

Building Information Modeling

About NLA

NLA - Nuno Leónidas Arquitectos

Founded in Lisbon in 1980

National and International projects

Portugal, Brasil, Italy, Germany,
Angola, Mozambique, Cape vert, Colombia,
East Timor, Emirados UAE,
Paraguay, Georgia, Oman, Morroco

Specialization areas

Housing, Retail, Corporate Buildings,
Public Spaces, Hotels and Leisure,
Sustainability, Urban Design,
Education, Interior Design

36 workers in house

N L A



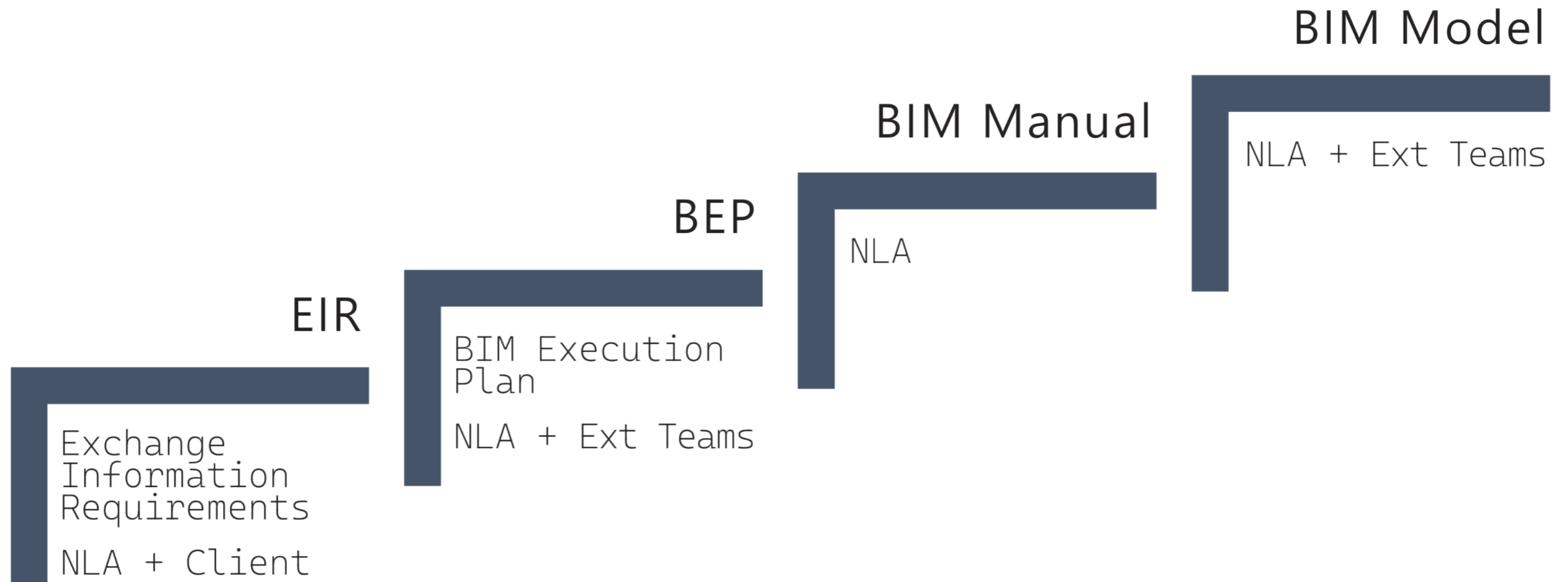


More NLA



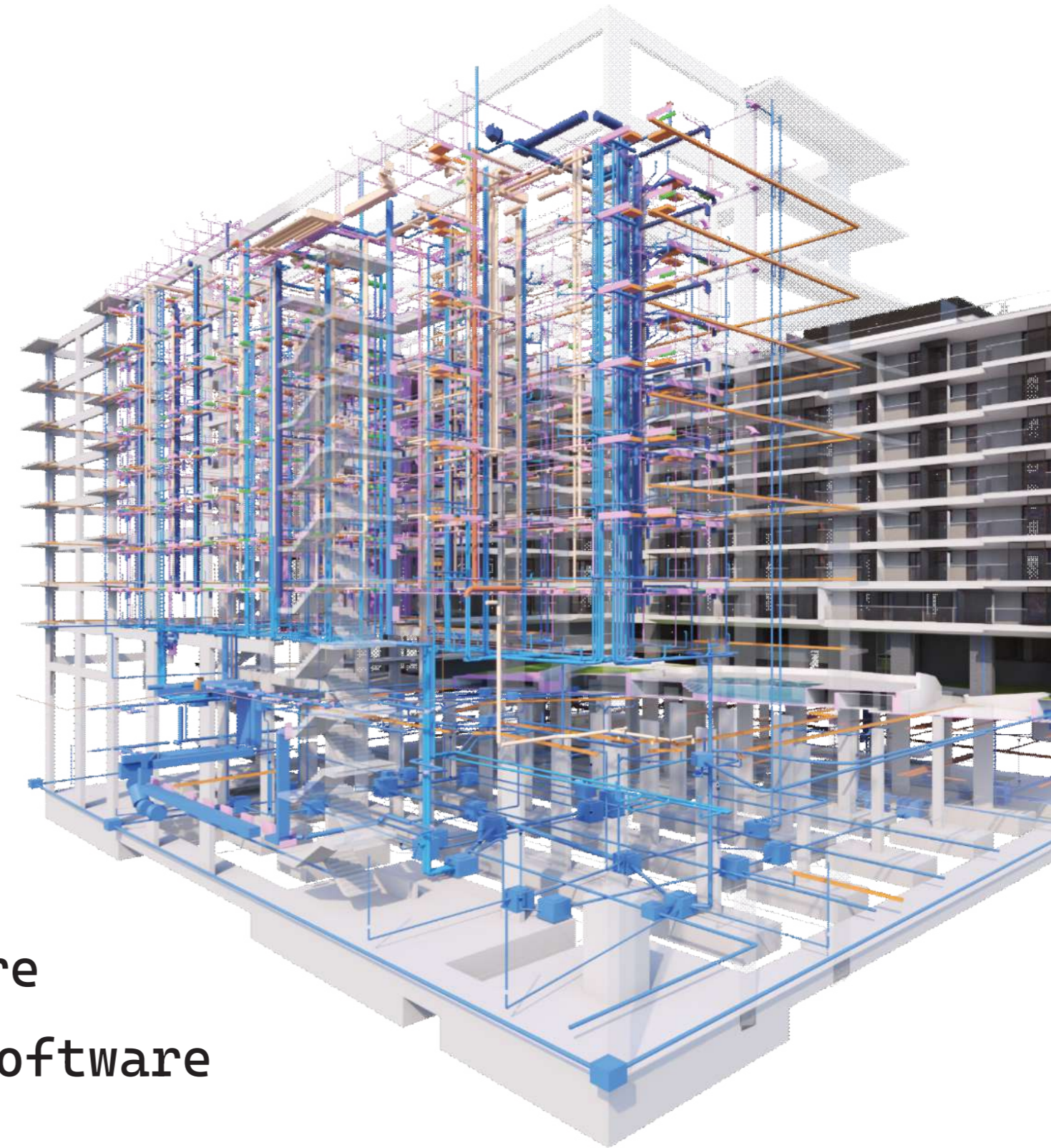
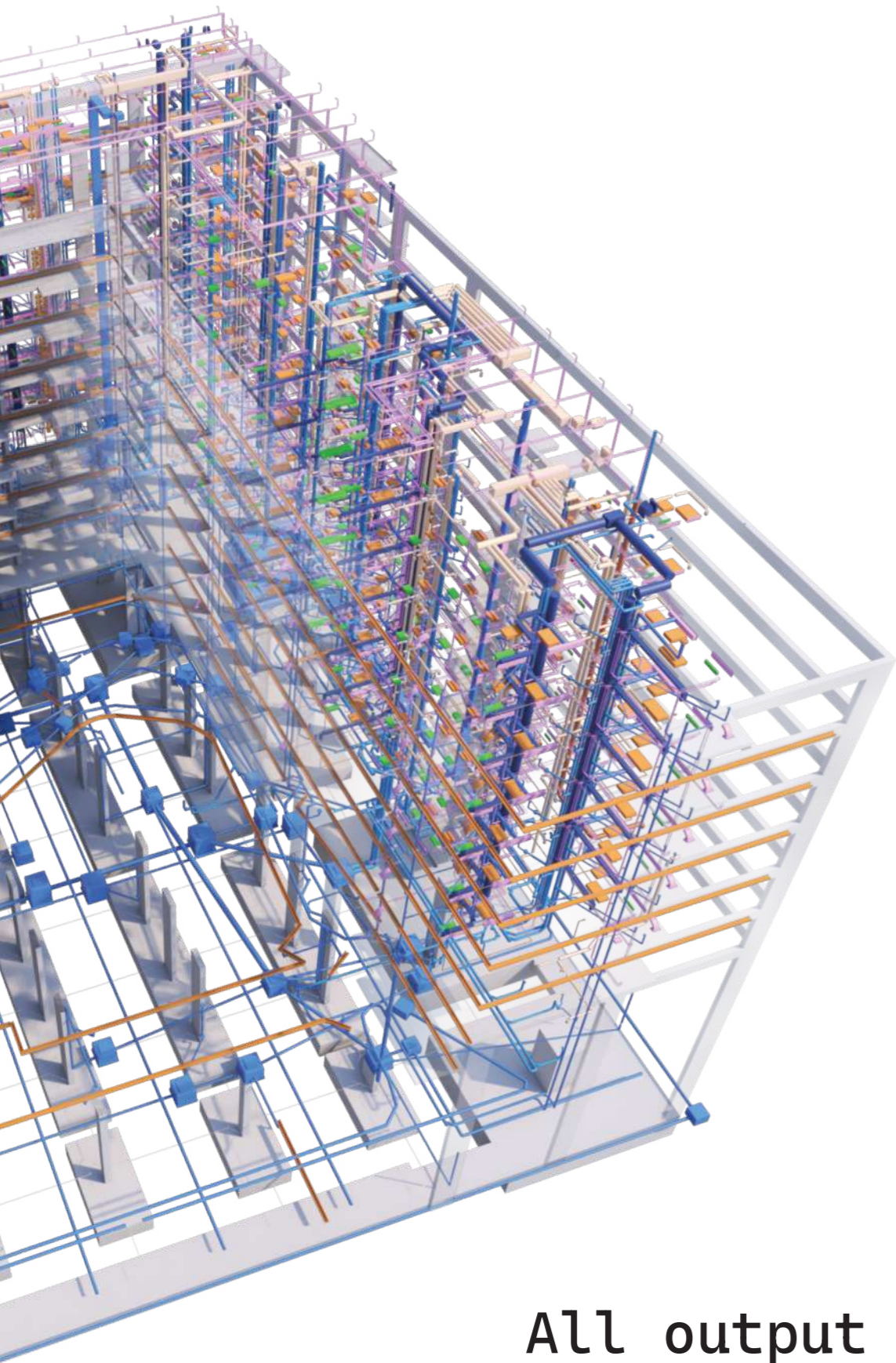
NLA

