BIM-Setup

Maaglife in Zürich



High-rise + Culture house + existing building + 2 underground levels

2021, LP2
For sauerbruch hutton
Client Swiss Prime

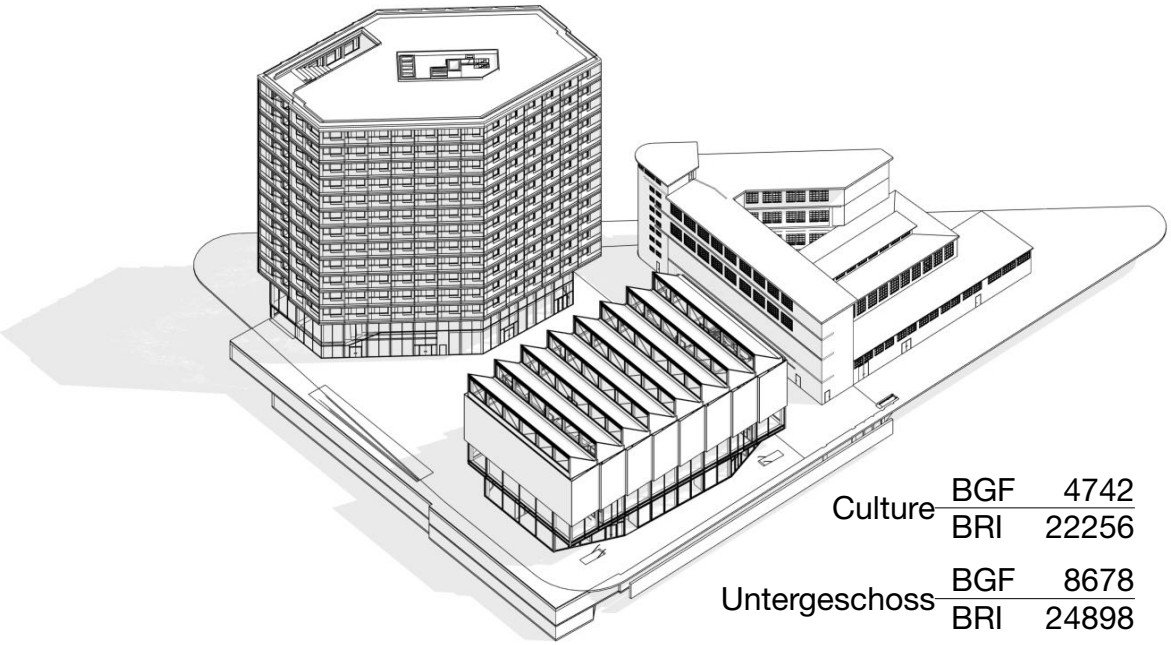
Open BIM project
ARC: Revit + Solibri

Role: BIM Manager

- Build parametric data according to Swiss norms
- Implement IFC classifications as Revit's assembly code:
  DIN 276, German cost keys, for the whole office
  eBKP-H, Swiss IFC-based elements, for this project
- Area calculations according to SIA 416 and d0165
  Revit <> Excel connection through data sources and Pivots
  implement Dynamo script for layouting data on plans
  expand Dynamo to serve DIN 277, for the whole office
- Begin implementing IFC-compliant door libraries for Revit
- Tutorials over Revit <> Excel
- Establish best praxis IFC export in Revit based upon C# code

