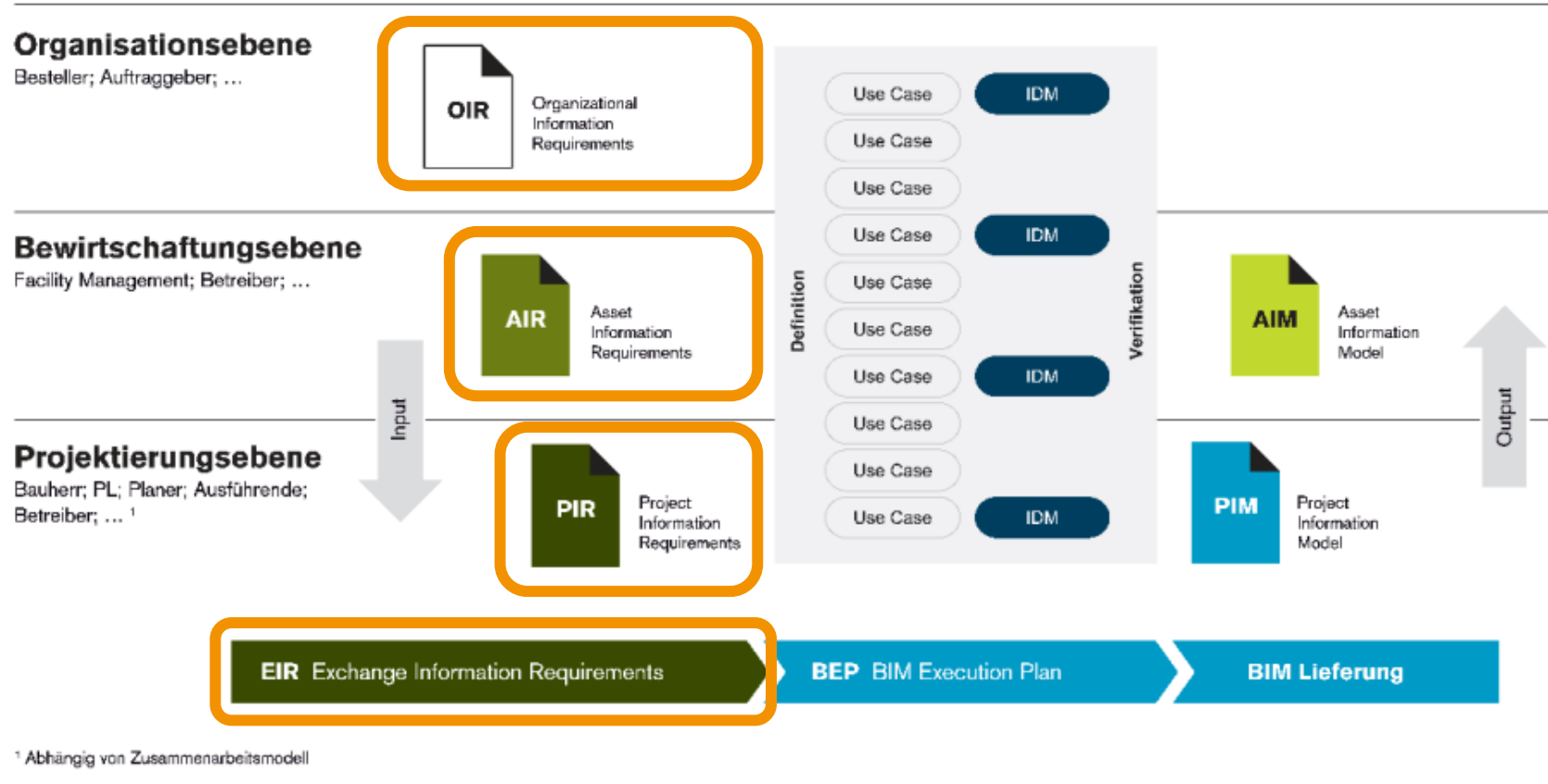
○ Documents for

- Information
- Training
- Tender process



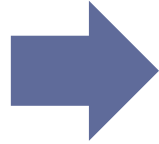
# #2 – Definition of a BIM strategy

🔗 Drafting of BIM documents (strategy, information level, BIM specifications, etc.)