BIM Process



N L A

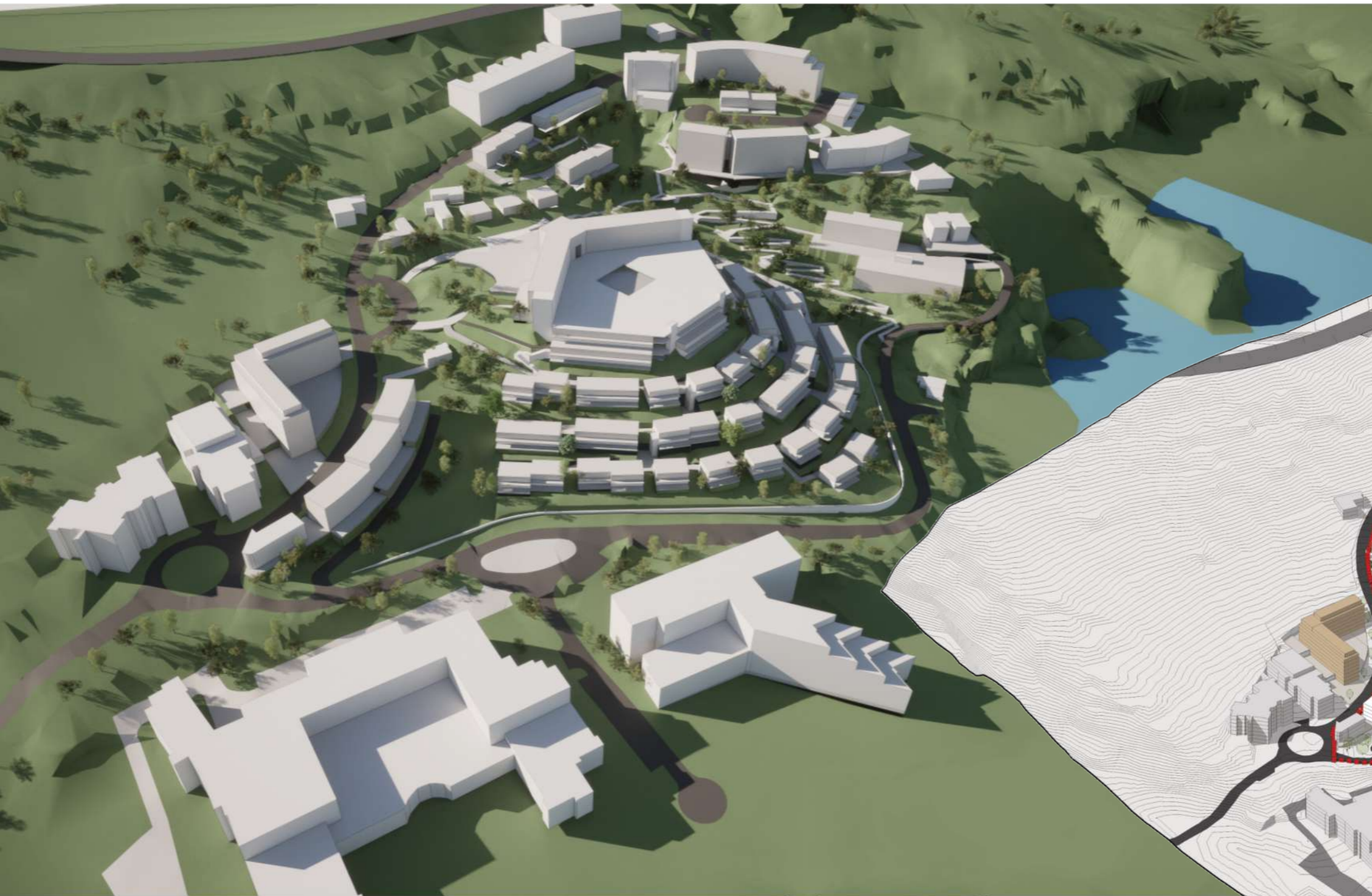
BIM by phase



All output and phases are
Generated directly from BIM software

N L A

Concept Design



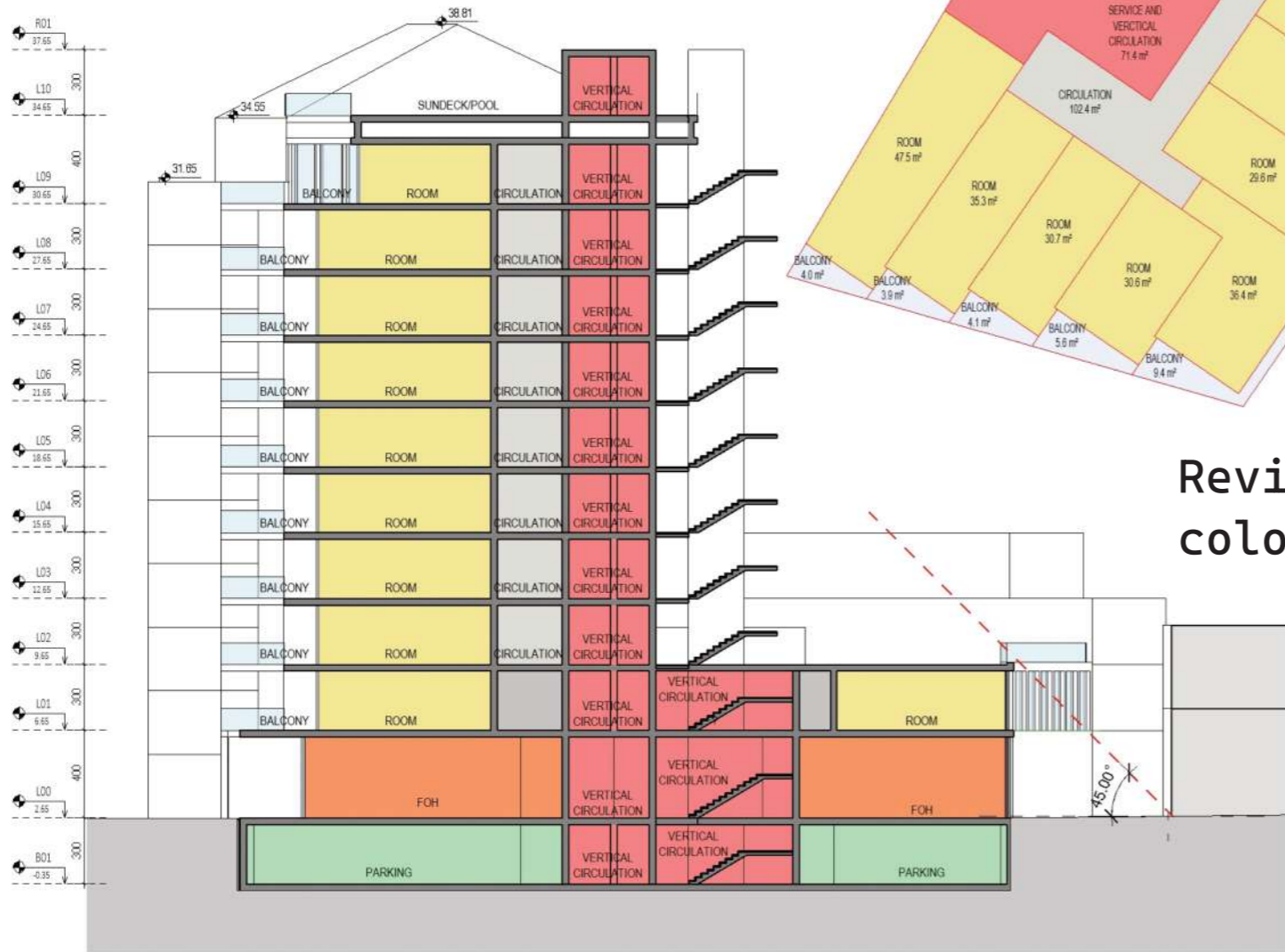
Twinmotion concept render

Revit model



Feasibility Study 01

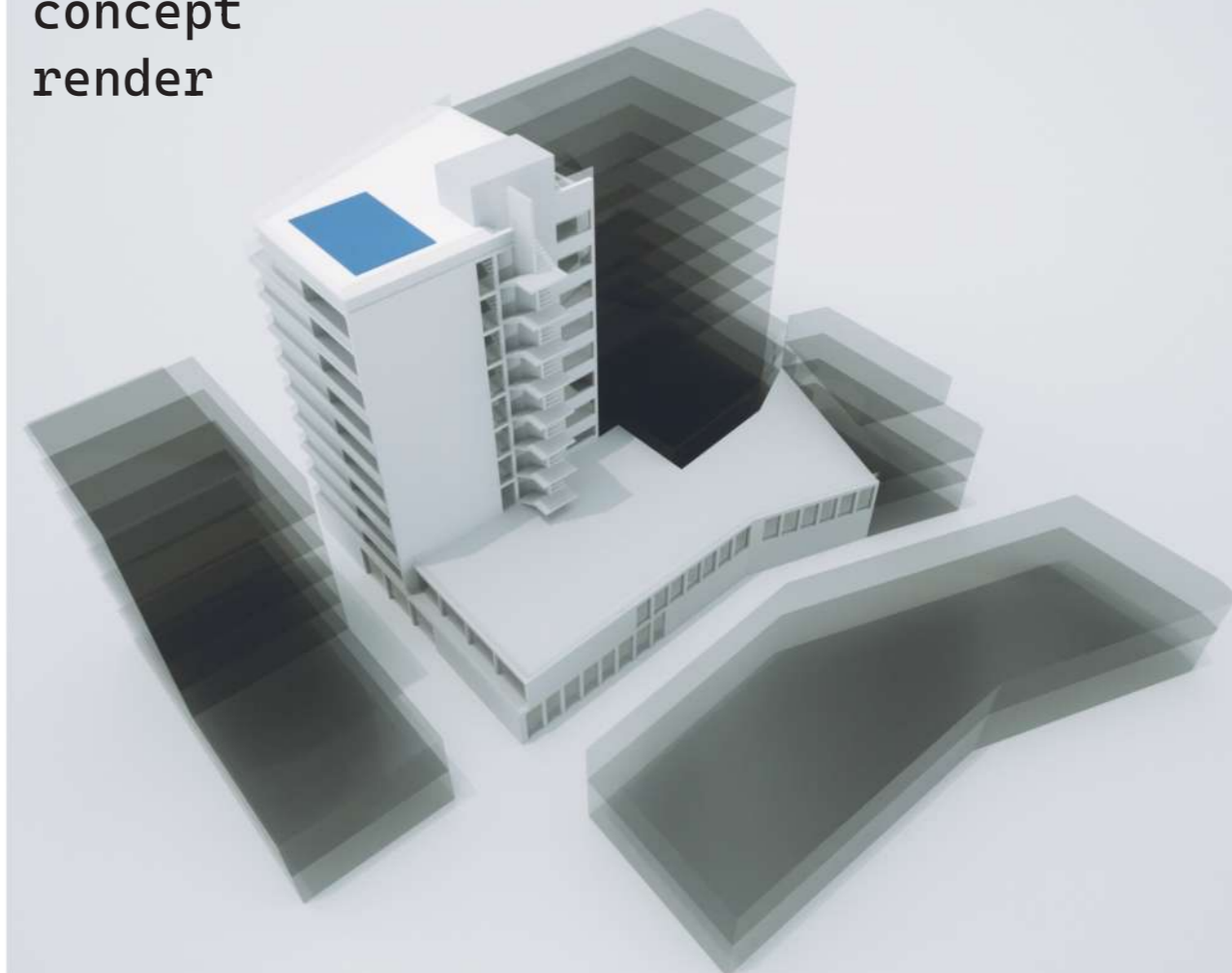
Revit section
color scheme



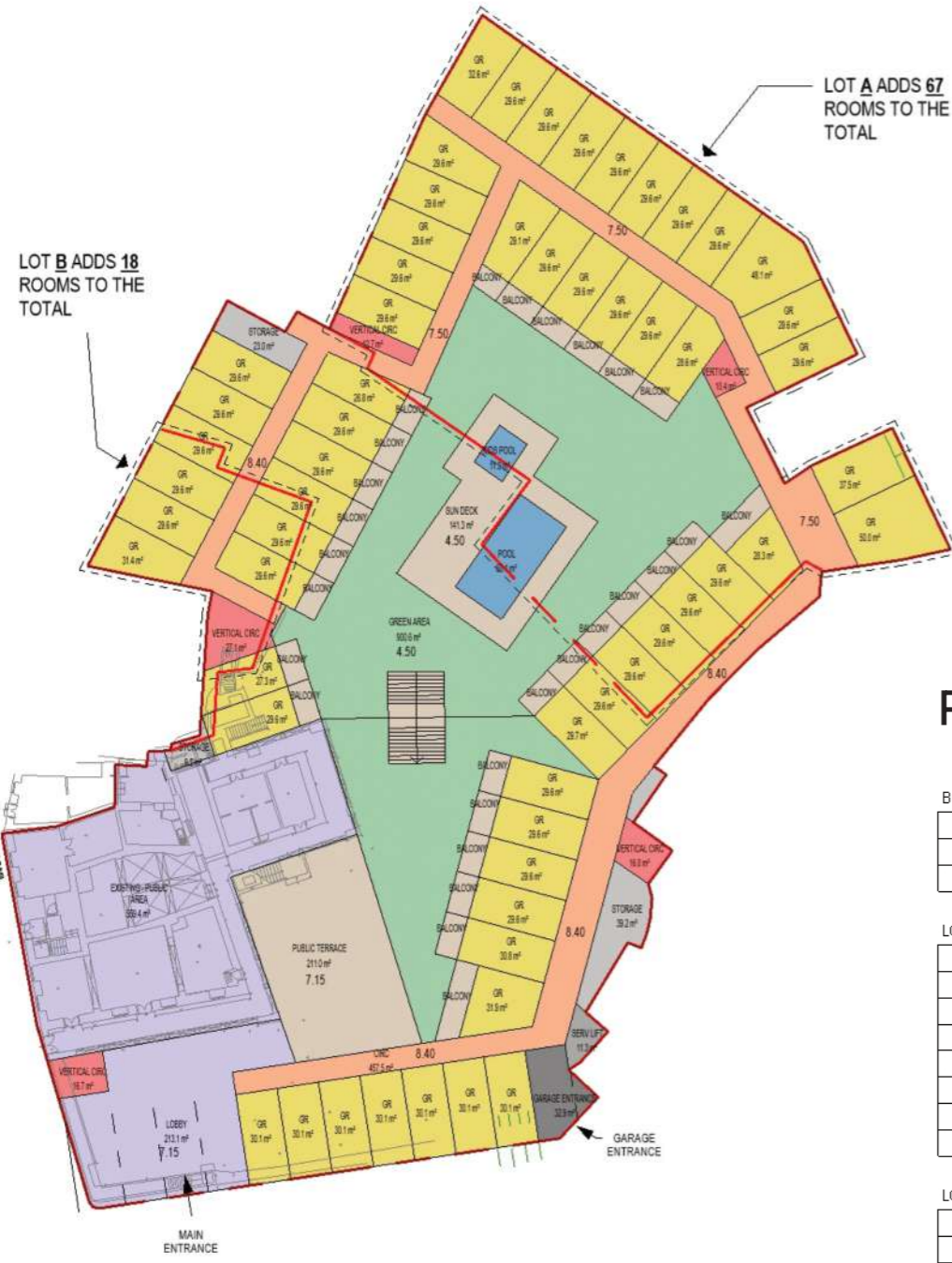
Revit area plan
color scheme



Twinmotion
concept
render



Feasibility Study 02



Revit area plan color scheme

Revit schedule

B01+	CIRC	286.1 m ²
	GR	613.8 m ²
	VERTICAL CIRC	101.7 m ²
		1001.6 m ²

L00+	CIRC	457.5 m ²
	EXISTING - PUBLIC AREA	559.4 m ²
	GARAGE ENTRANCE	32.9 m ²
	GR	1767.2 m ²
	LOBBY	213.1 m ²
	SERV LIFT	11.3 m ²
	STORAGE	78.3 m ²
	VERTICAL CIRC	82.9 m ²
		3202.7 m ²

L01	CIRC	510.0 m ²
	EXISTING	0.0 m ²
	EXISTING - PUBLIC AREA	416.1 m ²
	GR	1854.2 m ²
	SERV LIFT	8.8 m ²
	STORAGE	73.8 m ²
	VERTICAL CIRC	67.4 m ²
		2930.3 m ²
		7134.6 m ²

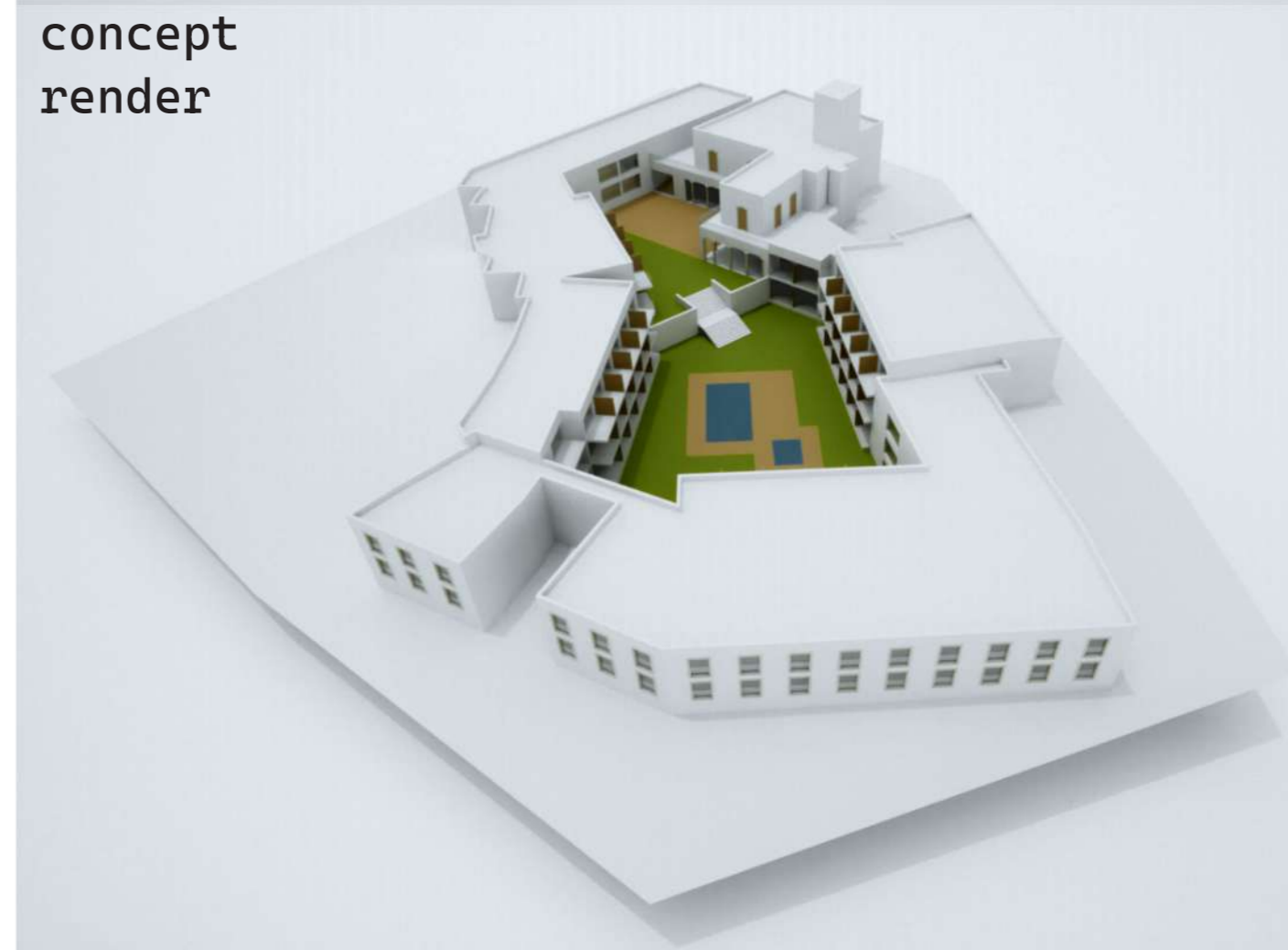
B01+	GR	21
------	----	----

L00+	GR	58
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L01	GR	61
		140

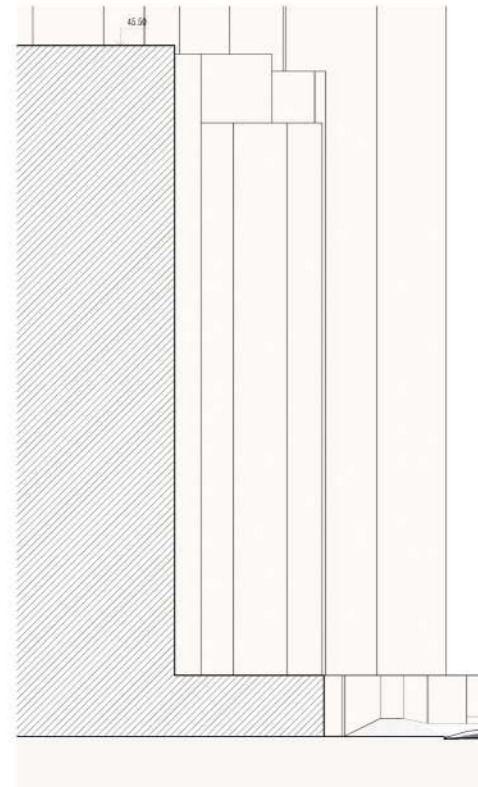
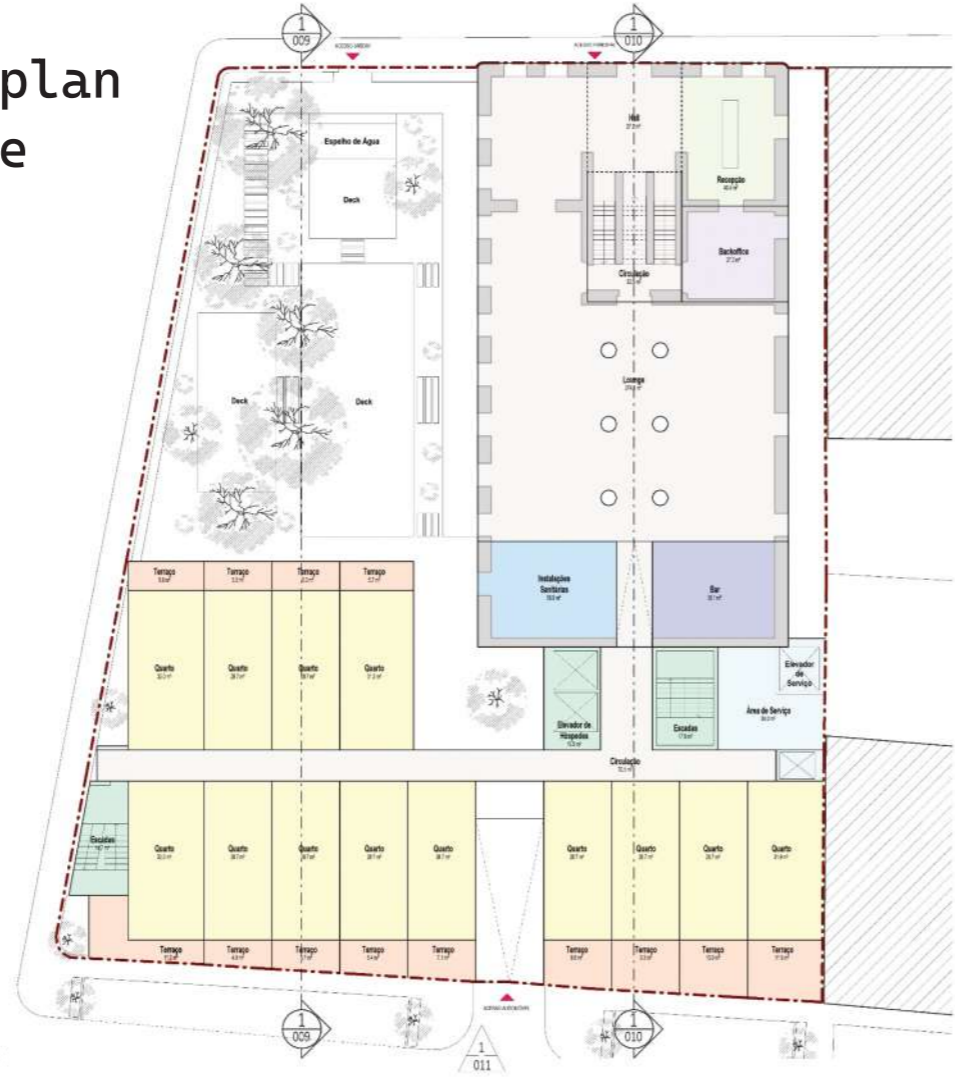


