

The Necessary Evolution

How Three Companies are Instigating Change
via Offsite Construction

UNITY HOMES



HOLZRAUM SYSTEM



B.PUBLIC PREFAB





unity
homes

Unity Homes | Beth Campbell

 **phius con**
CHICAGO 2022



- **Health and Comfort**
- **High Performance**
- **Predictability and Expertise**
- **Cost efficiency via Library of Designs**



**Panel
Production
Facility**

Fully automated

Keene, NH



**20,000 sf solar
array offsets ~75%
of energy use at factory**

Keene NH



**Rapid
On-Site
Assembly**

**1-2 weeks
typical**



“Configured” Floor Plans

Allows for semi-customization

Add "bumps" or "connectors"

Choose from predesigned layouts that plug and play into floorplan

Eng CD Set

DD CD Set

Permit Set



Offsite manufacturing requires decisions upfront

and

Robust communication systems

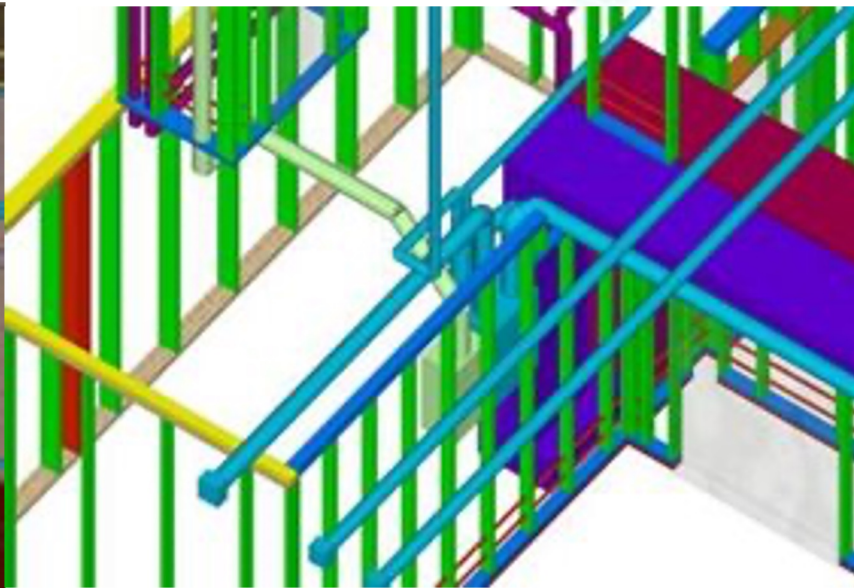
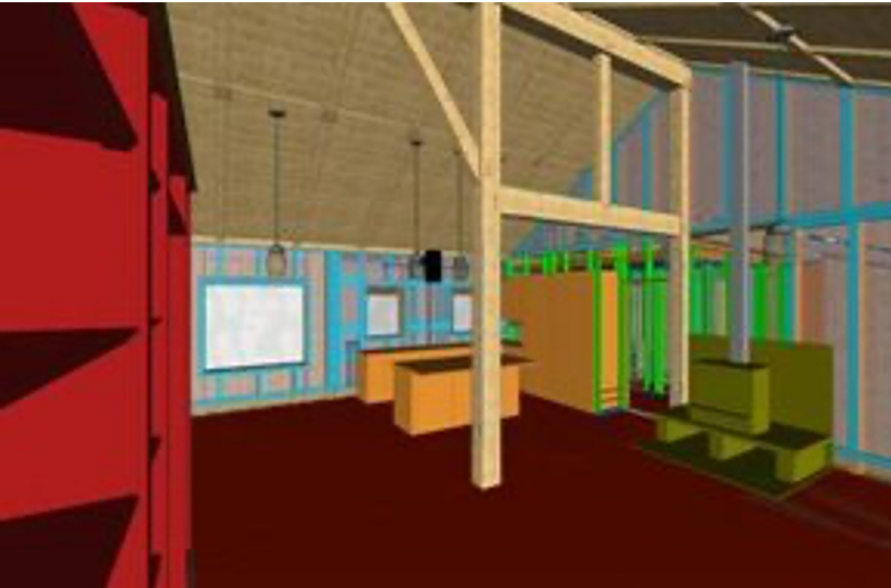


3D Model/ Virtual Fabrication

Build it virtually before
building it in real life

--->> QC! <<---

Export files to CNC
machinery





CNC Machinery

**Sheathing/
nailing**



Dense pack cellulose machine



Air / Vapor Control Layer



Gaskets and Tapes



Pre-formed Penetrations



Pre-formed Penetrations



Completed Shell

Thank you!

unity homes | Unity Homes | Beth Campbell

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CHICAGO 2022

EDIE DILLMAN

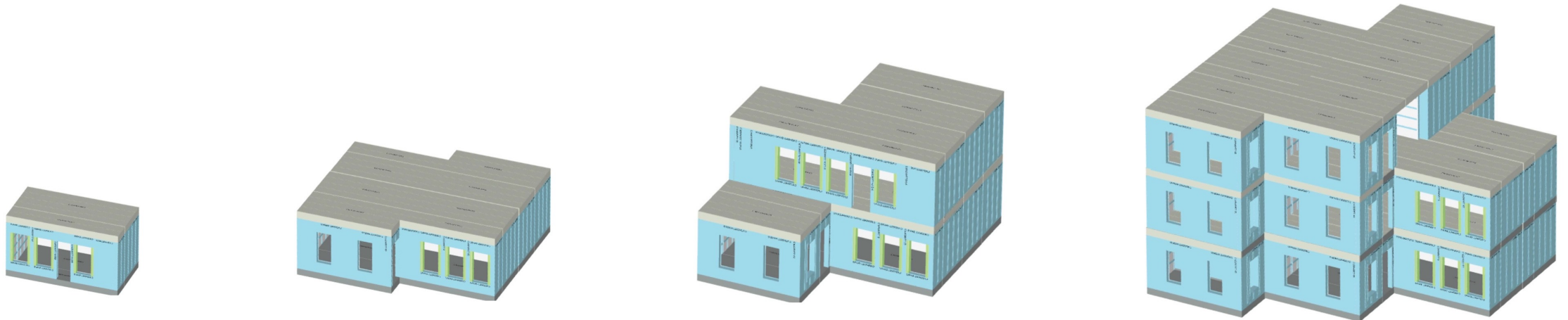


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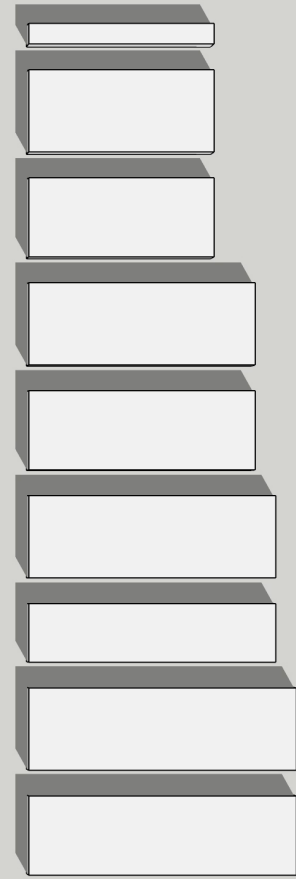
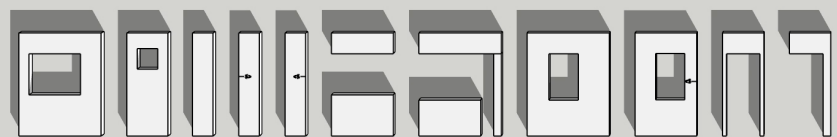
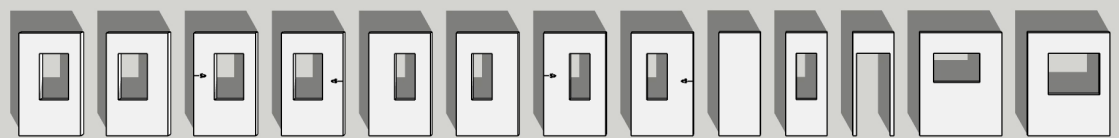
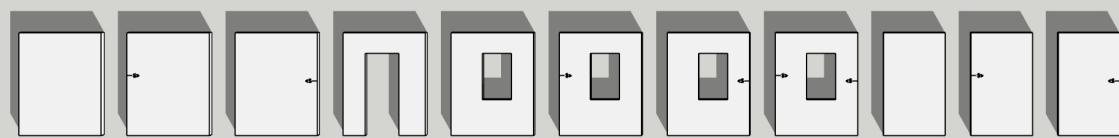
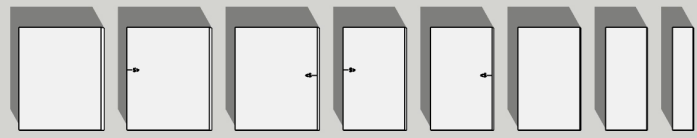
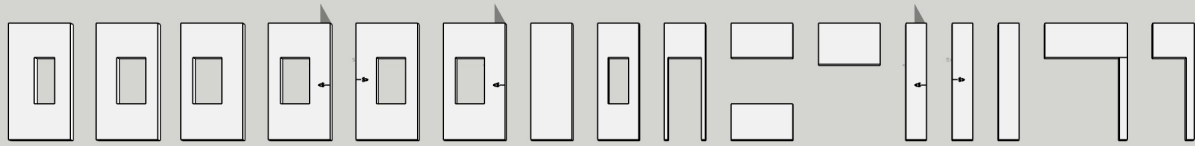
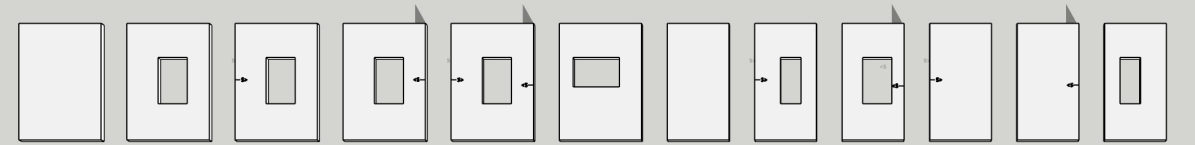


Standardized Prefabricated Off-site Building Assemblies
Fully Insulated Pre-engineered Light-Wood Frame Construction
IBC, IRC, and ICC code compliant

Architects | Design Build | Contractors | Developers | Homeowners



Low-rise new construction residential and mixed use 1-3 story building envelopes



Concept

Quote

Delivery

Install

1 week

1.5 weeks



B.PUBLIC Component Model
Standard 3D Views

Project Two: Zaha Residence

Front perspective

Panel layout

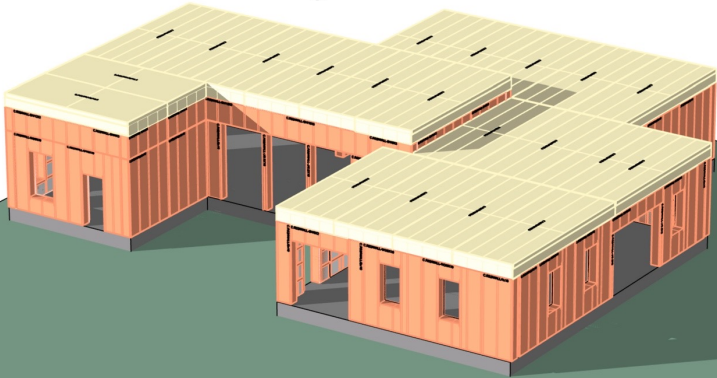
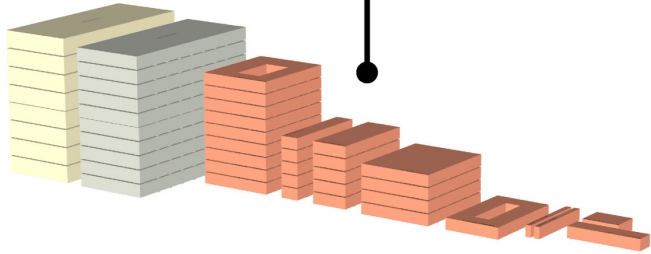
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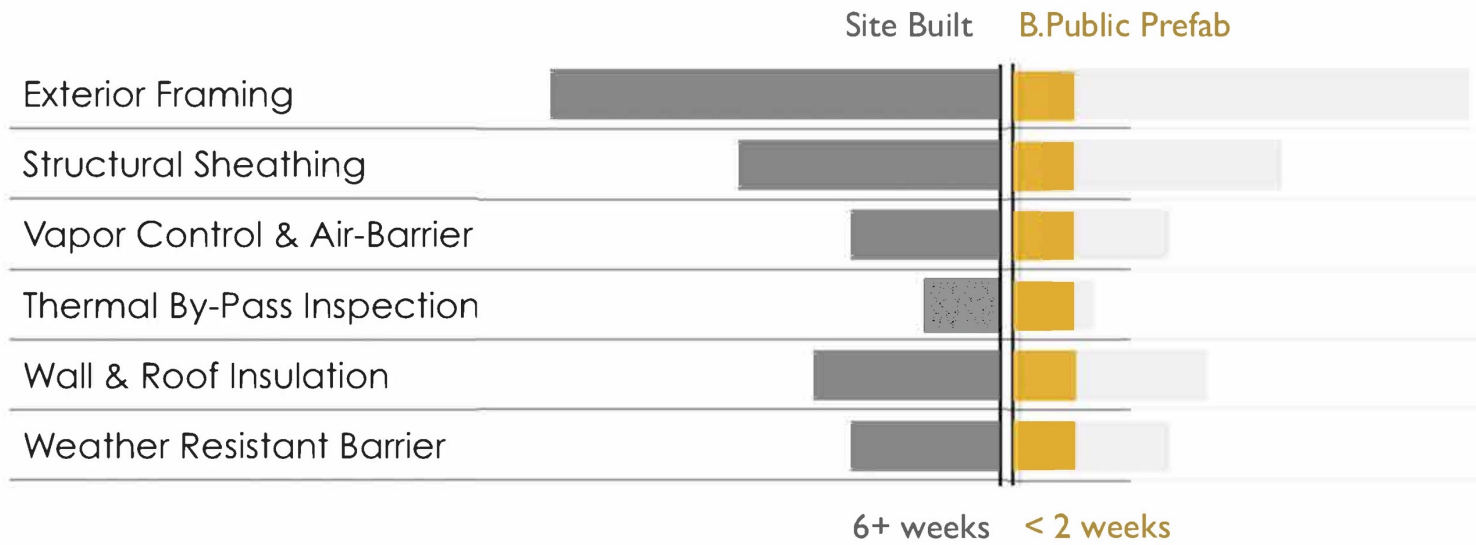
- Standard Floor Panels
- Standard Wall Panels
- Standard Top Panels
- Custom panels
- Site-built scope