Turm		
	BGF	16298
	BRI	56900

Existing		
	BGF	3180
	BRI	16471



Culture		
	BGF	4742
	BRI	22256

Untergeschoss		
	BGF	8678
	BRI	24898

NMZ		
	BGF	32989
	BRI	120616

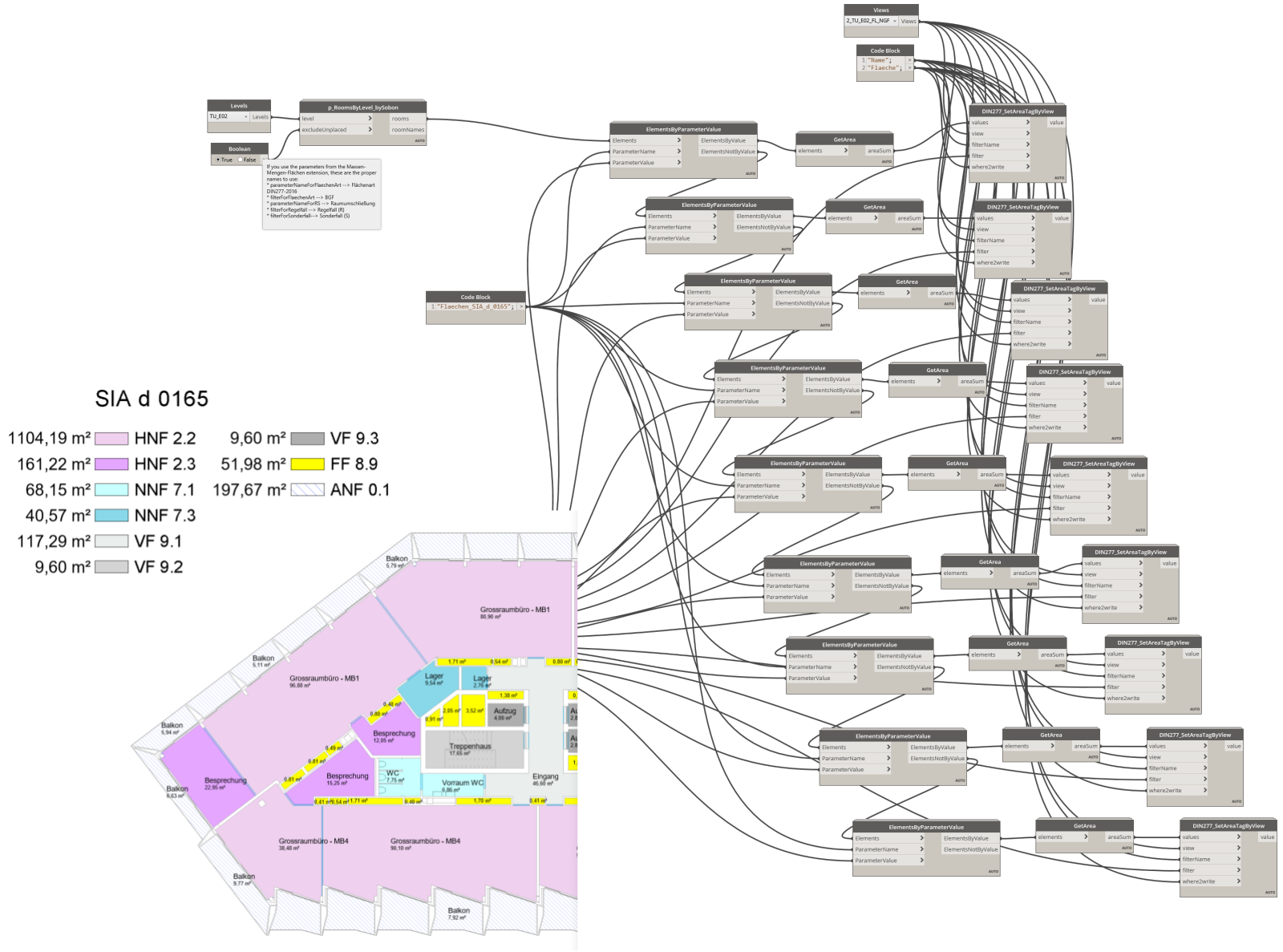
Team

1 project director
6 architects
2 interns

	Walls	Slabs	Stairs	Columns	Beams
Tower	3005	52	36	862	3
Culture	261	71	27	172	57
Existing	252	39	25	151	27
Underground	442	35	28	163	0
	3960	**197**	**116**	**1348**	**87**

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Implement Dynamo library for layouting calculated values in Revit (overcome 2D limits)



PROJ-cbi_DIN277_Flaechen.dyn
cbi_AlignLayoutElements.dyf
cbi_AllDesignOptions.dyf
cbi_AreasByLevel.dyf
cbi_CategoryByLevel.dyf
cbi_DesignOptionsByElements.dyf
cbi_DIN277_Get_BGFbyElements.dyf
cbi_DIN277_Get_BGFbyLevel.dyf
cbi_DIN277_Get_BRIbyElements.dyf
cbi_DIN277_Get_NGFbyElements.dyf
cbi_DIN277_Get_NGFbyLevel.dyf
cbi_DIN277_Get_RSbyElements.dyf
cbi_DIN277_SetAreaTagByElement.dyf
cbi_DIN277_SetAreaTagByView.dyf
cbi_DIN277_SetFloorThickness.dyf
cbi_DIN277_SetOneFloor.dyf
cbi_DIN277_Write_BGFbyView.dyf
cbi_DIN277_Write_BGFonView.dyf
cbi_DIN277_Write_NGFbyLevel.dyf
cbi_DIN277_Write_NGFbyView.dyf
cbi_ElementsByCatAndLevel.dyf
cbi_ElementsByDesignOption.dyf
cbi_ElementsByLevel.dyf
cbi_ElementsByParameterValue.dyf
cbi_ElementsByPhase.dyf
cbi_GetArea.dyf
cbi_GetFloorThickness.dyf
cbi_GetParmSum.dyf
cbi_IFC_AddParameters.dyf
cbi_IFC_LoadParmsFromSharedFile.dyf
cbi_ListSum.dyf
cbi_LoadDataTagsTest.dyn
cbi_MoveByVector.dyf
cbi_p_DeleteParmByName.dyf
cbi_p_DeleteParmsByGroupName.dyf
cbi_p_OSTcategoryByString.dyf
cbi_RoomsByLevel.dyf
cbi_SchedulesByNameFilter.dyf
cbi_SetParameterValue.dyf
cbi_SheetsByNumberFilter.dyf
cbi_SIA416_Get_BGFbyElements.dyf
cbi_SIA416_Get_BGFbyLevel.dyf
cbi_SIA416_SetOneFloor.dyf
cbi_SIA416_Write_aGFbyLevel.dyf
cbi_SIA416_Write_BGFbyLevel.dyf
cbi_ViewportsBySheetNumberFilter.dyf
cbi_ViewportsByViewNameFilter.dyf
cbi_ViewReplace.dyn
cbi_WriteAreaByMatchingValue.dyf
cbi_WriteAreasAnyElement.dyf
cbi_WriteAreasOnTag.dyn
cbi_WriteAreaTagByID.dyf