Twinmotion concept render



Scheme Design

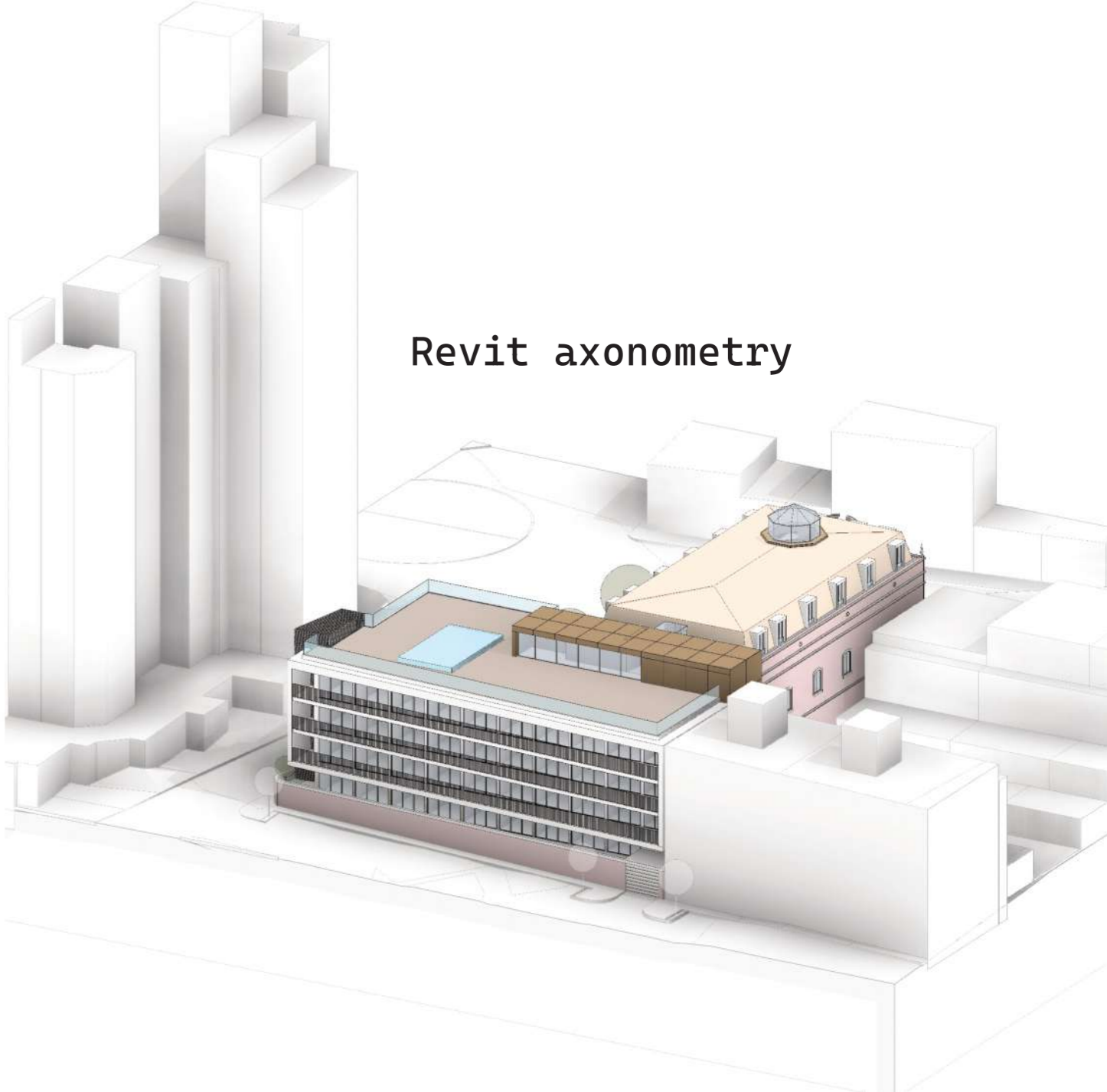
Revit floor plan color scheme



Revit elevation

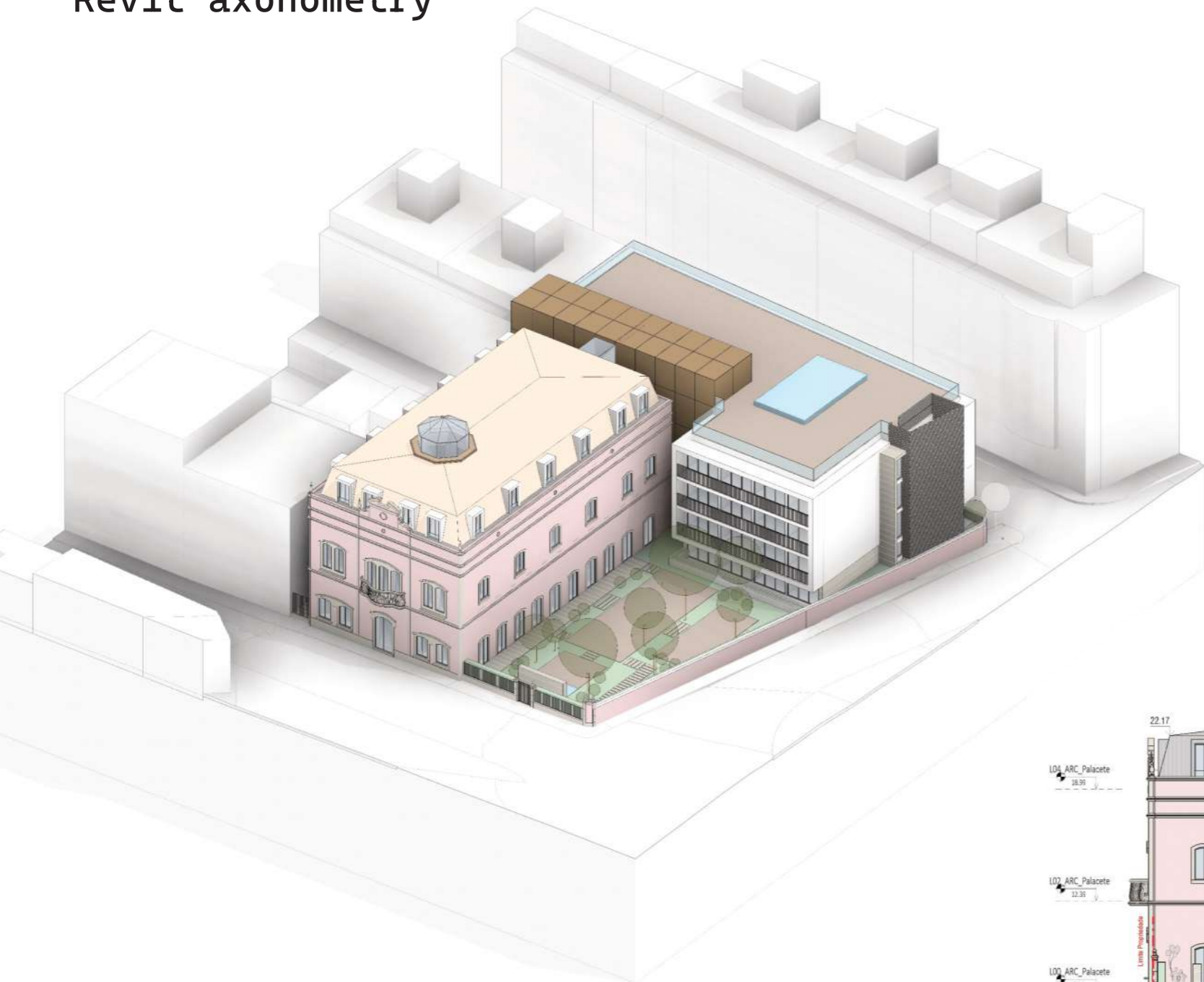
N L A

Revit axonometry



Scheme Design

Revit axonometry



Revit elevation / section



N L A

Scheme Design

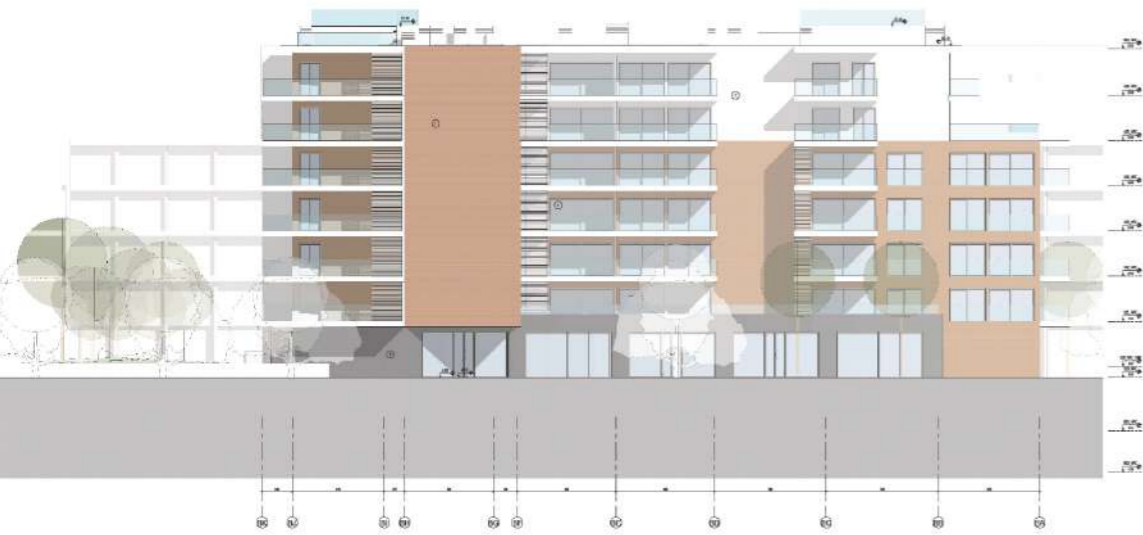


Revit + v-ray render

N L A



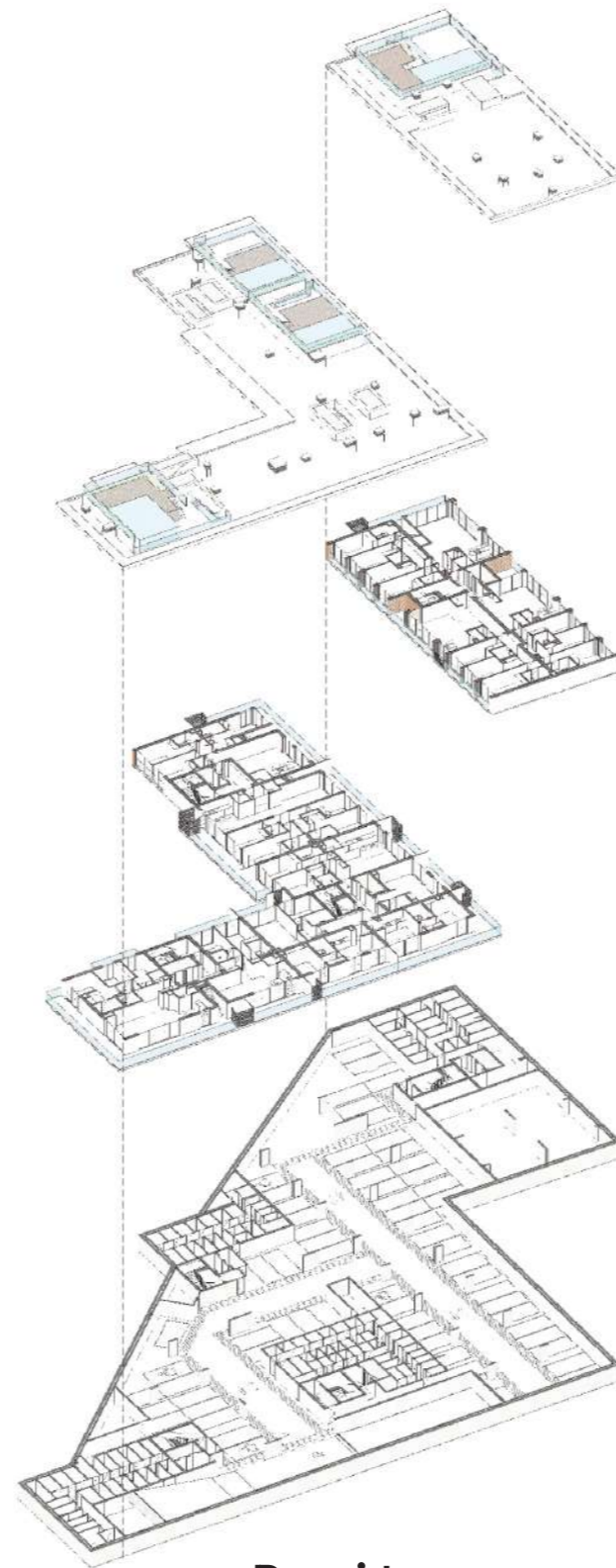
Licensing new construction



Revit elevations



N L A



Revit axonometry

Revit floor plan



Licensing new construction



Revit axonometry

Revit + v-ray render



Licensing rehabilitation



Revit proposal drawings

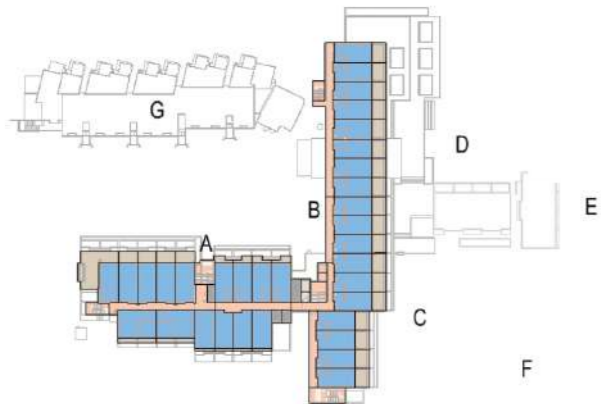
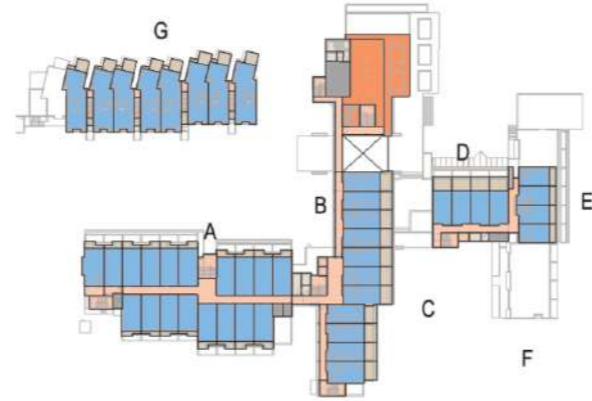
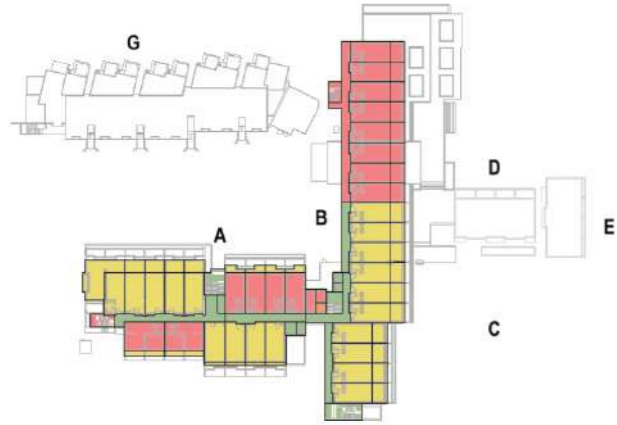