B.PUBLIC

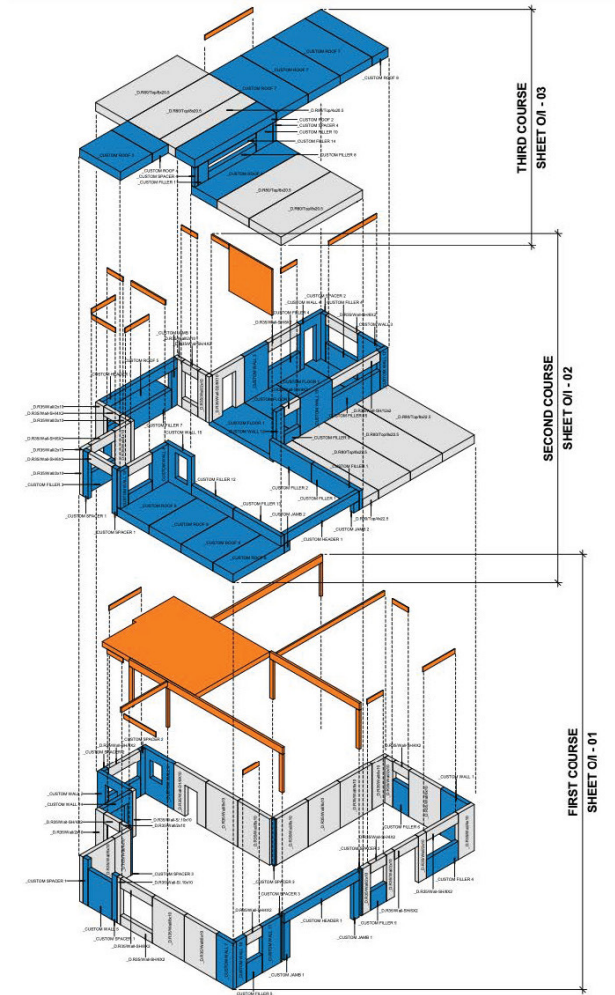
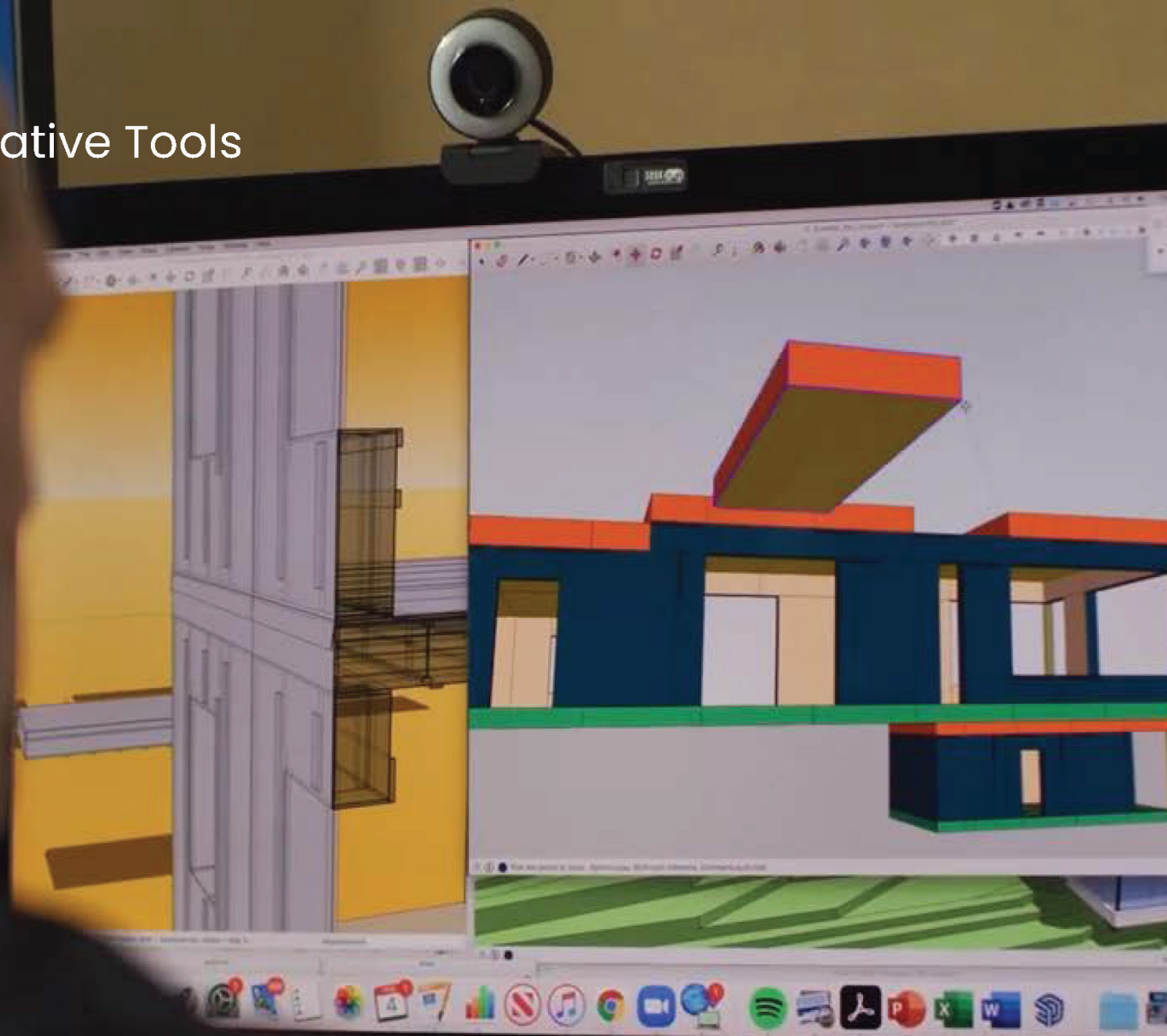
HA HOUSE + ADU

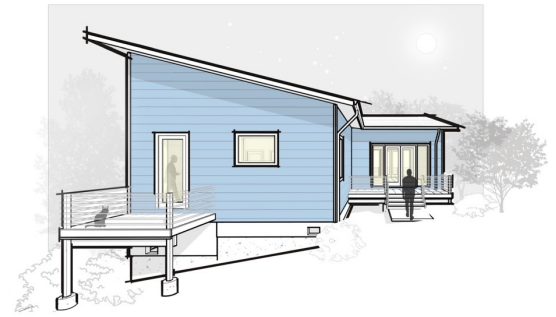
Name	Quantity
0 (8x6)	2
1 (8x6)	2
2 (8x6)	5
3 (8x6)	1
H (8x2)	4
2 (8x10)	3
W2 (8x10)	2
W3 (8x10)	2
W4 (8x10)	2
W5 (8x10)	3
W7 (6x10)	14
W (2x10)	16
W (4x10)	6
W (8x10)	2
FLOOR	
R-51	2
F (4x22.5)	11
F (8x22.5)	11
TOP	
R-59	2
T (4x22.5)	11
T (8x22.5)	11



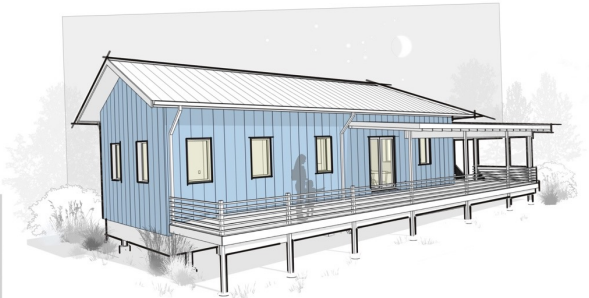



Collaborative Tools





B.PUBLIC Homes



Perspective Material	Function	Name ↑	Prod#	comment	group	subgroup	Quantity	Width Rough (in)	Height Rough (in)	Length Rough (in)	Panel	Slice
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	LE2	Exterior Wall Slice	1,000	1,421	1,421	4,460	LE2	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	LE2	Exterior Wall Slice	1,000	1,421	1,421	4,460	LE2	
Galvanized Steel_1	HZ_UNKNOWN	A35	2701	Collective Supplied - Col...	LE2	Exterior Wall Slice	1,000	1,421	1,421	4,460	LE2	
Galvanized Steel_1	HZ_UNKNOWN	A35	2701	Collective Supplied - Col...	LE2	Exterior Wall Slice	1,000	1,421	1,421	4,460	LE2	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	LN6	Exterior Wall Slice	1,000	1,421	1,421	4,460	LN6	
Galvanized Steel_1	HZ_UNKNOWN	A35	2701	Collective Supplied - Col...	LN6	Exterior Wall Slice	1,000	1,421	1,421	4,460	LN6	
Galvanized Steel_1	HZ_UNKNOWN	A35	2698	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2699	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
Galvanized Steel_1	HZ_UNKNOWN	A35	2700	Collective Supplied - Col...	Loose Part	Load Path Slice	1,000	1,421	1,421	4,460	Loose Part	
TOTAL							223,000	647,259	681,246	2748,860		



