



[Carolina Ramírez García](#)  
[CRa-HUB](#)

[Fernando Valderrama](#)  
[RIB SPAIN](#)

### Learning Objectives

- Identify the level of information needed at each step of the process to meet the requirements of the next agent.
- Create collaborative workflows focused on the "last builder".
- Communicate with each other the different digital resources involved.  
Establish the characteristics of a CDE according to ISO 19650, practical and appropriate to the size of the project.

### Description

BIM models have reached a level of maturity in the design, cost estimation and planning stages, now what? It is in the execution where we will recover the previous effort taking advantage of all the information of the model to calculate the purchases of materials and the needs of our own resources, generate the contracts and manage the orders, deliveries, and invoices. We will see this process as it is being applied in a real building, starting from a Revit model already made by the design team.

The class will also be in Spanish:

[Después del diseño: Control de compras, suministros y costo en la ejecución \(BES500113\)](#)

# AUTODESK UNIVERSITY

## Speakers



### Autodesk University 2020

Top Speaker Award On-Demand of EMEA

CASOS Y USOS DE GESTIÓN DATOS BIM EN UN DATA CENTER



## CAROLINA RAMÍREZ

[www.linkedin.com/in/crarg](http://www.linkedin.com/in/crarg)  
[www.CarolinaRamirez.es](http://www.CarolinaRamirez.es)

Architecture Master's degree from UPM Polytechnic University of Madrid (Spain), Consultant and teacher, specialist in construction technology, data manager of ARCH, MEP and structural projects, quantitative surveyor, and planning, using BIM models for project life cycle.

Working in collaborative teams and with numerous universities, professionals, architecture, and construction companies from **CRA-hub**, developing project, classes, conferences, consultancy and implementing BIM in ARCH, MEP, STR and Presto.

Outstanding BIM experience since 2008, registered in the COAM and acts as specialized BIM consultant and trainer. Beholds Autodesk ARQ, MEP certificates and is **Presto certified trainer by RIB Spain** and **Autodesk Expert Elite**.

[www.youtube.com/c/CarolinaRamirezBIM](http://www.youtube.com/c/CarolinaRamirezBIM)

Permanent investigating and adapting to the new technologies and BIM trends.

## FERNANDO VALDERRAMA

[www.linkedin.com/in/fernandovalderrama](http://www.linkedin.com/in/fernandovalderrama)  
[www.rib-software.es](http://www.rib-software.es)

Strategic Consultant at **RIB Spain**, Architect from the Polytechnic University of Madrid, Technical Architect from the European University, MBA from IESE, University of Navarra, and Executive in Construction Management from CSE. Linked to the development of Presto, the spread of digital culture for the construction and teaching.





## LIFE AFTER DESIGN: PURCHASES, SUPPLIES AND COST CONTROL IN EXECUTION

After the design we will see the control of the purchases, the supplies, and the cost of the execution of a BIM project

### THE PROJECT

[www.retamoparc.com](http://www.retamoparc.com)



FV: BIM models and professionals have reached a level of maturity in the design, cost estimation and planning stages, everything that goes before construction. But it is in the execution stage where we are supposed to recover all the effort we have made before, taking advantage of the large amount of information that is in the model, as we are going to see today, to calculate the materials purchases based on a planning and the resources quantities.

We will generate the required contracts and documents, such as orders, deliveries, and invoices.

Let's see all of this in a real building that has been executed with Carolina's help. The first thing we would like, Carolina, is for you to describe what the building is like?

## THE MODEL

CR: The project is **RETAMO PARK**, a residential building promoted and built by **RIVADENEIRA BARRIGA ARQUITECTOS IN QUITO, ECUADOR**.

It is a VIP residential building in two stages. This is the second stage, which is made up of four buildings, building C, building F, D, and G.



Nicolás Ribadeneira

NR: Hello, my name is Nicolás Ribadeneira, I am from Ribadeneira Barriga Architects and for several years we have been working with Carolina Ramírez.

Carolina for our company is a key point, she has been our BIM MANAGER, which has helped us organized our models to be able to manage them later at the time of construction.

## USING THE MODEL

CR: The project was modeled to **MANAGE THE CONSTRUCTION**, to measure, estimate and plan the entire work and also to create the orders. For example, the orders of concrete. The first thing we do when we receive a model is to audit it and study it to know it.

### AGENTS

FV: Who are the agents involved in the project, that is, to use the 19 650 terminologies, who is the appointing party, who is the appointed party?

CR: The contracting party was Rivadeneira Barriga who decided, as they are the developer and the construction company, to model in BIM to be able to plan all the orders. And we take care of giving them all the measurements and the construction management for the work.

## AUDIT THE MODEL

FV: Tell us what you do when auditing the model and especially what problems you usually identify, what process you perform to audit it and what usually appears.

### KNOW THE MODEL

CR: We start by studying the model.

#### CATEGORIES FAMILIES AND TYPES

First you have to know which families and which categories are modeled and check that every element is in the proper category.

#### EACH ELEMENT IN ITS TYPE.

Check also that they have the right types. For example, here what happened was that we had toilet in all the houses and in the rooms of the football field. It was decided that they were of different types, different elements to buy. Then I changed the type in Revit.

#### BUILDINGS AND GROUPS

We also began to study separation. Where each of the buildings are separated to make different groups with them.

#### SINGLE LEVELS REQUIRED

Then what we did was to study that the levels were correct, and the minimum needed for the model.

#### EACH ELEMENT AT ITS LEVEL

Another thing we did was that all the elements were at the level to which they correspond.

#### Recommendations

FV: Have you followed any special rules or good practice documents, or do you recommend any of them that could be used to do this type of review?

uBIM [www.buildingsmart.es](http://www.buildingsmart.es)

CR: We can use the uBIM standard, what they recommend us in terms of design, BIM modeling levels, spatial tips, or improvements to implement in your models.

