



## BIM for Large Healthcare Projects

Jacques Lévy-Bencheton – Brunet Saunier Architecture  
Emmanuel Di Giacomo – Autodesk

### AB2438

Discover many examples of the use of Building Information Modeling (BIM) on some large health care projects in Europe and see BIM implementation used for a new typology of hospitals developed since 2005 by Brunet Saunier Architecture in Paris. The use of Autodesk® Revit® Architecture software corresponds to the advent of this new typology of hospitals. Jacques Lévy-Bencheton, Architect and BIM Manager since 1992 in Brunet Saunier will describe his company, describe their BIM processes and workflows, and explain how the company succeeded in their transition from CAD to BIM, making them one of the leading architectural practices in France. You will learn about the following hospitals projects: Cannes, Douai, Toulon, Lagny near Disneyland, and the modular hospital of Argenteuil. You will also see a more in-depth technical presentation on the projects of the University Hospital of Geneva and the Chambery Hospital.

### Learning Objectives

At the end of this class, you will:

- View some of Brunet Saunier Architecture's projects
- Discover the evolution of the different hospitals typologies
- Understand the importance of the use of BIM in Healthcare projects
- See some examples of built projects

### About the Speaker

Jacques Lévy-Bencheton, D.P.L.G. Architect - BIM Manager  
Partner at Brunet Saunier Architecture

Lectures:

- BIM Conference 2012 – “BIM for healthcare” Zurich for Building Smart.
- BIM Conference 2010 – “Presentation of two major hospital projects made digital model”.
- BIM Conference 2008 – “The use of BIM and 3D model for major architectural projects”.
- BIM experience award in 2007 receive by Jay Bhatt Vice president, AEC Solutions Autodesk, Inc.

Publications:

- Les Cahiers Techniques du Bâtiment Mai 2012 « Design using a numerical model »
- SmartMarket Report 2010
- McGrawHill CONSTRUCTION - « Applying BIM to projects of Any Size » ESEAN Nantes France
- Autodesk Magazine 2008 – « Talk »
- Autodesk Magazine 2007 – « Work the way you think »
- Le Moniteur 2006 – « The single data model »

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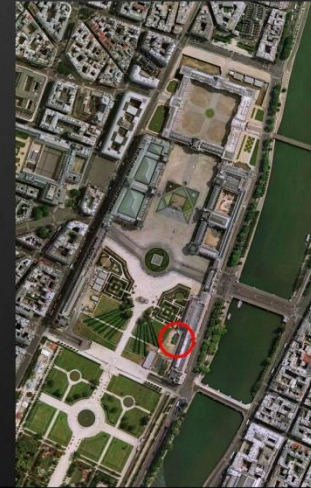
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## Brunet Saunier Architecture introduction

### Projects that earned the firm's reputation

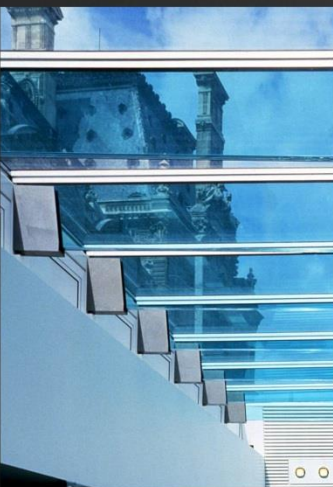
## The Research Laboratories of the Museums Of France



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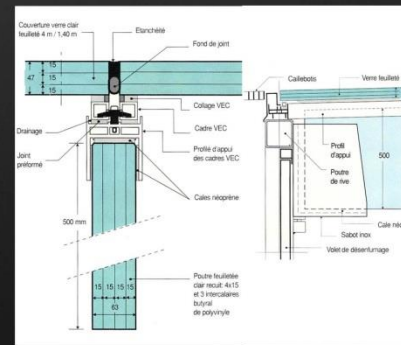
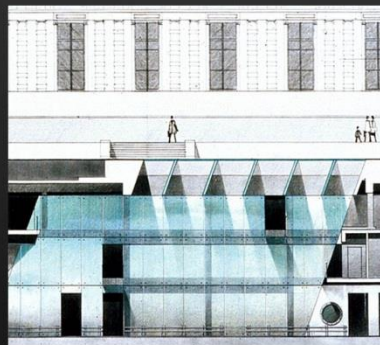
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## The Research Laboratories of the Museums Of France



- Site: Palais du Louvre
- Gross area: 5,500 sq.m

- Building cost: 7 M€
- Engineers: OTH



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## Town Hall Administrative Center Saint-Germain-en-Laye

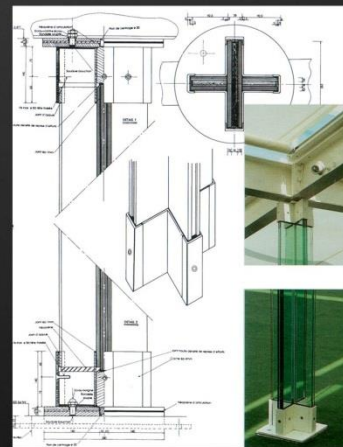


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## Town Hall Administrative Center Saint-Germain-en-Laye

- Detail of a laminated glass column
- Site: Saint-Germain-en-Laye
- Engineers: OTH
- Gross area: 7,000 sq.m
- Building cost: 9 M€



Vertical and horizontal sections of the columns.

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## Functional rehabilitation center for children



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## Functional rehabilitation center for children



- Site: Resort town of Palavas Les Flots
- Engineers: Jacobs Serete, Paris
- Gross area: 15,000 sq.m
- Building cost: 16 M€

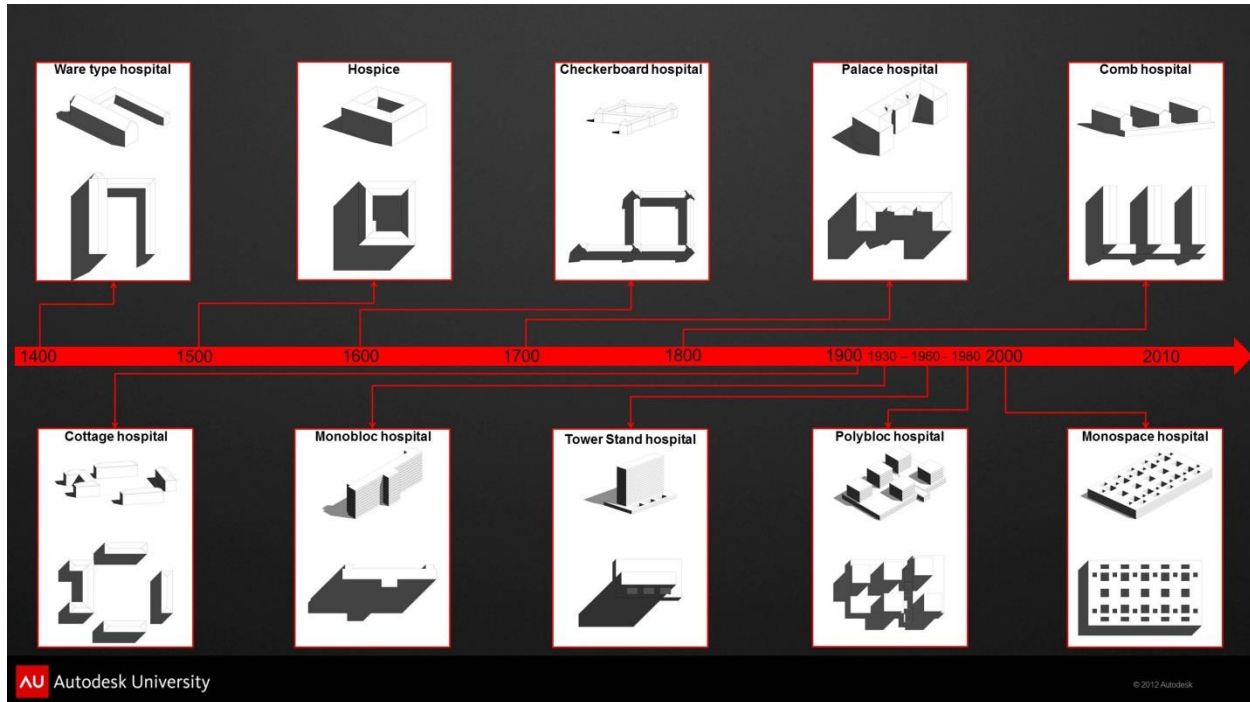


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## Typologies, Simplicity & Monospace

### Typologies – Evolution in time



Three distinctive periods mark the evolution of hospital typology:

- The period when the institution was intended solely for the accommodation of the poor and needy;
- The period when it looked after sick patients until their death;
- The much more recent and still current period when its purpose is to help patients get well.

It wasn't until the 21st century that a precursor of the 'monospace' was developed by Brunet Saunier Architecture.

This concept, concretized in the simple form of an 'homogeneous block perforated with patios', was novel and has since been acclaimed by the users of the first hospitals designed according to monospace guidelines in Douai, Chalon, Toulon, and elsewhere.

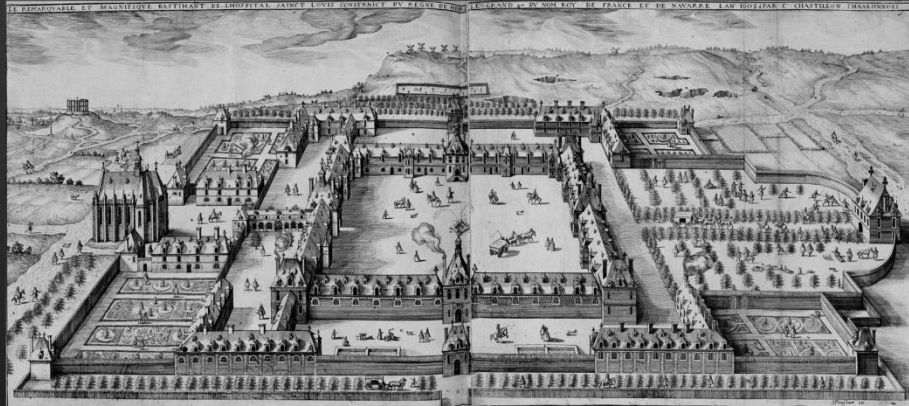
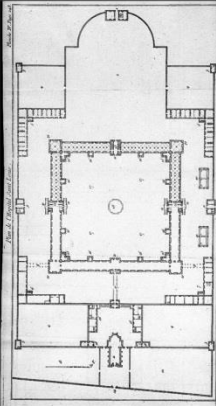
To resume, 600 years between the "Hospice" until the "Cottage hospital" and 100 years from the vertical "monobloc hospital" until the horizontal "monospace".

So that we can notice the extraordinary acceleration of the building hospital evolution due to the medical and technical advances.