Architecture
Energy Modeling
CPHC

Ilka Cassidy
Founder



Heavy/ Mass Timber
Production Design
CPHC

Steve Hessler
Founder



Software
Development

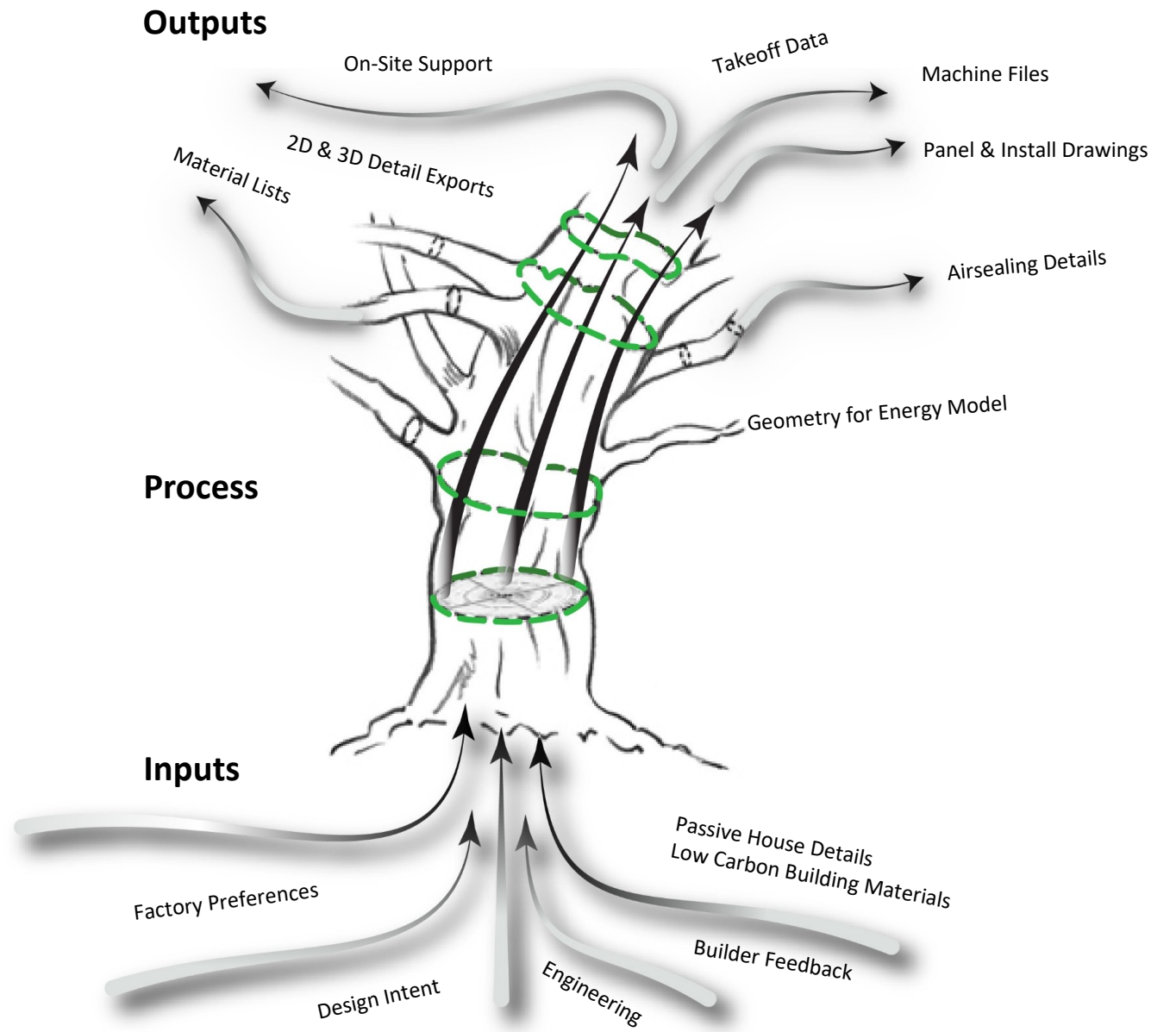
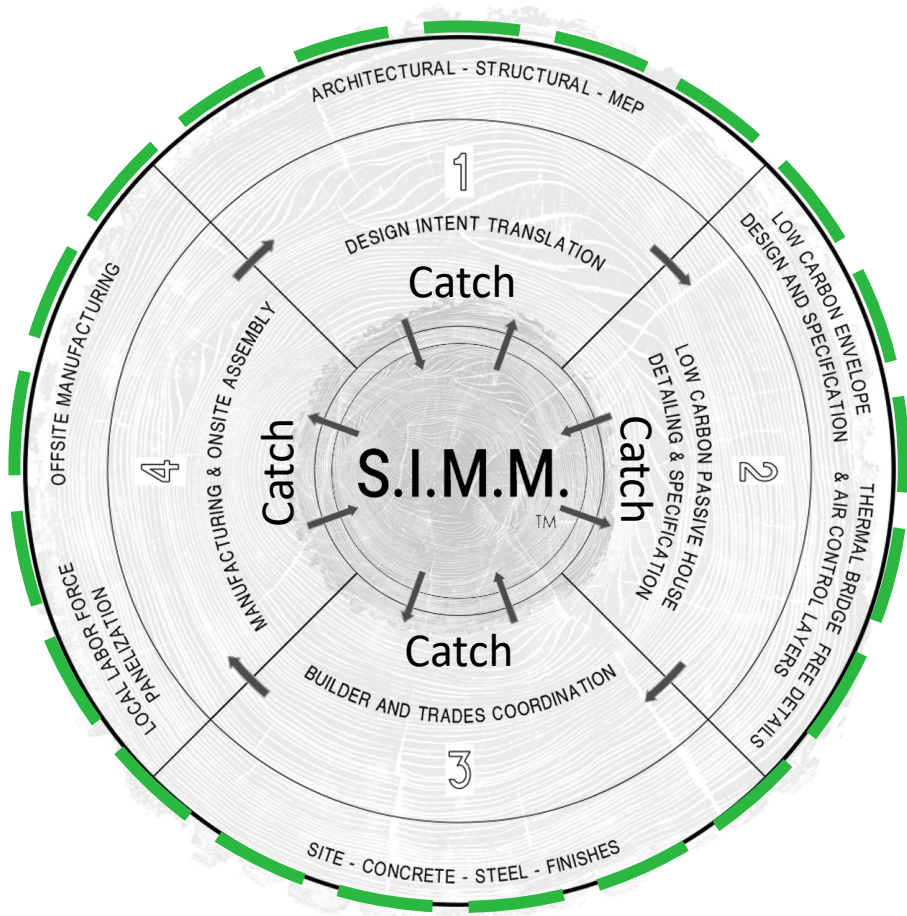
David Hessler
Founder

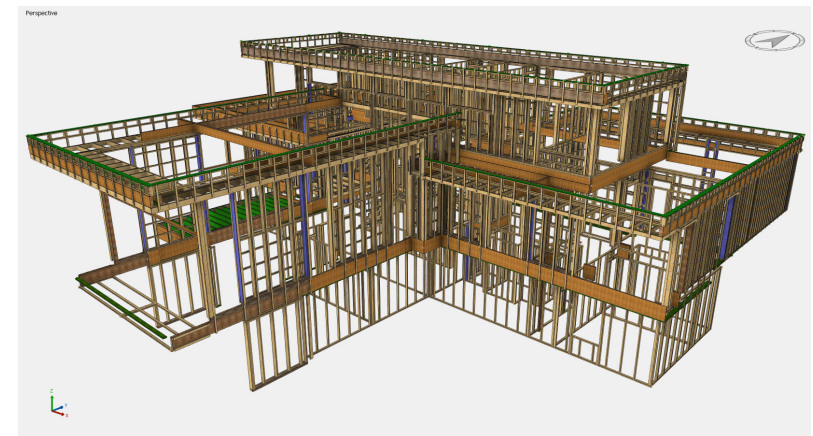
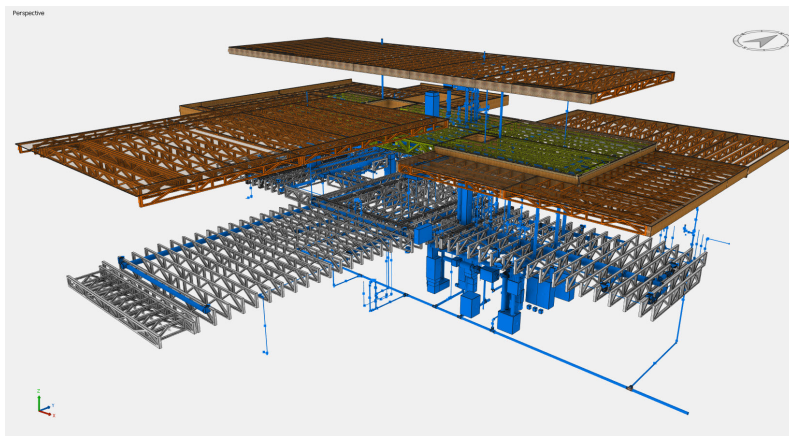
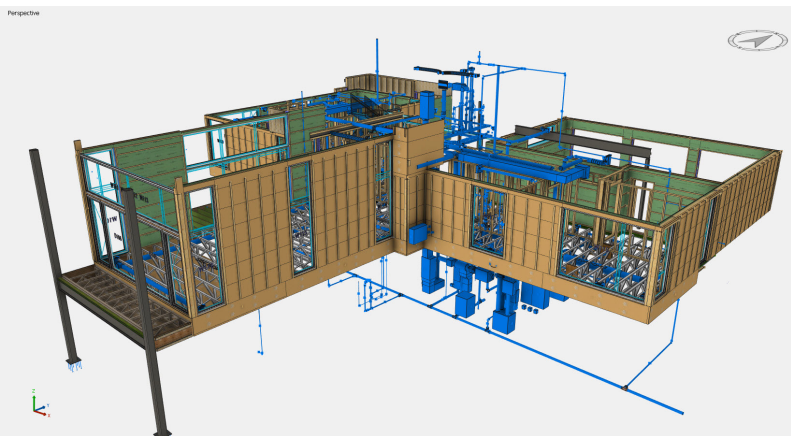
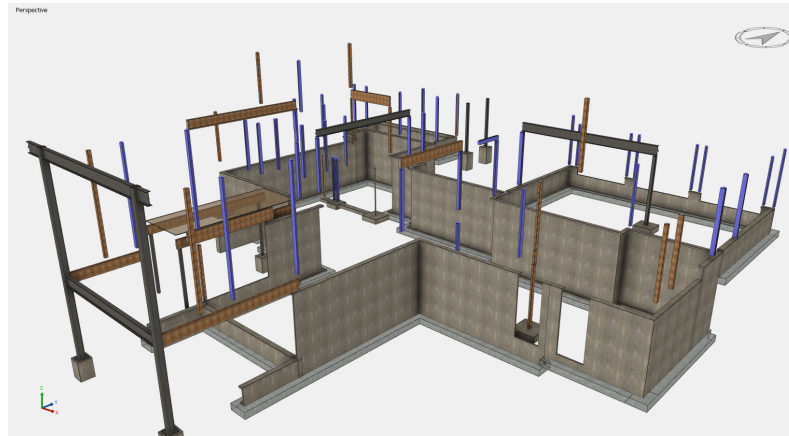
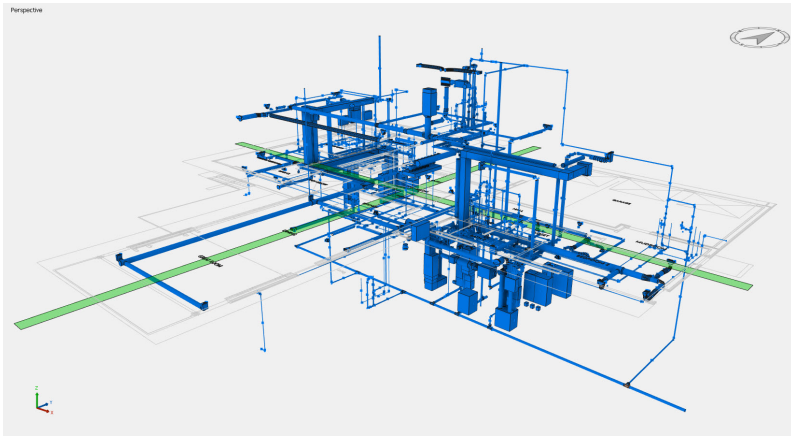