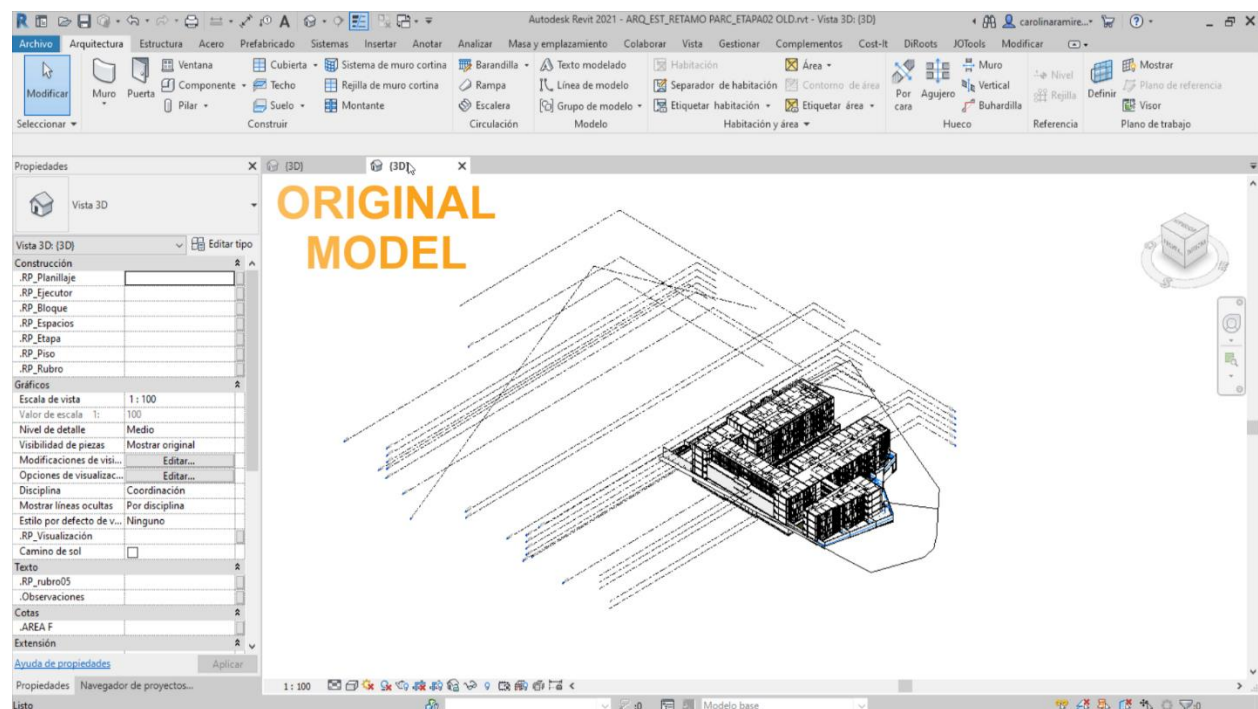
## LEVELS

FV: In the spatial BIM recommendations of uBIM I see that there are many standards to work well with spaces and levels, what else could you say about the levels as you received the model?

CR: This model, as was the continuation of phase 2, there were levels that were left by mistake. Also, those levels that belonged to phase 1 had elements in them.

So, if we delete those levels also elements of our project would be deleted. What did we do? We export all the information from the model to Presto as a list and we also took out the information from the levels in Presto.

We compared those two lists and realized, first, what are the levels that were left over, and second, we could select everything that was modeled in the wrong levels to move it to the corresponding level.



We check with Presto the project levels and the elements hosted in them.

● Video [AUDIT REVIT LEVELS IN PRESTO](#)



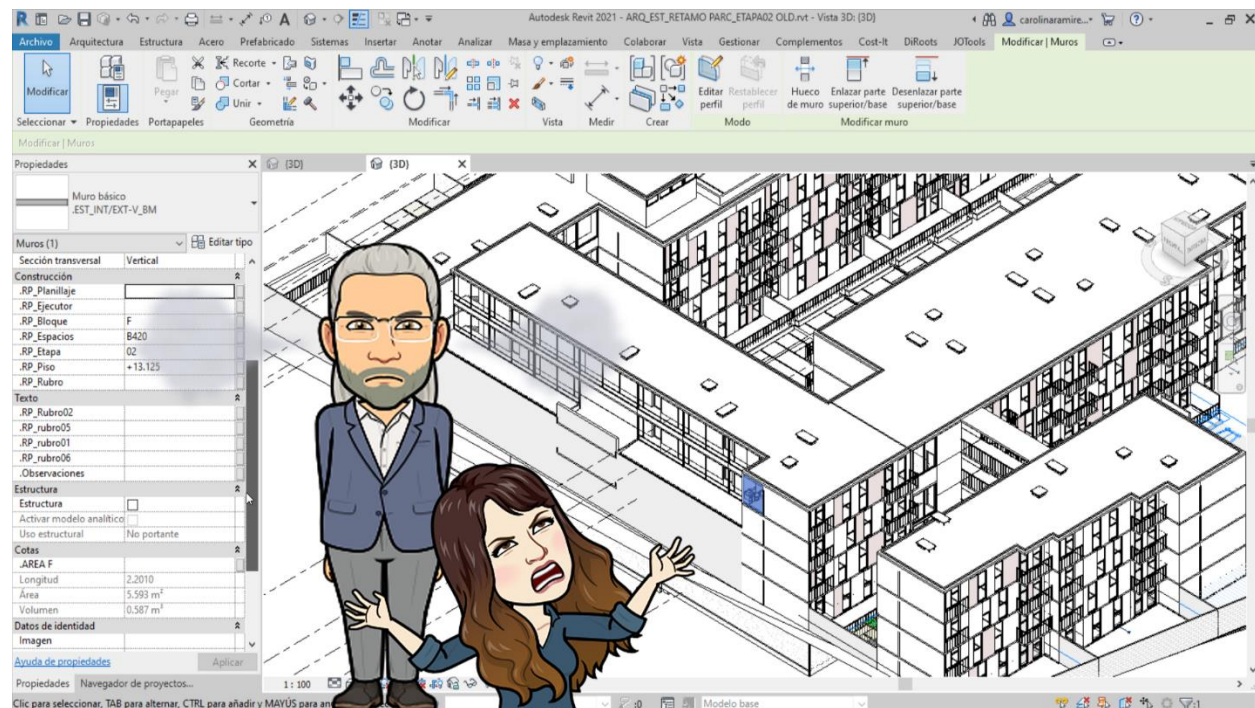
## PARAMETERS

**FV:** Another issue that always arises with models is the use of parameters. Many times, there are too many parameters, and they are not always filled correctly or are empty or incompatible. How do you do the parameter review and what problems do you usually identify?

**CR:** The parameters at the end are the information that we have in the model, and they are important. But of course, we must have them organized so that they are useful to label or to get all the information we have within our project.