# #3 – Implementation on a pilot project

**#1 – BIM Awareness**



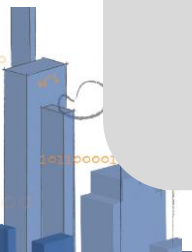
**#2 – Definition of a BIM strategy**



**#4 – Deployment on next projects and/or existing buildings**

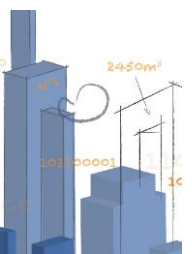
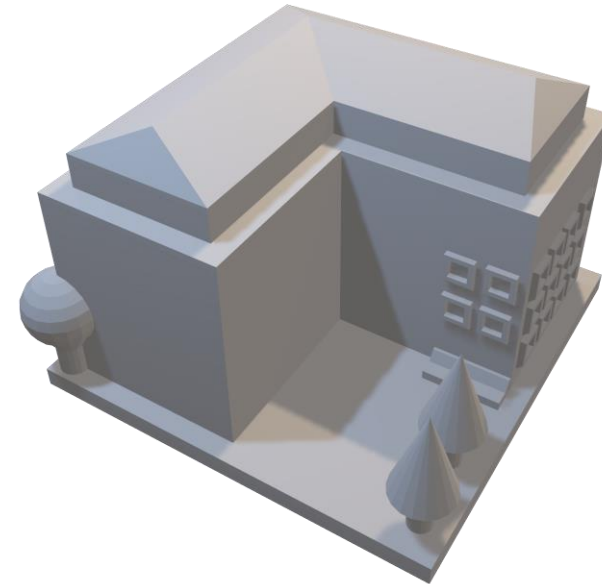


**#3 – Implementation on a pilot project**



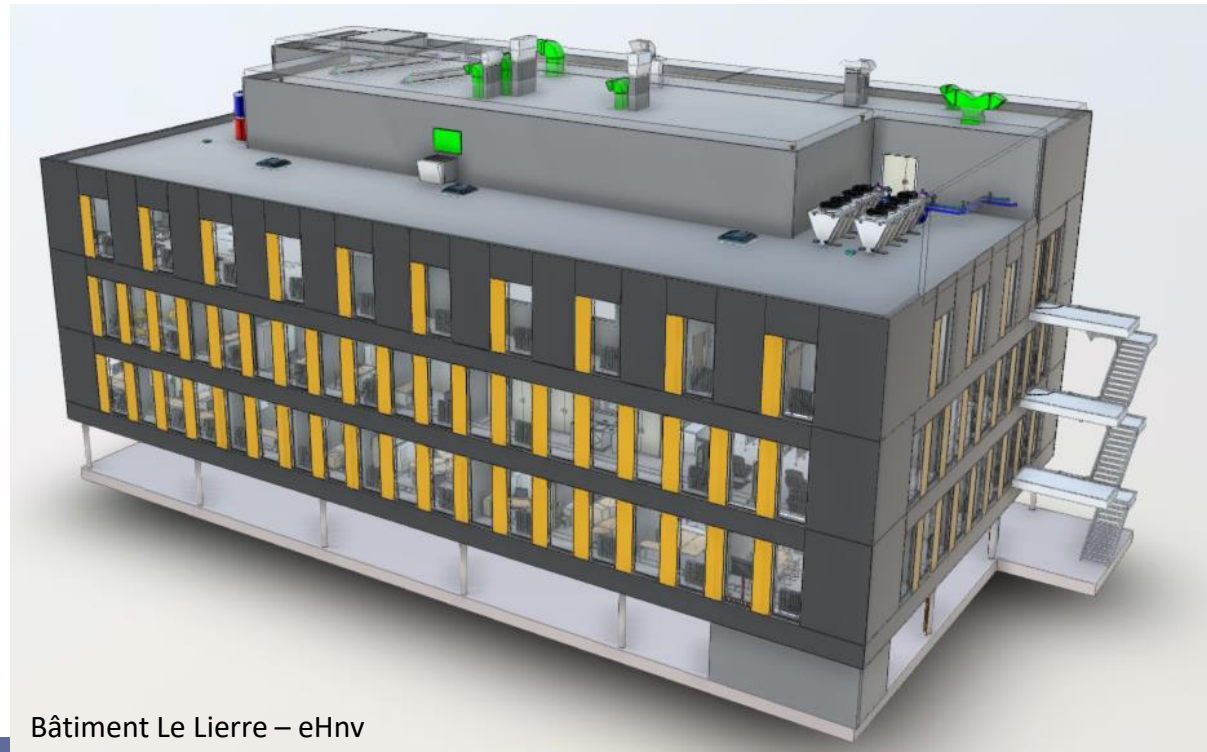
# #3 – Implementation on a pilot project