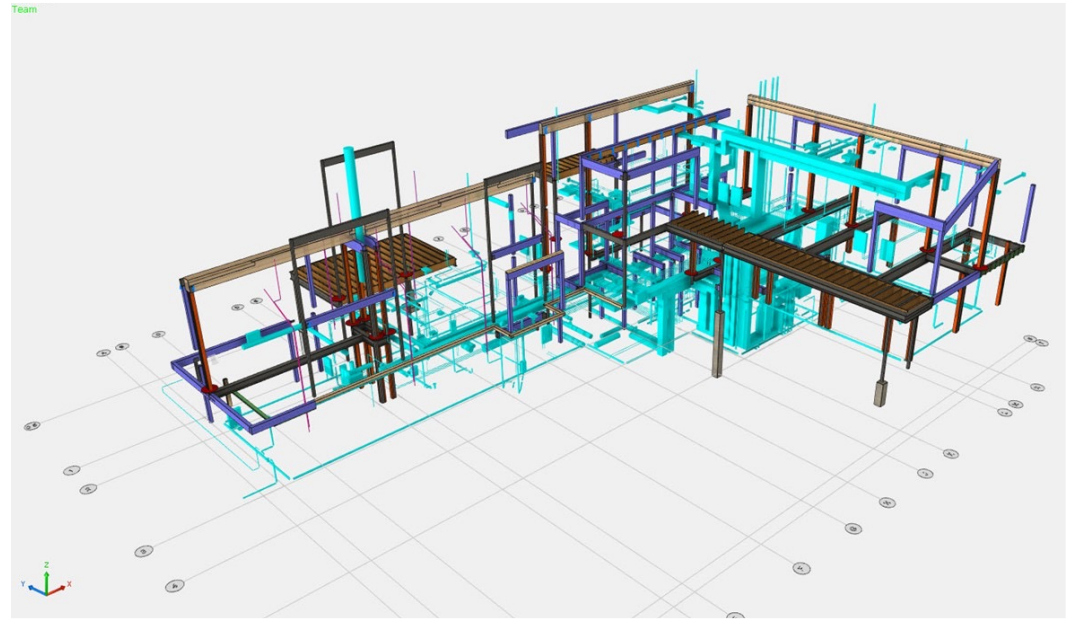
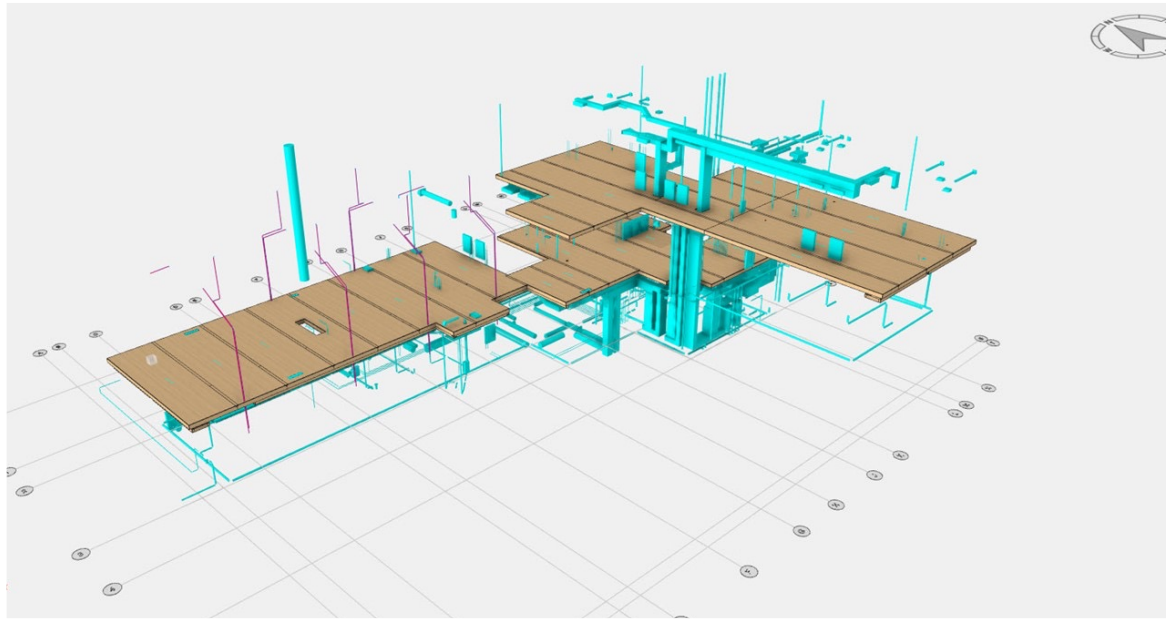
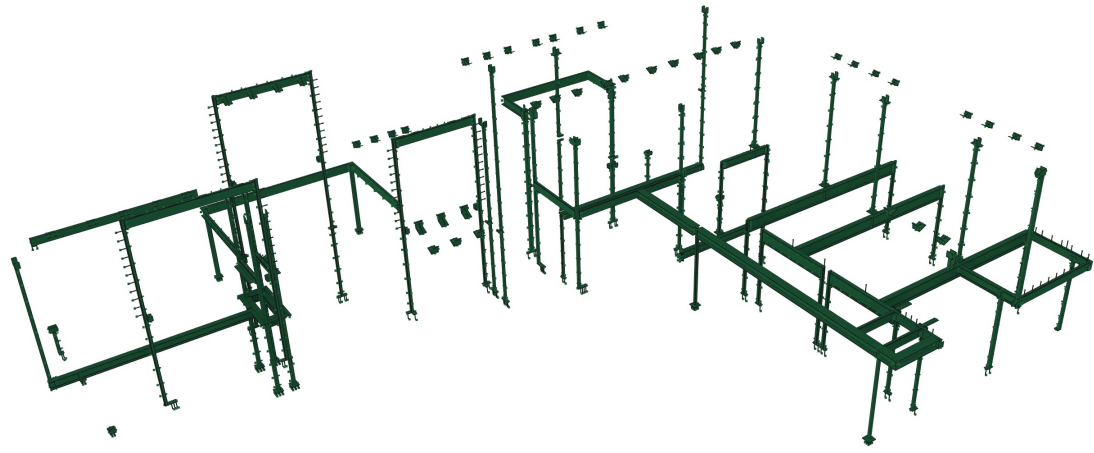
Architecture
Production Design
LEED AP

Emily Dodson









SIMM Data Assignment

MATERIAL	PRODUCTION #	NAME	QUANTITY	WIDTH	HEIGHT	LENGTH	PANEL GROUP	OE OF FIELD APPLIED
HEM-FIR	1	Stud	8	1 1/2"	3 1/2"	9'-9"	11-28	1-21
HEM-FIR	2	Stud	4	1 1/2"	3 3/4"	8 1/4"	1X-48	
HEM-FIR	3	Stud	13	1 1/2"	5 1/2"	9'-9"	11-27	11-18 11-19
HEM-FIR	4	Stud	4	1 1/2"	7 1/4"	6 3/4"	1X-49	
HEM-FIR	5	Stud	12	1 1/2"	7 1/4"	1-4 1/2"	1X-49	
HEM-FIR	6	Stud	1	1 1/2"	7 1/4"	3-4 3/4"	1X-43	
HEM-FIR	7	Flush Bot	3	1 1/2"	7 1/4"	5-1 3/4"		Temp - floor and roof work
HEM-FIR	8	Stud	11	1 1/2"	7 1/4"	5-3 3/4"	1X-43	
HEM-FIR	9	Stud	1	1 1/2"	7 1/4"	5-3 3/4"	1X-43	
HEM-FIR	10	Stud	12	1 1/2"	7 1/4"	8	1X-47	1X-46
HEM-FIR	11	Stud	4	1 1/2"	7 1/4"	8-1 1/2"	1X-48	1X-45
HEM-FIR	12	Stud	11	1 1/2"	7 1/4"	9'	2X-11	
HEM-FIR	13	Stud	3	1 1/2"	7 1/4"	9'-6"	1X-14	
HEM-FIR	14	Stud	5	1 1/2"	7 1/4"	9'-6 1/8"	1X-33	1
HEM-FIR	15	Stud	4	1 1/2"	7 1/4"	9'-4 1/2"	1X-44	1X-23
HEM-FIR	16	Stud	44	1 1/2"	7 1/4"	9'-7 1/2"	1X-28	1X-10 1X-27 1X-2
HEM-FIR	17	Stud	2	1 1/2"	7 1/4"	9-10 1/8"	1X-34	
HEM-FIR	18	Stud	2	1 1/2"	7 1/4"	9'-8 1/8"	1X-32	
HEM-FIR	19	Stud	9	1 1/2"	7 1/4"	15'-1"	1X-37	1X-40
HEM-FIR	20	Header 2x10 - Flush Bot	3	1 1/2"	9 1/4"	8'-4"		Temp - floor and roof work
Insulation EPS	21	Top Plate	2	1 1/2"	5 1/2"	6'-9"	2X-3	2X-2
Insulation EPS	22	Top Plate	1	1 1/2"	5 1/2"	6-10 1/2"	2X-3	
Insulation EPS	23	Top Plate	3	1 1/2"	5 1/2"	7'-2"	2X-11	2X-10
Insulation EPS	24	Top Plate	2	1 1/2"	5 1/2"	6'-7"	2X-11	2X-8
LSL	25	Stud	2	1 1/8"	7 1/4"	9'-4"	2X-11	2X-10
LSL	26	Header	2	1 1/4"	5 1/2"	6'-9"	2X-3	2X-2
LSL	27	Header	1	1 1/4"	5 1/2"	6-10 1/2"	2X-3	
LSL	28	Header	3	1 1/4"	5 1/2"	7'-2"	2X-11	2X-10
LSL	29	Header	2	1 1/4"	5 1/2"	6'-7"	2X-11	2X-8
LSL	30	LSL 125x8-28	2	1 1/4"	9 1/4"	22'-3/4"	1P-1	
LSL	31	LSL 125x14	1	1 1/4"	1'-2"	3-11 7/8"	2P-6	
LSL	32	LSL 125x14	1	1 1/4"	1'-2"	5-5 1/8"	2P-1	
LSL	33	LSL 125x14	1	1 1/4"	1'-2"	5-11 7/8"	2P-2	
LSL	34	LSL 125x14	1	1 1/4"	1'-2"	10-3 3/4"	2P-7	
LSL	35	LSL 125x14	1	1 1/4"	1'-2"	10'-11 7/8"		Temp - floor and roof work
LSL	36	LSL 125x14	1	1 1/4"	1'-2"	11'-5 1/8"		Temp - floor and roof work
LSL	37	LSL 125x14	8	1 1/4"	1'-2"	11'-11 7/8"	2P-3	2P-5 2P-4 2P-5 2P-2

Element	Standard element	1-Grade	1st Floor Level
Standard element	---	2-User2	1st Floor Level
Color	---	3-User3	1st Floor Level
Material	---	4-User4	1st Floor Level
Calculation data	---	5-User5	1st Floor Level
No. production list	788	6-User6	1st Floor Level
No. timber list	0	7-User7	1st Floor Level
No. assembly list	0	8-User8	1st Floor Level
Name	Stud	9-User9	1st Floor Level
Group	13-4	10-User10	1st Floor Level
Sub group	exterior wall slice	11-User11	1st Floor Level
Building	Building	12-Structural Special 1	1st Floor Level
Storey	1ST FLOOR		
Real width	Member		
Real height		1 1/2"	
Rough width		9'-7 1/2"	
Rough height		7 1/4"	
Positive height axis		9'-7 1/2"	
Negative height axis		0	
Positive width axis		0	
Negative width axis		0	
Process type	Purlin/---		
Critical end type	None		
End end type	None		
Planting depth		None	
Quantity		None	
Cutting set		Factory Scope	
Comment			
Wall situation			
Rounding value width		0	
Rounding value height		0	
Rounding value length		0	
Total prod. list		788	
Total timber list		---	
Total assembly list		---	

Element	Standard element	1-Grade	1st Floor Level
Standard element	---	2-User2	1st Floor Level
Color	---	3-User3	1st Floor Level
Material	---	4-User4	1st Floor Level
Calculation data	---	5-User5	1st Floor Level
No. production list	788	6-User6	1st Floor Level
No. timber list	0	7-User7	1st Floor Level
No. assembly list	0	8-User8	1st Floor Level
Name	Stud	9-User9	1st Floor Level
Group	13-4	10-User10	1st Floor Level
Sub group	exterior wall slice	11-User11	1st Floor Level
Building	Building	12-Structural Special 1	1st Floor Level
Storey	1ST FLOOR		
Real width	Member		
Real height		1 1/2"	
Rough width		9'-7 1/2"	
Rough height		7 1/4"	
Positive height axis		9'-7 1/2"	
Negative height axis		0	
Positive width axis		0	
Negative width axis		0	
Process type	Purlin/---		
Critical end type	None		
End end type	None		
Planting depth		None	
Quantity		None	
Cutting set		Factory Scope	
Comment			
Wall situation			
Rounding value width		0	
Rounding value height		0	
Rounding value length		0	
Total prod. list		788	
Total timber list		---	
Total assembly list		---	

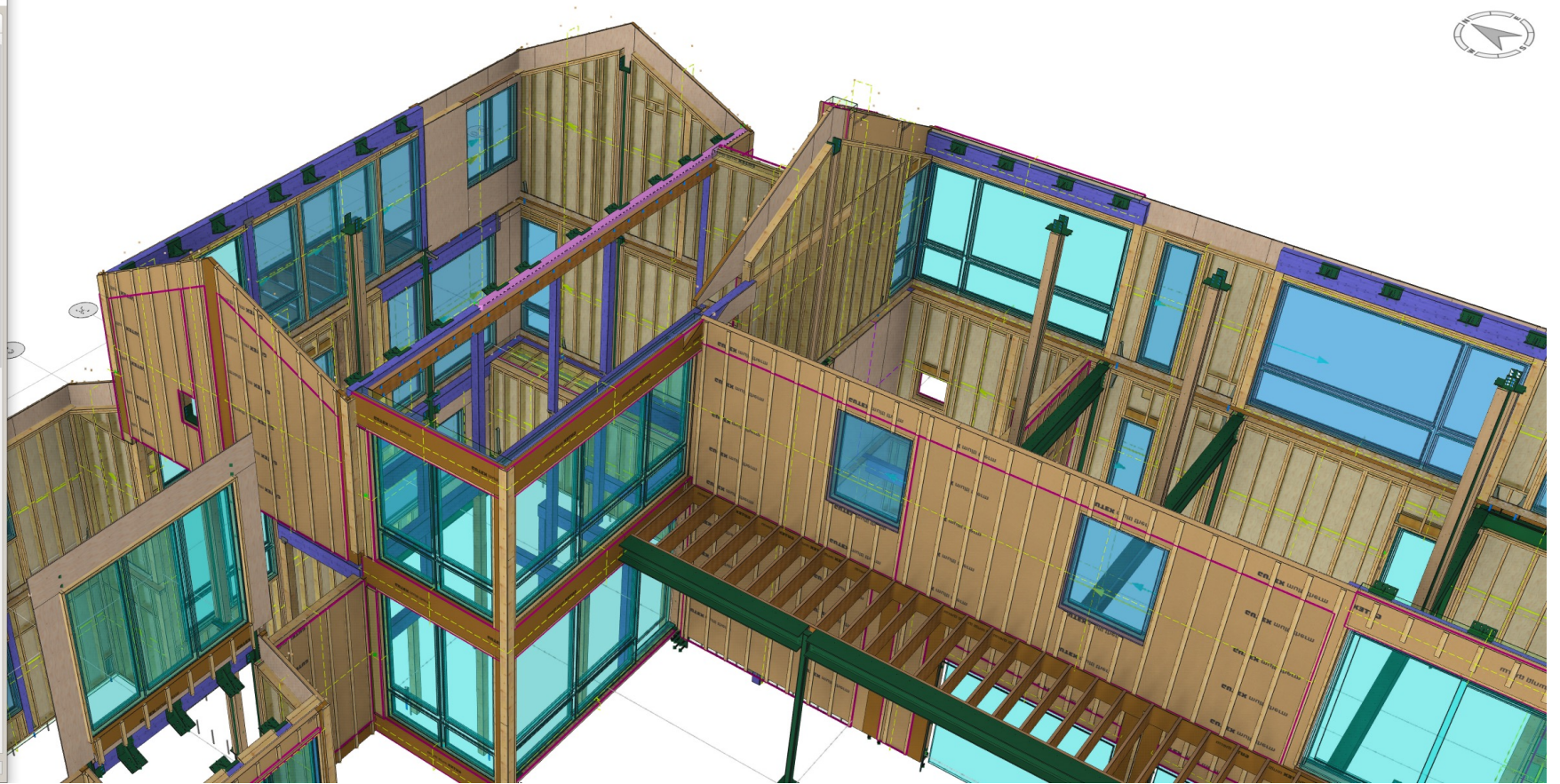
Element	Standard element	1-Grade	2nd Floor Level
Standard element	---	2-User2	2nd Floor Level
Shape	---	3-User3	2nd Floor Level
Color	---	4-User4	2nd Floor Level
Material	---	5-User5	2nd Floor Level
Calculation data	---	6-User6	2nd Floor Level
Name	---	7-User7	2nd Floor Level
Group	13-7	8-User8	2nd Floor Level
Sub group	ext. Soffit Slice	9-User9	2nd Floor Level
SKU		10-User10	2nd Floor Level
Building	Building	11-User11	2nd Floor Level
Storey	2ND FLOOR	12-Structural Special 1	2nd Floor Level
ZFC type	---		
Comment		Factory Scope	
Wall situation			