Many times, the amount of extra parameters and the number of parameters that we are creating because we do not trust that the old parameter is filled, and we create another one... it can become a chaos and suddenly we have parameters that are not working and that are not updated automatically.

 Video [Parameters and colors with Revit and Presto](#)



## UPDATED AUTOMATICALLY

**CR:** The rule is to use the model to save data that we can calculate natively, such as surfaces or membership relationships, and that we do not depend on parameters that we would have to fill ourselves by hand. For example, you cannot put the parameter of where it is to a chair, because you move it, and its parameter becomes obsolete.

So, what we decided was to eliminate that number of extra parameters that there were and leave only the **AREAS**, used also for calculating the built surfaces, and to group them by dwellings, and use groups to divide the buildings. And use native parameters as the levels for the entire zoning of the project.



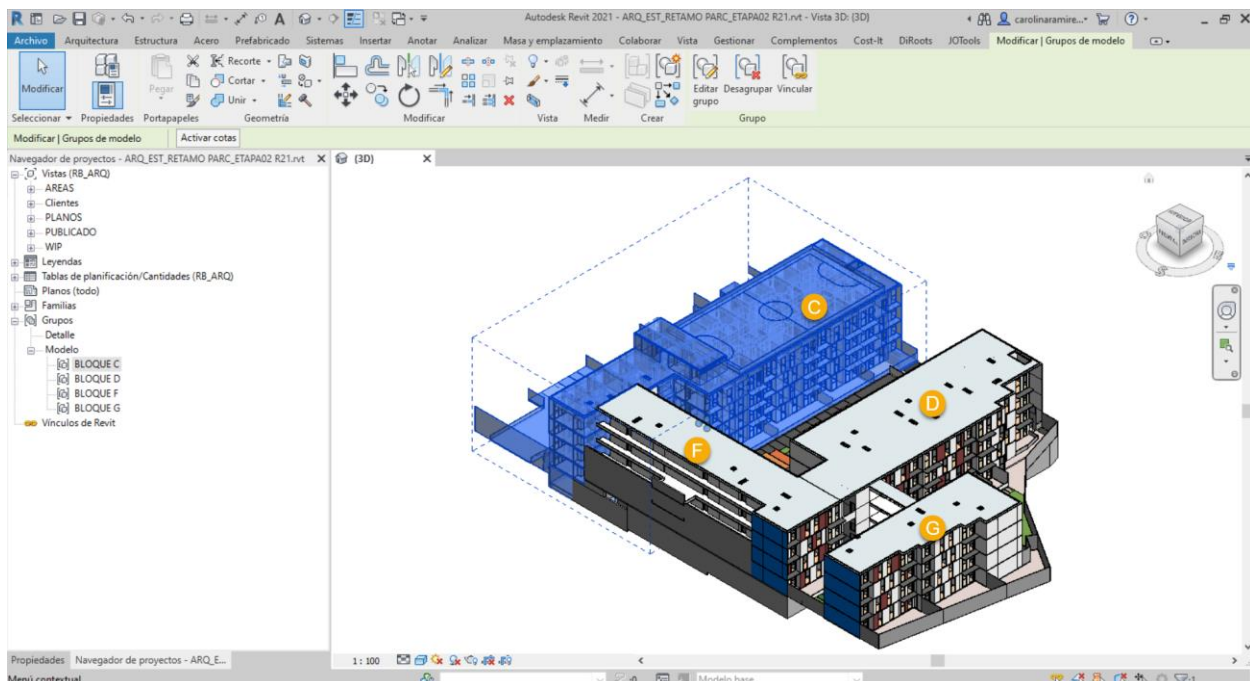
FV: That is, use the least possible parameters and that the properties can be calculated at the time they are needed. Therefore, it is not necessary to save them, because then they will not be obsolete.

CR: The only parameter that I do like to leave in the models, is the one that groups the views. I find them necessary specially to have those packages that we need to group those work views or those publication views.

## GROUPS OF BUILDINGS

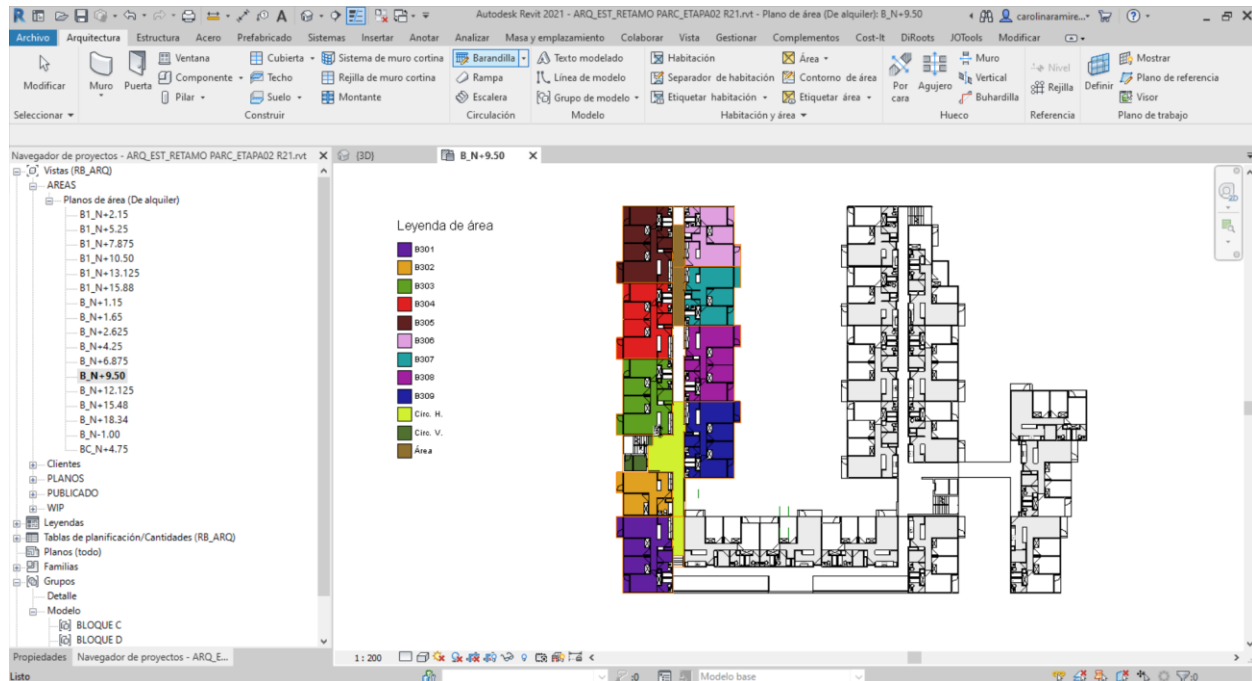
FV: You said that you use groups to divide buildings, how do you get those groups and why have you chosen precisely to make groups?