Les Hospices Civils de Beaune ou Hôtel-Dieu de Beaune - France

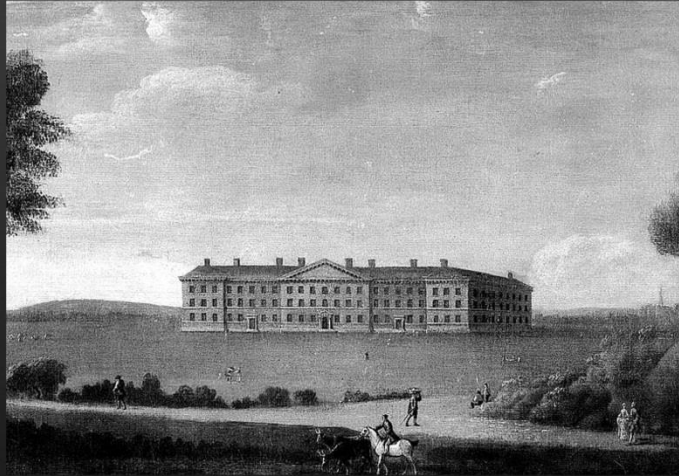
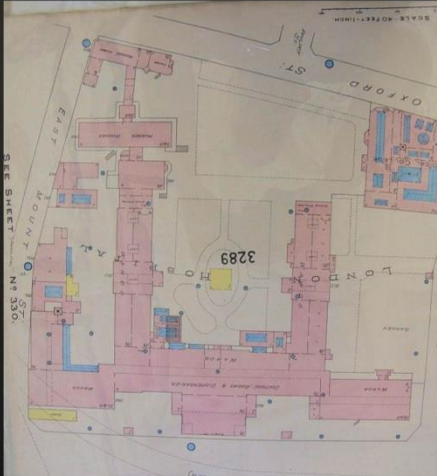


Saint-Louis hospital, Paris - France

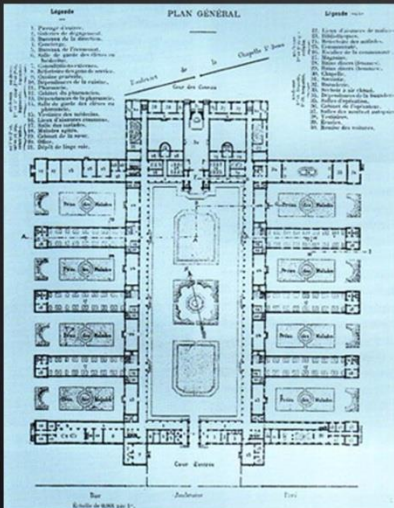




Royal Hospital, London - England



Lariboisière hospital, Paris - France



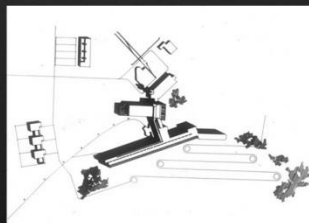
Edouard Herriot hospital, Lyon - France



Jules Bordet Institute, Bruxelles - Belgium



Sanatorium, Alvar Aalto Paimio - Finland





CHRU Caen hospital, Caen - France



Robert Debré hospital, Paris - France



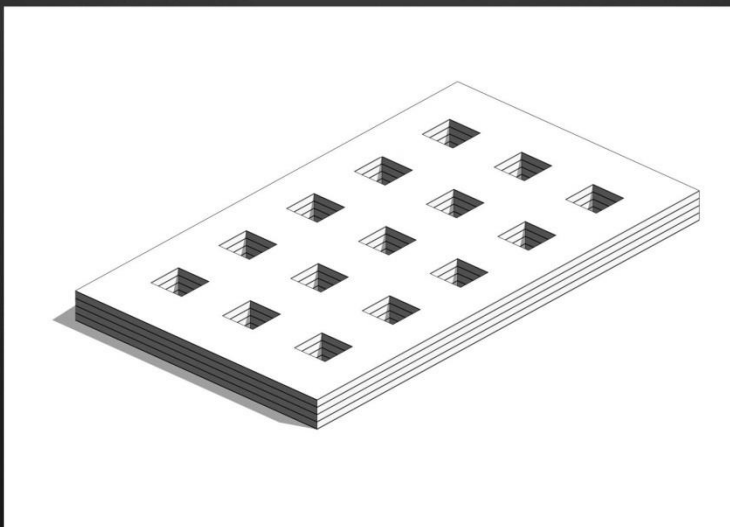


## Simplexity

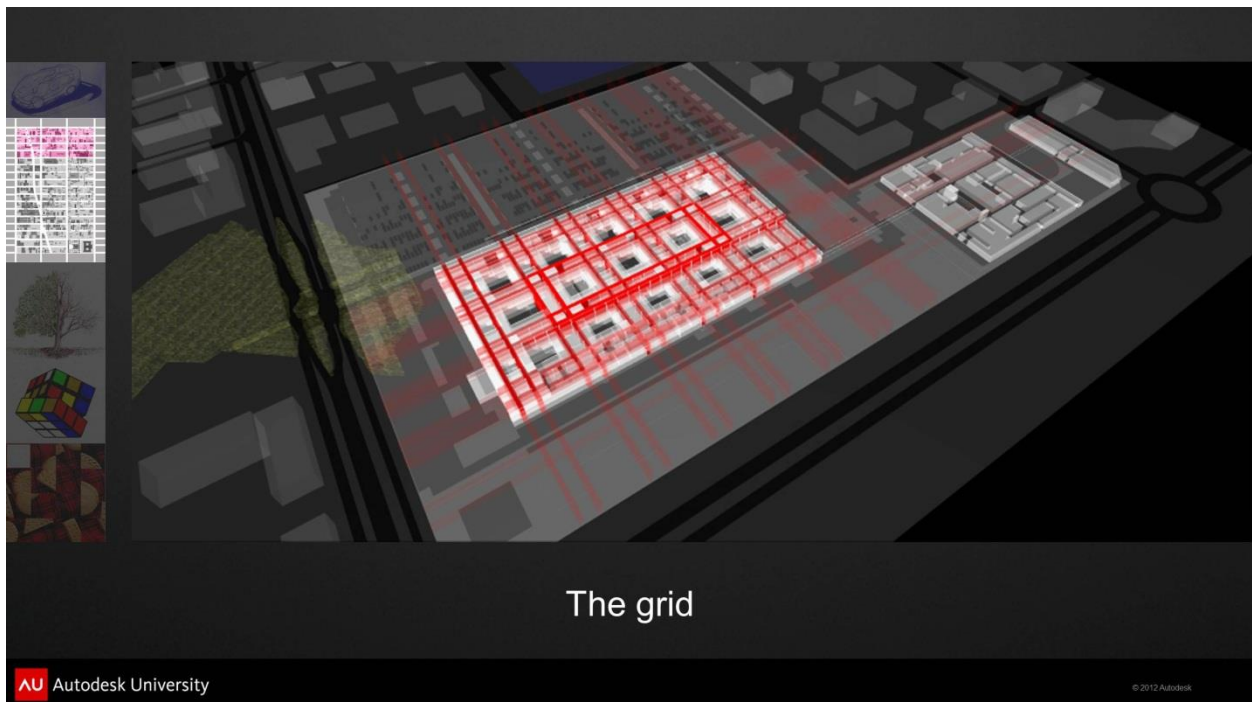
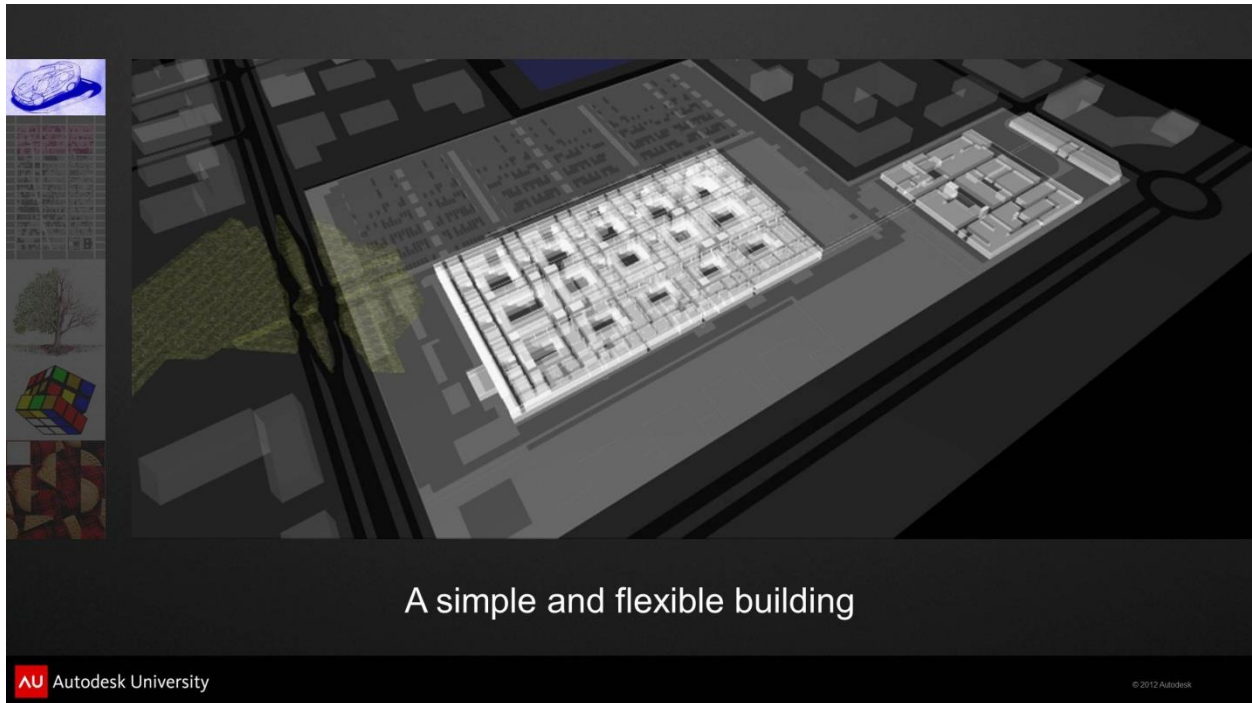
### Simplexity - The requirements