- 🔗 BIM modeling of an existing building
- 🔗 Integration in a BIM-compatible FM tool
- 🔗 Test by users
- 🔗 Return on Experience
- 🔗 Update of BIM documents

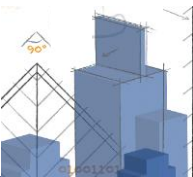
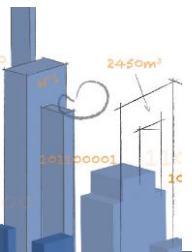


# #3 – Implementation on a pilot project

- 🔗 BIM modeling of an existing building
  - Using 2D drawings
  - Gathering information from all kind of sources (old drawings, excel sheets, etc.)



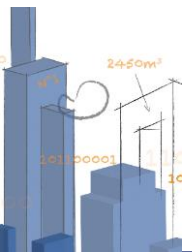
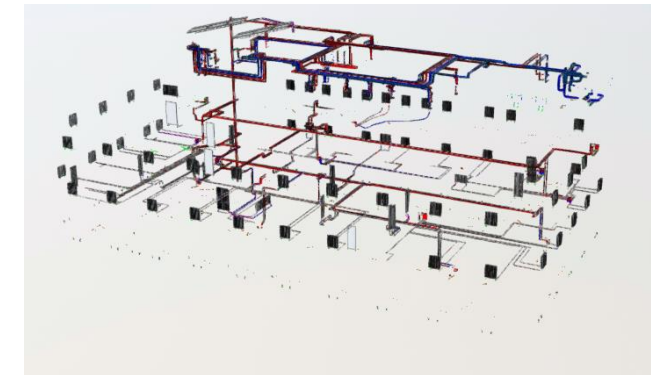
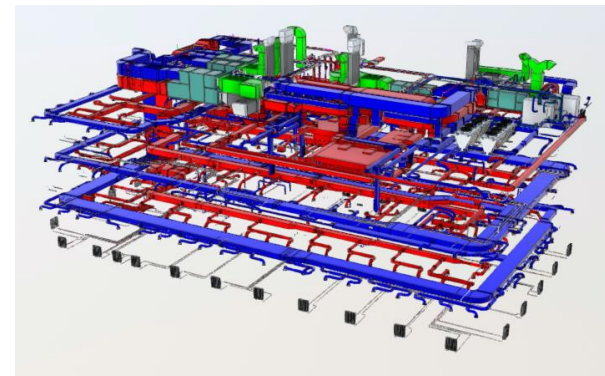
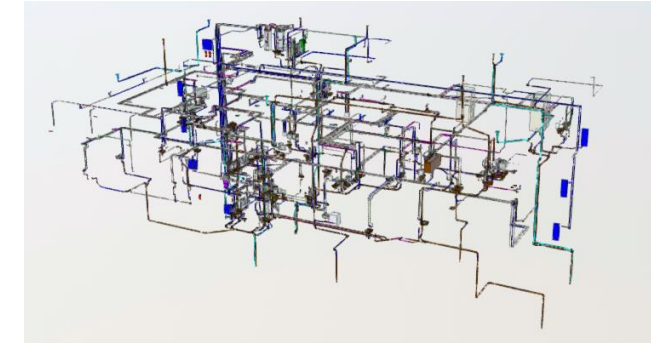
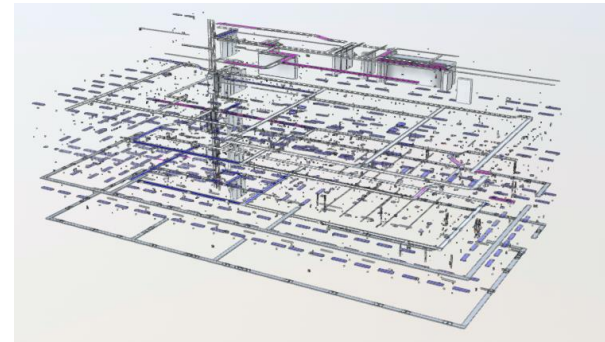
Bâtiment Le Lierre – eHnv