CR: We group the elements of each building into Revit groups. Why? because that is how we differentiate them. Even if we do not have several copies of a group, it serves us to select, to separate, and so on. In addition, if we have that group within our model, we can take it out to Presto and be able to have that list separated by buildings. If we are not allowed to modify the model, we are auditing, what we can do in Presto is directly fill in that field, selecting it from Revit. The group is transferred to a takeoff line field of the element, so I can have quantities, cost estimate and a planning split by buildings.



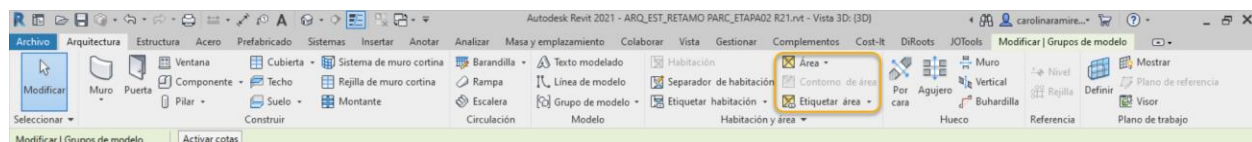
## AREAS

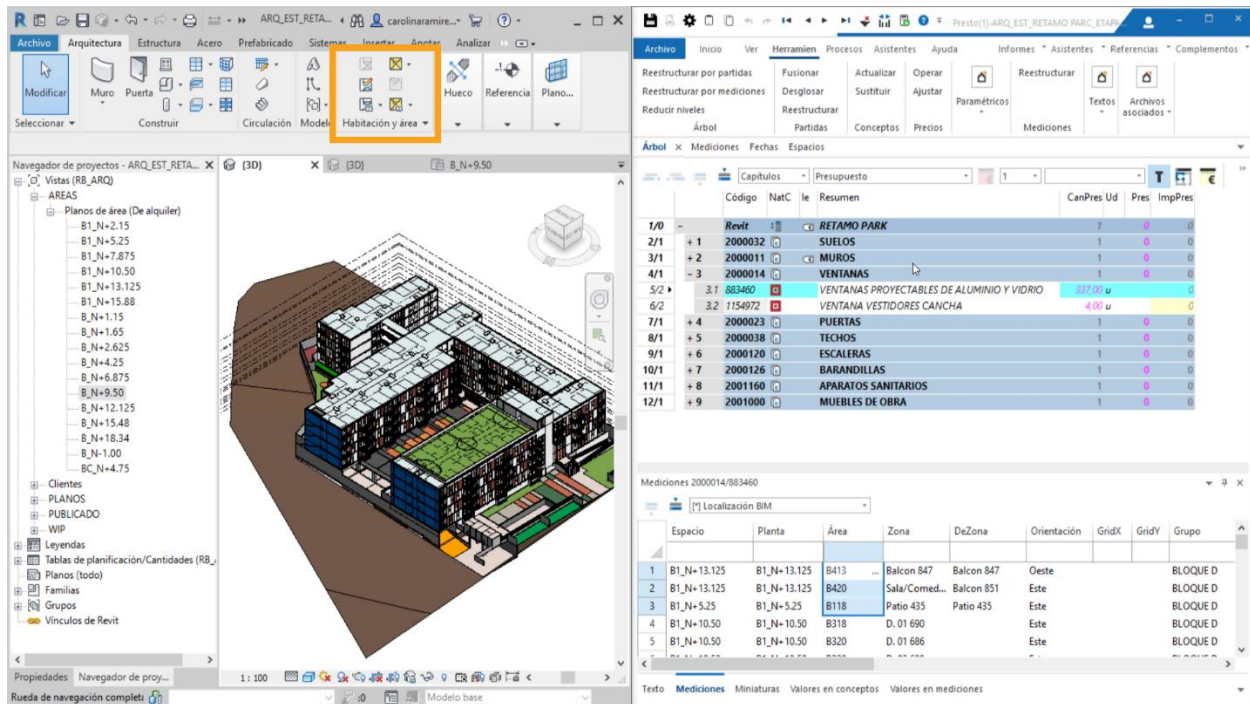
FV: Let's go with the areas, what do you use the areas for? Give us an example of the areas you have created and what the use is.



CR: Areas are a subdivision of a building element that we build drawing outlines or selecting model elements to use as outlines. We can calculate for example the gross built surface, which in all projects must be calculated. As we already have to create it to calculate the gross surface, we can use it to calculate for example the information of each element. Presto locates the area and adds a field in the takeoff line of those elements, in which area they are located. So, I can also have quantities, cost estimate and a planning split by areas.

Video [BIM data with Revit and Presto](#)





## WE SELECT HOUSING ELEMENTS B101

FV: Why don't you use the "Department" field of the zones to identify the houses?

CR: Because I would have to be aware that the "Department" field of each room is filled correctly throughout the project and in this case, we decided to do it directly by the areas.

## MODELED ELEMENTS

FV: We have seen the checking of spatial BIM, levels, and parameters. What are the elements that were modeled in this project and what review you do about types and categories?