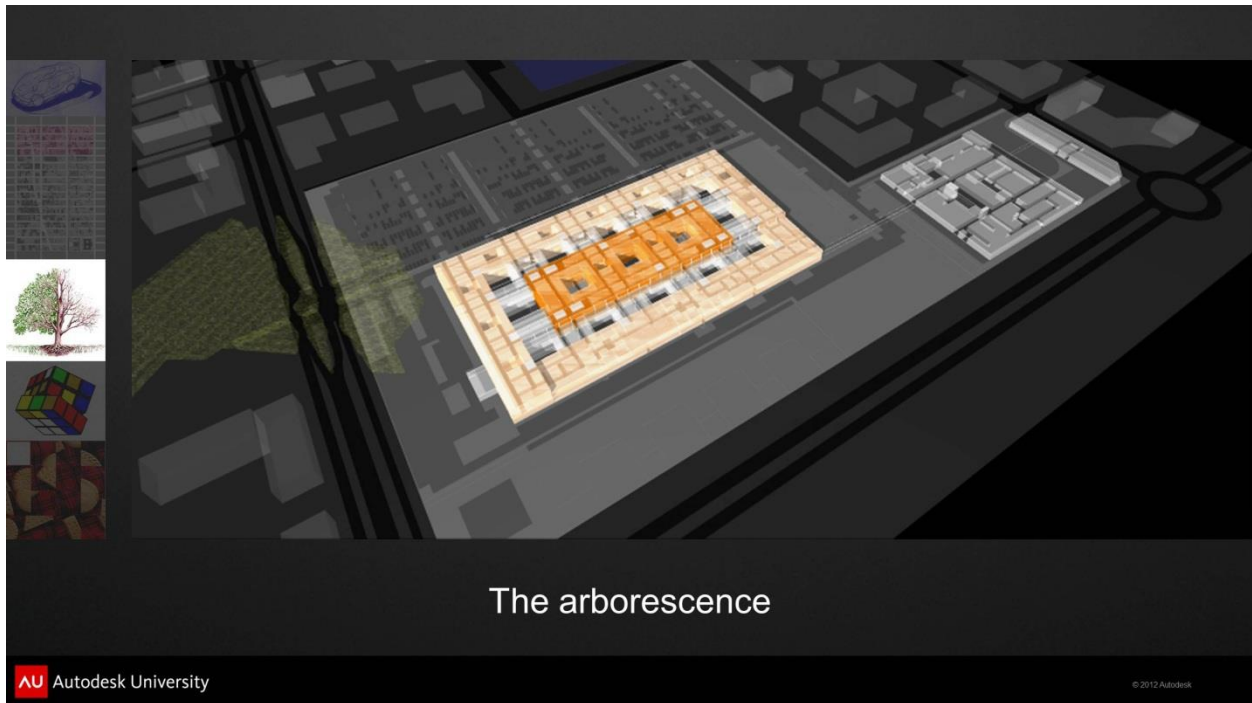


### Simplexity - Our answer

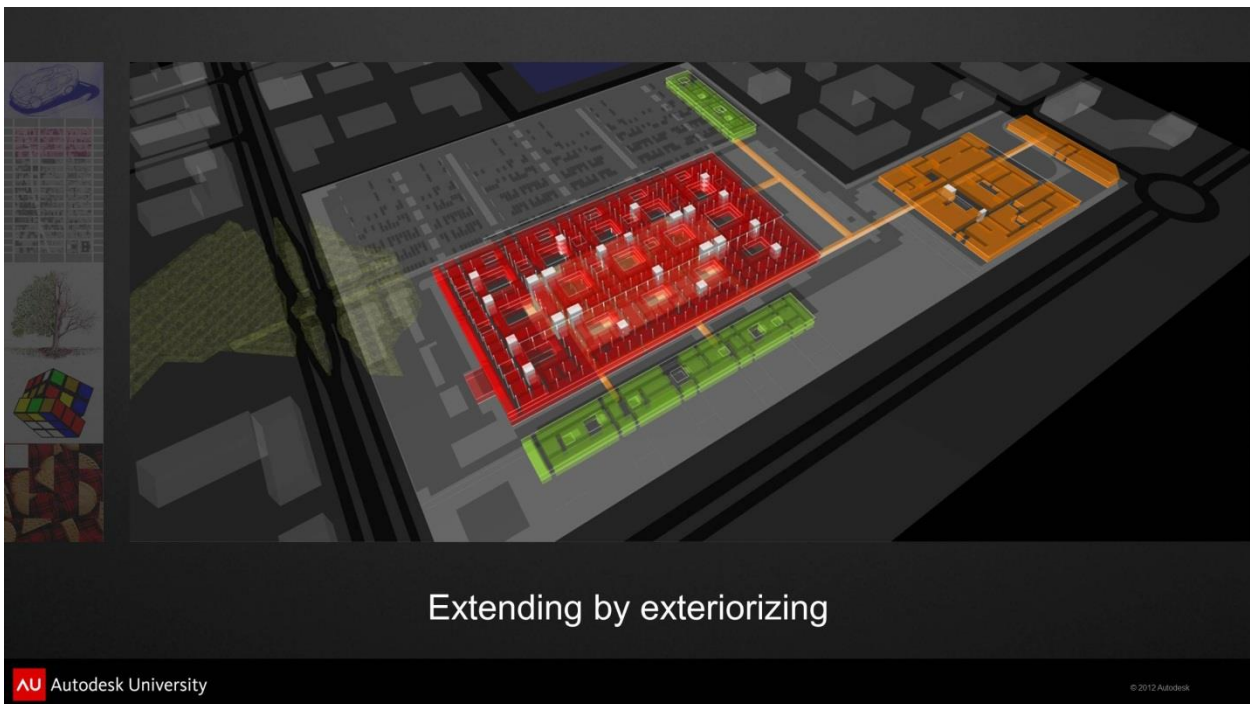
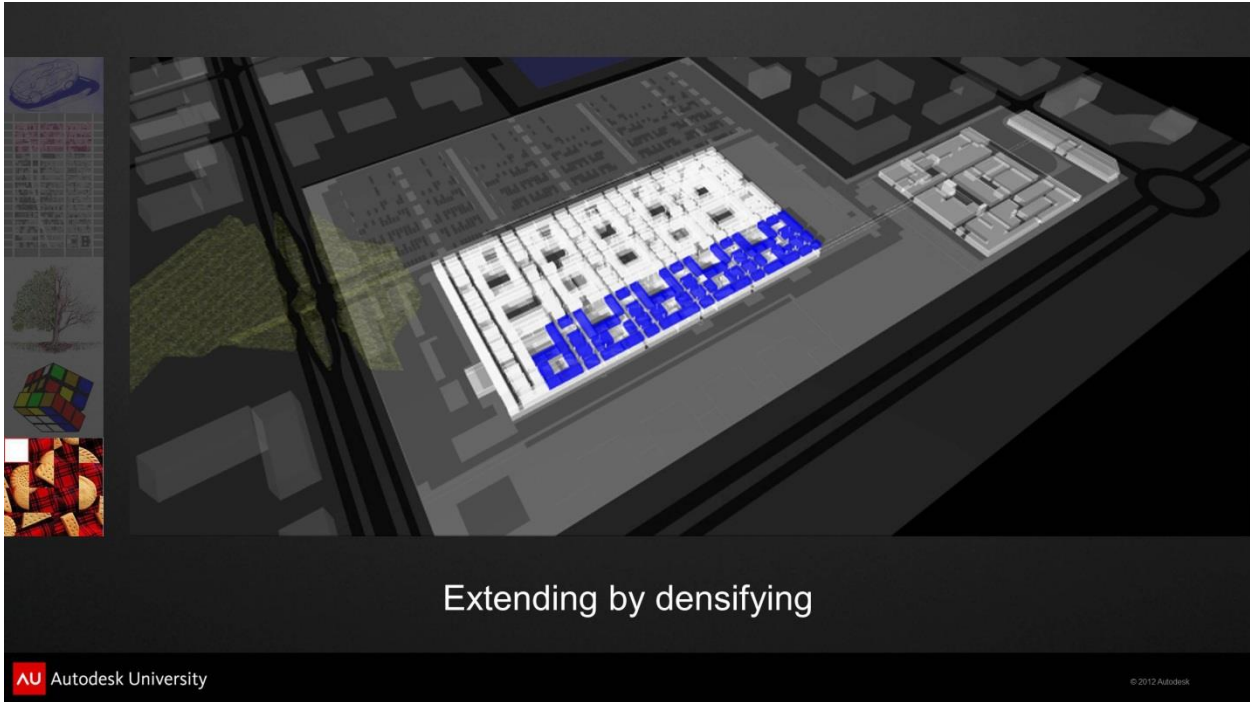