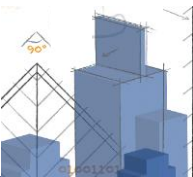


# #3 – Implementation on a pilot project

## BIM modeling of an existing building



Bâtiment Le Lierre – eHnv



# #3 – Implementation on a pilot project

## 🔗 Integration in a BIM-compatible FM tool

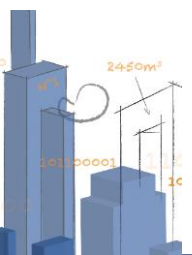
### ○ Objective :

- Experience an **FM tool that is compatible with BIM** (another FM tool is already in place as CMMS)
- **Test some usecases** to confirm benefits of BIM in Facility management

### ○ Involvement of Aremis for **integration of the FM tool «Archibus»**

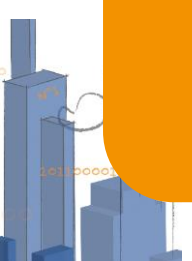
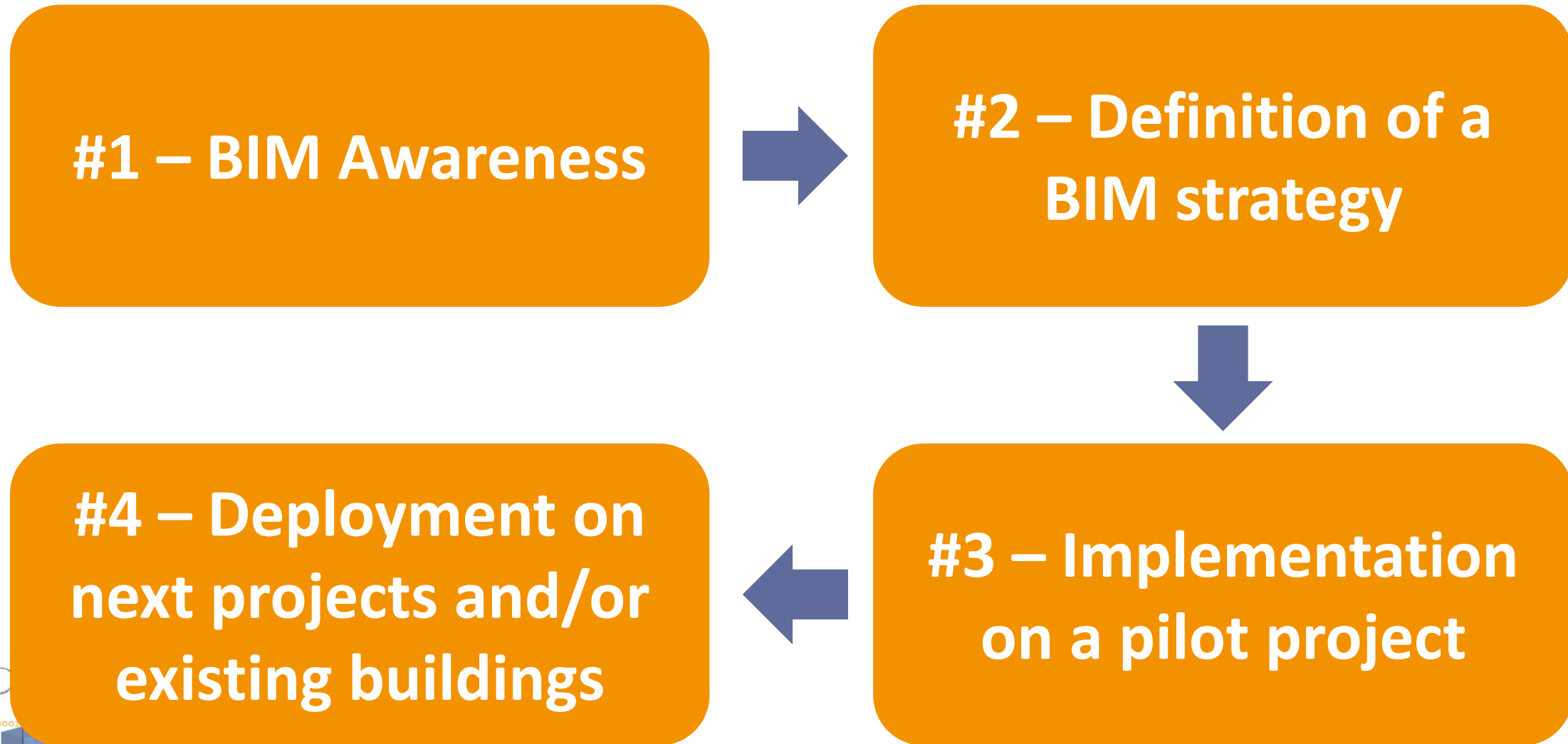
### ○ Pre-POC (Proof Of Concept)

- **Information and training of 10 users**
- Integration of eHnv 3D model into Archibus  
→ **technology approved**
- Tests in live with some basic BIM uses
- Return on experience → **the tool presented seems to be useful, to be tested on longer term**





# #4 – Deployment on next projects and/or existing buildings



# #4 – Deployment on next projects and/or existing buildings

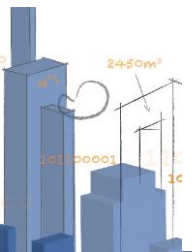
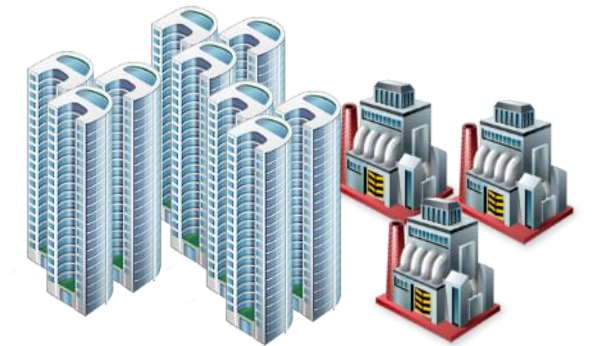
## 🔗 Last steps :