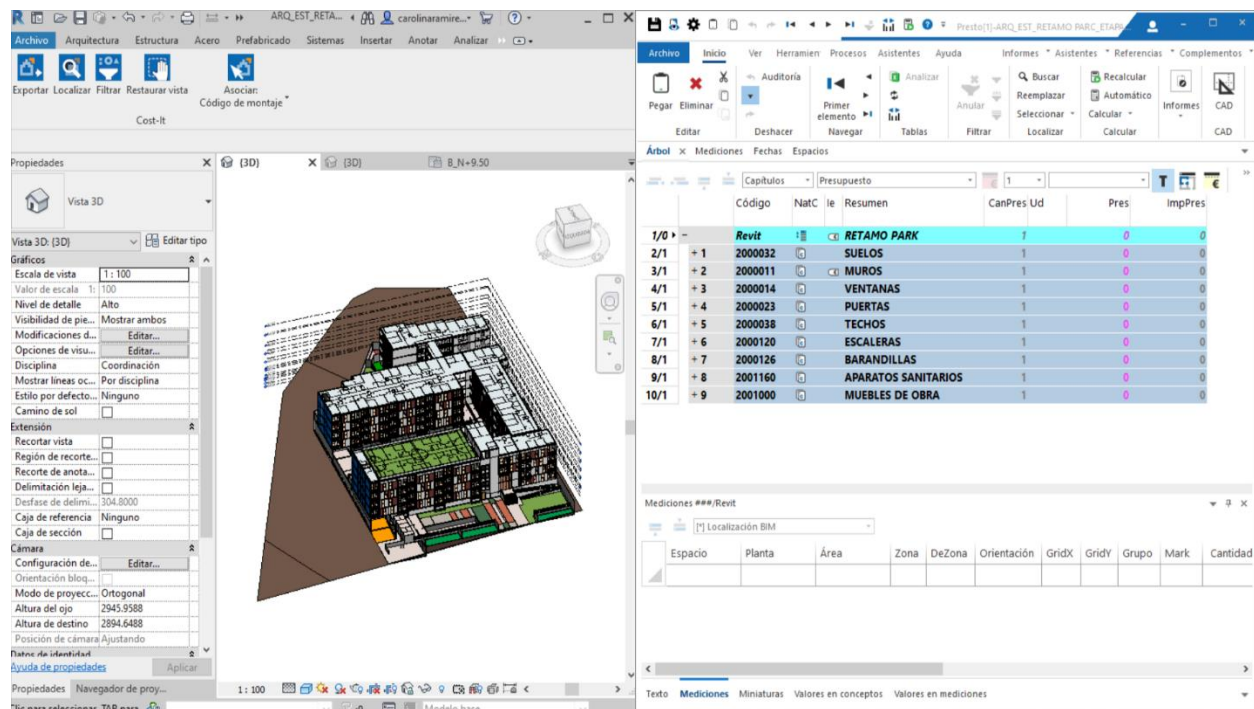
CR: For that, what we did is directly export the list of modeled elements from Revit to Presto to be able to manage it. We are going to Cost-It to export and here we have all the categories of our model. For example, the structural are in the basement, which does not belong to us, at this stage they are already built. We are going to extract the floors and the walls, they are important because they have the concrete.

The windows, the doors, the stairs, the railings... so we are able to make the orders, the plumbing fixtures to check what there are, how they are and how many there are. And, the equipment.



FV: Didn't they model more elements?

CR: No, only the elements necessary to manage, the most expensive parts of the work and those that had to be built.



## LIST, CATEGORIES AND TYPES

FV: What information can you use as a result of this export and this type and category check?

CR: This list can be used for many things. For example, to check all categories, families, and types. We have all the floors listed by all the types that are in the project, with the corresponding quantity, and all the elements that are in it. We have the windows, the whole list of windows with their level, their area, their room, and all the dimensions, in case we want the information of how much each window measures. We have the list of all the doors and of their location. We have the ceilings, the stairs, the railings. The railing list it was very useful because they all belonged to the same type in Revit, but we needed to quantity L and straight railings to order to the

workshop. What we did was **BREAK DOWN** the type elements by length to get the information on how many railings there were of each.

The plumbing fixtures, as I told before, we knew **HOW MANY TYPES** of toilets, showers and sinks were in the project. And the equipment and furniture, as the kitchens, the cabinets.

The screenshot shows the 'Cost-It 2021.04' window with a table of building elements. The table has columns for ID, Categoría, Etiqueta, Sub, Elementos, Código, Discriminador, Materiales, Color, Unidad, Medida, N, and Longitud. Several rows are highlighted with orange boxes, indicating specific elements of interest.

ID	Categoría	Etiqueta	Sub	Elementos	Código	Discriminador	Materiales	Color	Unidad	Medida	N	Longitud
1	2003200	Áreas	Model	198				12566527	m2	Área.(Lx...	1	
2	2000160	Habitaciones	Model	854				12568575	m2	Área.Ro...	1	
4	2001340	Topografía	Model	22	"Fill"			12572415	m3	Usuario	1	
5	2001340	Topografía	Model	22	"Cut"			12574463	m3	Usuario	1	
8	2001320	Armazón estructural	Model	189				12580351	m	Longitu...	1	
10	2001330	Pilares estructurales	Model	97				12582906	m3	Volumen	1	
14	2000032	Suelos	Model	450				12582868	m2	Área.(Lx...	1	
15	2000011	Muros	Model	5837				12582860	m2	Área.(Lx...	1	
16	2000170	Paneles de muro cortina	Model	174				12582852	m2	Área.(W...	1	
17	2000171	Montantes de muro cortina	Model	448				12779455	m	Longitu...	1	
19	2000035	Cubiertas	Model	2				13762495	m2	Área.(Lx...	1	
22	2000014	Ventanas	Model	341				15269823	u	Número	1	
23	2000023	Puertas	Model	799				15794111	u	Número	1	
24	2000120	Escaleras	Model	19				16252863	u	Número	1	
27	2000126	Barandillas	Model	183				16773311	m	Longitu...	1	
30	2000038	Techos	Model	201				16767423	m2	Área.(Lx...	1	
42	2001160	Aparatos sanitarios	Model	820				16564223	u	Número	1	
44	2001000	Muebles de obra	Model	840				15581183	u	Caja	1	BoxX
46	2000080	Mobiliario	Model	242				14598143	u	Caja	1	BoxX
50	2000095	Grupos de modelo	Model	4				12566463	u	Número	1	
52	2001370	Entorno	Model	29				12566463	u	Número	1	
103	2003101	Información de proyecto	Model	1					u	Número	1	
134	2000700	Materiales	Model	169					u	Número	1	
188	2008107	Zonas de climatización	Model	1					u	Número	1	
230	2000051	Líneas	Model	13					u	Número	1	

## BUDGETS:

FV: Well, I see that you have left the walls for the end because it is surely the most important element of all this work. Tell us what the walls are like and what's so special about them.

CR: The objective of this work was to get the entire concrete list of each of the houses to be able to plan it. An estimate with this list can be completed by putting a **PRICE** on the elements. On the other hand, a planning with this list can be done by putting a phase to each of the elements. We have the walls, and it is the concrete that we are going to plan in phases.