## Monospace – Answer for a modern medicine

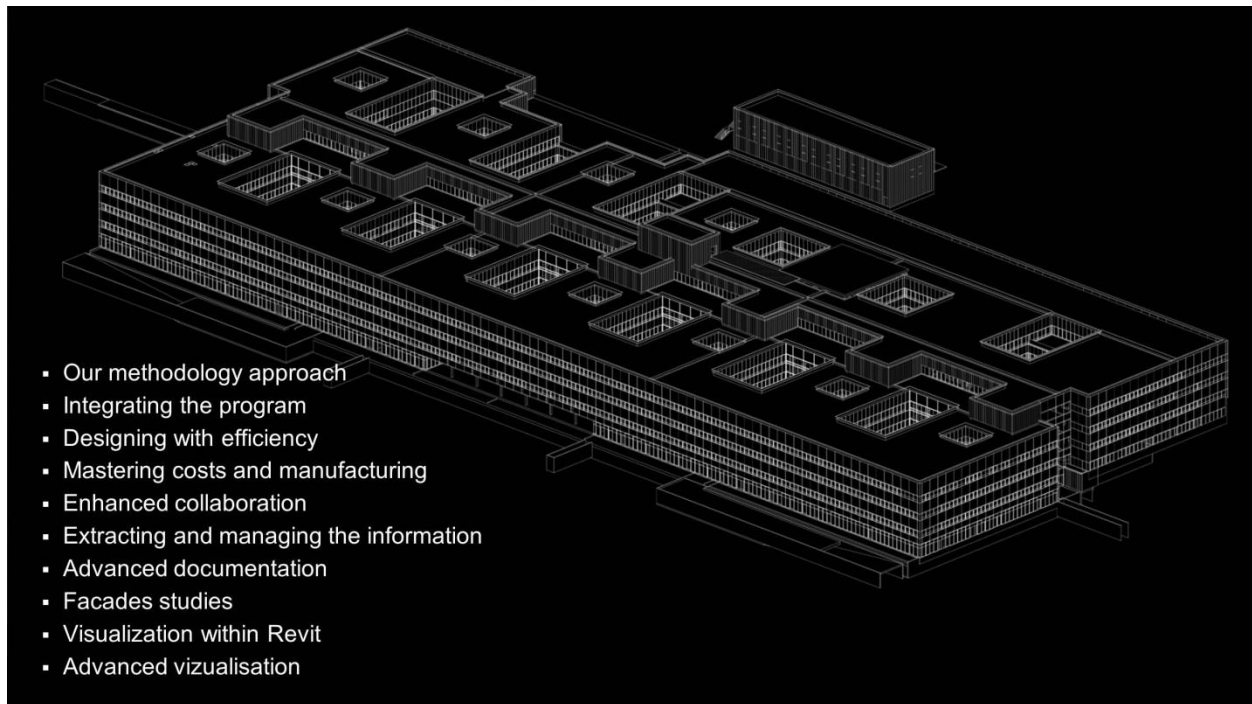




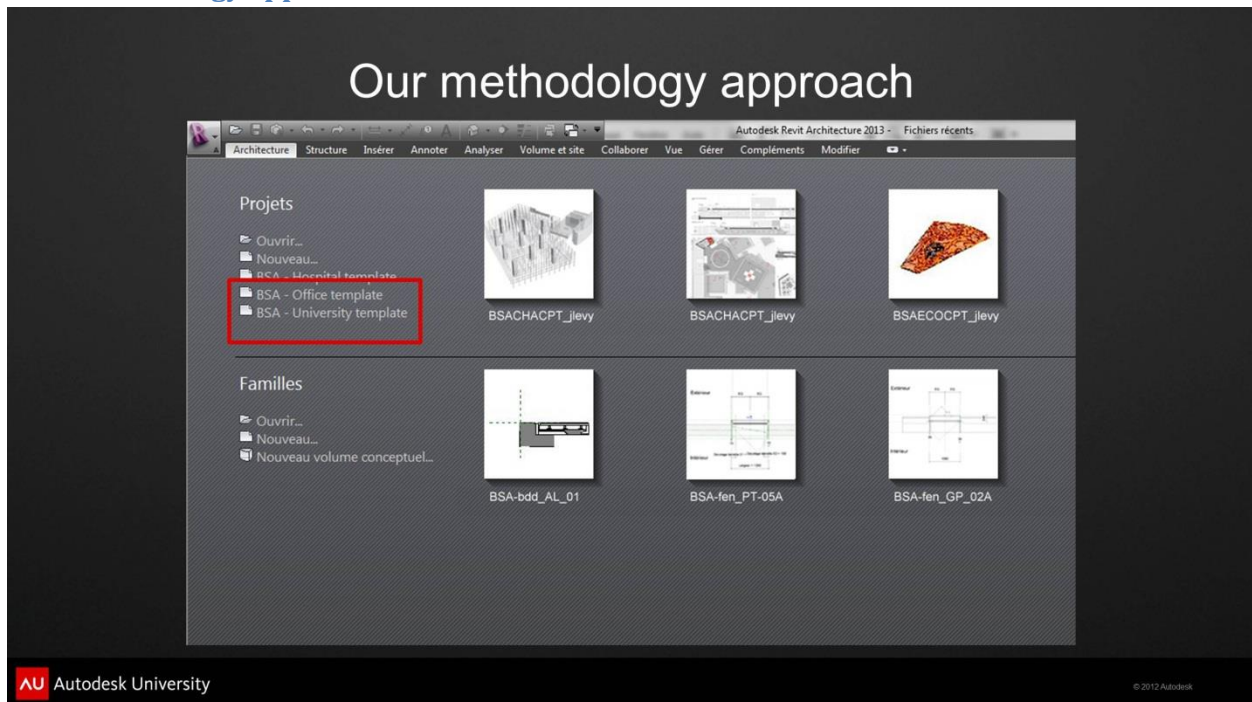




## BIM for Healthcare – The best approaches



## Our methodology approach



## Our methodology approach

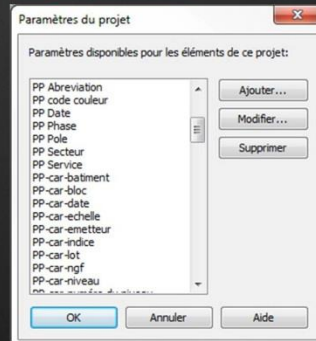
### Preparing project template

- Shared parameters
- Workset
- Browser
- Project parameters
- Titleblocks
- Customized schedules
- View templates
- Custom walls, roofs & profiles
- Preloaded families
- Object styles
- Fill patterns
- Materials

### Shared parameters



### Project parameters

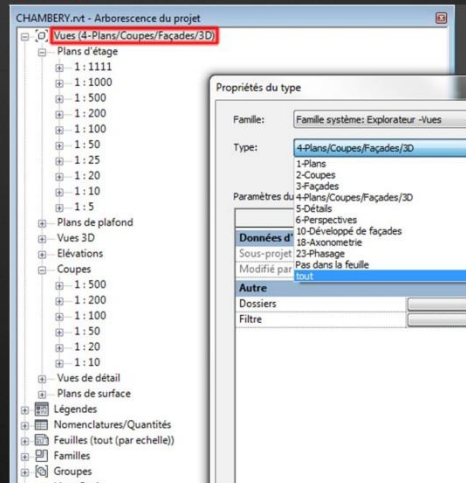


## Our methodology approach

### Worksets

Sous-projets					
Sous-projet actif:					
31-STRUCTURE (non modifiable) <input type="checkbox"/> Graphiques grisés dans les sous-projets inactifs					
Nom	Modifiables	Propriétaire	Emprunteur(s)	Ouvrer	
00-PLAN MASSE	Non			Ou	
01-NIVEAU -3	Non			Ou	
02 - RADIOTHERAPIE - PHASE 01	Non			Ou	
02 - RADIOTHERAPIE - PHASE 02	Non			Ou	
02 - RADIOTHERAPIE - PHASE 03	Non			Ou	
02 - RADIOTHERAPIE - PHASE 04	Non			Ou	
03-NIVEAU -1	Non			Ou	
04-NIVEAU 0	Non			Ou	
05-NIVEAU 1	Non			Ou	
06-NIVEAU 2	Non			Ou	
07-NIVEAU 3	Non			Ou	
08-NIVEAU 4LT	Non			Ou	
09-NIVEAU 5LT	Non			Ou	
20-FACADES EXTERIEURE	Non			Ou	
23-FACADE GRANDS PATIOS	Non			Ou	
22-FACADE PETITS PATIOS	Non			Ou	
30-DALLES	Non			Ou	
31-STRUCTURE	Non			Ou	
32-NOYAUX	Non			Ou	
33-EXTERIEURS	Non			Ou	
34-EXTENSIONS	Non			Ou	
35-GARAGES	Non			Ou	
50-SITE	Non			Ou	
51-VOLUMES	Non			Ou	
52-TERRAIN NATUREL	Non			Ou	
60-IMPORTS	Non			Ou	
61-QUADRILLAGES & NIVEAUX	Non			Ou	


### Browser





## Integrating the program

## Integrating the program



71 353 sqm.

78 488 sqm.

Code local	Nature du local	Proximités/ Remarques	# locaux	m² unit/ local	total m² utile
AL017	Bureau AHL	2 postes info	1	15	15
AL018	Office alimentaire		1	20	20
AL019	Local ménage		1	6	6
AL020	Lingerie commune	Armoire	1	15	15
AL021	Matériel encombrant		1	30	30
AL022	Vestiaires personnel	260p 5 modules de 52 vestiaires	5	36	180
AL023	Linge propre vestiaire	attenant aux vestiaires	1	12	12
AL024	Linge sale vestiaire	attenant aux vestiaires	1	8	8
AL025	Sanitaire douche	attenant aux vestiaires	1	26	26
AL026	Sanitaire douche	attenant aux vestiaires	1	14	14
	Stockage chariots	pour 5 chariots en surtaleur de couloir	1	pm	pm
	<b>sous-total m²</b>				<b>326</b>
	<b>Total m² pour logistique plateaux médico-techniques</b>				<b>326</b>

Administration commune des plateaux médico-techniques

UDSP-UDSP-HAD CSQ-UMG UHPP Logistq hébergements Logistq plateau médico tech Logistq plateau méca Logistq plateau tertiaire Logistq ambu Urgence

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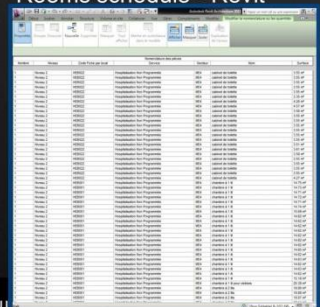
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## Integrating the program

DB Link

↑

Rooms schedule - Revit



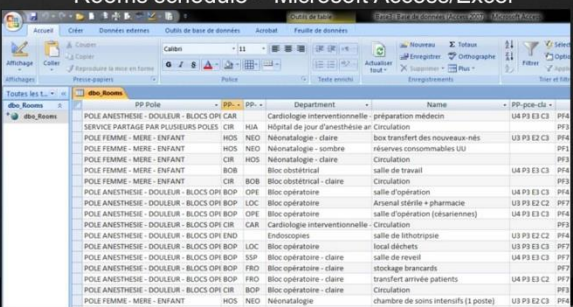


Enriching the BIM database

MS Access  
MS Excel

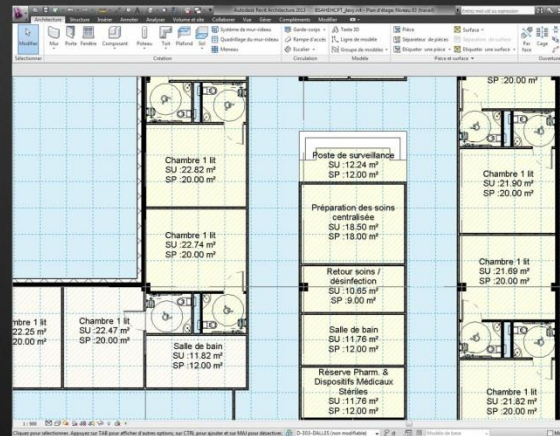
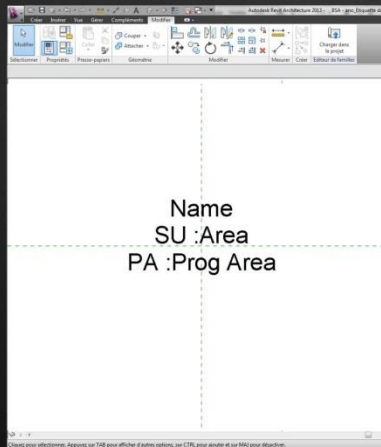
↑