○ Deploy this tested strategy **on all the projects to come**

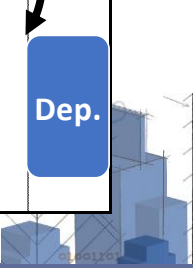
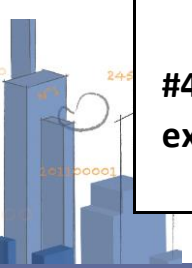
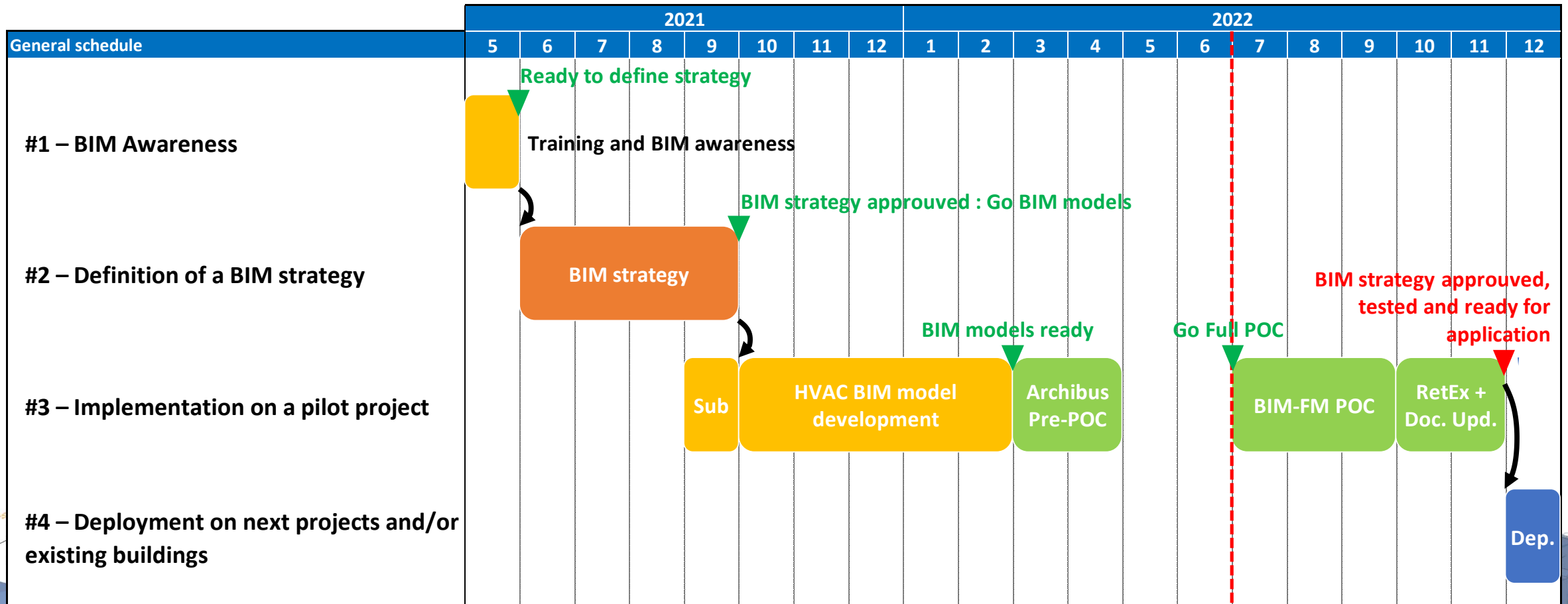
- Use the documents drafted for tender

○ Deploy this strategy **on your existing buildings**

- Modelize your buildings in BIM (based on priority and use cases)
- Integrate them into the BIM-FM environment



## An idea of the timing...



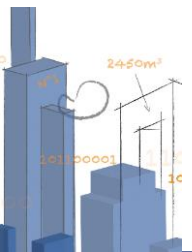
# Main highlights

## 🔗 What worked well :

- Importance of training and awareness of all parties involved,
- Tools and processes adapted to real needs,
- Defined framework allows to control BIM modeling

## 🔗 What to be careful of :

- Budget : over costs can occur
  - Quality of information provided → some drawings were already out of date
  - BIM maturity of stakeholders → transition and good practices are ongoing
- Difficulties for users to project their work and uses of BIM without knowing the full possibilities





Analysis – Support – AMO BIM – BIM Management – Consulting  
Quality control – Reporting – Strategy – Virtual Reality