SIMM Data Assignment +

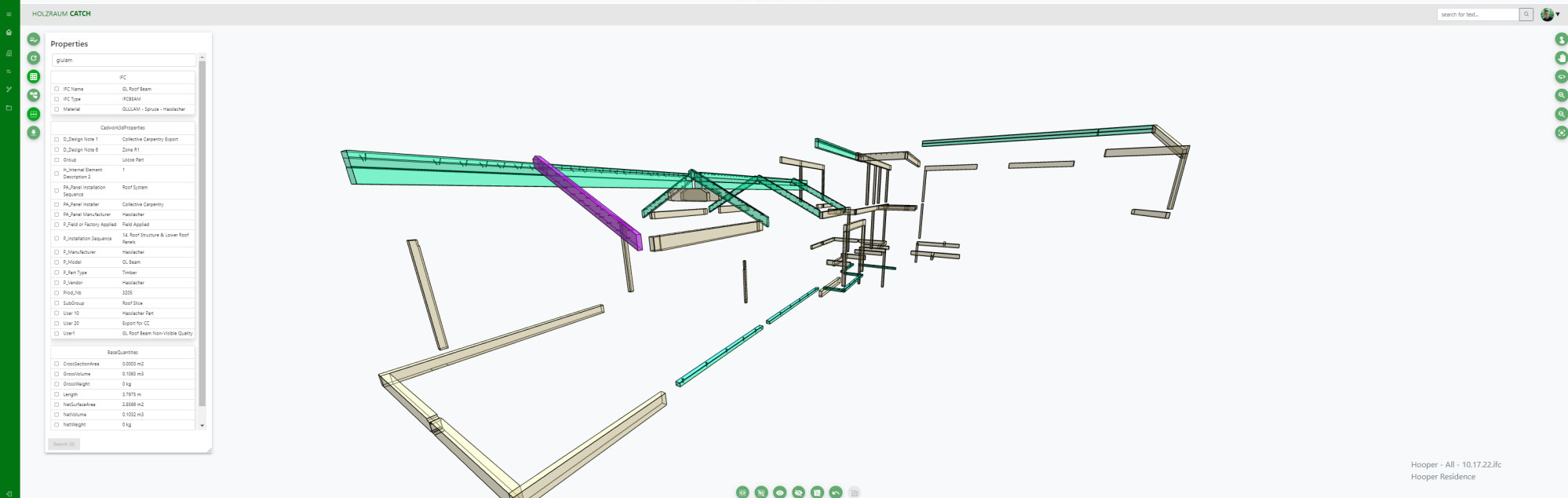
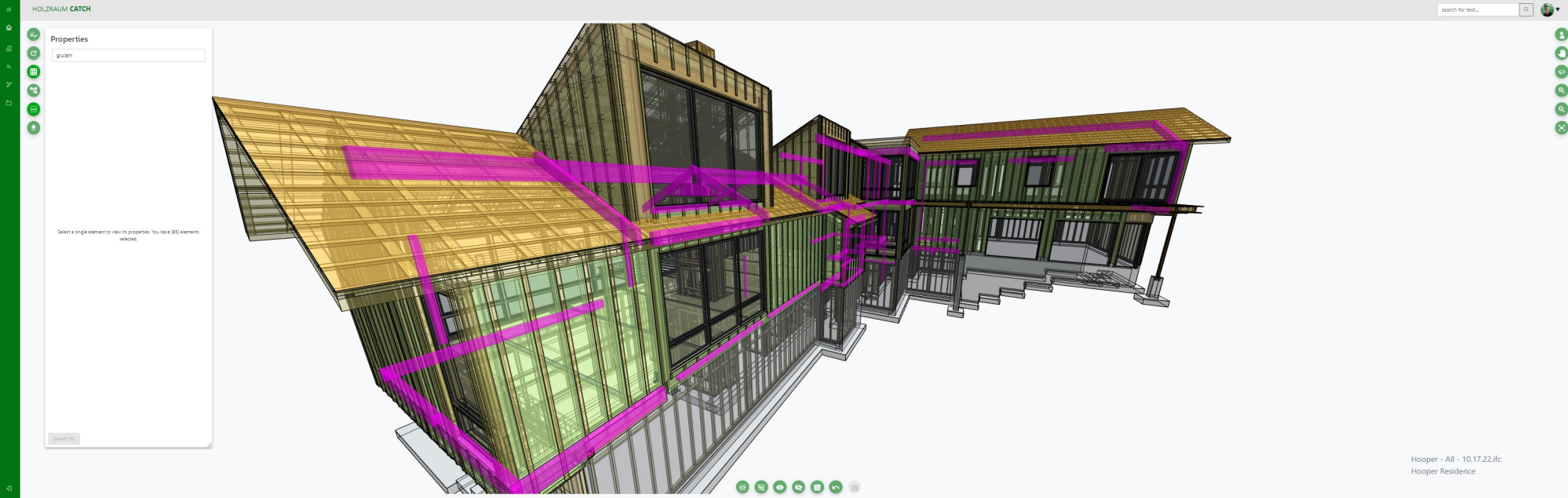
The screenshot displays a BIM software interface with a 3D perspective view of a timber roof structure. A data table is overlaid on the right side of the model, listing various properties and their assigned values. The table includes columns for property names, values, and user assignments. The interface also shows a top menu bar with options like 'Version 29 (2022)', 'Attributes display', and '3D settings'. A bottom navigation bar contains various view and tool options.

Property	Value	User
Element	Panel	1-User1
Standard element	---	2-User2
Color	Green	3-User3
Material	CLT - Spruce - Hasslacher	4-User4
Calculation data		5-Users
No. production list	3104	6-User6
No. timber list	0	7-User7
No. assembly list		8-User8
Name	CLT - WALL	9-User9
Group	Loose Part	10-User10
Sub group	Roof Slice	11-User11
SKU		12-User12
Building	Building	13-User13
Storey	Roof	14-User14
Ifc type	Ifcbeam (Beam)	15-User15
Ifc predefined type	NOTDEFINED	16-User16
Real width	4'-2 5/16"	17-User17
Real thickness	5 33/64"	18-User18
Real length	10'-11 51/64"	19-D. Design Note 5
Rough width	4'-2 5/16"	20-D. Design Note 6
Rough thickness	5 33/64"	21-D. Design Note 7
Rough length	10'-11 51/64"	22-D. Design Note 8
Positive length axis	0	23-D. Design Note 9
Negative length axis	0	24-D. Design Note 10
Positive width axis	0	25-H. Internal Element Description 1
Negative width axis	0	26-H. Internal Element Description 2 1
Reference face		27-H. Internal Element Description 3
Process type	None/===	28-H. Internal Element Description 4
Internal end type	None	29-H. Internal Element Description 5
End end type	None	30-User30
Planing depth	None	31-H. Internal Element Description 7
Quantity	1	32-H. Internal Element Description 8
Cutting sec		33-H. Internal Element Description 9
Comment	Stolze Supplied - Collective ...	34-H. Internal Element Description 10
wall situation		35-MEP Trunk Description
Rounding value width	0	36-MEP Type
Rounding value height	0	37-P. Structural Spec 1
Rounding value length	0	38-P. Structural Spec 2
Total prod. list	2	39-P. Structural Spec 3
Total timber list	===	40-P. Structural Spec 4
Total assembly list	===	41-P. Conductivity
42-P. Connector Type		
43-P. Density		
44-P. Embedded Carbon		
45-P. Field or Factory Applied	Field Applied	
46-P. Finish Spec		
47-P. Flush Top or Flush Bot		
48-P. Global Warming Potential		
49-P. Grade		
50-P. Installation Sequence	14. Roof Structure & Lower Roof Panels	
51-P. Leadtime		
52-P. Manufacturer	Hasslacher	
53-User3		
54-P. Metal Connector Type	CLT Wall Panel	
55-P. Model		
56-M. No. of Exposed Visual Sides		
57-P. Order Priority		
58-P. Part Type	Timber	
59-P. Perm Classification		
60-P. Price per Unit		
61-P. Ref Value		
62-P. R Value		
63-P. RefList Status		
64-P. Surfacing Spec		
65-P. Sustainability Certification		
66-P. Timber Heart Spec		
67-P. US Perm Value		
68-P. Vendor	Hasslacher	
69-P. Visual Grade		
70-P. VOC Rating		
71-PA. Panel Installation Sequence	Roof System	
72-PA. Panel Installer	Collective Carpentry	
73-PA. Panel Manufacturer	Hasslacher	
74-PA. Panel Model	CLT Wall	
75-User19		
76-User20		
77-D. Design Note 1	Export for CC	
78-D. Design Note 2	Collective Carpentry Export	
79-D. Design Note 3		
80-D. Design Note 4		
81-PA. Panel Type	Wall Panel	
82-H. Internal Element Description 6		
89-3D Master		
90-3D Parent		
90-3D Type grp		
90-3D Index ch1d		
904-Nbr Child		
905-Thickness banding 1		
906-Material banding 1		
907-Priority veneer - banding 1		
908-Priority corner 1 - 2		
909-Thickness banding 2		
910-Material banding 2		
911-Priority veneer - banding 2		
912-Priority corner 1 - 2		
913-Thickness banding 3		
914-Material banding 3		
915-Priority veneer - banding 3		
916-Priority corner 1 - 4		
917-Thickness banding 4		
918-Material banding 4		
919-Priority veneer - banding 4		
920-Priority corner 1 - 4		
921-Thickness positiv veneer		
922-Material positiv veneer		
923-Thickness negativ veneer		
924-Material negativ veneer		
925-Export list		
926-over Length Banding		
927-over Width Banding		
928-over Length Veneer		
929-over Width Veneer		
930-over Length Supporting		
931-over Width Supporting		