Rooms schedule - Microsoft Access/Excel



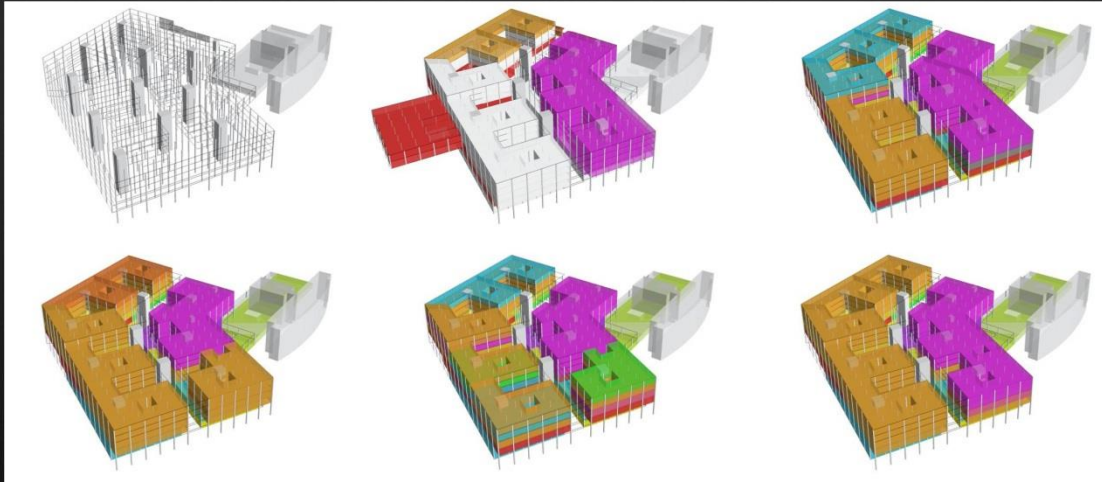
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## Integrating the program



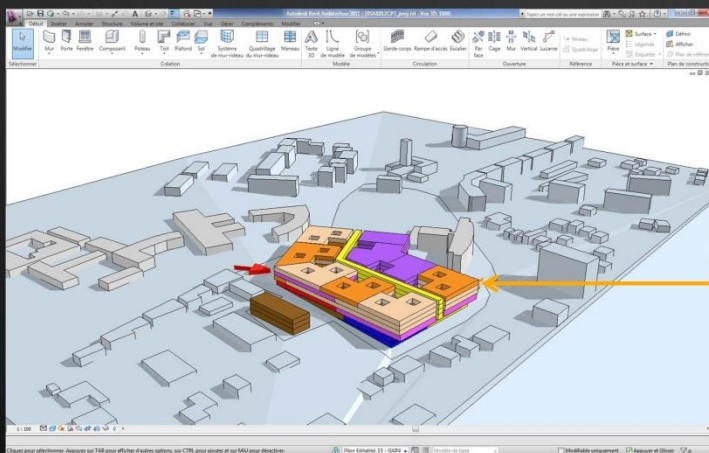
## Designing with efficiency

## Designing with efficiency



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## Designing with efficiency

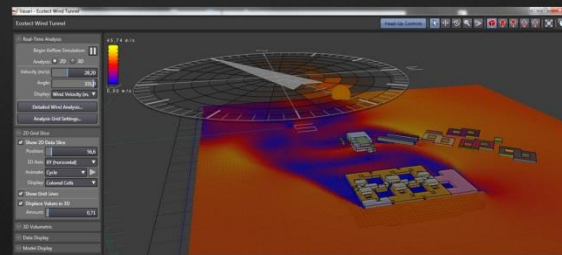
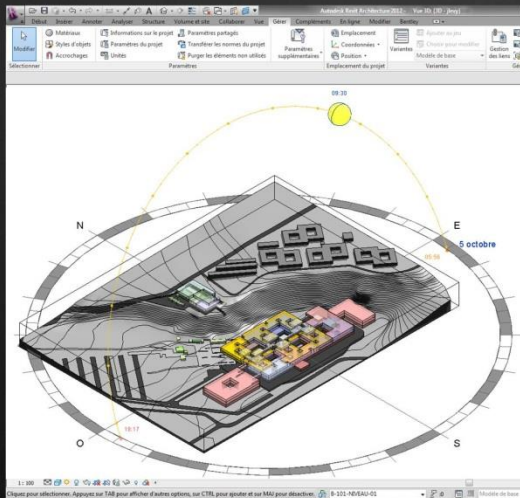


Logiciel Acoustique	Logiciel et microphone à sonnette	10 700 €
Pôle Chant	Logiciel communale R&S - SC	774 €
Logiciel techniques	Logiciel techniques	12 574 €
Logiciel non médicale	Logiciel central	1 160 €
Logiciel techniques	Parking	8 016 €
Médico Technique	Pharmacie	2 555 €
Fonction technique et support	Plateau de rééducation	4 45 €
Médico Technique	Radiesthésie	15 47 €
Médico Technique	Rééducation	1 620 €
Pôle Chant	S&P - CB&A C19	483 €
Pôle Chant	S&P&R	4 45 €
Fonction technique et support	STP	1 31 €
Pôle Chant	Surveillance continue	630 €
Pôle Chant	UNICD et cellules déformées	4 45 €
Consultation et explorations fonctionnelles	UNICD adulte et soins palliatifs et unité mobile - RAD	390 €
Hébergement	UNICD hospitalisation Post Partu	634 €
Hébergement	UNICD hospitalisation prépartu	636 €
Pôle Chant	Urgences adultes	1 179 €
Pôle Chant	Urgences pédiatriques + UNICD	630 €
Hébergement	US Pédiatrie adolescent 10 lits	557 €
Hébergement	US Pédiatrie moyen grands 12 lits	314 €
Hébergement	US Pédiatrie petit moyen 13 lits	754 €
Hébergement	US Pédiatrie surveillance continue 4 lits	139 €
Hébergement	USP - USP	7 720 €

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## Designing with efficiency



## Mastering costs and manufacturing

### Mastering costs and manufacturing



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### Mastering costs and manufacturing

COMPONENT / WOODEN FACADE ELEMENT (integrating a cut variable angle element)



FAMILY OBJECTS AND PANELS TYPES



SOLID PANEL TYPE FAMILY



TYPE 2



TYPE 1

GLAZED PANEL TYPE FAMILY



TYPE 2

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## Mastering costs and manufacturing





## Enhanced collaboration

# Enhanced collaboration

**Architects data**

DESIGNATION		DONNÉES DU LOCAL										DONNÉES ARCHITECTES										CLOISONS									
Niveau	Local	Désignation du local	Surface	Périmètre	Hauteur sous plafond	Valeur acoustique	Classification BCO	Niveau fini	Niveau brut	Charge utile étaiage	Charge utile concentrée	Type revêtement	Plancher	Valeur acoustique	Faux plancher	Résistance électrique	Adhérence	Type finition	Vitrée	Châssis vitré	Store	Protection murale	Type plafond								
7	102.0	Chambre 2 lits	26.16 m²	2428	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	102.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	103.0	Chambre 2 lits	26.16 m²	2430	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	103.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	104.0	Chambre 2 lits	26.6 m²	2467	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	104.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	105.0	Sas ch iso	6.05 m²	1189	240	?	8	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	DM								
7	105.1	Chambre isolement	16.51 m²	1642	260	?	8	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	DM								
7	105.2	SOB	4.97 m²	882	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	106.0	Sas ch iso	6.23 m²	1169	240	?	8	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	DM								
7	106.1	Chambre isolement	16.72 m²	1652	260	?	8	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	DM								
7	106.2	SOB	4.97 m²	882	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	107.1	Chambre isolement	23.02 m²	1958	260	?	8	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	DM								
7	107.1	Sas ch iso	2.81 m²	681	240	?	8	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	-	DM								
7	107.2	SOB	4.65 m²	941	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	108.0	Chambre 2 lits	26.61 m²	2502	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	108.1	SOB	4.32 m²	912	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	109	Séjour des patients	20.81 m²	1848	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	Imi	-	-	-	Onla								
7	110	Bureau RI	11.82 m²	1391	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	111.0	Chambre 2 lits	26.01 m²	2423	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	111.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	112.0	Chambre 2 lits	26.6 m²	2423	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	112.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	113.0	Chambre 2 lits	26.6 m²	2413	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	113.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	114.0	Chambre 2 lits	26.16 m²	2413	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	114.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	115.0	Chambre 2 lits	26.16 m²	2415	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	115.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	116.0	Chambre 2 lits	26.6 m²	2467	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	116.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								
7	117.0	Chambre 2 lits	26.6 m²	2467	260	?	-	33.10	33.07	2.0	2.0	CAO	CAO	a 10	-	?	?	SCAN + P	-	-	-	ACR	Onla								
7	117.1	SOB	4.2 m²	900	240	?	-	33.10	32.98	2.0	2.0	RES1	RES	-	-	?	?	CAR	-	-	-	-	DM								

# Enhanced collaboration

**Architect**

**Structure team**

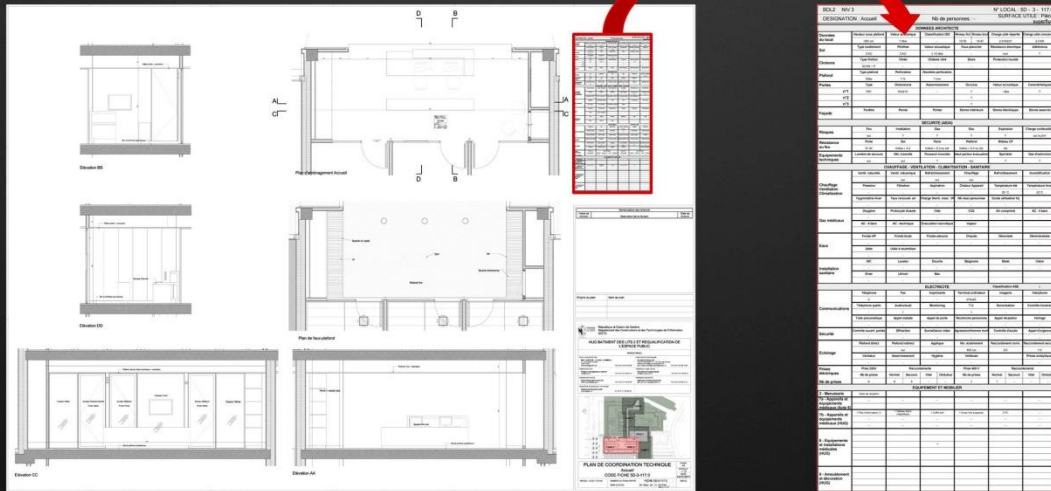
**MEP team**

**Contractor**

**Owner**

**Electricity**

## Enhanced collaboration



## Extracting and managing the information

## Extracting and managing the information

**BIMBACT Pro - Addendum du projet**

- >Tableaux des portes
- >Tableaux des portes des gaines
- >Copie (2) sur Liste des locaux (par service)
- >Copie du Liste des feuilles PRO
- >Copie du Liste des locaux (par nom)
- >Copie du Liste des locaux (par service)
- >Liste de vouts
- >Liste des feuilles
- >Liste des feuilles ADR
- >Liste des feuilles DFC
- >Liste des feuilles ESE
- >Liste des feuilles PRO
- >Liste des feuilles PRO PAR NUMERO
- >Liste des feuilles PSP
- >Liste des locaux (HSP)
- >Liste des locaux (par access PARE)
- >Liste des locaux (par code local)
- >Liste des locaux (par code unique)
- >Liste des locaux (par code unique L)
- >Liste des locaux (par niveau)
- >Liste des locaux (par nom)
- >Liste des locaux (par service)
- >Liste des locaux (par service) finitions
- >Liste des locaux (par SPQ2)
- >Liste des locaux (Surcharge)
- >Liste des locaux Finitions (Julid)
- >Liste des locaux Finitions SOLS (classement)
- >Nomenclature de mur
- >Nomenclature de mur (Surface facade partie plaine)
- >Nomenclature des chassis vitrés
- >Nomenclature des cloisons
- >Nomenclature des fenêtres
- >Nomenclature des fenêtres (Surface vitrage par niveau)
- >Nomenclature des fenêtres (Surface vitrage)
- >Nomenclature des luminaires
- >Nomenclature des meubles de rangement
- >Nomenclature des panneaux Hall
- >Nomenclature des plafonds
- >Nomenclature des portes
- >Nomenclature des portes (par famille et type)
- >Nomenclature des portes (par hauteur)
- >Nomenclature des portes PARFONCTION
- >Nomenclature des portes PARFONCTION DETAILLEE