Revit new and demolished



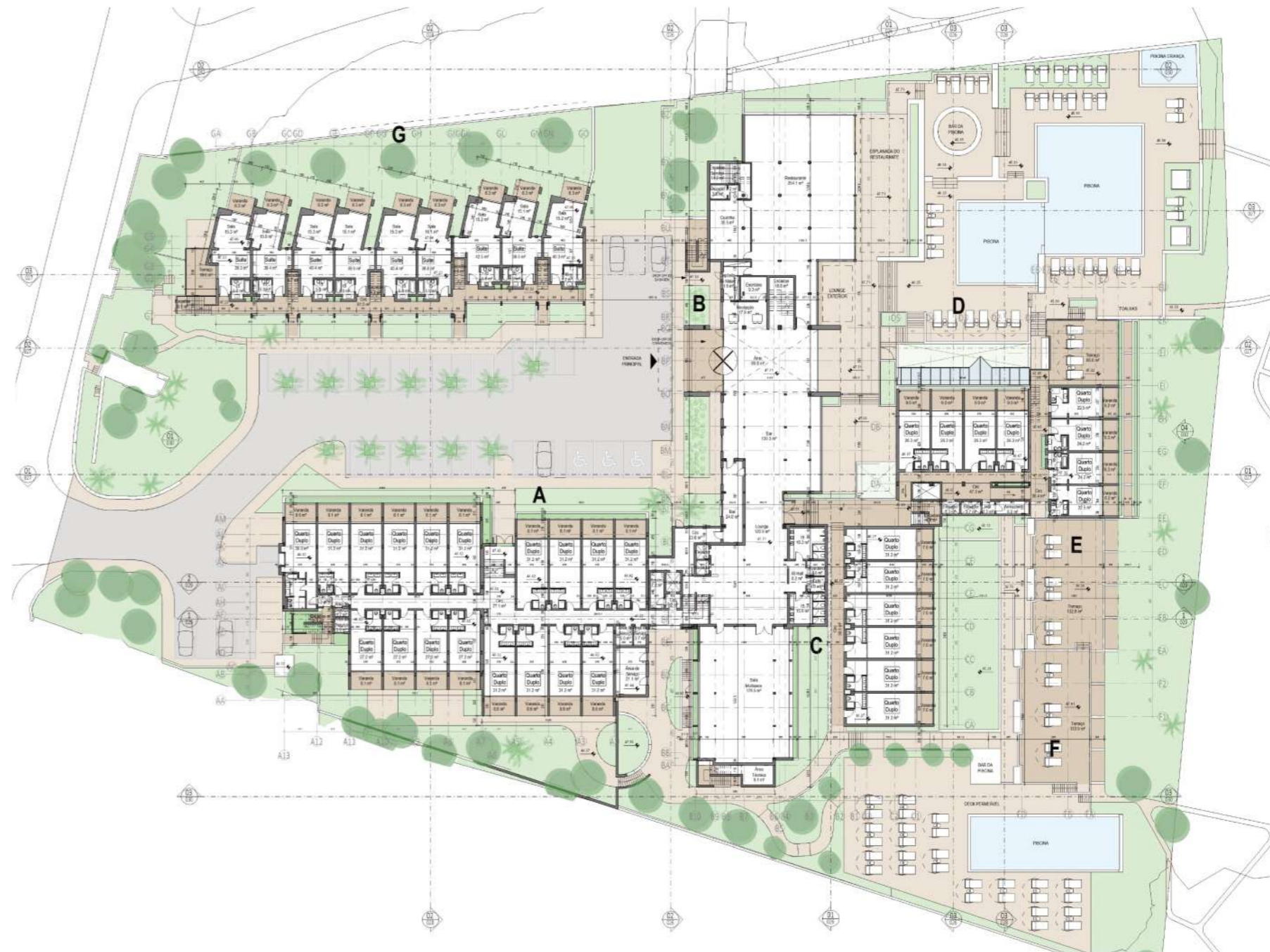
N L A

Licensing rehabilitation



Revit area plan

Revit floor plan



Licensing rehabilitation

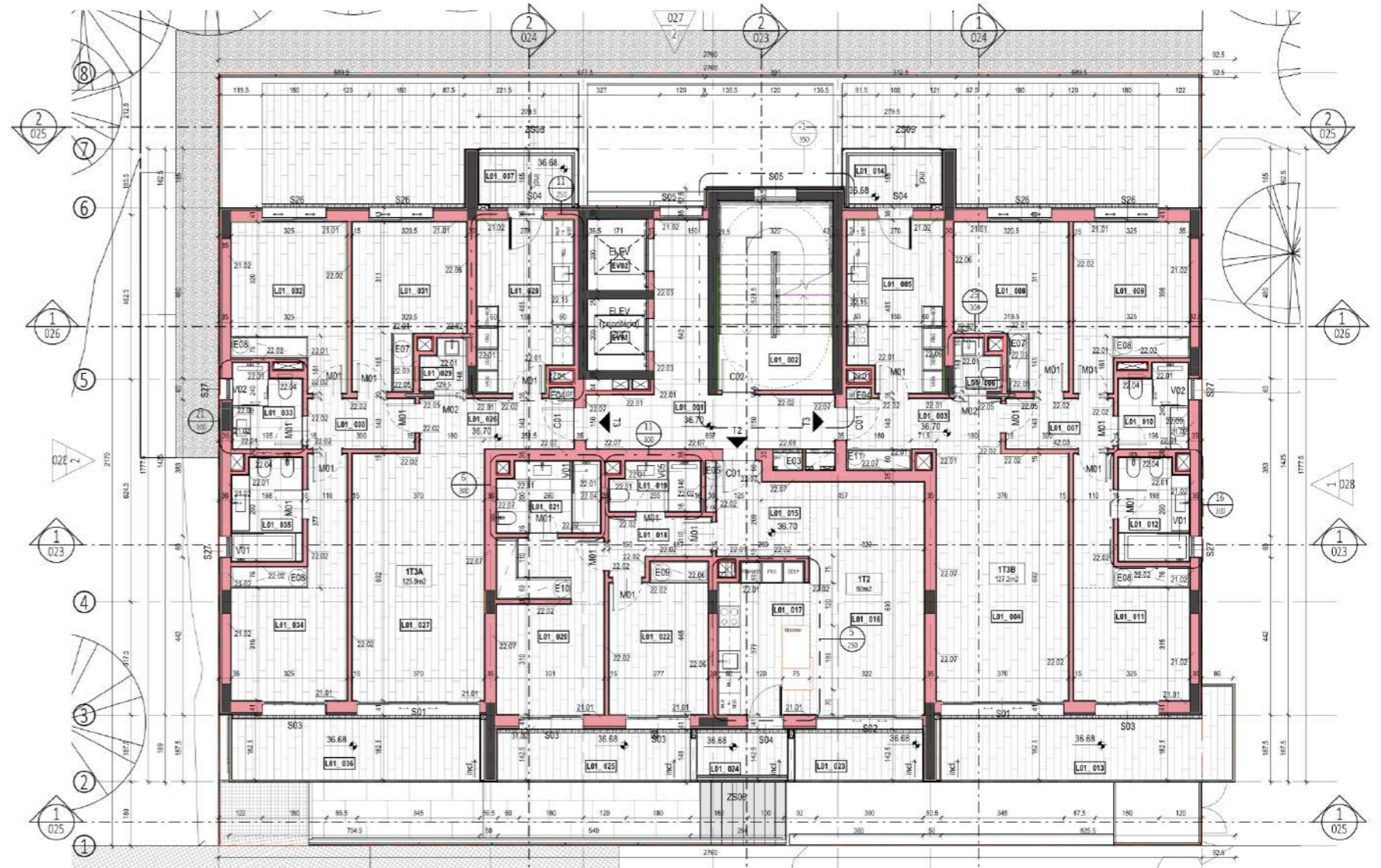
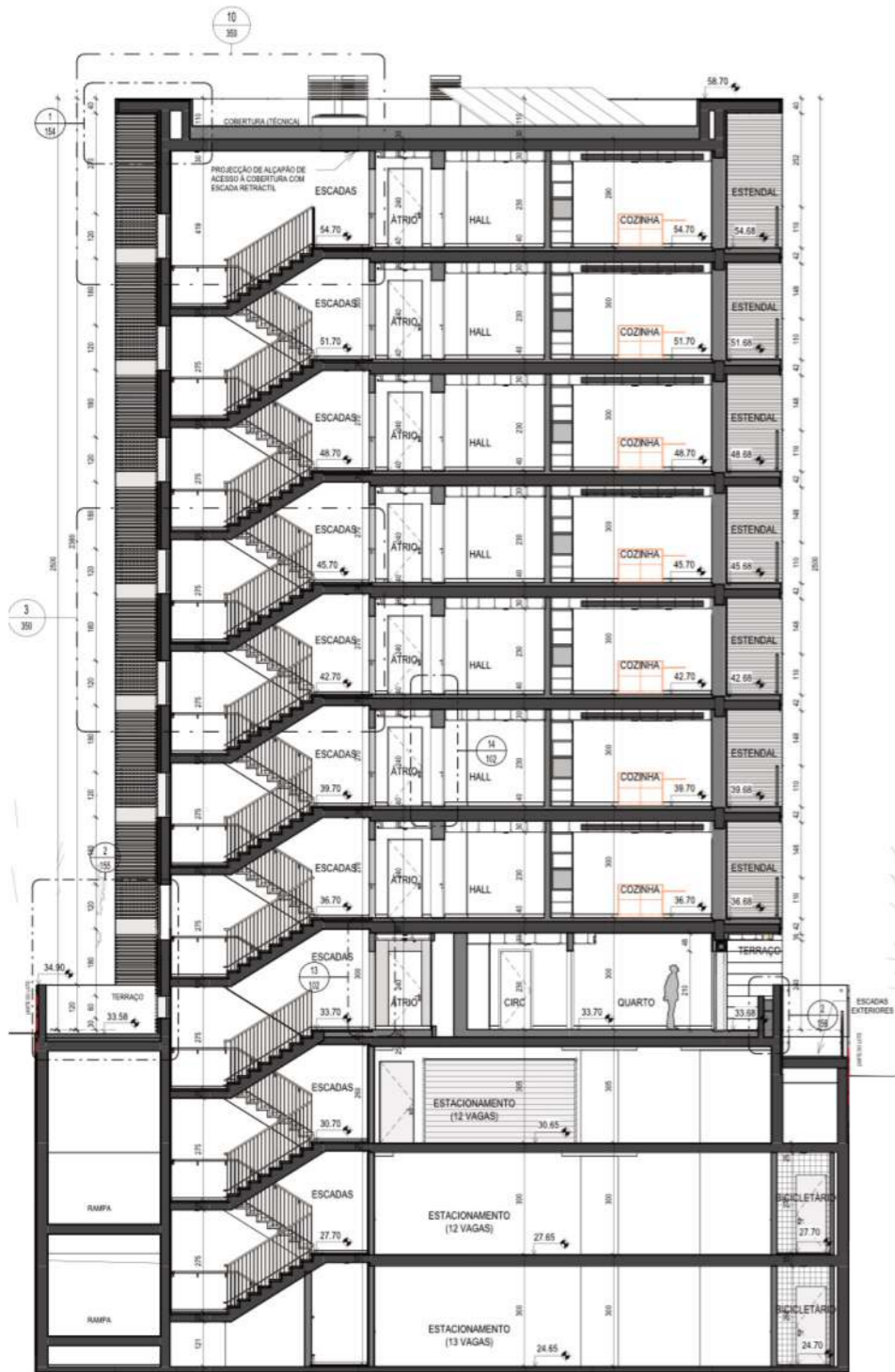