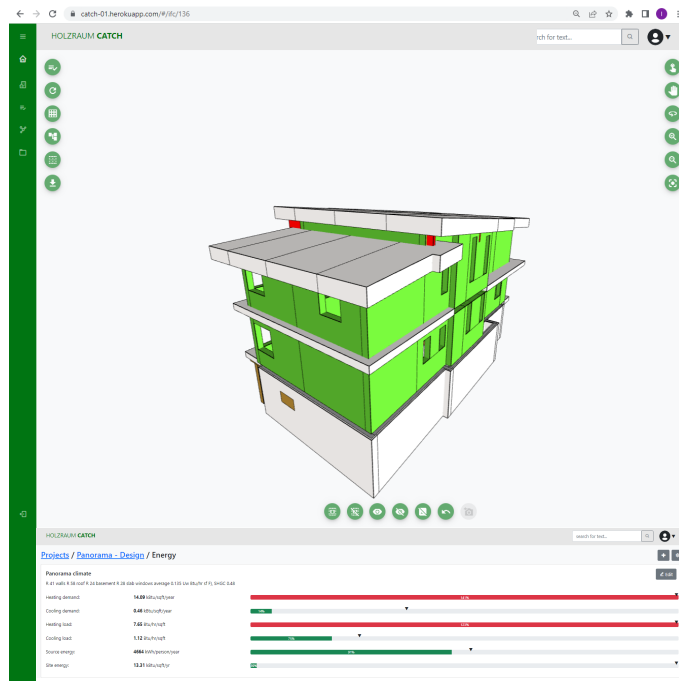
SIMM Data Organization



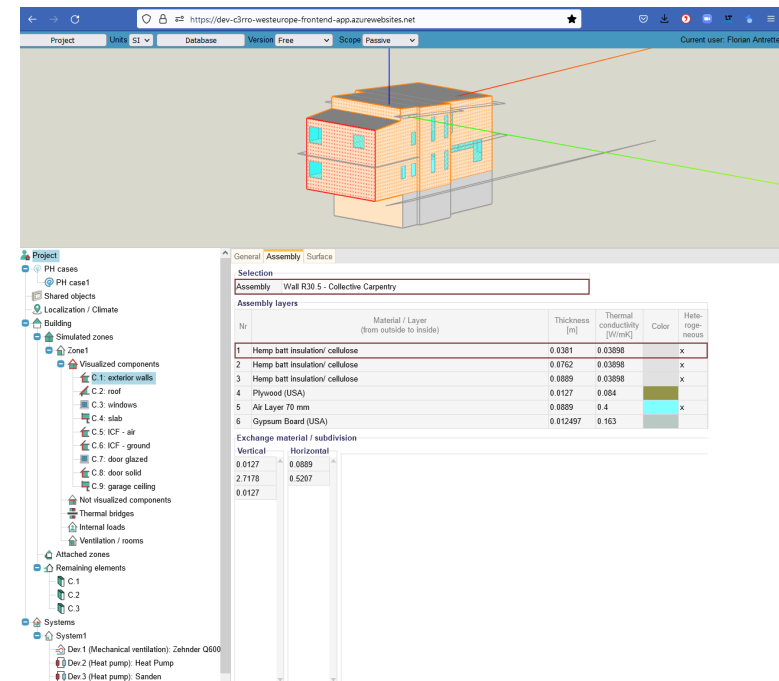
CATCH Data Search Tools



Collaborations



IFC File →



Calculation Request →
← Simulation Results

Building Geometry / Info →
← Model Updates / Results

Thermal Bridge Nugget →
← Simulation Results



(speak: ze-ro): A spin-off of



Enabling better buildings by making holistic building simulation common place

By the creators of WUFI® Passive

To contribute to a

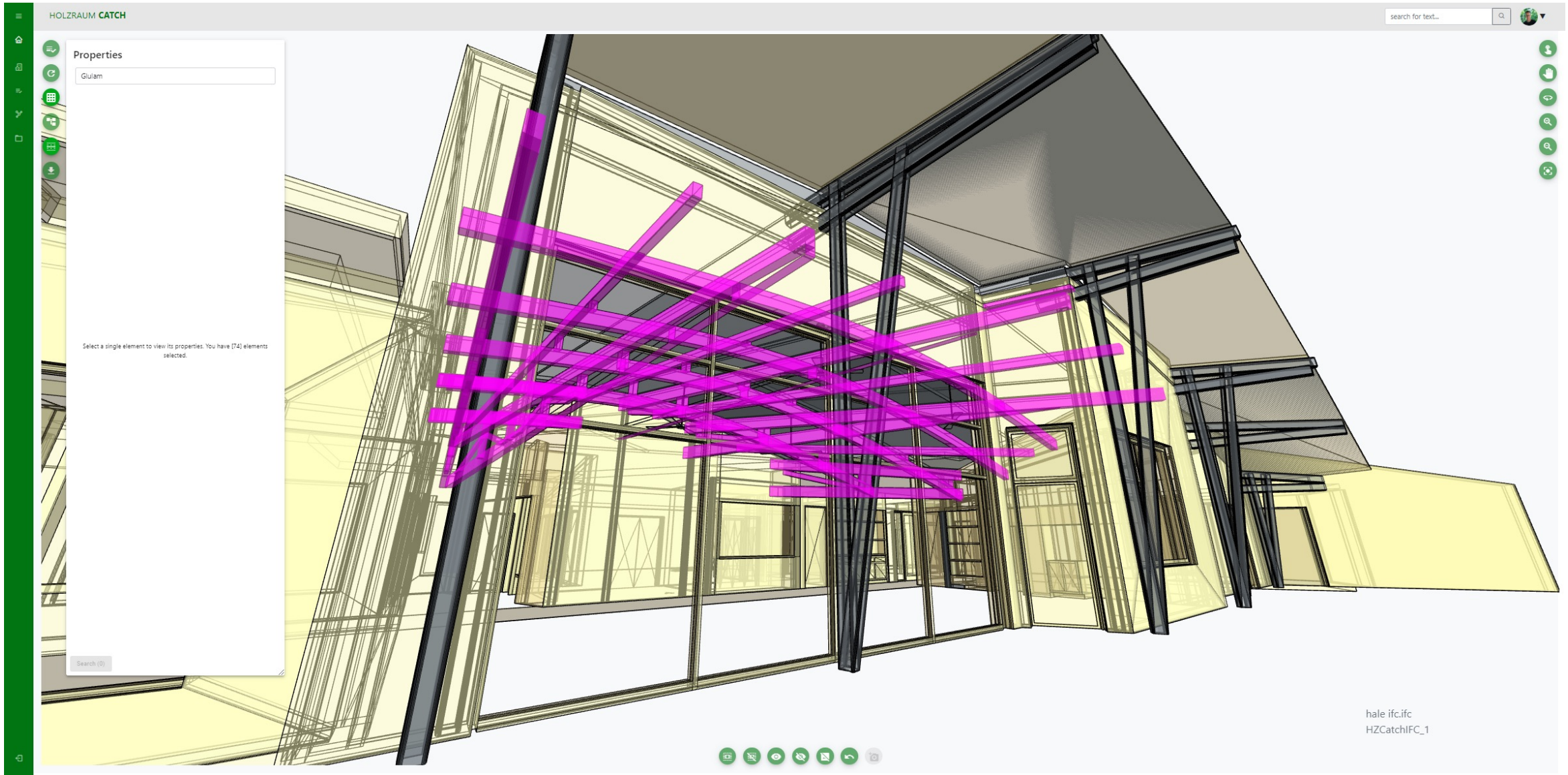
- C3RRO carbon future
- C3RRO Energy Buildings
- C3RRO Durability | Comfort | Air Quality

Through web-based, collaborative and state-of-the-art building science tools and data

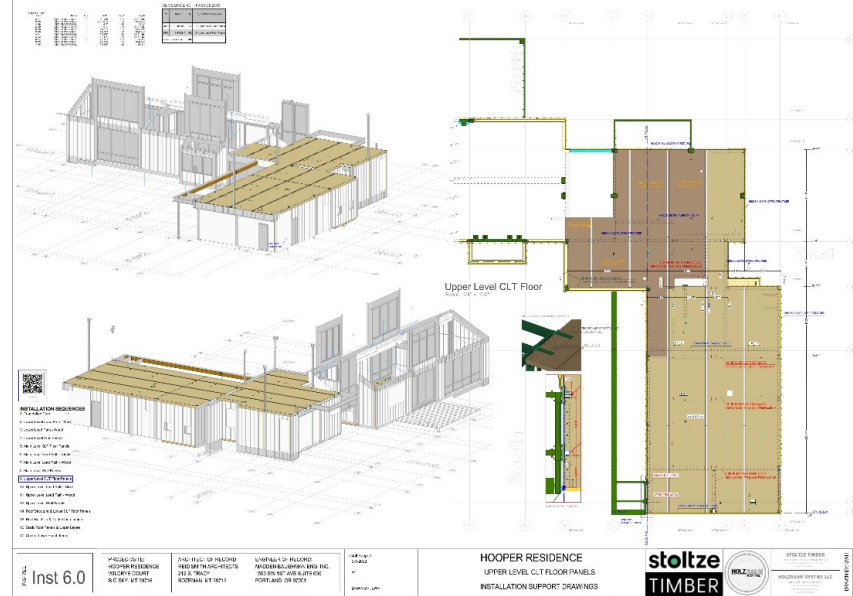
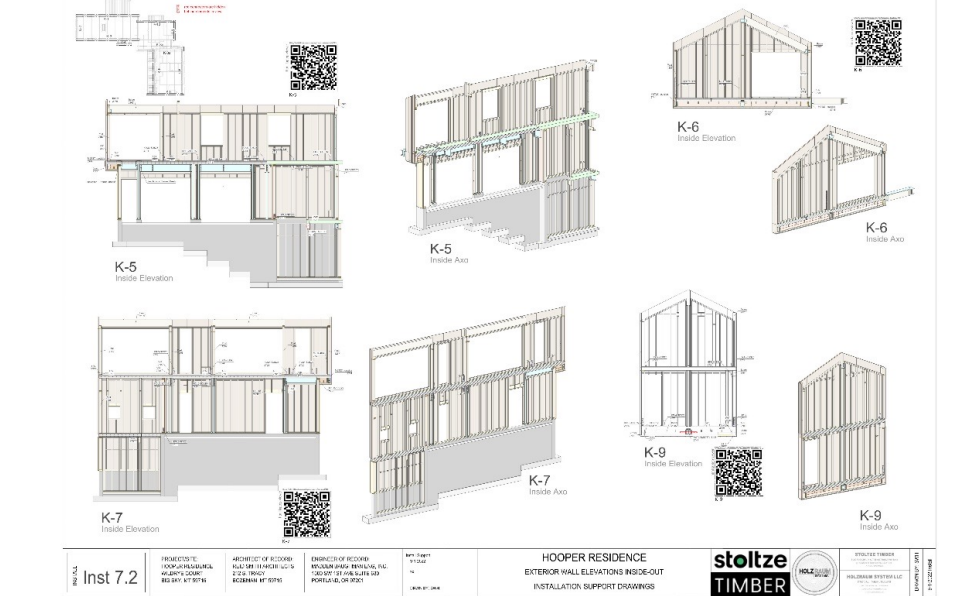
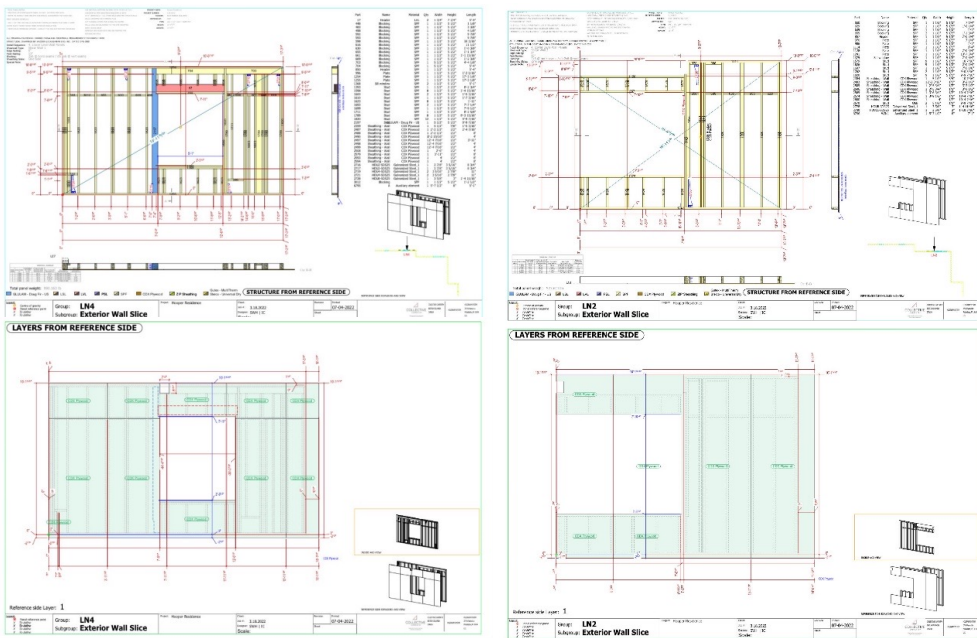
The screenshot shows a web-based interface for building simulation. On the left is a project tree with categories like 'PH cases', 'Shared objects', 'Localization / Climate', 'Building', 'Simulated zones', 'Attached zones', 'Remaining elements', and 'Systems'. The main area displays a data table for 'DormModel.json' with fields such as Project name, Client, Surname & Name, Locality, Postal code, Street, Tel., e-mail, Building, Name/Type, Year of construction, Owner, and Surname & Name. Below the table are buttons for 'OK/Additional calculation necessary', 'Stop calculation', and 'Cancel'. The bottom right section shows 'Results' for 'Passive' and 'Calculation finished' scopes, with a table of energy metrics and corresponding bar charts.