### Schedules lists

Modifier la nomenclature ou les quantités	Service affecté (par service)	Service	Area
<b>Mur en alite</b>			
		Ingenierie technique	1202 m²
Finition Technique		Laboratoire microbiologie et biologie	3102 m²
Pile Local		Local commun Réa. BC	174 m²
Local		Local technique	4102 m²
Couloir sans nébuleux		Couloir central	1202 m²
Local Technique		Pharmacie	1002 m²
Finition Interne et support		Niveau de distribution	402 m²
Finition Technique		Radiographie	1202 m²
Finition Technique		Radiation	1202 m²
Pile Local		Juvén. OBIA ETS	402 m²
Pile Local		Stable	402 m²
Finition Interne et support		EPS	102 m²
Pile Local		Surveillance centrale	602 m²
Pile Local		PROJ + cabinet externe	402 m²
Intergration		Centre d'exploration microscopique	1002 m²
Intergration		Lab. Analyse et suivi pathologie et anti-moisiss.	402 m²
Intergration		Unité de production des tests	602 m²
Intergration		Unité de production des produits	602 m²
Pile Local		Couloir externe	1012 m²
Pile Local		Couloir périphérique + USQ2	602 m²
Intergration	(2) Plateau extérieur 10.0m		1027 m²
Intergration	(2) Plateau neutre grande 10.0m		1014 m²
Intergration	(2) Plateau petit moyen 10.0m		704 m²
Intergration	(2) Plateau surveillance central x 0m		1002 m²
Pile Local	USQ		3702 m²

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## Extracting and managing the information

Autodesk Revit A

Architecture Structure Insérer Annoter Analyser Volume et site Collaborer Vue

Propriétés Groupe Dissocier Nouvelle Supprimer Masquer Tout afficher Mettre en surbrillance dans le modèle

Propriétés En-têtes Lignes Colonnes Élément

Modifier la nomenclature ou les quantités

Nom de la pièce	Nomenclature des styles de pièces	
	Finition du plafond	Finition du sol
1	FPf4	Ss2
2	Ppt1	Sp2
3	FPf2	Ss1
4	Ppt	Ss3
5	FPf1	Ss4
6	FPm	Sc2
7	FPg1	Sr1
8	FPg2	Sc1
9	FPp1	Ss4
10	FPp2	SFP
11	FPa	Ss1 bis

Key numbers

Key numbers

**LEGENDE DES FAUX PLAFONDS**

**Fibre**

- FPf1 - Faux plafond hygiène dalle 120x60
- FPf2 - Faux plafond fibre minérale dalle 120x60
- FPf4 - Faux plafond dalles hydrofuges 120x60

**LEGENDE DES SOLS**

**Revêtements de sols souples:**

- Ss1 Sol souple PVC (U4 P3 E2/3 C2)
- Ss1 bis Sol souple PVC (Traitement JD ou étanchéité spécifique - décaissé à prévoir)
- Ss2 Complexe PVC sols et murs, siphon + forme de pente (décaissés à prévoir)
- Ss2 bis PVC sols antidérapants
- Ss3 Paliers d'escalier

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# Extracting and managing the information

Autodesk Revit Architecture 2012 - CHAMBERLYN.rvt

Architecture Structure Insérer Annoter Analyser Volume et site Collaborer Vue Gérer Compléments Modifier

Propriétés Groupe Disposer Nouvelle Supprimer Masquer Tout afficher Mettre au subtilisant dans le modèle Afficher Masquer Isolier Expliquer de l'ar

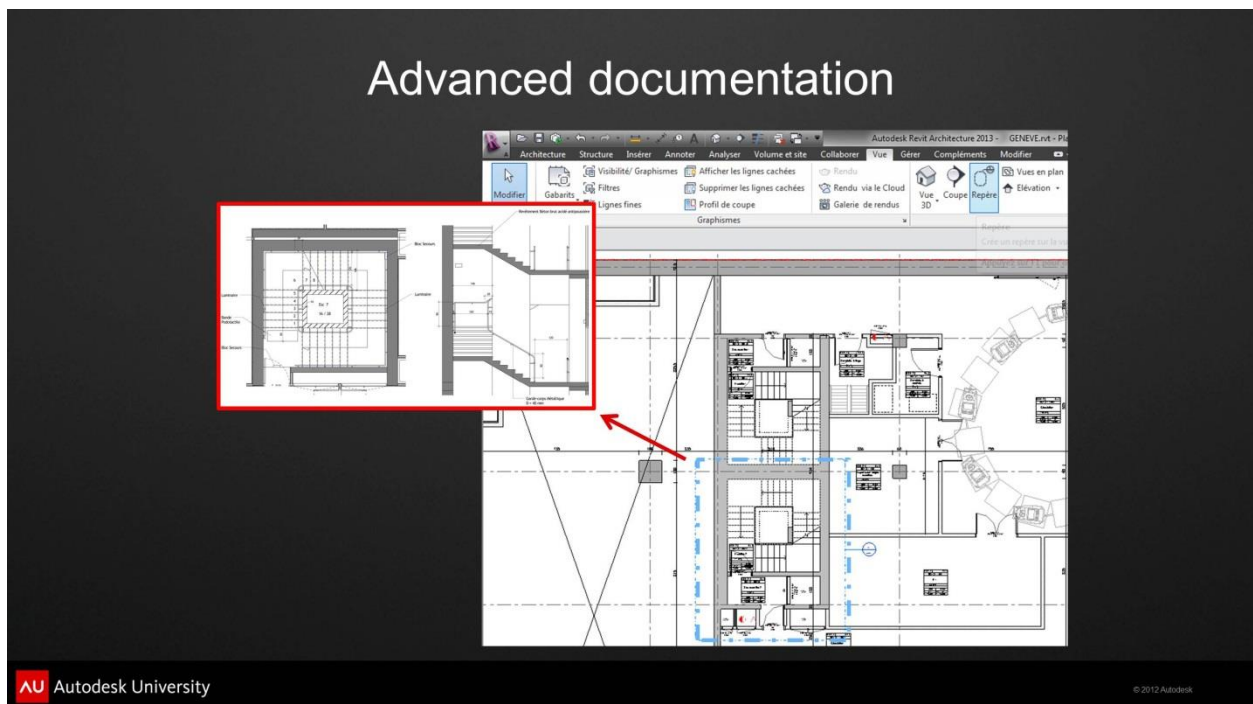
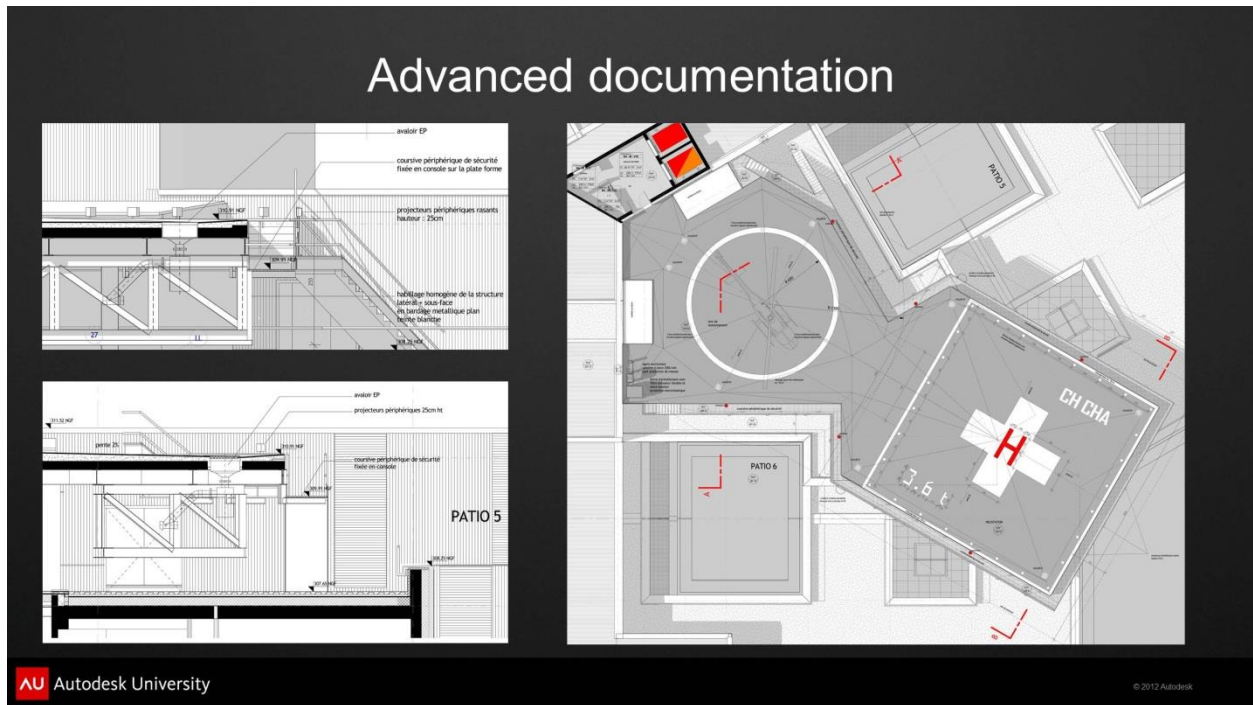
Propriétés En-têtes Lignes Colonnes Élément Filtrer les éléments non placés et non fermés Erreur

Modifier la nomenclature ou les quantités

Liste des locaux (par service)