Video [Revit - Presto BIM budgets](#)

## CONSTRUCTION SYSTEM

CR: This project is built with the **METALEX** construction system, where they fill all the elements with concrete and melt them into a single monolithic package.

On the first day they put the **MESHES, THE ELECTRIC WIRING, THE PIPES FOR DRINKING WATER AND SANITATION**.

On the second day **THE METAL FORMWORK** is put on.

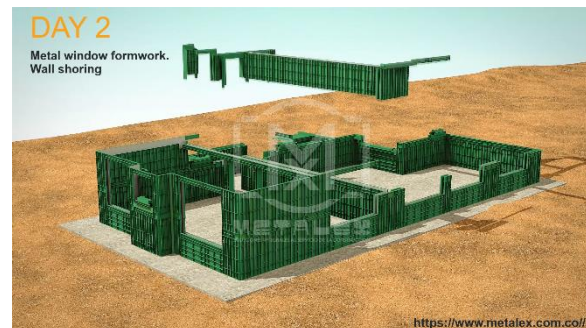
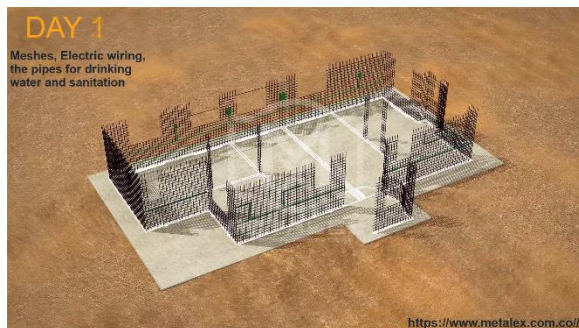
On the third day they do the **MONOLITHIC CONCRETING** of the walls and floors.

On the fourth day, **TRANSFER THE FORMWORK** to the next house.

Each phase covers approximately two dwellings at the same time. Also, they have two work teams on the site that are overlapped.

<https://www.metalex.com.co/>

**VIDEO** <https://youtu.be/Mxi9hAx5Tco>



## PLANNING

FV: How are the phases organized, that is, how long are they and who assigns the specific elements to be done in each phase?

CR: Each phase begins every three days. Then we must identify the elements that belong to each of the phases. We go to the concrete work unit and as you can see, we have an area parameter that locates the element where it is. The area parameter comes from the Revit areas and in this case for example it is the B121 that belongs to a specific floor. The elements of each



floor are already located. It is decided that two houses go for a phase. Then it is decided for example that house B105 and house B106 go to phase 1. Houses 104 and 107 go to phase 2. As you already know, it is filtered here in this list of measurements, where we have all the elements of the model, and it is set to phase 2. In addition, as there are elements that don't belong to any area, to any specific house, the builder decides to which of the phases to assign those elements. They are for example the walls that separate each house or the walls that separate the common part of two houses.

## MONDAY AND THURSDAY

FV: Can we visually check in Revit the planning as it is being done?

CR: Of course, here I have a list of dates every three days. If you look at it, we only have Mondays and Thursdays at the beginning of the phase. I can simply right click all the elements that belong to that phase to see them. Also, since I have the information in Presto I can view it in Revit. We remember that I don't have and don't need any extra parameters in Revit. Everything can be managed and organized directly in Presto. Let's go now to "Processes", "Model Animation" and tell it to color the elements by the planning phase. We have phase 1 to phase 51. We "Accept" and we can see visually, which is more intuitive, all the concrete planning in this project.

FV: Can we keep turning the view while the planning is visualized?

CR: Sure, we can move it, we can turn it, especially to see these hidden parts in a very large project.

The screenshot displays the Autodesk Revit 2021 interface. On the left, the Project Browser shows a hierarchy of elements including Areas, Clients, Plans, and Phases. The main view is a 3D perspective of a building structure with various colored walls and floors. On the right, the 'Phases' table is visible, showing a list of phases with columns for Tag, FechaDMA, NatC, Resumen, Plan, Real, Cert, Color, Transparencia, Nota, and UsrNam.

Tag	FechaDMA	NatC	Resumen	Plan	Real	Cert	Color	Transparencia	Nota	UsrNam
1	07-Jul-21	3					10066431			
2	10-Ene-22	1					10073087			
3	13-Ene-22	4					10079487			
4	17-Ene-22	1					10086143			
5	20-Ene-22	4					10092543			
6	24-Ene-22	1					10092518			
7	27-Ene-22	4					10092492			
8	31-Ene-22	1					10092467			
9	03-Feb-22	4					10092441			
10	07-Feb-22	1					11796377			
11	10-Feb-22	4					13434777			
12	14-Feb-22	1					15138713			
13	17-Feb-22	4					16777113			
14	21-Feb-22	1					16770713			
15	24-Feb-22	4					16764057			
16	28-Feb-22	1					16757657			
17	03-Mar-22	4					16751001			
18	07-Mar-22	1					16751027			
19	10-Mar-22	4					16751052			
20	14-Mar-22	1					16751078			
21	17-Mar-22	4					16751103			
22	21-Mar-22	1					15112703			
23	24-Mar-22	4					13408767			
24	28-Mar-22	1					11770367			

FV: Do you think that during these checks the construction company found problems or ways to optimize the process they had planned?

CR: Yes, this helped him to plan and to know which walls were built in each phase. The most important thing, which was what they asked me at first, was to know how much concrete they had to order every day and to be sure that it would come that day and also to know how much concrete they had to pay to the subcontractors.

## PHASES

CR: Here we show you the real photos of the work in its phases.

I select phase 1 in Presto and select the elements that are planned in this phase in Revit, we isolate it in the view.

You can see in the work photo the walls and floors already concreted, and that they are forming the next phase.

We select phase 1 and 2 and isolate the elements of the phase and can be seen concreted in the photo.

We reestablish the isolated elements, and select the phases from 1 to 6, isolate their elements and see in the work photo the houses already concreted.