Metric	Passive	Calculation finished
Heating demand	30.44 kWh/m²a	~18 kWh/m²a
Cooling demand	11.99 kWh/m²a	~10 kWh/m²a
Heating load	13.45 W/m²	~10 W/m²
Cooling load	6.23 W/m²	~5 W/m²
Source energy	293104 kWh/Person a	~4000 kWh/Person a
Site energy	16.65 kWh/m²a	~12 kWh/m²a

CATCH SIMM/BIM Integration



Data Outputs



- ALL CORES
- C-1
- C-2
- C-3
- C-4
- C-5
- C-6
- C-7
- C-8
- C-9
- C-10
- C-11
- C-12
- C-13
- C-14
- C-15
- C-16
- C-17
- C-18

<p>INSTALL</p> <p>Inst 8.0</p>	<p>PROJECT/SITE:</p> <p>HOOPER RESIDENCE</p> <p>WILDRIE COURT</p> <p>BIG SKY, MT 59716</p>
---------------------------------------	--

Data Outputs

Panel ID	Room	Material	Area
W101	Living Room	CLT	150
W102	Dining Room	CLT	120
W103	Kitchen	CLT	100
W104	Bath	CLT	80
W105	Bedroom	CLT	110
W106	Entry	CLT	60
W107	Garage	CLT	180
W108	Owner's Deck	CLT	90
W109	Staircase	CLT	40
W110	Staircase	CLT	40
W111	Staircase	CLT	40
W112	Staircase	CLT	40
W113	Staircase	CLT	40
W114	Staircase	CLT	40
W115	Staircase	CLT	40
W116	Staircase	CLT	40
W117	Staircase	CLT	40
W118	Staircase	CLT	40
W119	Staircase	CLT	40
W120	Staircase	CLT	40
W121	Staircase	CLT	40
W122	Staircase	CLT	40
W123	Staircase	CLT	40
W124	Staircase	CLT	40
W125	Staircase	CLT	40
W126	Staircase	CLT	40
W127	Staircase	CLT	40
W128	Staircase	CLT	40
W129	Staircase	CLT	40
W130	Staircase	CLT	40
W131	Staircase	CLT	40
W132	Staircase	CLT	40
W133	Staircase	CLT	40
W134	Staircase	CLT	40
W135	Staircase	CLT	40
W136	Staircase	CLT	40
W137	Staircase	CLT	40
W138	Staircase	CLT	40
W139	Staircase	CLT	40
W140	Staircase	CLT	40

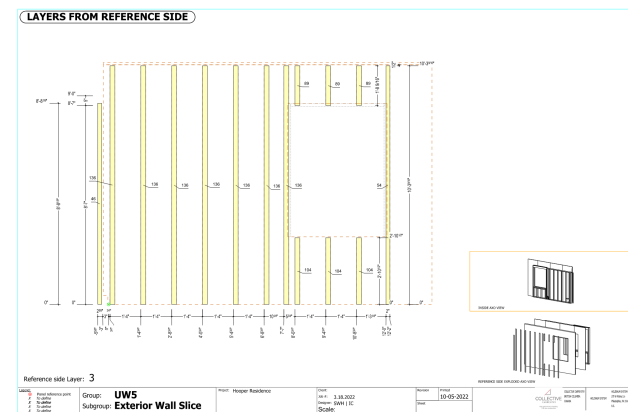
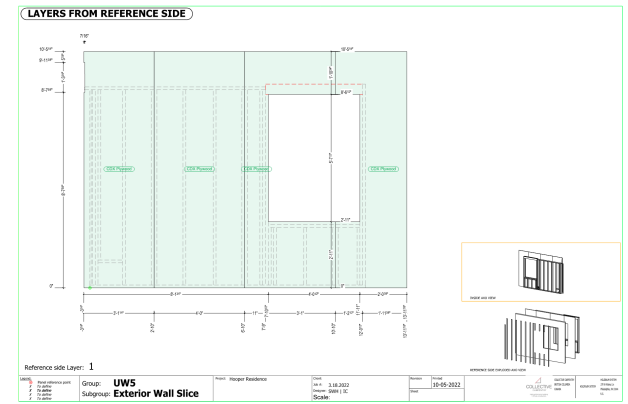
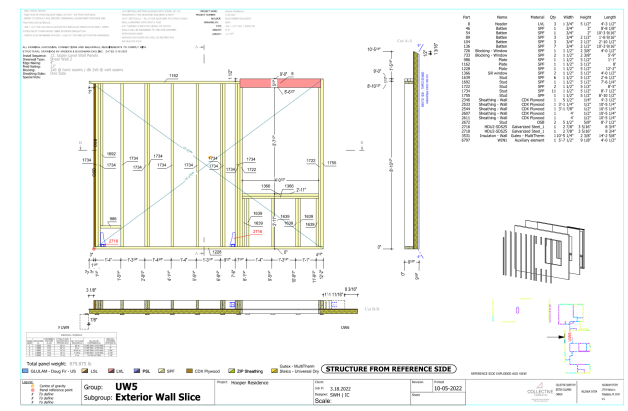
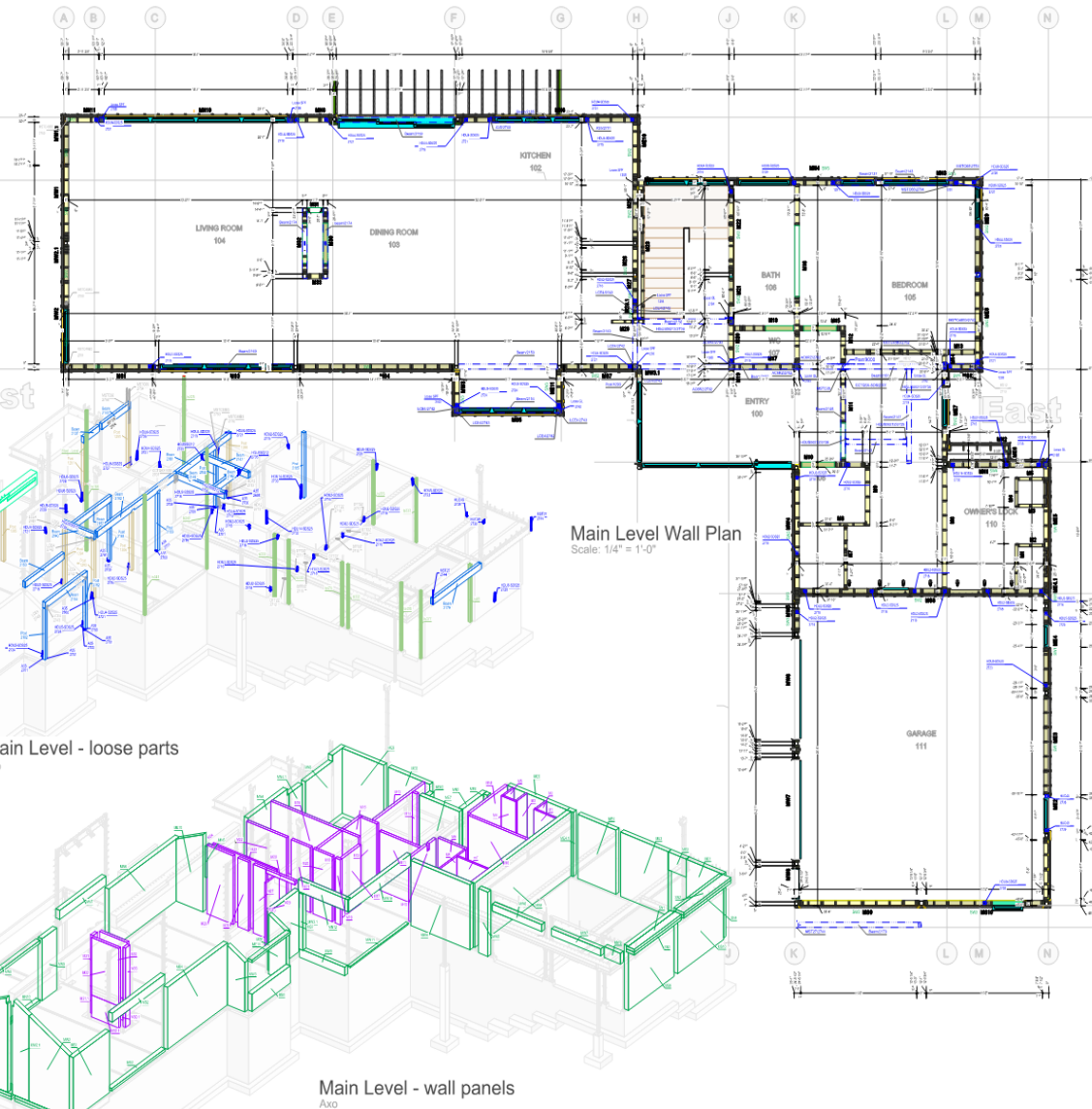
Panel ID	Room	Material	Area
W201	Living Room	CLT	150
W202	Dining Room	CLT	120
W203	Kitchen	CLT	100
W204	Bath	CLT	80
W205	Bedroom	CLT	110
W206	Entry	CLT	60
W207	Garage	CLT	180
W208	Owner's Deck	CLT	90
W209	Staircase	CLT	40
W210	Staircase	CLT	40
W211	Staircase	CLT	40
W212	Staircase	CLT	40
W213	Staircase	CLT	40
W214	Staircase	CLT	40
W215	Staircase	CLT	40
W216	Staircase	CLT	40
W217	Staircase	CLT	40
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W236	Staircase	CLT	40
W237	Staircase	CLT	40
W238	Staircase	CLT	40
W239	Staircase	CLT	40
W240	Staircase	CLT	40

Panel ID	Room	Material	Area
W301	Living Room	CLT	150
W302	Dining Room	CLT	120
W303	Kitchen	CLT	100
W304	Bath	CLT	80
W305	Bedroom	CLT	110
W306	Entry	CLT	60
W307	Garage	CLT	180
W308	Owner's Deck	CLT	90
W309	Staircase	CLT	40
W310	Staircase	CLT	40
W311	Staircase	CLT	40
W312	Staircase	CLT	40
W313	Staircase	CLT	40
W314	Staircase	CLT	40
W315	Staircase	CLT	40
W316	Staircase	CLT	40
W317	Staircase	CLT	40
W318	Staircase	CLT	40
W319	Staircase	CLT	40
W320	Staircase	CLT	40
W321	Staircase	CLT	40
W322	Staircase	CLT	40
W323	Staircase	CLT	40
W324	Staircase	CLT	40
W325	Staircase	CLT	40
W326	Staircase	CLT	40
W327	Staircase	CLT	40
W328	Staircase	CLT	40
W329	Staircase	CLT	40
W330	Staircase	CLT	40
W331	Staircase	CLT	40
W332	Staircase	CLT	40
W333	Staircase	CLT	40
W334	Staircase	CLT	40
W335	Staircase	CLT	40
W336	Staircase	CLT	40
W337	Staircase	CLT	40
W338	Staircase	CLT	40
W339	Staircase	CLT	40
W340	Staircase	CLT	40

Panel ID	Room	Material	Area
W401	Living Room	CLT	150
W402	Dining Room	CLT	120
W403	Kitchen	CLT	100
W404	Bath	CLT	80
W405	Bedroom	CLT	110
W406	Entry	CLT	60
W407	Garage	CLT	180
W408	Owner's Deck	CLT	90
W409	Staircase	CLT	40
W410	Staircase	CLT	40
W411	Staircase	CLT	40
W412	Staircase	CLT	40
W413	Staircase	CLT	40
W414	Staircase	CLT	40
W415	Staircase	CLT	40
W416	Staircase	CLT	40
W417	Staircase	CLT	40
W418	Staircase	CLT	40
W419	Staircase	CLT	40
W420	Staircase	CLT	40
W421	Staircase	CLT	40
W422	Staircase	CLT	40
W423	Staircase	CLT	40
W424	Staircase	CLT	40
W425	Staircase	CLT	40
W426	Staircase	CLT	40
W427	Staircase	CLT	40
W428	Staircase	CLT	40
W429	Staircase	CLT	40
W430	Staircase	CLT	40
W431	Staircase	CLT	40
W432	Staircase	CLT	40
W433	Staircase	CLT	40
W434	Staircase	CLT	40
W435	Staircase	CLT	40
W436	Staircase	CLT	40
W437	Staircase	CLT	40
W438	Staircase	CLT	40
W439	Staircase	CLT	40
W440	Staircase	CLT	40

Panel ID	Room	Material	Area
W501	Living Room	CLT	150
W502	Dining Room	CLT	120
W503	Kitchen	CLT	100
W504	Bath	CLT	80
W505	Bedroom	CLT	110
W506	Entry	CLT	60
W507	Garage	CLT	180
W508	Owner's Deck	CLT	90
W509	Staircase	CLT	40
W510	Staircase	CLT	40
W511	Staircase	CLT	40
W512	Staircase	CLT	40
W513	Staircase	CLT	40
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W515	Staircase	CLT	40
W516	Staircase	CLT	40
W517	Staircase	CLT	40
W518	Staircase	CLT	40
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W520	Staircase	CLT	40
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W524	Staircase	CLT	40
W525	Staircase	CLT	40
W526	Staircase	CLT	40
W527	Staircase	CLT	40
W528	Staircase	CLT	40
W529	Staircase	CLT	40
W530	Staircase	CLT	40
W531	Staircase	CLT	40
W532	Staircase	CLT	40
W533	Staircase	CLT	40
W534	Staircase	CLT	40
W535	Staircase	CLT	40
W536	Staircase	CLT	40
W537	Staircase	CLT	40
W538	Staircase	CLT	40
W539	Staircase	CLT	40
W540	Staircase	CLT	40