Niveau	Rôle	Service	Nom	Area
01-Niveau S3	Locaux techniques	Locaux techniques	Local centrales de traitement d'air COT	66.98
01-Niveau S3	Locaux techniques	Locaux techniques	Local centrales de traitement d'air COT	21.19
01-Niveau S3	Parking	Locaux techniques	LT disséminum PC	4.88
01-Niveau S3	Parking	Locaux techniques	LT disséminum PC	4.88
01-Niveau S3	Parking	Locaux techniques	LT disséminum PC	4.88
01-Niveau S3	Parking	Locaux techniques	LT disséminum PC	4.88
01-Niveau S3	Parking	Locaux techniques	LT disséminum PC	10.53
01-Niveau S3	Locaux techniques	Locaux techniques	Local technique	73.64
01-Niveau S3	Locaux techniques	Locaux techniques	Local technique	49.85
01-Niveau S3	Locaux techniques	Locaux techniques	Local technique	12.11
01-Niveau S3	Locaux techniques	Locaux techniques	Local technique	9.72
01-Niveau S3	Parking	Parking	Sas	6.91
01-Niveau S3	Parking	Parking	Sas	7.63
01-Niveau S3	Parking	Parking	Sas	13.63
01-Niveau S3	Parking	Parking	Sas	4.99
01-Niveau S3	Parking	Parking	Sas	4.53
01-Niveau S3	Parking	Parking	parting	10.53
01-Niveau S3	Parking	Parking	parting	10.53
01-Niveau S3	Parking	Parking	Sas	10.58
01-Niveau S3	Parking	Parking	Sas	13.17
01-Niveau S3	Parking	Parking	Sas	6.91
01-Niveau S3	Parking	Parking	Sas	6.42
01-Niveau S3	Parking	Parking	Paler	18.58
01-Niveau S3	Parking	Parking	parting	4.88
01-Niveau S3	Parking	Parking	Sas	33.98
01-Niveau S3	Parking	Parking	Circulation	4.47
01-Niveau S3	Locaux techniques	Locaux techniques	LT transito d'acclément bloc	12.18
01-Niveau S3	Parking	Parking	Sas	9.31
01-Niveau S3	Parking	Parking	Escalier-13	18.48
01-Niveau S3-48				7926.58
02-Niveau S2				
02-Niveau S2	Logistique non médicale	Axe logistique du plateau route (1)	Salle de réunion	53.73
02-Niveau S2	Logistique non médicale	Axe logistique par plateau d'hébergement (4)	Local de distribution	13.52
02-Niveau S2	Logistique non médicale	Axe logistique du plateau route (1)	Salle de réunion	13.52
02-Niveau S2	Logistique non médicale	Axe logistique du plateau route (1)	Local ménage	6.66
02-Niveau S2	Logistique non médicale	Axe logistique par plateau d'hébergement (4)	Vestiaires personnel	21.58

## Advanced documentation



# Advanced documentation

Notes d'identification - (NBSA-SRV1\Disque-r718-09-chambery\0-CONCEPTION\0.4-888.L...

Note d'identification clé	Texte de la note d'identification
27.09.03	doublage BA13 des voiles y compris embrasure fenêtre.
27.10	Gaine tête de lit verticale monobloc à angle droit sans charif...
27.12	Plafond type FP4. Dalles en fibres minérales démontables (...)
27.13	Banc mobile ajustable en hauteur pour toilettes à la douche ...
27.14	Barre de maintien verticale aluminium epoxy blanc
27.16	OPTION table rabattable fixation invisible en finition MDF-vel...
27.19	Table à langer + baignoire bébé, ensemble en résine de syn...
27.20	Rail universel médical support d'accessoires en aluminium th...
27.20.01	Rail universel complémentaire (Hors marché)
27.21	Plafond type FPp1: Plafond peint en BA13 jonction avec au...
27.22	Plafond type FPp1: Plafond peint en BA13
27.23	Plafond type FPp2: Plafond peint en BA13 hydrofuge
27.24	Trappe de visite
27.25	Barre d'appui rétractable au mur avec béquille de soutien ...
27.26	Grille VMC thermolaquée
27.27	Grille de soufflage thermolaquée rectangulaire
27.28	Downlight - verre de protection
27.29	Luminaire rectangulaire avec vasque opaque, flux réglable, ...
27.30	Barre de tirage en inox-PMR-axe à 79cm du sol
27.31	Siège de douche escamotable avec béquille automatique
27.32	Cuvette suspendue, H=50cm, profondeur environ 70cm PMR
27.33	Cuvette suspendue WC? 56cm H=46 à 50cm livrées PM

Texte de la note:

Rail universel médical support d'accessoires en aluminium thermolaqué blanc y compris embouts, consoles de fixations, et tous accessoires divers d'installation

Keynote Table

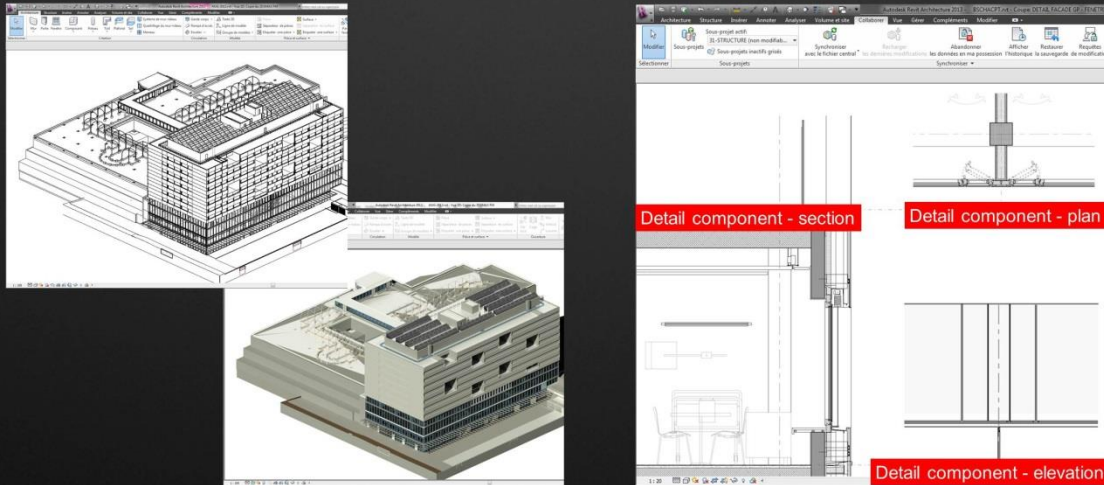
OK Annuler Aide

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## Facades studies

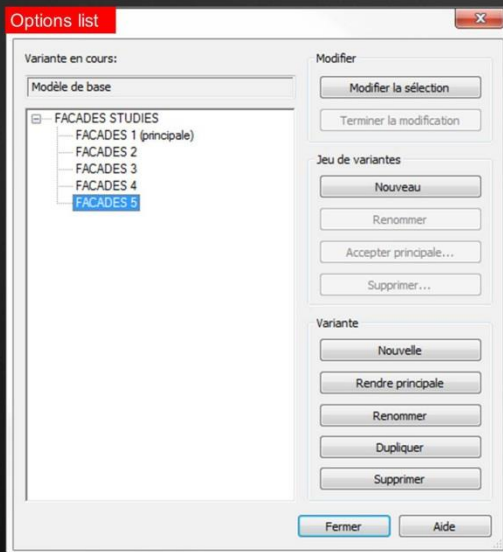
### Facades studies



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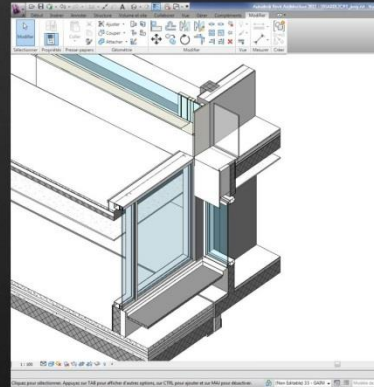
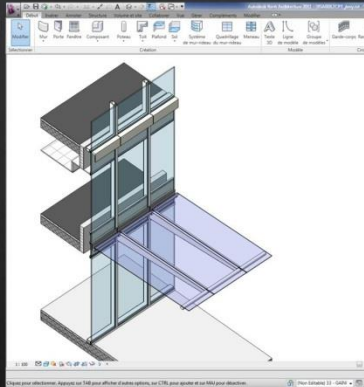
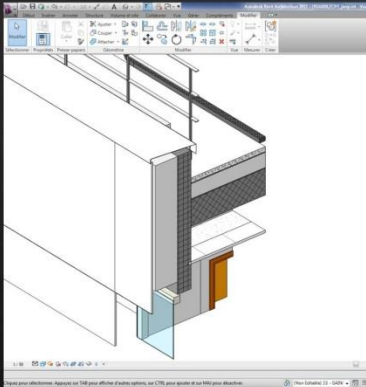
### Facades studies



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## Facades studies

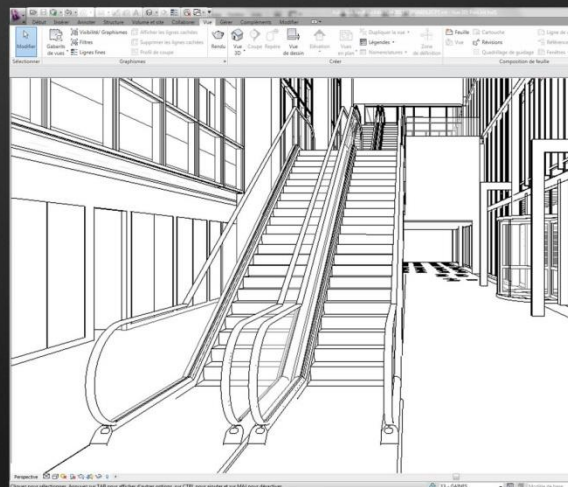
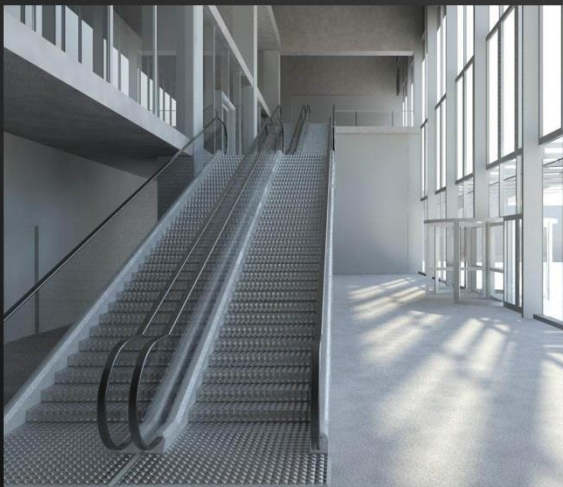