Revit + v-ray renders

N L A

Detail Design

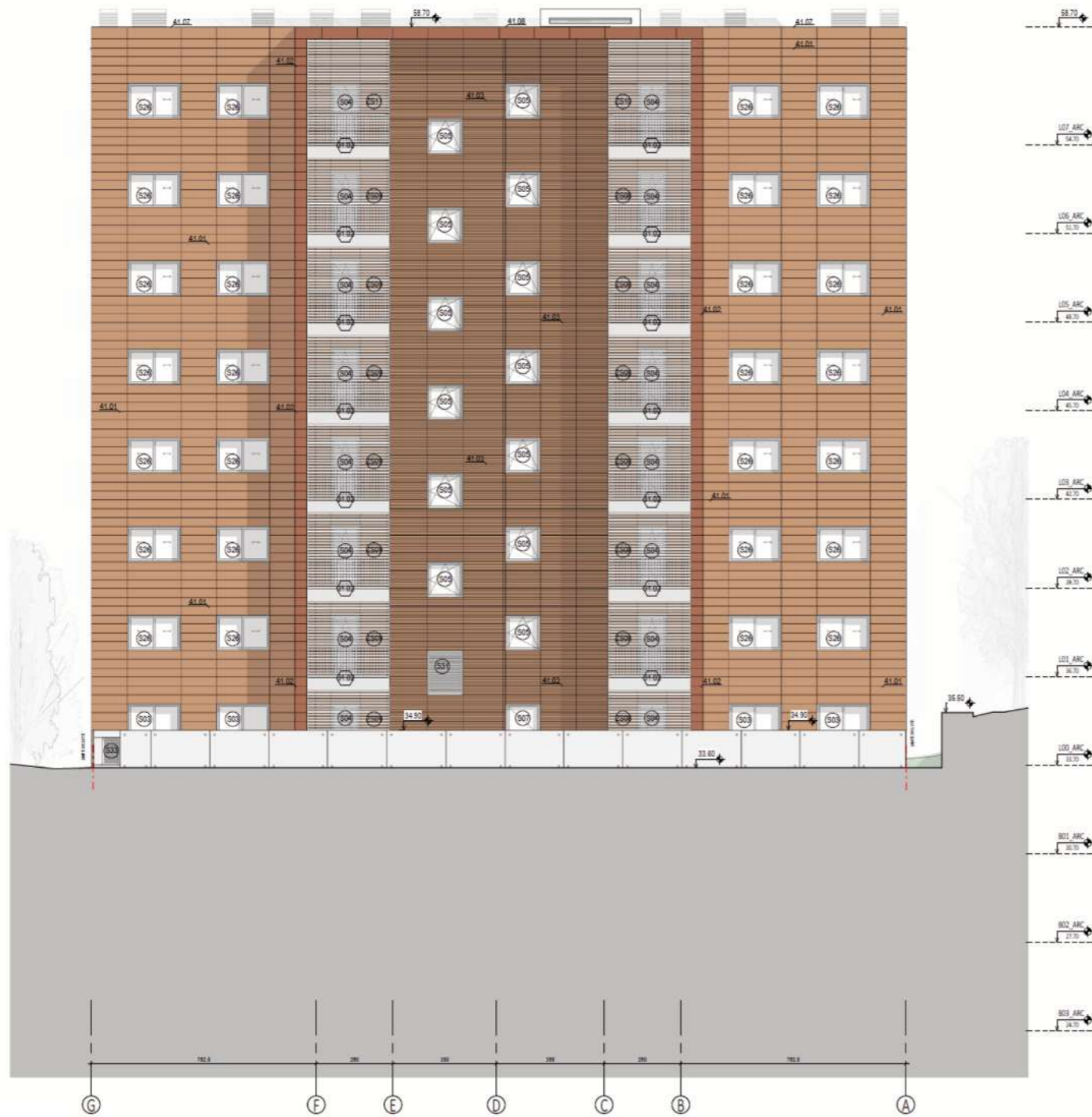
Revit section



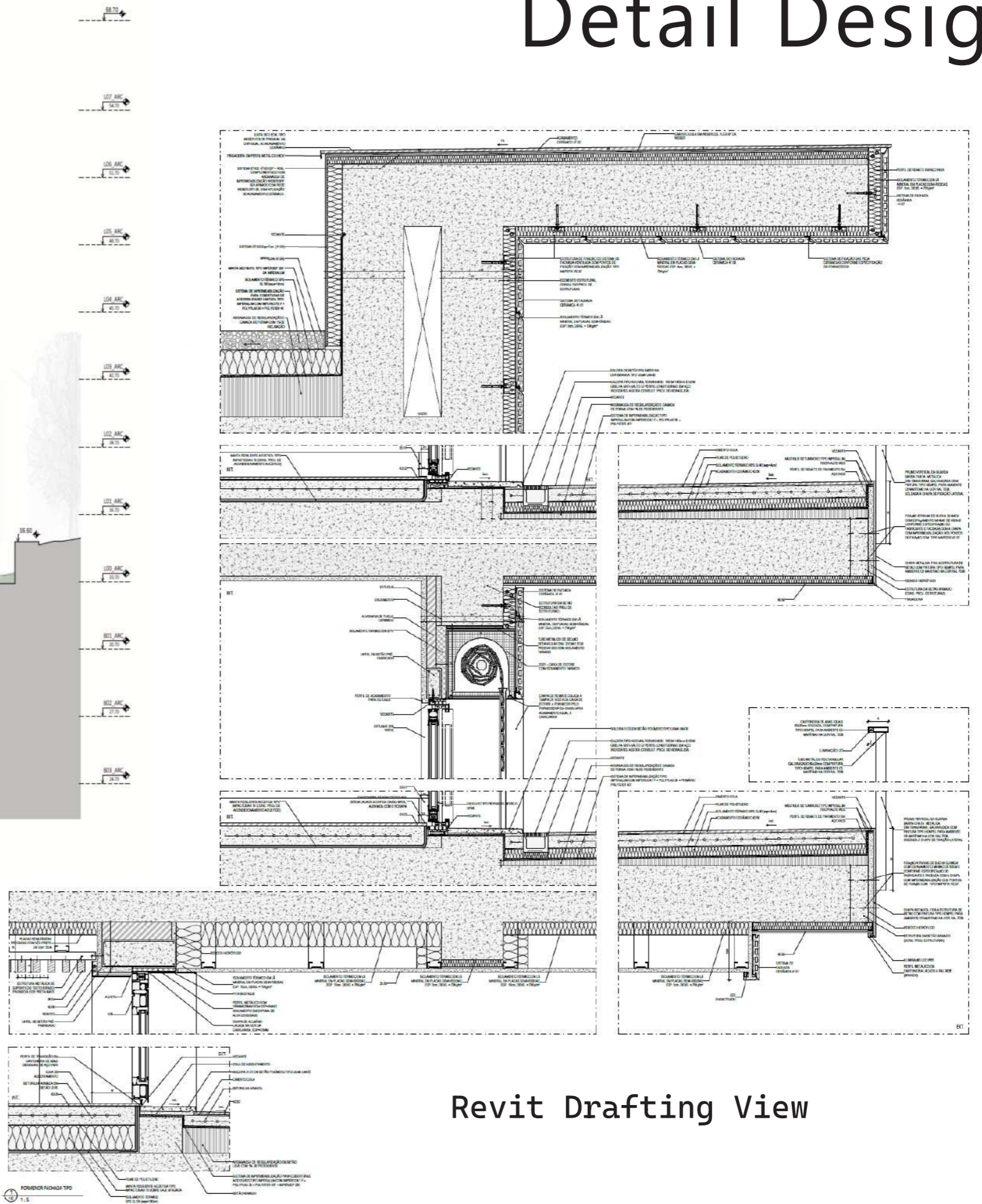
Revit floor plan

N L A

Detail Design



Revit Elevation



Revit Drafting View

ART.	CÓDIGO	DESCRIÇÃO	UN	QT	PREÇO / UN	PREÇO TOTAL
05.014	41.03	Fornecimento e execução de Revestimento exterior de fachada , com peças mecanizadas de grande formato de grês porcelânico Gama Cover da SOLADRILHO, Cor Areia, dim.30x(Variável), acabamento polido, ; colocação através do sistema de ancoragem oculto de grampo, sobre subestrutura suporte do sistema. Inclusive tira-fundos e ancoragens mecânicas de expansão de aço inoxidável A2, para a fixação da subestrutura suporte, incluindo isolamento termico em placas semi-rígidas de lã de rocha com 5cm e 70/kg/m3 fixa ao paramento, e todos os trabalhos e acessórios necessários à sua execução conforme projecto, especificações do fabricante e CE.	m2	173,75	167,64€	29 127,61€
05.015	41.04	Fornecimento e execução de sistema de isolamento térmico ETICS WEBERTHERM MINERAL , constituído por: - WEBERTHERM PRO - cimento cola para Placas - WEBERTHERM TF PROFI 60mm fixo com bucha e anilha - Rede de reforço fibra de vidro 160g/m2 - WEBERTHERM PRO primário fixador - WEBERPLAST DECOR F - Revestimento de textura fina F 2659 A (Cor Branca) incluindo perfil de arranque em alumínio, perfis de canto em PVC com rede 10x15cm, E todos os trabalhos e materiais necessários à sua execução conforme projecto, indicações do fabricante e CE.	m2	112,01	65,40€	7 325,17€
05.016	41.05	Fornecimento e execução de sistema de isolamento térmico ETICS WEBERTHERM MINERAL , constituído por: - WEBERTHERM PRO - cimento cola para Placas - WEBERTHERM TF PROFI 30mm fixo com bucha e anilha - Rede de reforço fibra de vidro 160g/m2 - Impermeabilização c/ argamassa de impermeabilização Weber.Dry.824 Armada com rede Weber.Dry.90 - WEBERPLAST DECOR F - Revestimento de textura fina F 2659 A (Cor Branca) incluindo perfil de arranque em alumínio, perfis de canto em PVC com rede 10x15cm, E todos os trabalhos e materiais necessários à sua execução conforme projecto, indicações do fabricante e CE.	m2	0,62	62,53€	38,98€

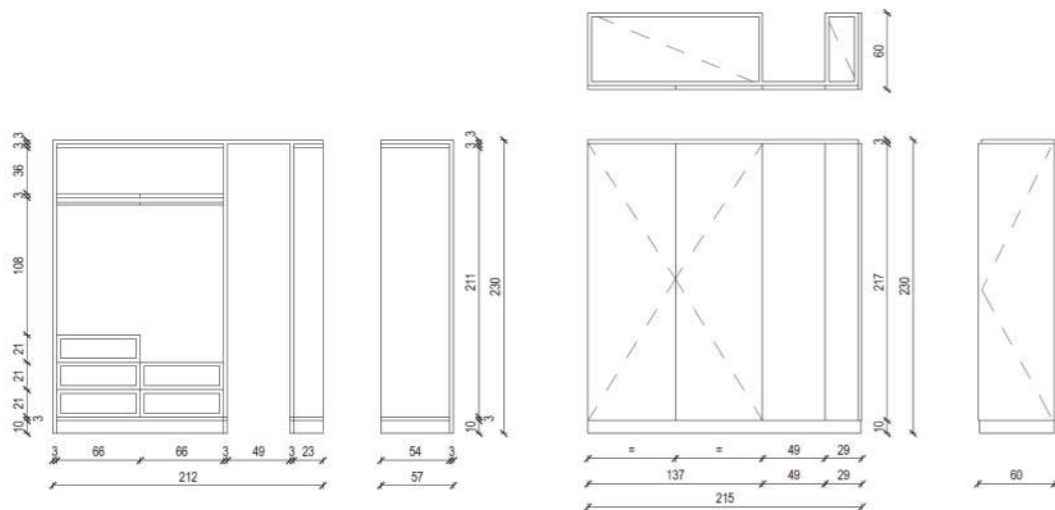
BOQ = Revit schedules
 → Python → formatted Excel

Detail Design

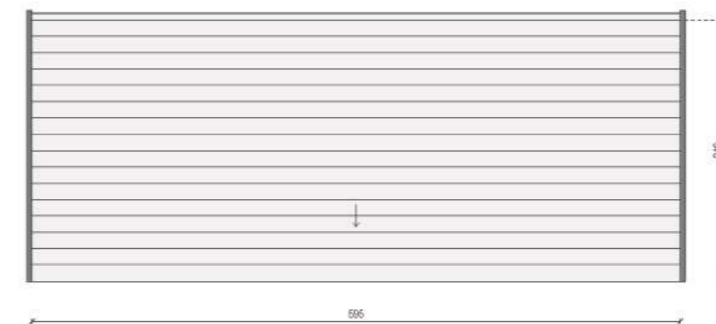
Specs + BOQ

NR DO CAPÍTULO	CAPÍTULO	Lote 1	Lote 2	Lote 3	TOTAL
01	Estaleiro	0,00€	0,00€	0,00€	0,00€
02	Demolições	0,00€	0,00€	0,00€	0,00€
03	Alvenarias, gesso cartonado e argamassas	242 147,17€	242 140,85€	452 654,66€	936 942,68€
04	Betonilhas compostas, impermeabilizações e isolamentos	176 008,55€	176 013,74€	521 507,15€	873 529,44€
05	Revestimentos exteriores e coberturas	421 414,20€	421 467,33€	767 122,18€	1 610 003,71€
06	Cantarias e pré-fabricados	9 777,99€	9 777,99€	17 895,30€	37 451,28€
07	Carpintarias	302 236,43€	302 236,43€	531 803,04€	1 136 275,90€
08	Serralharias, alumínio e vidros	769 124,11€	769 210,91€	1 555 228,22€	3 093 563,24€
09	Revestimentos interiores de pisos e rodapés	220 751,06€	220 641,30€	443 077,02€	884 469,38€
10	Revestimentos interiores de paredes	177 937,11€	177 988,35€	351 919,55€	707 845,01€
11	Revestimentos interiores de tectos	145 229,35€	145 221,95€	347 820,12€	638 271,42€
12	Equipamentos sanitários	181 968,35€	181 968,35€	332 451,26€	696 387,96€
13	Equipamentos de cozinha	653 697,60€	653 697,60€	1 198 370,40€	2 505 765,60€
14	Diversos	0,00€	0,00€	0,00€	0,00€
TOTAL:		3 300 291,92€	3 300 364,80€	6 519 848,90€	13 120 505,62€

CÓDIGO	ITEM	DIMENSÕES (cm)	MATERIAL	ACABAMENTO	ESPECIFICAÇÕES	REV
E13	Roupeiro	215x60x230	MDF	Portas Lacadas na cor RAL9003 (branco) / interior laminado ref. Penelope FA44 KAKI da Cleaf	inclui iluminação em fita led embutida na prateleira superior e interruptor de contacto nas portas / Dobradiças ocultas/ Puxador em chanfro incorporado na porta, consultar pomenor	No



CÓDIGO	DIMENSÕES (cm)	TIPO	MATERIAL	ACABAMENTO	MODELO / FABRICANTE	FERRAGENS	VIDRO	OBSERVAÇÕES	REV
S12	595x240	Portão seccionado	Painéis sandwich com 42mm de esp. em dupla chapa de aço com interior em poliuretano 100% sem cfc	Superfície micrograin canelado L. Cor exterior igual à restante caixilharia exterior em alumínio, cor interior RAL 9002.	Portão seccionado industrial SPU F42 série 60 da HORMANN	Incluindo todos as ferragens e todos os acessórios necessários para o bom funcionamento do conjunto;		1 Painel em caixilharia de alumínio; Molas de compensação do portão preparadas para 100.00 ciclos; Guia do portão tipo N - Padeira min.390mm; Automatismo lateral WA500 FU; Motor lateral monofásico 230V; Motor 100% ED; Cademat por corrente para abertura manual na falha de energia eléctrica; Quadro de comando 560, por impulso e com botoneiras Abrir-Parar-Fechar integradas e display com indicação da posição do portão e outras informações; Variador de frequência; Optensores (SKS) de segurança na borracha interior do portão; Células de segurança EL51 (Permitem o fecho automático temporizado); Fecho automático temporizado; Comando por rádio-frequência (modelo HSES BS, 868MHz) e comando chave (Modelo STAP50); Botoneira Abrir-Parar-Fechar (Modelo DTH-R) localizada no interior do estacionamento	No



N L A

Specs = Revit sheets
 + Schedules + Legend Components

Detail Design

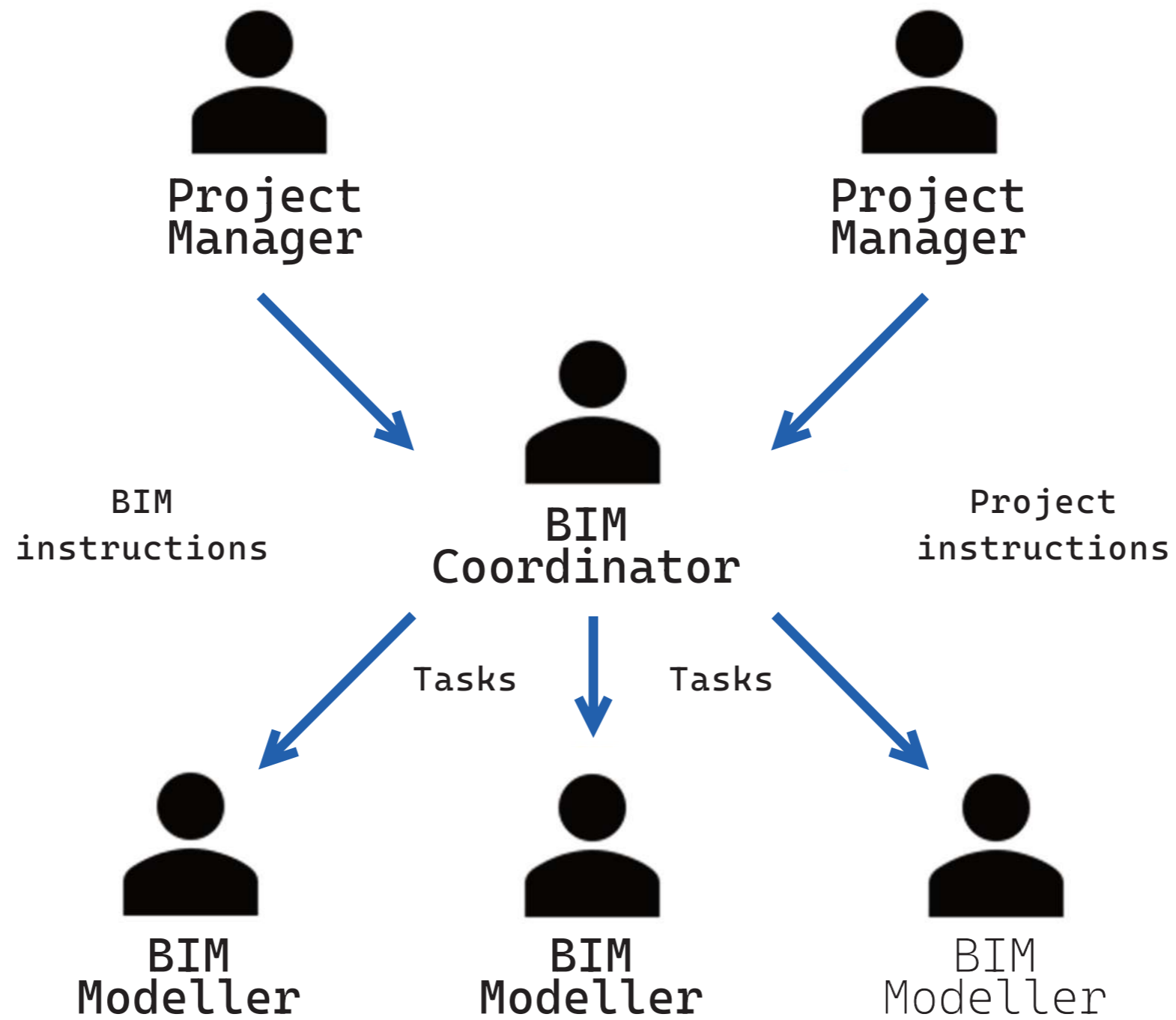


Twinmotion sections' renders



N L A

Teams' Dynamics



Standards and Procedures

24.4. Elements of Construction

Structure - Primary Elements			
21.xx	External Walls		
22.xx	Internal Walls		
23.xx	Architectural Floors	23.01 - 23.49	Interior
		23.50 - 23.xx	Exterior
Structure - Secondary Elements			
31.xx	Sills, Thresholds & Roller shutters	31.01 - 31.49	Interior
		31.50 - 31.xx	Exterior
33.xx	Skirtings	33.01 - 33.49	Interior
		33.50 - 33.xx	Exterior
34.xx	Guardrail	34.01 - 34.49	Interior
		34.50 - 34.xx	Exterior
35.xx	Ceilings & Trapdoors	35.01 - 35.49	Interior
		35.50 - 35.xx	Exterior
36.xx	Ceiling Mouldings & Coves	36.01 - 36.49	Interior
		36.50 - 36.xx	Exterior
37.xx	Chimneys and Roof's Technical Areas		
38.xx	Stair Railings	38.01 - 38.49	Interior
		38.50 - 38.xx	Exterior
39.xx	Coping & Covering Sheets		
Finishes			
41.xx	External Wall Finish		
42.xx	Internal Wall Finish	43.01 - 43.49	Interior
		43.50 - 43.xx	Exterior
44.xx	Stair Finish	44.01 - 44.49	Interior
		44.50 - 44.xx	Exterior
45.xx	Ceiling Finish	45.01 - 45.49	Interior
		45.50 - 45.xx	Exterior
47.xx	Roof Finish		

Windows & Doors	
Cxx	Fire Protection
Mxx	Wood
Sxx	Metals/Pvc & Skylights
Vxx	Glass
CWxx	Curtain Wall
Pxx	Prefabricated
Other Façade Elements	
ZSxx	Drying areas
BSxx	Balcony's separation stalls
Vertical Elements	
ESCxx	Stairs
EVxx	Elevators
Xxx	Shafts
Equipments	
EFxx	Fixed Equipment
ESxx	Sanitary Equipment
EKxx	Kitchen Equipment
Fxx	Furniture
Lxx	Lighting
Ax	Accessories
Dxx	Others
Materials Code (BIM only for boq purpose)	
ts.xx	Membrane
rm.xx	Insulations
er.xx	Plaster
pv.xx	Paint
ff.xx	Concrete Block Work
fg.xx	Ceramic Block Work

22.5.6. Filling out the standard BCF (offline project)

1) confirm you have the BCF Manager opened

if not you can find the BCF Manager Button in the tab "BIMcollab"

STANDARD BCF (OFFLINE PROJECT)

2) select the elements you want to address

3) Click "Add new issue"

4) add a prefix number with 3 digits, when adding the Title

5) Be careful choosing the type of issue

6) Define the priority

7) assign the issue to a team or team member

8) choose a label to match the discipline

NOTE: Always fill in the comment field, even if with just one word. It is the only field that allows a chronological track.