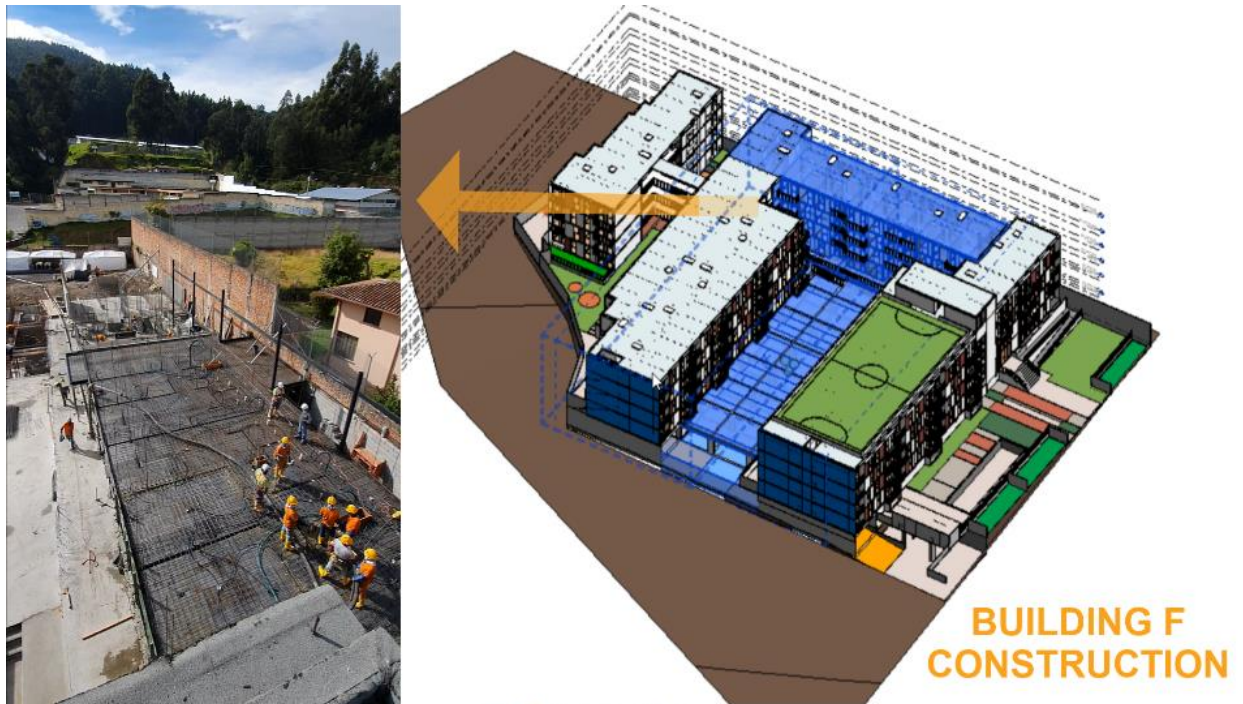
We select phase 1 to 14 and isolate the planned elements in phase you can see what has been built.

In the video you can see how the last floor of building C is being finished, and here in the next one, how it continues with building F.

Controlling and managing the work with the model.

The screenshot displays the Autodesk Revit interface. On the left, a 3D model of a building structure is shown, with a red box highlighting a specific area. The model is labeled '06-30-2020 Tue 08:08:05'. On the right, a table titled 'Planificación' (Planning) is visible, showing a list of construction phases with columns for Tag, FechaDMA, NatC, R., Color, and PlanPres.

Tag	FechaDMA	NatC	R.	Color	PlanPres
1	07-Jul-21	3		10066431	3.199,57
2	10-Ene-22	1		10073087	2.777,35
3	13-Ene-22	4		10079487	2.744,43
4	17-Ene-22	1		10086143	1.356,33
5	20-Ene-22	4		10092543	1.544,74
6	24-Ene-22	1		10092518	3.212,05
7	27-Ene-22	4		10092492	2.781,89
8	31-Ene-22	1		10092467	2.743,30
9	03-Feb-22	4		10092441	1.359,73
10	07-Feb-22	1		11796377	1.544,74
11	10-Feb-22	4		13434777	3.205,24
12	14-Feb-22	1		15138713	2.778,48
13	17-Feb-22	4		16777113	2.739,89
14	21-Feb-22	1		16770713	1.363,14
15	24-Feb-22	4		16764057	2.321,08
16	28-Feb-22	1		16757657	3.942,99
17	03-Mar-22	4		16751001	3.384,57
18	07-Mar-22	1		16751027	3.796,58
19	10-Mar-22	4		16751052	2.175,80
20	14-Mar-22	1		16751078	3.022,51
21	17-Mar-22	4		16751103	2.760,32
22	21-Mar-22	1		15112703	3.091,74
23	24-Mar-22	4		13408767	2.755,78



Controlling and managing the work with the model.

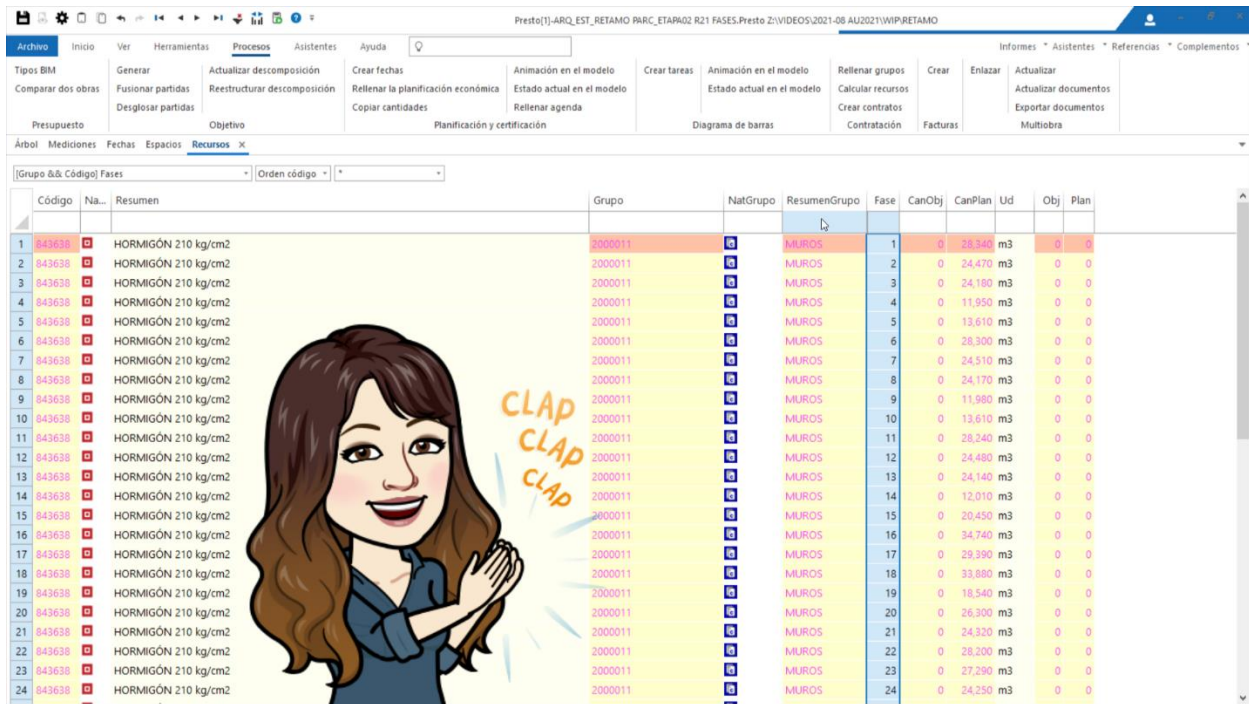
● Video [Planning](#)