Visualization within Revit according to Autodesk 360

## Visualization within Revit

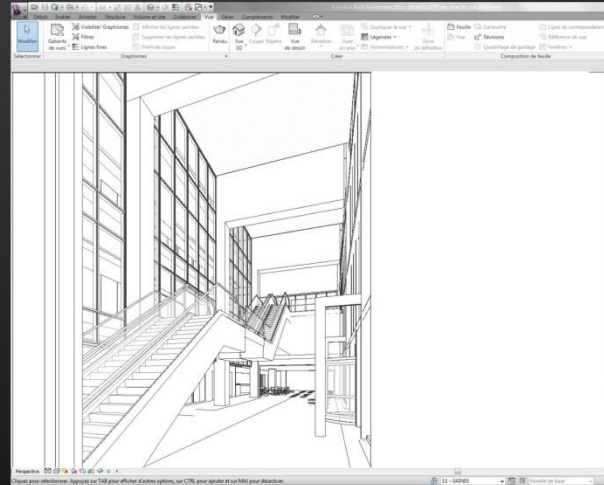


## Visualization within Revit using mental ray or Autodesk 360 Rendering





## Visualization within Revit



Advanced visualization

## Advanced visualization

New Belfort-Montbéliard hospital



## Advanced visualization

University Hospital of Geneva



## Advanced visualization

Hospital Centre of Chambéry





BIM for prefabrication

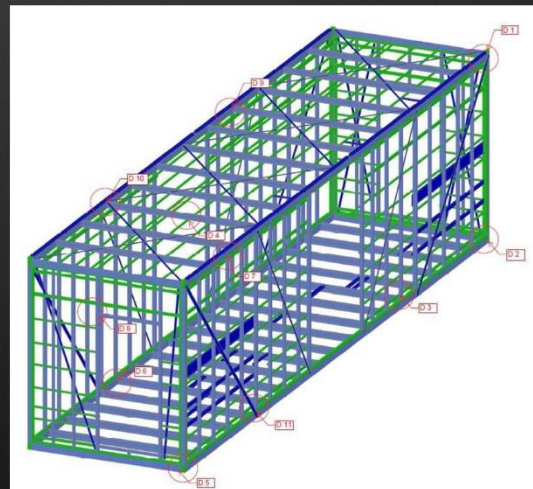
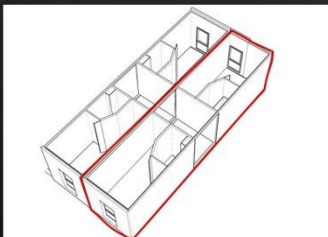
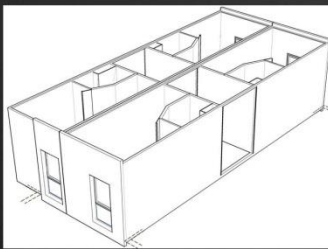
## Modular hospital of Argenteuil



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## Modular hospital of Argenteuil



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## Large hospitals projects built

### New Cannes hospital centre

#### New Cannes hospital centre

Client: Centre hospitalier de Cannes  
Location: Avenue des Broussailles – Cannes [06]  
Gross area: 60,000 sq.m  
Building cost: 120 M€  
Program: 530 beds, complete technical platform, emergencies, 22 operating rooms



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#### New Cannes hospital centre

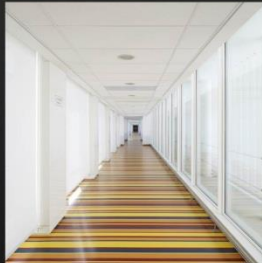
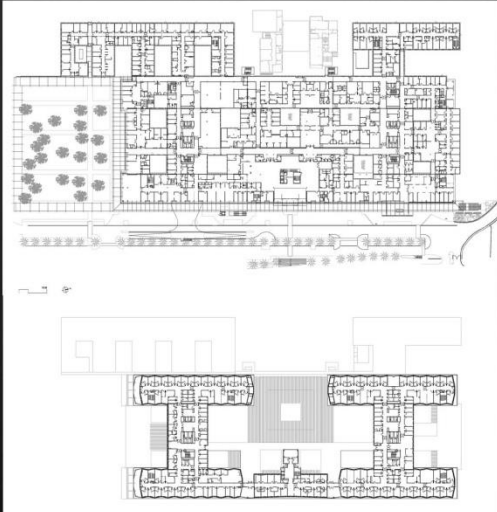
- Allegories
- The upper deck
- Venetian blinds
- Introducing the concept of Monospace



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## New Cannes hospital centre





## New Douai hospital centre

### New Douai hospital center

Client: Centre Hospitalier de Douai  
 Location: Route de Cambrai – Déchy site – Douai [59]  
 Gross area: 65,000 sq.m  
 Building cost: 110 M€  
 Program: 500 beds for obstetrics surgery, complete technical platform, 11 operating rooms, 10 imaging rooms, birthing area, 24 haemodialysis stations



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### New Douai hospital centre

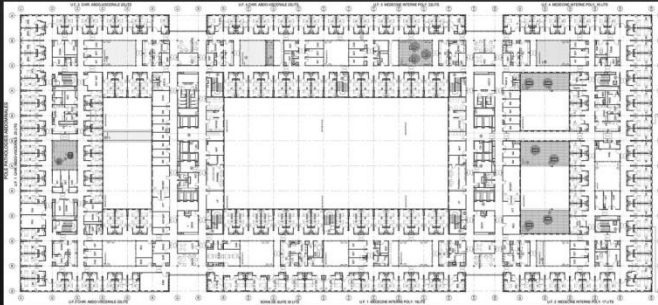
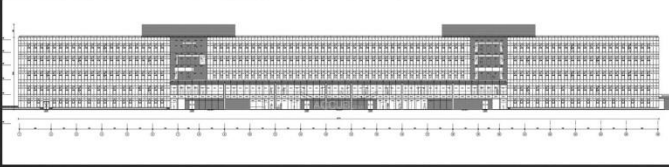
- Fixed yet flexible
- Iconic patterning
- A welcoming entrance
- Perfect polychromy



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## New Douai hospital centre



## Sainte-Musse hospital

### Sainte-Musse hospital

Client: Centre Hospitalier intercommunal de Toulon-La-Seyne-sur-Mer  
Location: Site du quartier Sainte-Musse – Avenue Sainte-Claire Deville Toulon [83]  
Gross area: 85,000 sq.m  
Building cost: 207 M€  
Program: 850 beds, complete technical platform, 15 operating rooms



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### Sainte-Musse hospital

- Extended freedom
- An institutional character
- Extreme monochrome
- A green belt

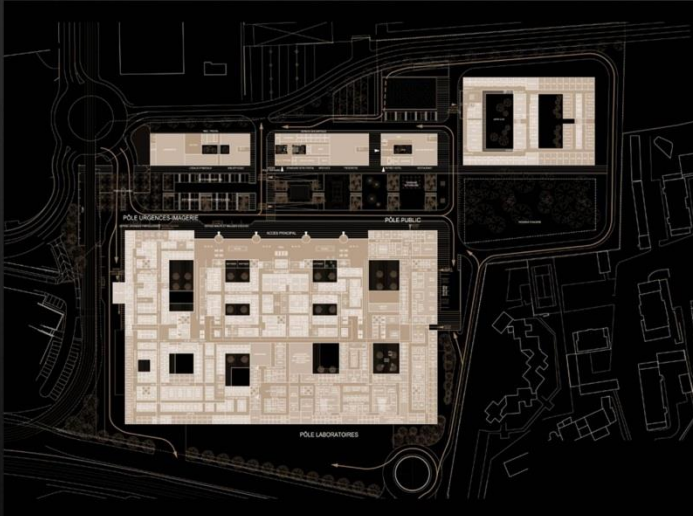


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## Sainte-Musse hospital



## William-Morey hospital centre

### William-Morey hospital centre

Client: Centre Hospitalier William-Morey  
Location: Pré devant site – ZAC Thalie Chalon-sur-Saône  
Gross area: 73,000 sq.m  
Building cost: 170 M€  
Program: 550 beds, complete technical platform, 15 operating rooms



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### William-Morey hospital centre

- All in one
- Quay landscape
- Pixellation
- Warm colors



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## William-Morey hospital centre





## Marne-la-Vallée hospital centre

### Marne-la-Vallée hospital centre

Client: Centre Hospitalier of Lagny Marne-la-Vallée  
 Location: Pré devant site – ZAC Thalie Chalon-sur-Saône  
 Gross area: 72,000 sq.m  
 Building cost: 158 M€  
 Programme: 460 beds, 125 beds for psychiatric treatment, logistics centre



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### Marne-la-Vallée hospital centre

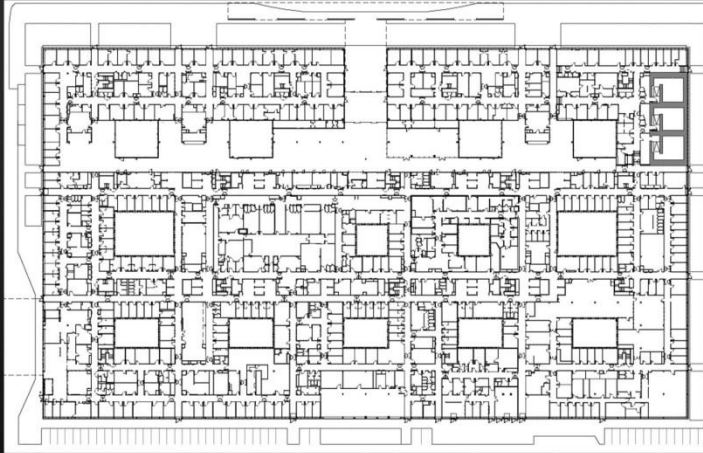
- Contextual differentiation
- Jeu de taquin
- Dematerialized skin
- Colour palette



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## Marne-la-Vallée hospital centre



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Thank you for your attention!



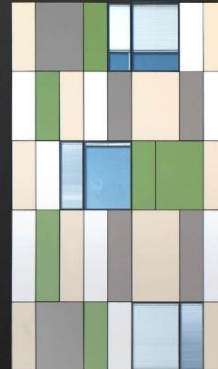
Cannes  
New Cannes hospital centre



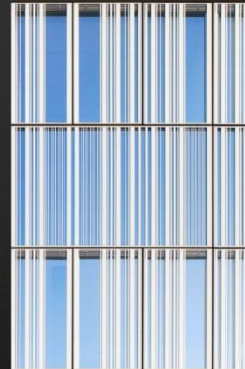
Douai  
New Douai hospital centre



Toulon  
Sainte-Musse hospital



Chalon-sur-Saône  
William-Morey hospital



Jossigny  
Marne-la-Vallée hospital

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**Brunet Saunier Architecture**  
Monospace and Simplicity

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