If you select the element in a 3D view, when you click element with the correct ID. If you select the element in open the bcf has the same view created. Nevertheless

Parts of Construction

LEVELS

BLOCKS

ZONES

PROJECT

- 1 - Open the showcase
- 2 - Select the type of lift you need and copy it into your file
- 3 - Place the family in the proper place. The family must be placed on the lowest level the lift will assist
- 4 - It will be helpful to have a section cutting the lift in order to fill the information in the Type Properties
- 5 - According to the dimensions in your section fill these parameters
- 6 - Request your Project Manager the info to fill these parameters
- 7 In detail design it might be needed to extract the lift's schedule, in that case, these parameters have to be filled

HEADROOM LEVEL

PIT LEVEL

Level04_Height

Level03_Height

Level02_Height

Level01_Height

PIT

Type Properties

Family: NLA_Lift_Central_4L

Type: Service_250x300CM

Parameter Value

Parameter	Value
Function	Interior
Wall Closure	By host
Construction Type	
Materials and Finishes	
NLA_Door_Material	<By Category>
NLA_Frame_Material	<By Category>
Dimensions	
NLA_Level01_Height	3.0000
NLA_Level02_Height	3.0000
NLA_Level03_Height	3.0000
NLA_Level04_Height	3.0000
NLA_Door_Width	1.0000
NLA_Door_WidthZ	0.5000
NLA_Door_Height	2.2000
NLA_Door_Thickness	0.0500
NLA_Cabin_Width	2.0000
NLA_Cabin_Length	2.0000
NLA_Shaft_Width	2.5000
NLA_Shaft_Length	3.0000
NLA_Pit_Height	1.0000
NLA_Headroom_Height	4.0000
NLA_Frame_Width	0.2000
NLA_Frame_Thickness	0.0100
NLA_Aux_Level01_Height	3.0000
NLA_Aux_Level02_Height	6.0000
NLA_Aux_Level03_Height	9.0000
NLA_TotalHeight	14.0000
NLA_TravelHeight	9.0000

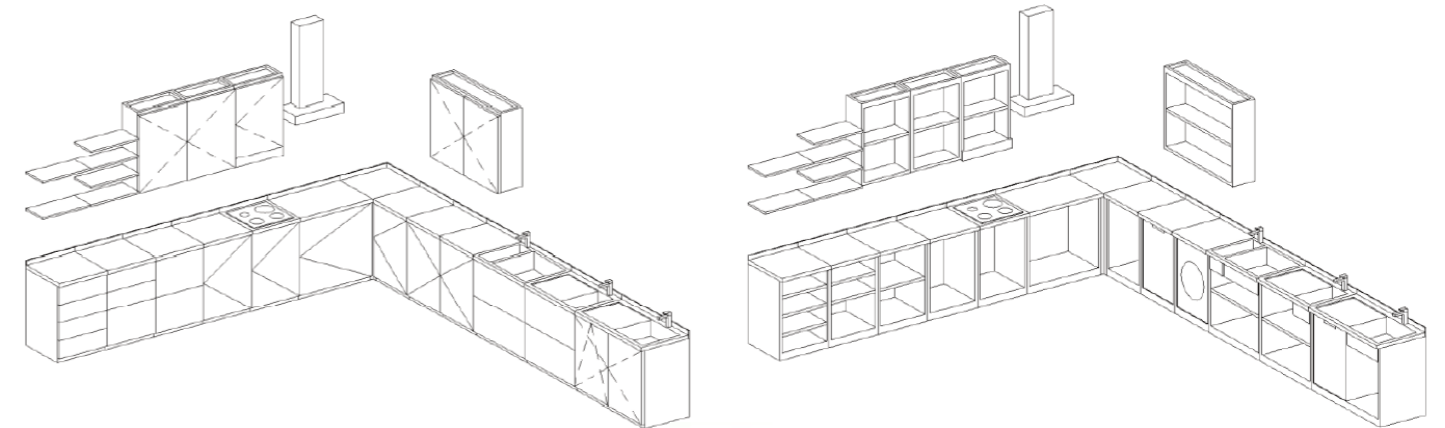
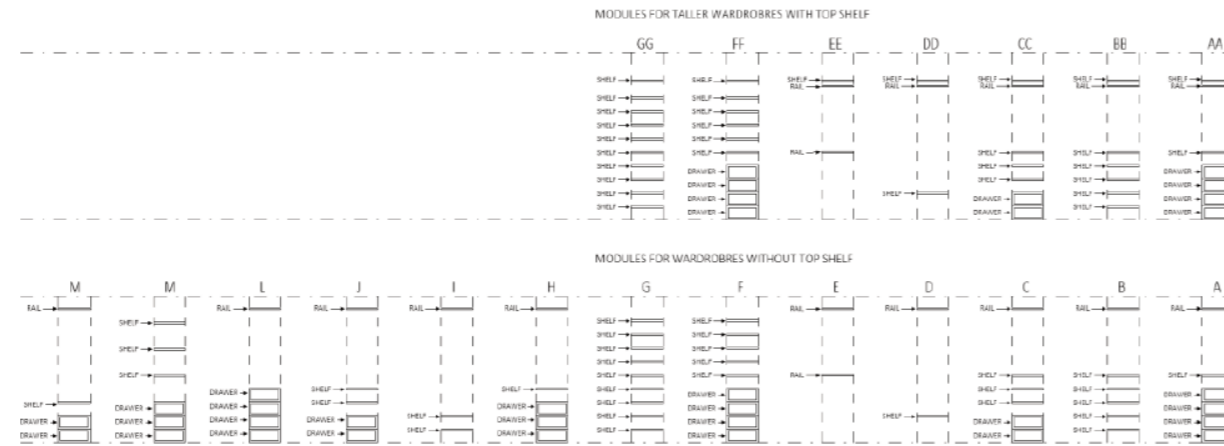
Data

Parameter	Value
NLA_Code	Evoor
NLA_Block	xx
NLA_Use	public
NLA_Load	800kg
NLA_Capacity	10
NLA_NumberOfLevels	4
NLA_Door_Type	central
NLA_Speed	1.6 m/s
NLA_Observations	
NLA_Revision	
NLA_Type	single/duble
NLA_Acoustic properties	
NLA_Fire rating	
NLA_Hardware	
NLA_Metalic sheet protection	
NLA_Panic bar	
NLA_Retainer	
NLA_Glass description	
NLA_Schedule	
NLA_Comments	
NLA_Supplier-Model	

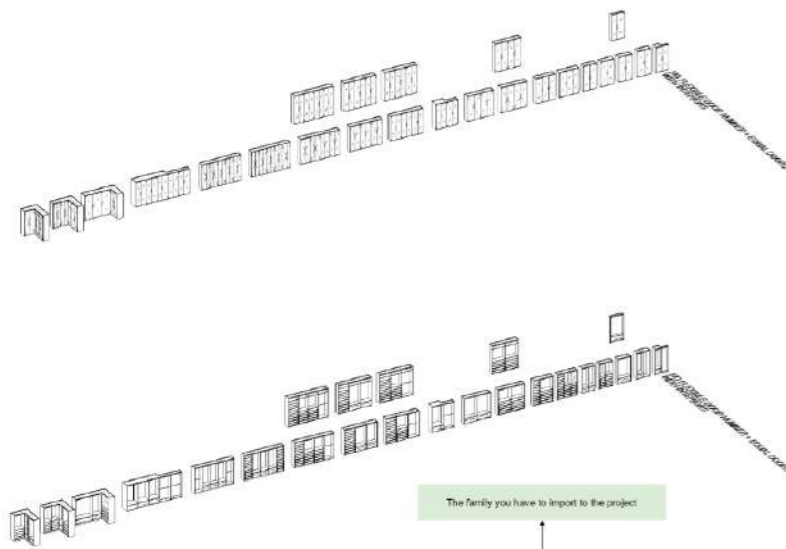
What do these properties do?

<< Preview OK Cancel Apply

Standards and Procedures



C) The composed wardrobes: with the module's families as nested families.



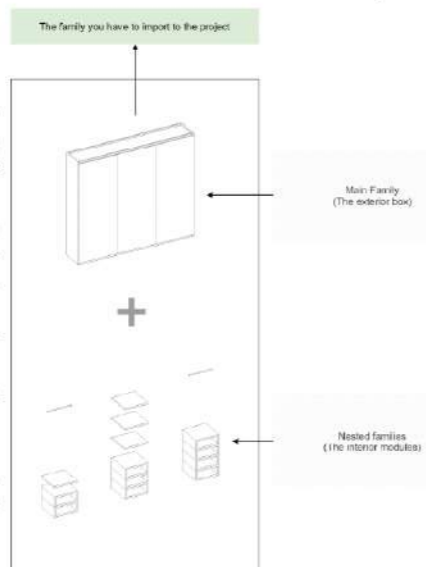
In these showcase there are also several mixes of solutions for wardrobes, but this file is in development. If it is necessary a different solution, it should be requested to the BIM Coordinator of the project that should consult with the BIM Manager.

The purpose of this file is to try to maximize solutions and have a limit number of options in order to standardize the process. The new families must be reviewed and eventually will be included in this showcase.

All these families are parametric, these means all dimensions are editable.

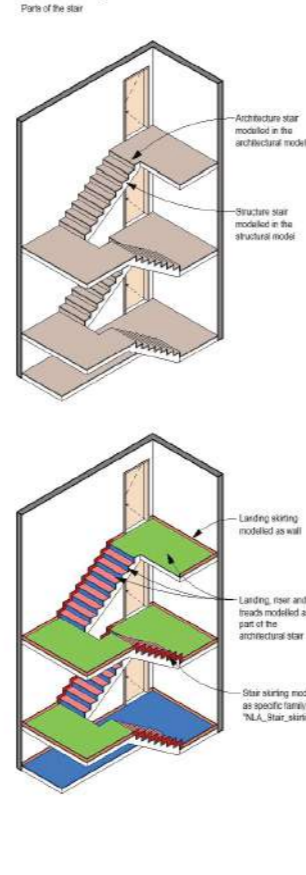
The structure of the final family is according to the diagram on the right.

NOTE: These families are set to not show the door panels in views with detail "Medium", in order to allow the visualization of the interior.