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Revit <> Excel data exchange: **data source + pivot + tables**
Unregarded how large or complex the calculations are, this approach allows to recalc entire buildings in 3 clicks.

Building Name	Flaechen_Ebene	Flaechen_DIN_277_1	Flaechen_DIN_277_2	Flaechen_DIN_277_RS	Name	Flaeche
B1	E01	NUF	NUF 1	S	Balcony	4,976
B1	E01	NUF	NUF 1	S	Balcony	12,934
B1	E01	NUF	NUF 1	S	Balcony	30,461
B1	E01	NUF	NUF 1	R	Bathroom for stairs guests	96,055
B1	E01	NUF	NUF 1	R	Bathroom, as puffer to eating room	102,225
B1	E01	NUF	NUF 1	R	Eating room	32,275
B1	E01	NUF	NUF 1	R	Kitchen	92,685
B1	E01	NUF	NUF 1	R	Sauna	68,431
B1	E01	NUF	NUF 1	R	Sleeping Room	80,704
B1	E01	NUF	NUF 1	R	Sleeping Room	59,738
B1	E01	NUF	NUF 2	R	Conference room direct access to sauna	111,140
B1	E01	NUF	NUF 3	R	Metal workshop (grinding)	151,639
B1	E01	NUF	NUF 3	R	Wood workshop (cutting)	69,580
B1	E01	TF	-	R	Schaft	4,567
B1	E01	VF	-	R	Corridor	32,353
B1	E01	VF	-	R	Entrance	135,097
B1	E01	VF	-	R	Stairs	107,498
B1	E02	NUF	NUF 1	S	Balcony	23,452
B1	E02	NUF	NUF 1	S	Balcony	47,207
B1	E02	NUF	NUF 1	S	Balcony	37,538
B1	E02	NUF	NUF 1	R	Bathroom (yes. On the staircases. Dot)	89,483
B1	E02	NUF	NUF 1	R	Living room	223,758
B1	E02	NUF	NUF 1	R	Room	159,542
B1	E02	NUF	NUF 1	R	Sauna	28,574
B1	E02	NUF	NUF 1	R	Sleeping Room	50,091
B1	E02	NUF	NUF 2	R	Conference room direct access to sauna	45,218
B1	E02	NUF	NUF 3	R	Metal workshop (grinding)	61,670
B1	E02	TF	-	R	Schaft	4,567
B1	E02	VF	-	R	Corridor	89,696
B1	E02	VF	-	R	Stairs	78,956

Data Source

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Building Name	B1			
Sum of Flaeche	Column Labels			
Row Labels	NUF	TF	VF	Grand Total
E01	912,843	4,57	274,95	1192,358
E02	766,533	4,57	168,65	939,752
Grand Total	1679,376	9,13	443,6	2132,11

Pivot (dynamic queries)

Fail gracefully

Data Query, not cell position (resistent to row/cols additions)

=IFERROR(GETPIVOTDATA("Flaeche";Pivot!A3;"Flaechen_Ebene";$A4;"Flaechen_DIN_277_1";B$3); 0)

Relative link to string value in cell A4, used as data query
—> change string, change query

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	A	B	C	D	E
1					
2					
3	Etage	NUF	VF	TF	NGF
4	E01		274,95	4,57	1192,36
5	E02	766,53	168,65	4,57	939,75
6		1679,38	443,60	9,13	2132,11

Normal linked table