- INSTALLATION SEQUENCE**
- Foundation Prep
 - Lower Level Load Path - Steel
 - Lower Level Path - Wood
 - Lower Level Wall Panels
 - Main Level CLT Floor Panels
 - Main Level Load Path - Steel
 - Main Level Load Path - Wood
 - Main Level Wall Panels**
 - Upper Level CLT Floor Panels
 - Upper Level Load Path - Steel
 - Upper Level Load Path - Wood
 - Upper Level Wall Panels
 - Roof Structure & Lower CLT Roof Panels
 - Roof Build Up & Trade Coordination
 - Static Roof Panels & Upper Layers
 - Control Layer Punch Items



INSTALL Inst 5.3

PROJECT/SITE:
HOOPER RESIDENCE
WILDRIE COURT
BIG SKY, MT 59716

ARCHITECT OF RECORD:
REID SMITH ARCHITECTS
212 S. TRACY
BOZEMAN, MT 59715

ENGINEER OF RECORD:
MADDEN BAUGHMAN ENG. INC.
1500 SW 1ST AVE SUITE 630
PORTLAND, OR 97201

Install Support
16-5-2022
XX
DRAWN BY: SWH

HOOPER RESIDENCE
MAIN LEVEL WALL PLAN
INSTALLATION SUPPORT DRAWINGS

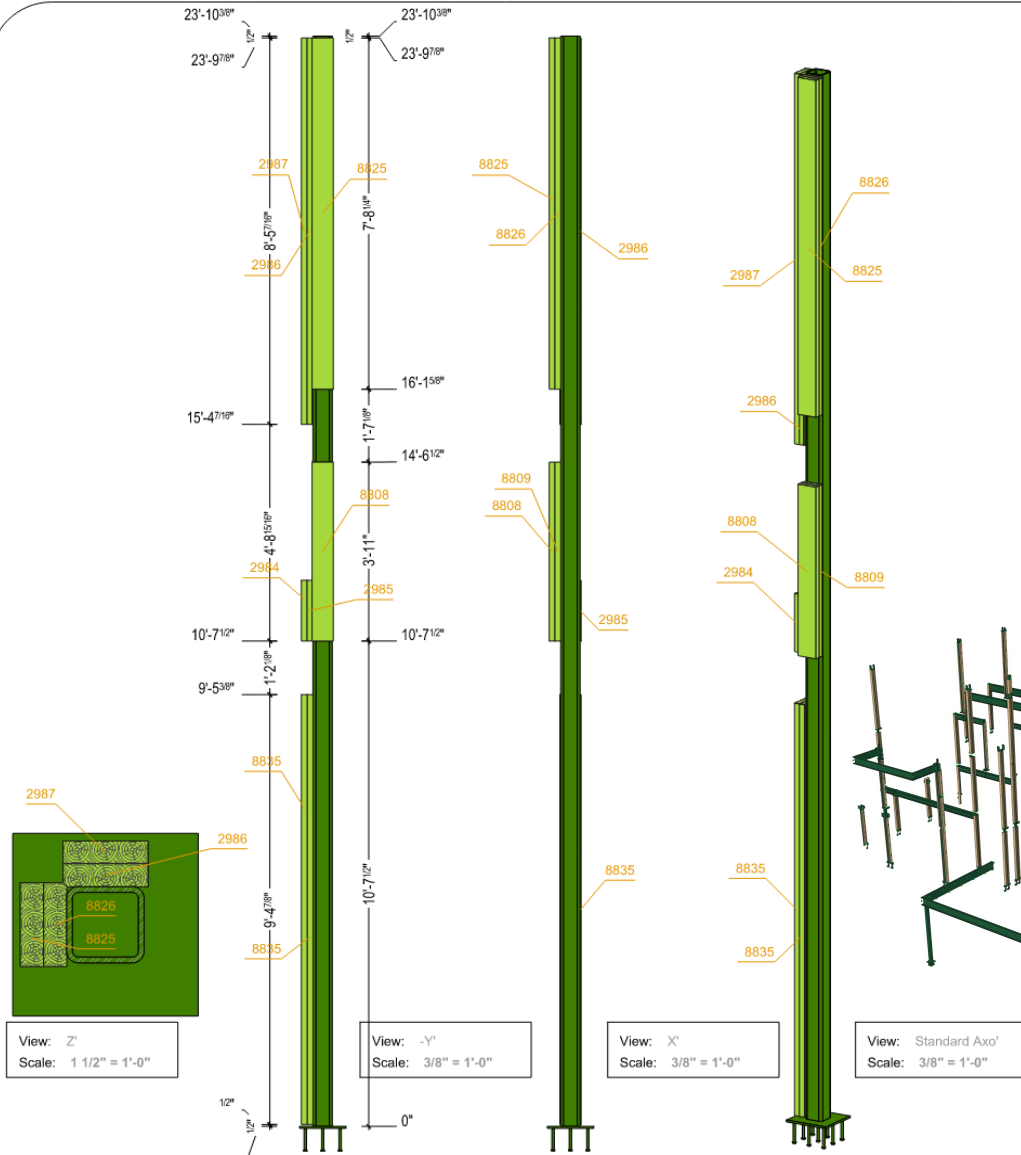


STOLTZE TIMBER
CONNECTIONS FOR CLT AND MASS TIMBER
HOLZRAUM SYSTEM LLC
1000 W. UNIVERSITY AVENUE
PORTLAND, OR 97201
PH: 503.251.1000
WWW.HOLZRAUMSYSTEM.COM

DRAWN BY: SWH
10-1-2022 Inst04

Reference side: 3
Group: UWS
Subgroup: Exterior Wall Slice
Date: 1.18.2022
Scale: 1/8" = 1'-0"
10/05/2022

Data Outputs



View: Z'
Scale: 1 1/2" = 1'-0"

View: -Y'
Scale: 3/8" = 1'-0"

View: X'
Scale: 3/8" = 1'-0"

View: Standard Axo'
Scale: 3/8" = 1'-0"

Project name: Hooper Residence
Output Date: 5.23.2022

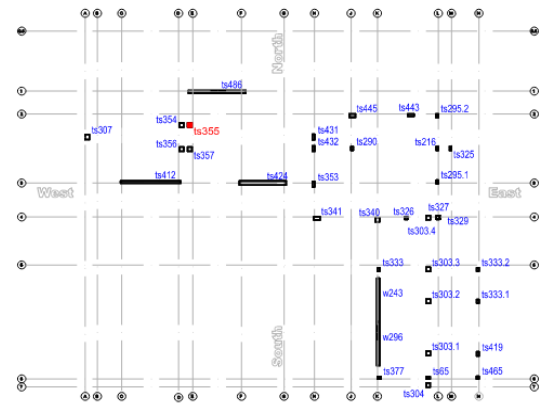
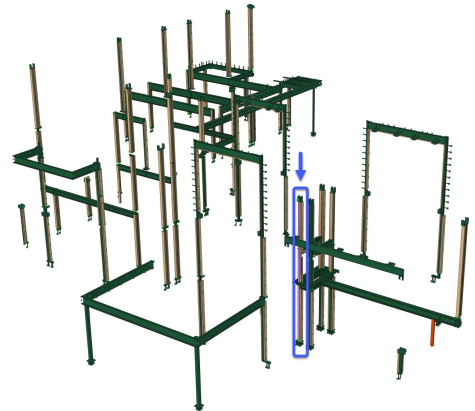
GROUP **ts355**

MATERIAL NOTE: ALL NAILERS ARE DESIGNATED AS PT SPF IN SIMM AND CATCH. IT IS UP TO BUILDER REPLACE SPECIFIC PT SPF MEMBERS WITH SPF MEMBERS PER PREFERENCE.

Part	Name	Material	Qty	Real width	Real height	Real Length
2984	Stl Col Nailier	PT SPF	1	1 1/2"	5 1/2"	1'-3 15/16"
2985	Stl Col Nailier	PT SPF	1	1 1/2"	5 1/2"	1'-3 15/16"
2986	Stl Col Nailier	PT SPF	1	1 1/2"	5 1/2"	8'-5 7/16"
2987	Stl Col Nailier	PT SPF	1	1 1/2"	5 1/2"	8'-5 7/16"
8808	Stl Col Nailier	PT SPF	1	1 1/2"	5 1/2"	3'-11"
8809	Stl Col Nailier	PT SPF	1	1 1/2"	5 1/2"	3'-11"
8825	Stl Col Nailier	PT SPF	1	1 1/2"	5 1/2"	7'-8 1/4"
8826	Stl Col Nailier	PT SPF	1	1 1/2"	5 1/2"	7'-8 1/4"
8835	Stl Col Nailier	PT SPF	2	1 1/2"	5 1/2"	9'-4 7/8"

NOTE: THESE DRAWINGS ARE FOR COORDINATION PURPOSES ONLY. IF STRUCTURAL STEEL MEMBER GEOMETRY/POSITIONING ON SITE DIFFERS THAN AS REPRESENTED ON THESE DRAWINGS IT IS THE SOLE RESPONSIBILITY OF THE BUILDER TO ALERT HOLZRAUM SYSTEM AND MONTANA STEEL BEFORE INSTALLING ASSOCIATED NAILERS. HOLZRAUM SYSTEM BEARS NO RESPONSIBILITY FOR THE INTERPRETATION AND/OR INSTALLATION OF ANY NAILERS TO STEEL MEMBERS.

INSTALLATION OF NAILERS WITHIN 1/8" TOLERANCE IS REQUIRED TO INSURE SUCCESSFUL PANEL INSTALLATION BY COLLECTIVE CARPENTRY. A THOROUGH INSPECTION AND VERIFICATION AGAINST THESE DRAWINGS SHOULD BE DONE BY BRB FOREMEN PRIOR TO COMMENCEMENT OF COLLECTIVE CARPENTRY PANEL INSTALLATION.



NOTE: VERTICAL DIM STRING STARTS B.O. TS (T.O. BASEPLATE)

Architect: Reid Smith Architects
Customer:
Designer: SWH | IC

HOLZRAUM SYSTEM
270 W Walnut Ln
Pleasanton, PA 15104
U.S.



HOLZRAUM CATCH

search for text...



Hooper CLT & Rothblaas
Locations_28.ifc
Hooper Residence

HOLZRAUM CATCH

Issues for **Hooper Residence**

FILTERS: [all projects] [any unresolved] **Assigned To Me** [all types] [all pers]

HZA	Created On	Issue	Type	Status	Assigned To	Perspective	Newest Comment
#787	10/13/22, 6:16 PM	UnGated SIMM with Ms?	Needs Input	New	John_Finney BRB	Architectural	
#794	10/17/22, 5:18 PM	Rothblaas Fastener Location	Note	New	Rane_Wardwell	Structural	When you click the file it will automatically start downloading then loading into a new Catch Viewer browser window. Takes a few minutes to load. Steve

HOLZRAUM CATCH

Projects / Hooper Residence Active

hooper

[Edit] [Make Current] [Issues] [Search] [Invite Users] [Wkt]

Details

Address:	Big Sky, Montana	PHILUS Certification:	No
Architect:	Reid Smith Architects	Level One (sqft):	2495
Builder:	Blue Ribbon Builders	Level Two (sqft):	3369
Project Owner:		Level Three (sqft):	1867
Energy Modeler:		Structural Engineer:	Madden & Baughman Engineering
MEP Engineer:	Central Heating and Cooling		

Description

High Performance Single Family Residence

Energy Model Cases


Case	Heating Demand of Target	Cooling Demand of Target	Heating Load of Target	Cooling Load of Target	Source Energy of Target

Data Imports

Users

Username	Role	Action
Brandon Roachy	Contributor	[edit] [star]
Brandon Wier	Project Admin	[edit] [A]
Craig Lochay	Contributor	[edit] [star]
davidh	Project Admin	[edit]
dheslerjr	Contributor	[edit] [star]
Don Keebo	Contributor	[edit] [star]
Emily Dodson	Project Admin	[edit]
Erik Renne	Contributor	[edit] [star]
Ilka Cassidy	Project Admin	[edit]
Jason Simpson	Contributor	[edit] [star]
John Finney BRB	Project Admin	[edit] [A]
jpratschke	Project Admin	[edit] [A]
Lude Schrova Stolte	Contributor	[edit] [star]
Lude Ring	Project Admin	[edit] [A]
Matt Brown	Contributor	[edit] [star]

Project Image



Documents

- [From Architect](#)
- [Holzraum Deliverables](#)
- [IFC](#)

The Necessary Evolution

How Three Companies are Instigating Change
via Offsite Construction

UNITY HOMES



Beth Campbell

HOLZRAUM SYSTEM



Steve Hessler

B.PUBLIC PREFAB



Edie Dillman

Thank You!