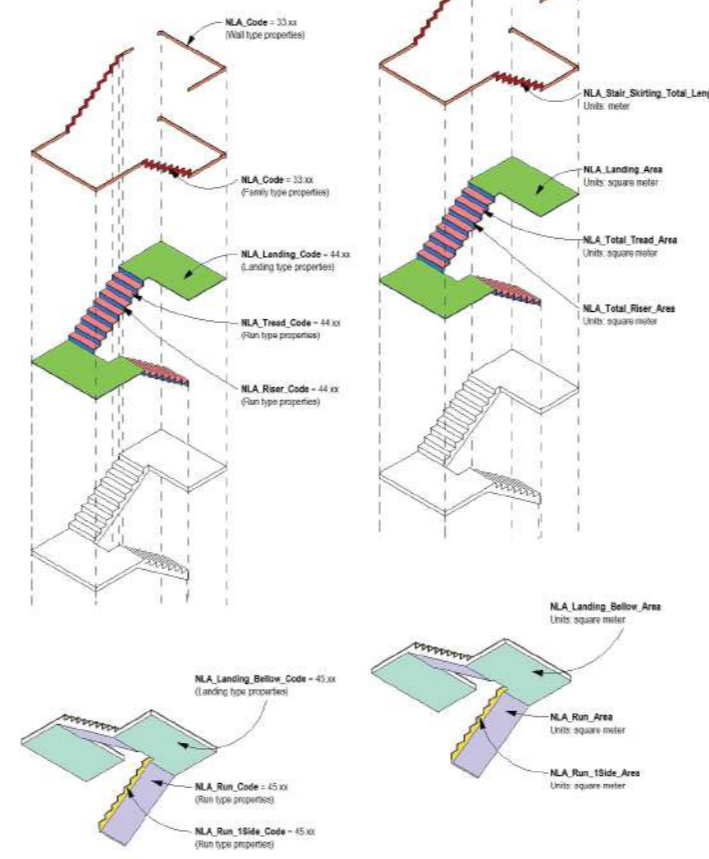


35.7. Stairs

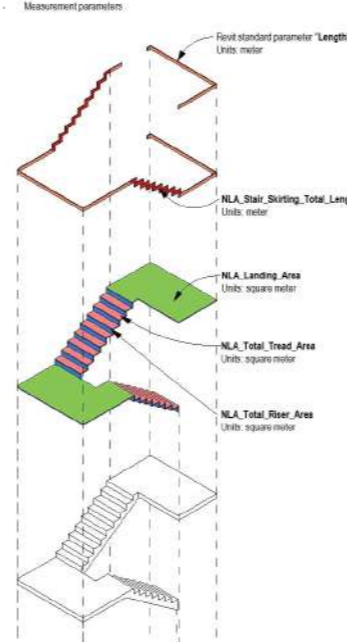
A - Modelling



B - Coding

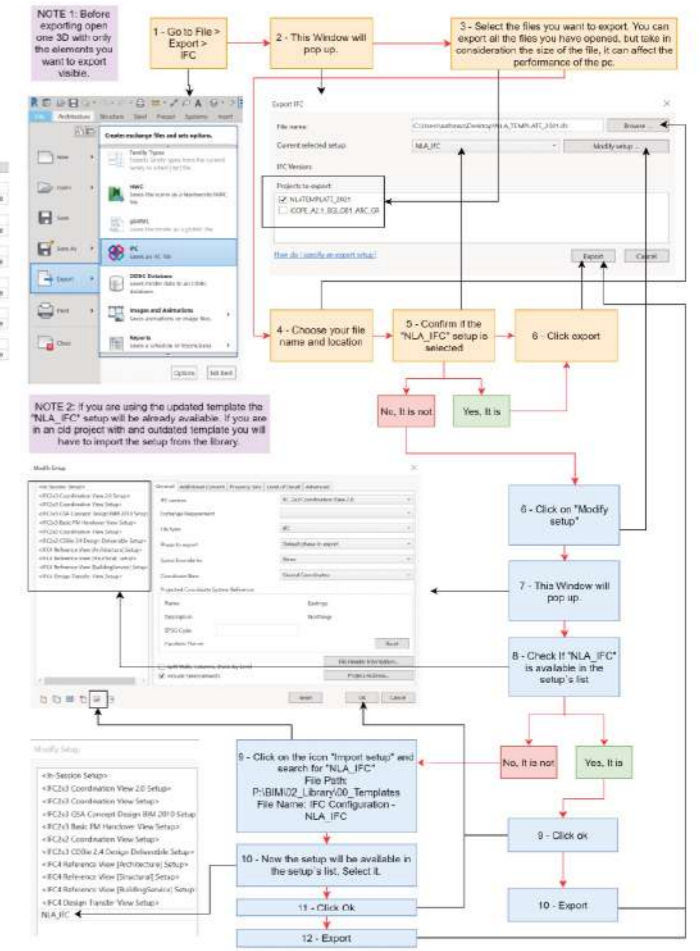


C - Taking quantities

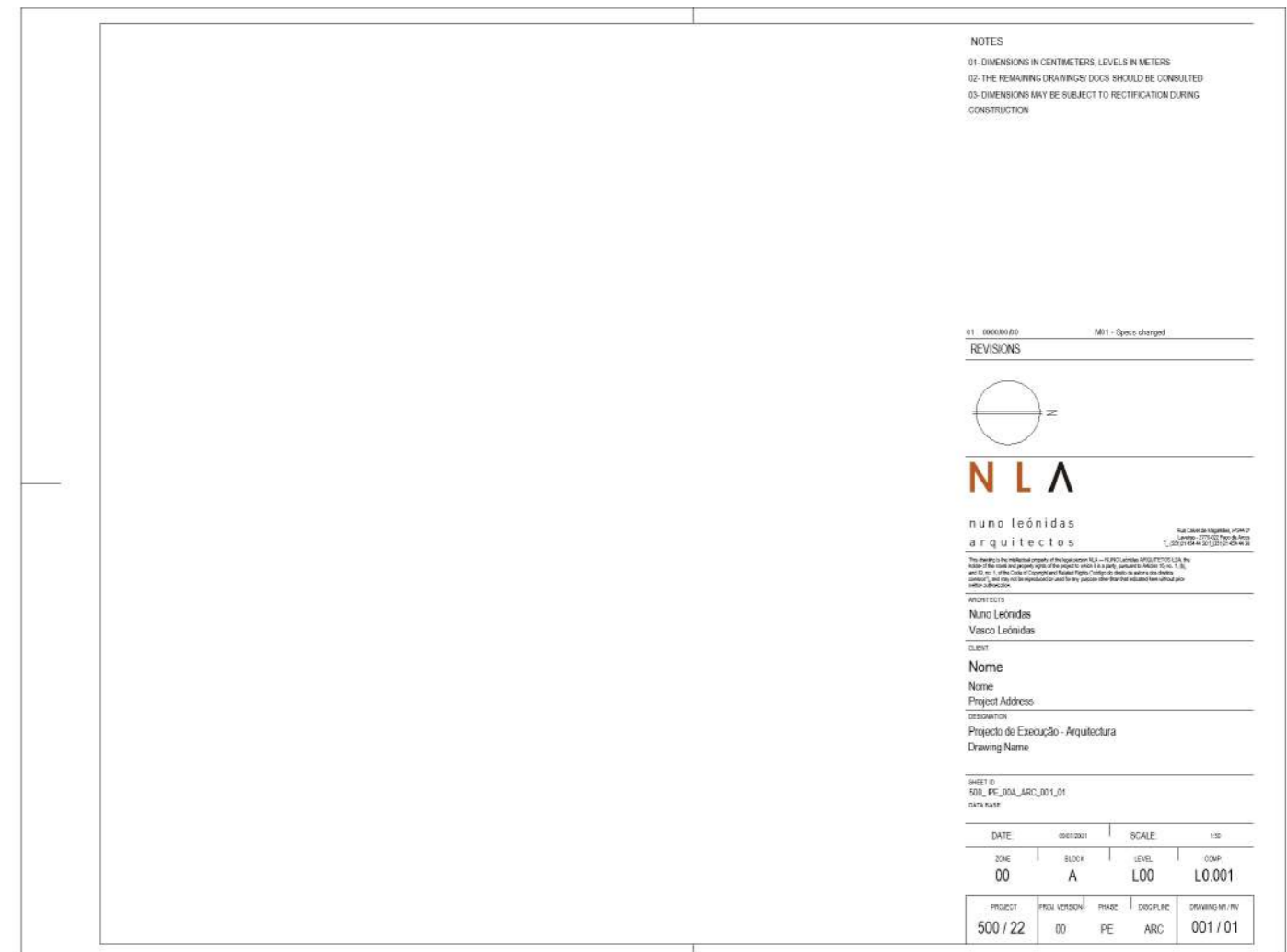
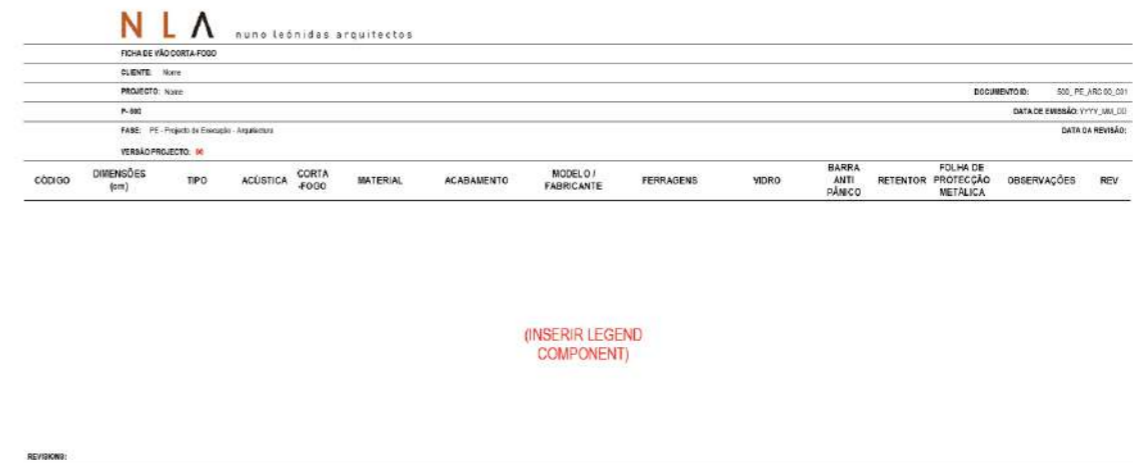
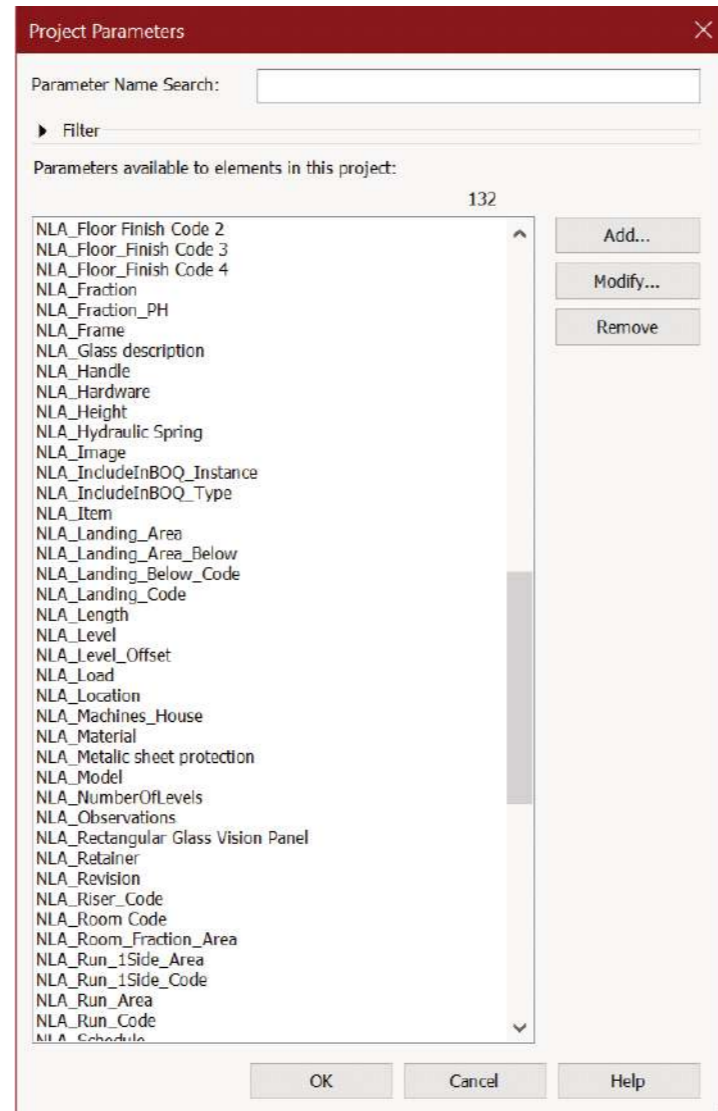
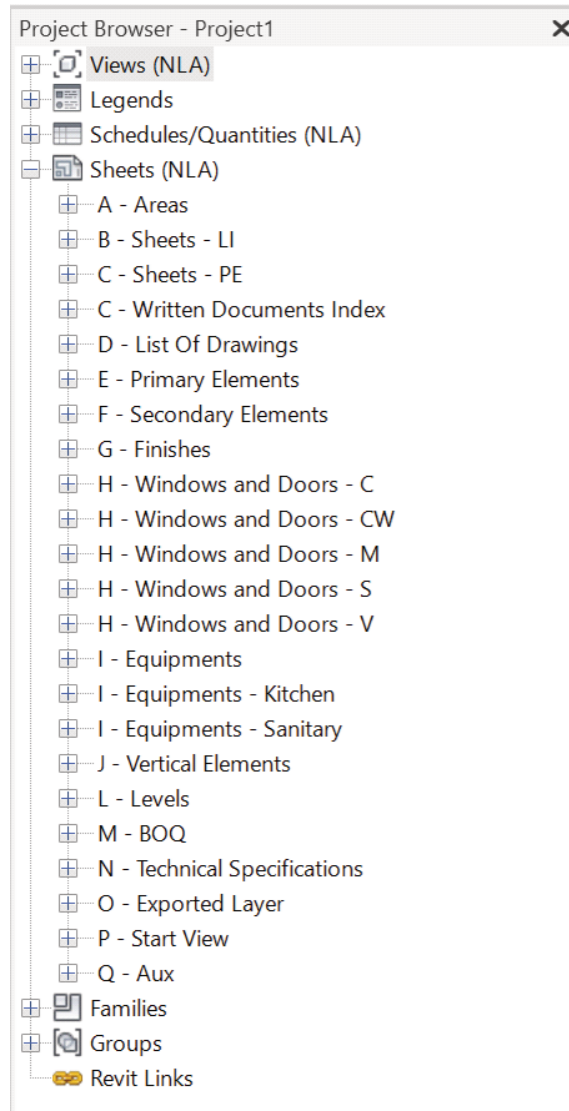