## RESOURCES

**FV:** How are the quantities of concrete of every phase calculated?

**CR:** We can see in this main window of dates the list of all the phases that we have in our project. There are 50, as we have in the planning, how much money we need for the concrete in each phase, because the only thing that is in phases in this project for now is the concrete. To calculate the resources, we are going to open the main resource window and we are also going to go to "Tree" because we want this concrete in a given chapter of contracts and orders. Then we select them, and we go to "Processes" to calculate the resources required to carry out the work of this concrete item. For this we chose the first higher level concept of "Destiny" type, so it will be a resource of the "Walls" contract. The result in the main resource window is that we have all 50 phases listed as orders, with their phase, summary, quantity, and measurement unit.





Código	Na.	Resumen	Grupo	NatGrupo	ResumenGrupo	Fase	CanObj	CanPlan	Ud	Obj	Plan
1	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	1	0	28,340	m3	0	0
2	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	2	0	24,470	m3	0	0
3	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	3	0	24,180	m3	0	0
4	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	4	0	11,950	m3	0	0
5	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	5	0	13,610	m3	0	0
6	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	6	0	28,300	m3	0	0
7	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	7	0	24,510	m3	0	0
8	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	8	0	24,170	m3	0	0
9	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	9	0	11,980	m3	0	0
10	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	10	0	13,610	m3	0	0
11	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	11	0	28,240	m3	0	0
12	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	12	0	24,480	m3	0	0
13	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	13	0	24,140	m3	0	0
14	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	14	0	12,010	m3	0	0
15	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	15	0	20,450	m3	0	0
16	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	16	0	34,740	m3	0	0
17	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	17	0	29,390	m3	0	0
18	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	18	0	33,880	m3	0	0
19	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	19	0	18,540	m3	0	0
20	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	20	0	26,300	m3	0	0
21	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	21	0	24,320	m3	0	0
22	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	22	0	28,200	m3	0	0
23	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	23	0	27,280	m3	0	0
24	843638	HORMIGÓN 210 kg/cm2	2000011	15	MUROS	24	0	24,250	m3	0	0

## CONTRACT

FV: This information is very useful especially internally to know what we have to ask for, every three days in this case. Can we convert this information into official documents that serve us for contracts and purchase orders?

CR: Of course, now we are going to **SELECT ALL** these orders and concrete resources and we are going to generate those contracts with "**CREATE CONTRACTS**". In the window we select that we do not want a contract per phase, we want a contract of all the concrete. Suppliers are going to be paid weekly, but we make a contract for everything. Now, we go to the main contract window and see that our contract is already created.

We have to assign it to the supplier. In this case we only have one provider, which is the usual one and therefore we are going to generate it in the **ENTITIES** window. Here we have as entities the designer and the promoter, and we are going to enter the **CONCRETE SUPPLIER**. Now in the contracts we assign it with right click, "Search and associate suppliers", we click and "Accept". Now **WE HAVE TO PUT THE PRICE OF THE SUPPLIER**.

When we prepared the project, they gave us the concrete at 113,50 but after six months my supplier gives me that concrete, for example, at 105,00 with the discounts. This generates all the properties and data I need in the contract.

## AWARD THE CONTRACT TO A SUPPLIER

CR: In this case the supplier it is the same as always, so I award him that work. If I had more providers, then I would create more and I have to decide among them.

**Award the contract to the supplier**

Código	It	la	Resumen	Fecha	Grupo	Proveedor	NumPro	Obj	Cont	BaseMed	BaseMin	UsrFecha	UsrNum
1	2000011_00_01		MUROS	07/07/2021	2000011			1	0	125.629,35	125.629,35		

Código	NatC	lu	Resumen	FecPlan	FecFPlan	CanObj	Ud	SigmaCont	MedCont	MinCont	ImpMedCont	ImpMinCont	Obj	Precio	ImpObj	ImpCont	1: P
1	843638		HORMIGÓN 210 kg/cm2			1.196,47	m3	0	105,00	105,00	125.629,35	125.629,35			0	0	105,00

## ORDERS AND INVOICES

### ORDER A MATERIAL

FV: Now, how can we prochet?

CR: Well, we have to order that concrete. We select it with right click and "**MOVE TO ORDER**". We go to the order window and so I can make sure that by this date this concrete must have arrived. I can record the invoice, signatures and all documents associated with this supply of this concrete on this date and this amount. I can associate the invoice, the order, and put all the necessary information to have a record of all the elements.

## CONCLUSIONS

NR: Having a project modeled in Revit and accompanying it with Presto brings many benefits, since with it we can cross-reference databases, organize the model, and above all program over time how we are going to execute it.

I am going to name some of the main benefits that come to mind:

1. Make exact orders and calculations
2. Better schedule and monitor labor payments
3. Control the amount of material that is being executed in the project
4. Comply with the work schedules in the execution

A good model can save between 25% and 30% in the budget

FV: We hope you like this real case, where natural and easy workflow helps to a ship of the goals of this complex project. Carolina what do you say.

CR: I recommend making simple models so you can take advantage of the information, as much as possible.

Thanks for listening

**CAROLINA RAMÍREZ**

[www.linkedin.com/in/crarg](http://www.linkedin.com/in/crarg)  
[www.CarolinaRamirez.es](http://www.CarolinaRamirez.es)  
<https://twitter.com/Caritorag>



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