Notes

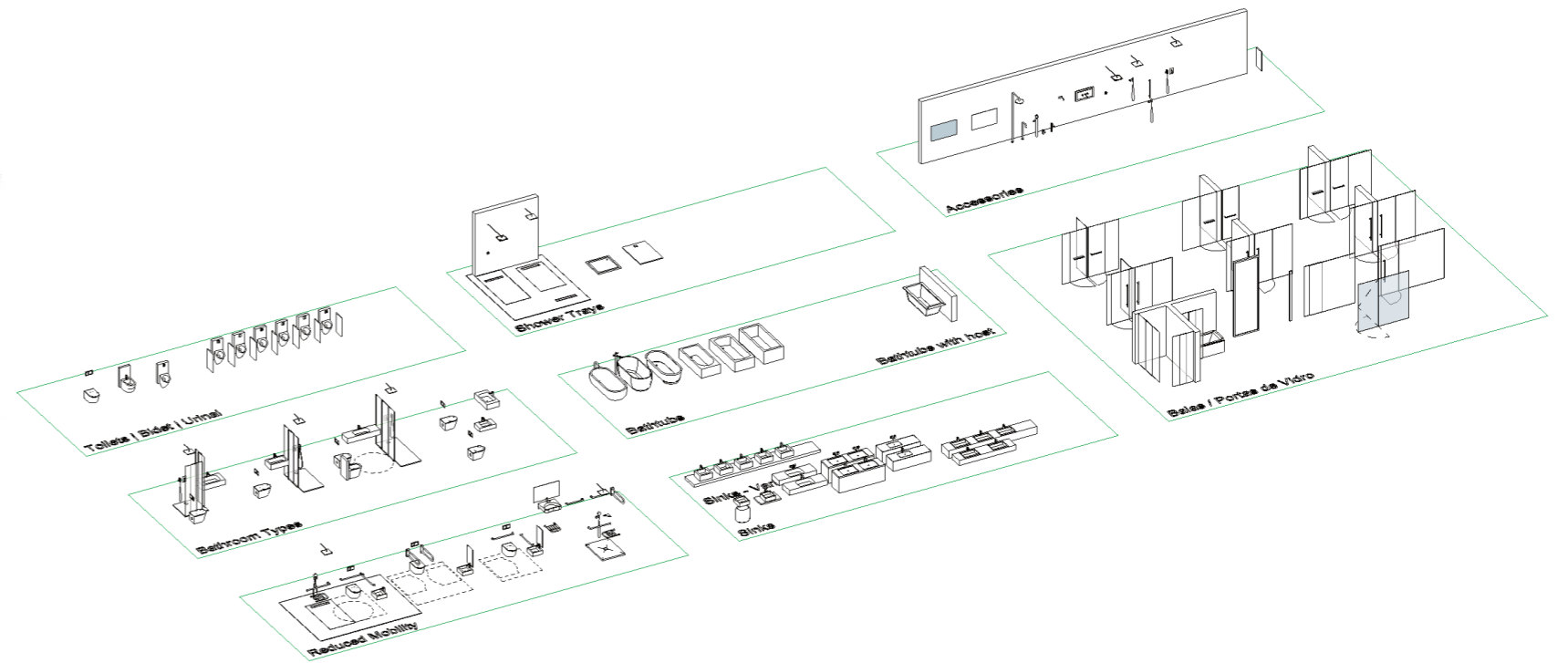
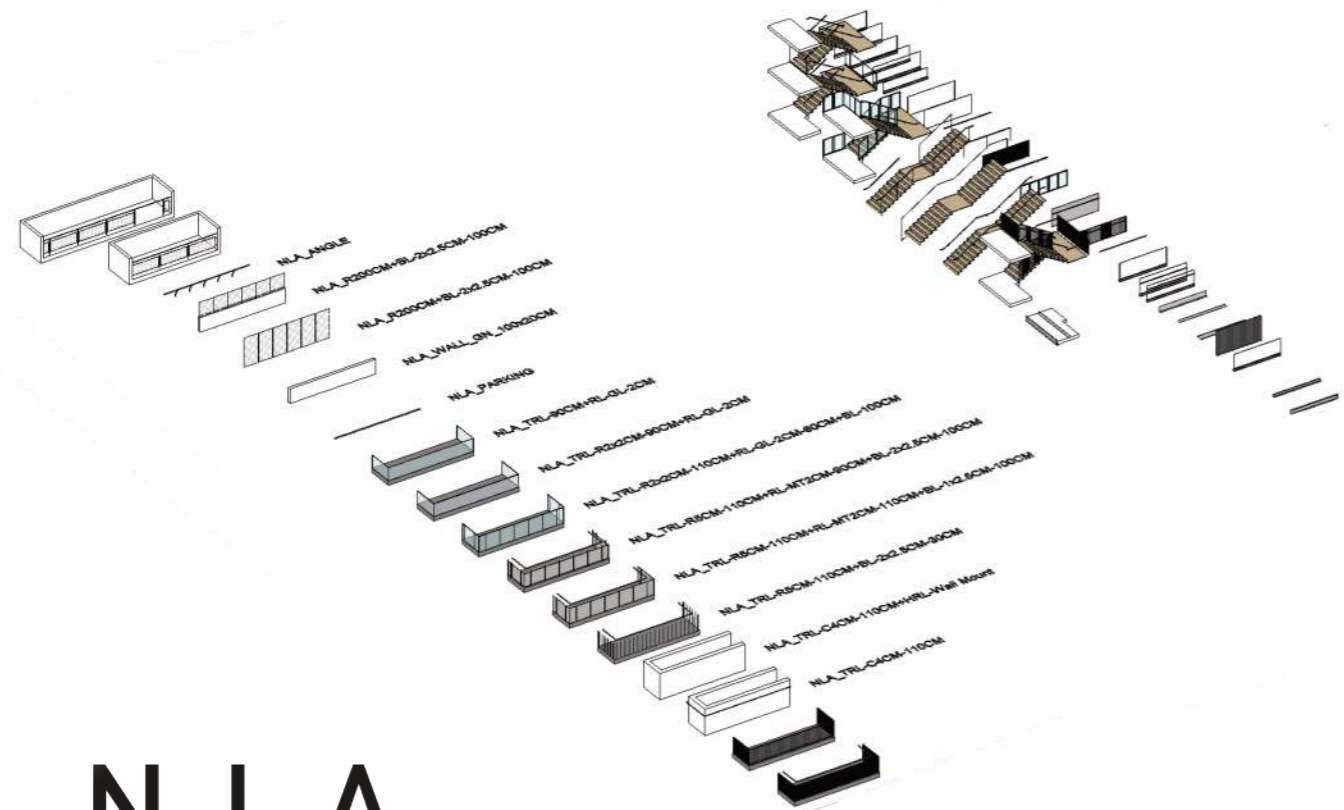
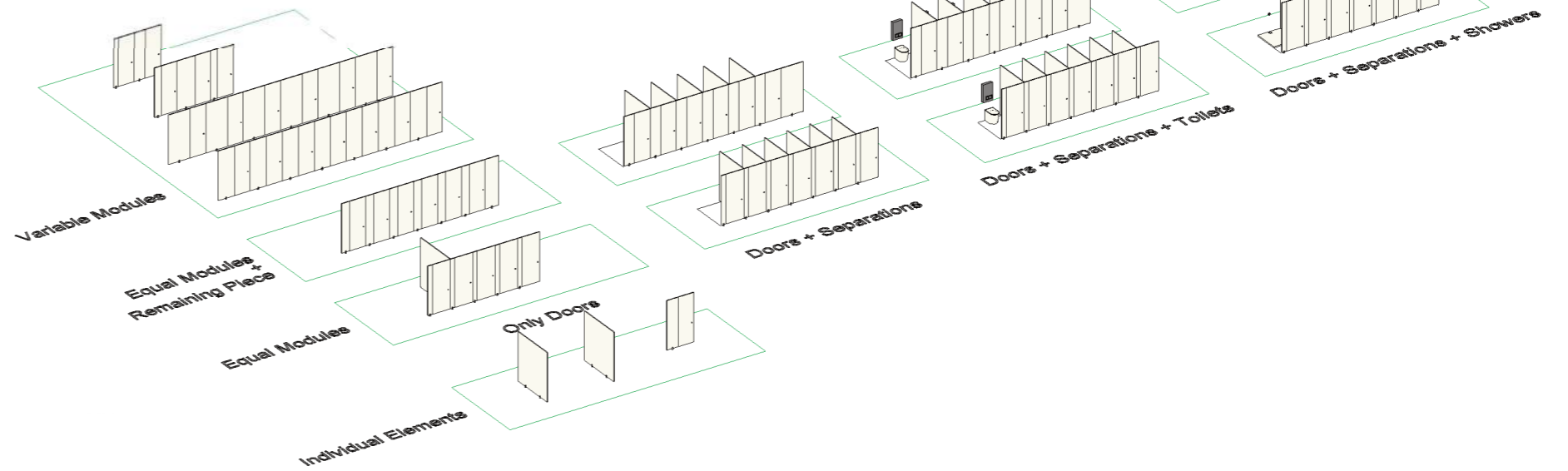
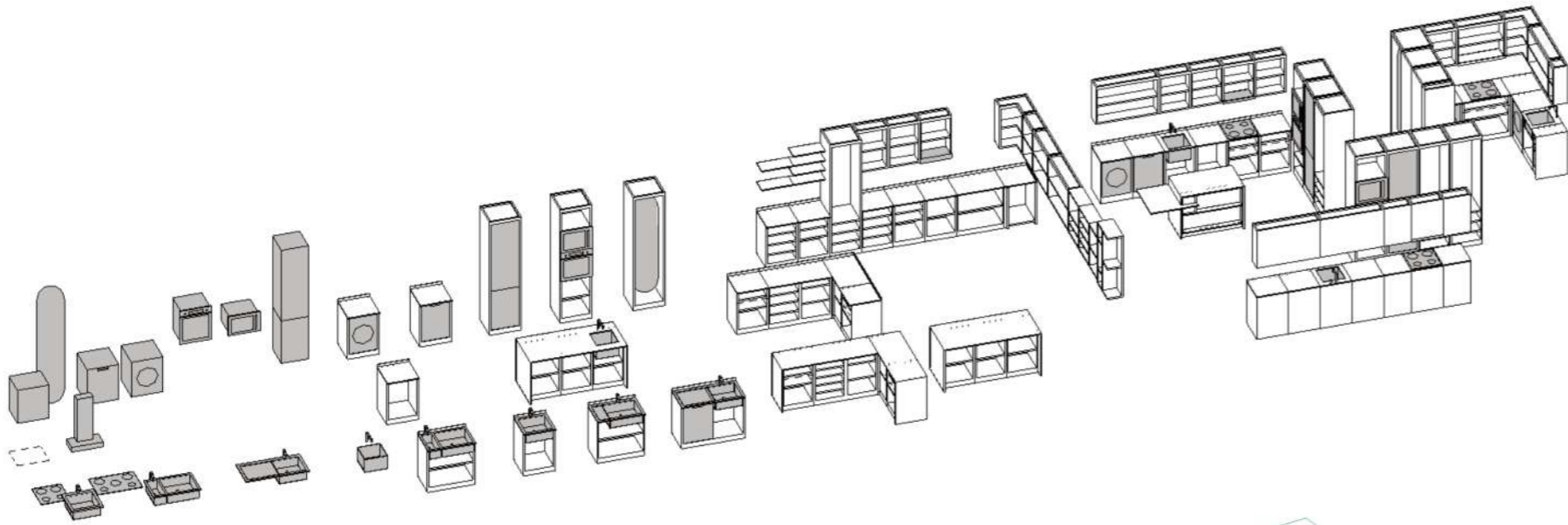
- Elements with different colors represent different modelled objects.
 - These shared parameters are from NLA's .btf file. If the project is based in an old template, the parameters must be imported.
- Parameters to import, if you are using an outdated template:**
- | Parameter Instance | Associated category | Parameter order | By |
|------------------------|---------------------|-----------------|---------------|
| NLA_Landing_Code | Stairs-Landing | General | Type Instance |
| NLA_Landing_Area | Stairs-Landing | Dimensions | Type Instance |
| NLA_Landing_Below_Code | Stairs-Landing | General | Type Instance |
| NLA_Landing_Below_Area | Stairs-Landing | Dimensions | Type Instance |
| NLA_Tread_Code | Stairs-Run | General | Type Instance |
| NLA_Total_Tread_Area | Stairs-Run | Dimensions | Type Instance |
| NLA_Riser_Code | Stairs-Run | General | Type Instance |
| NLA_Total_Riser_Area | Stairs-Run | Dimensions | Type Instance |
| NLA_Run_Code | Stairs-Run | General | Type Instance |
| NLA_Run_Area | Stairs-Run | Dimensions | Type Instance |
| NLA_Run_Side_Code | Stairs-Run | General | Type Instance |
| NLA_Run_Side_Area | Stairs-Run | Dimensions | Type Instance |
- 3 - In order to fill the measurement parameters there is a Dynamo script to use, through Dynamo player. The script is stored in the folder: P:\BIM\02_VisualProgramming\Dynamo\NLA_Scripts



Template



Families' Library



Software

Modelling

_Revit

_Civil 3D

Revision / Coordination

_Navisworks

_BIMcollab Zoom

_BCF Manager

BOQ

_Custom Software

Built in house

Clouds

_BIM 360 Docs

_BIMcollab Cloud

Visual Programming

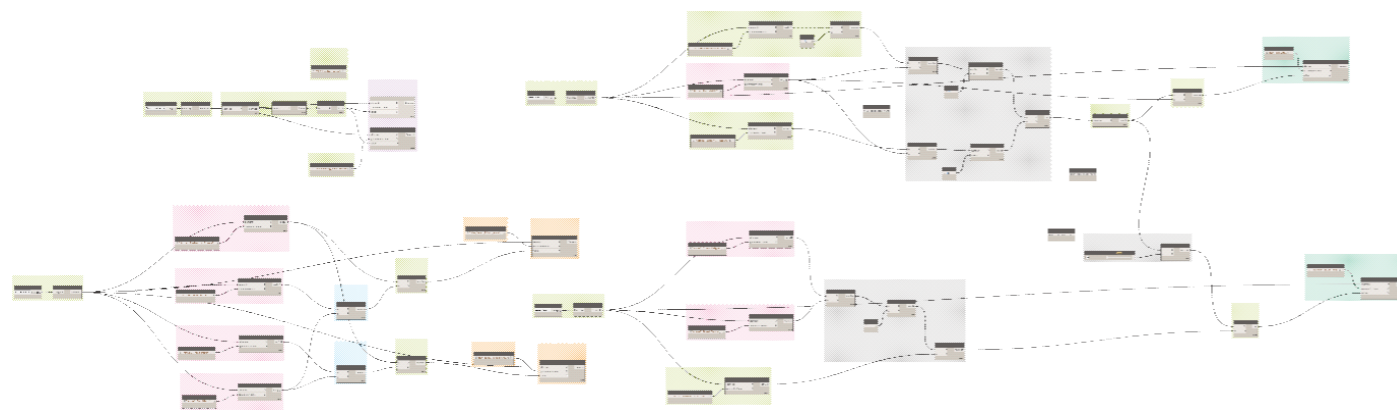
_Dynamo

Programming

_Python

_C#

Visual Programming



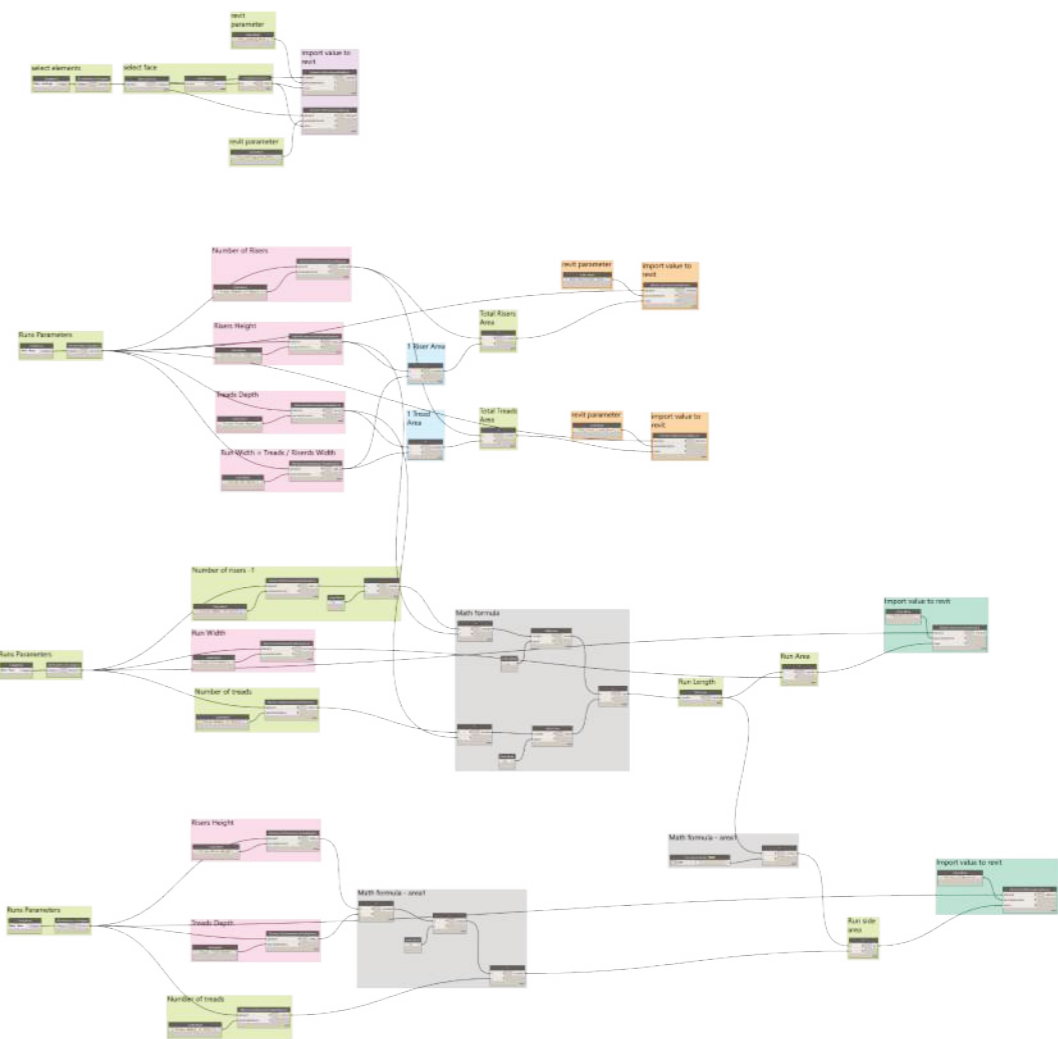
_Areas

_Data Export

_Deleting Elements

_Model Health

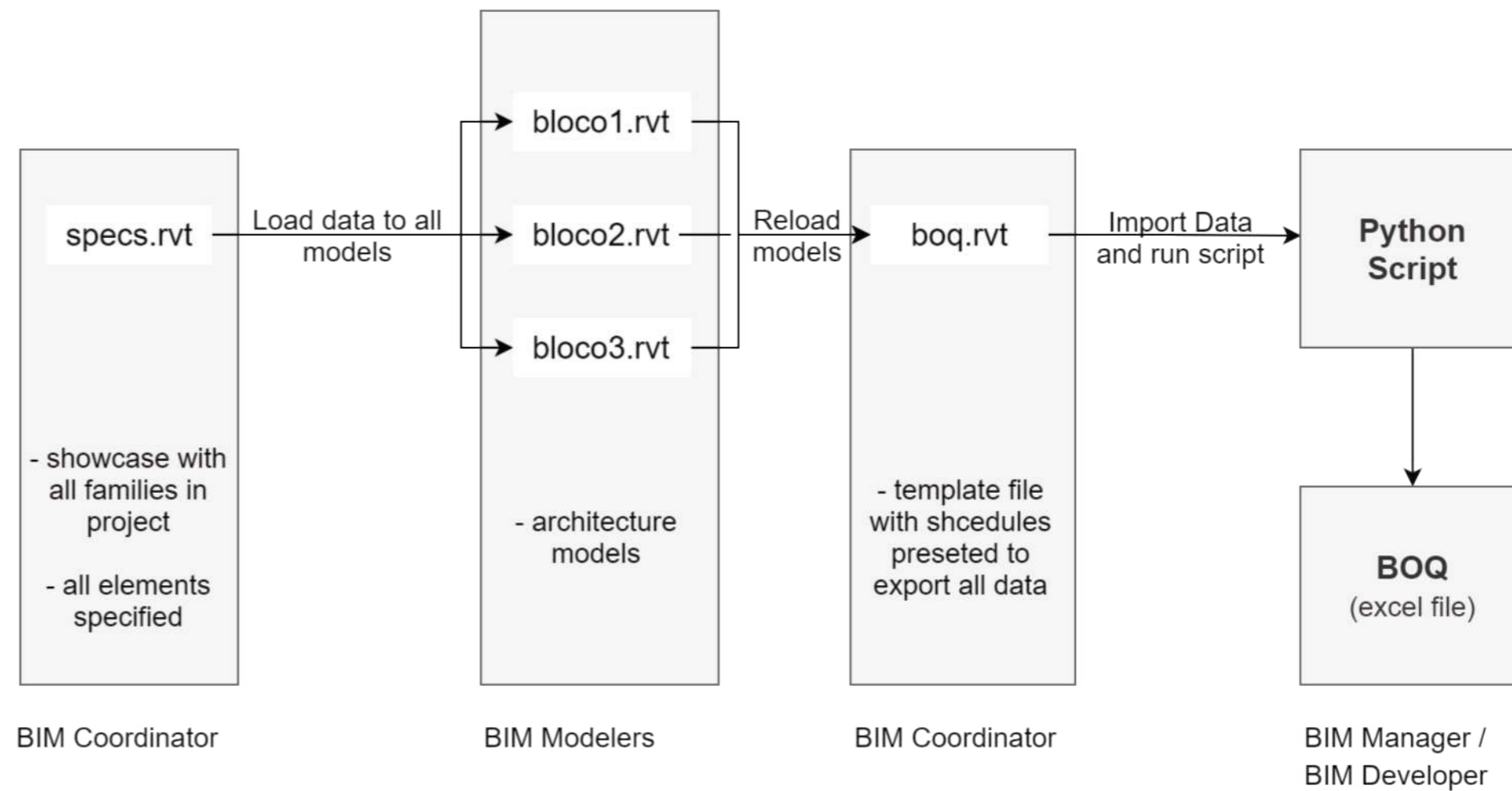
_Room finishes table automatically filled



Programming



<ul style="list-style-type: none"> CAD Layers Procedures Quick Guide <p>Docs</p>	<ul style="list-style-type: none"> BIM360 BIMcollab <p>Websites</p>	<ul style="list-style-type: none"> Floor Area Fraction Area Coves Anotation 	<ul style="list-style-type: none"> Room Available Height Room Free Height Room Translate <p>Utilities</p>	<ul style="list-style-type: none"> Ceiling Thickness Delete Unplaced Remove Paint 	<ul style="list-style-type: none"> schedule <p>Export</p>	<ul style="list-style-type: none"> Stairs <p>Quantities</p>
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Coordination

