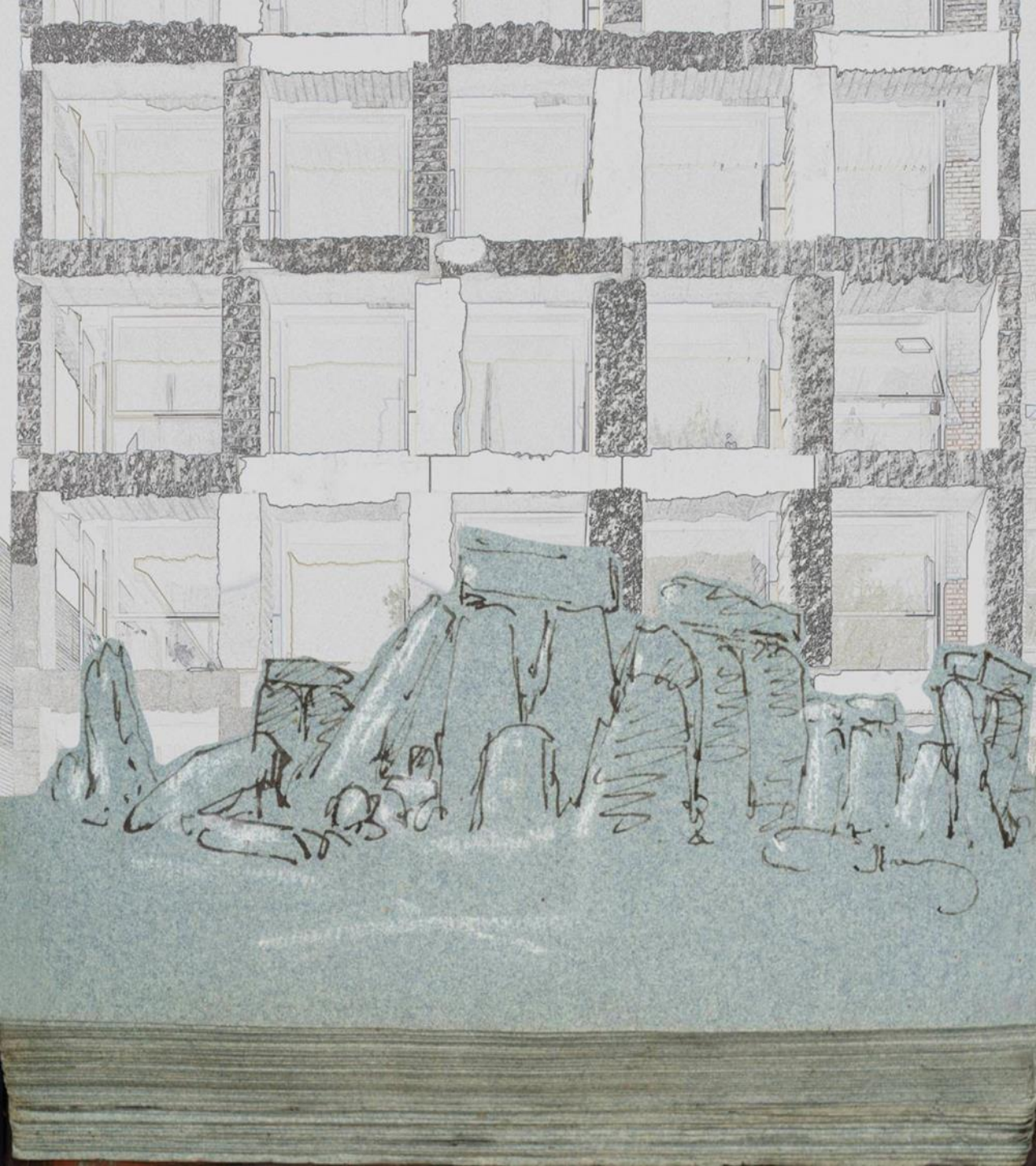


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PIERRE NATURELLE :MIXITÉ
BOIS-PIERRE,CONSTRUCTION
HORS SITEET RÉEMPLOI.

Bordeaux-11/06/2024

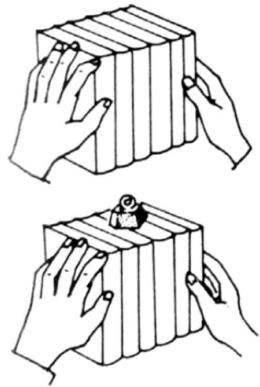




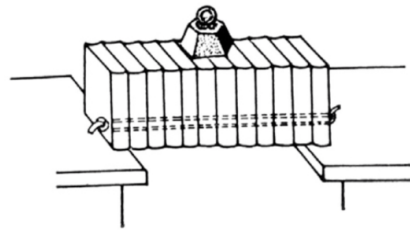
Where is my natural
prefabricated stone structure
!??



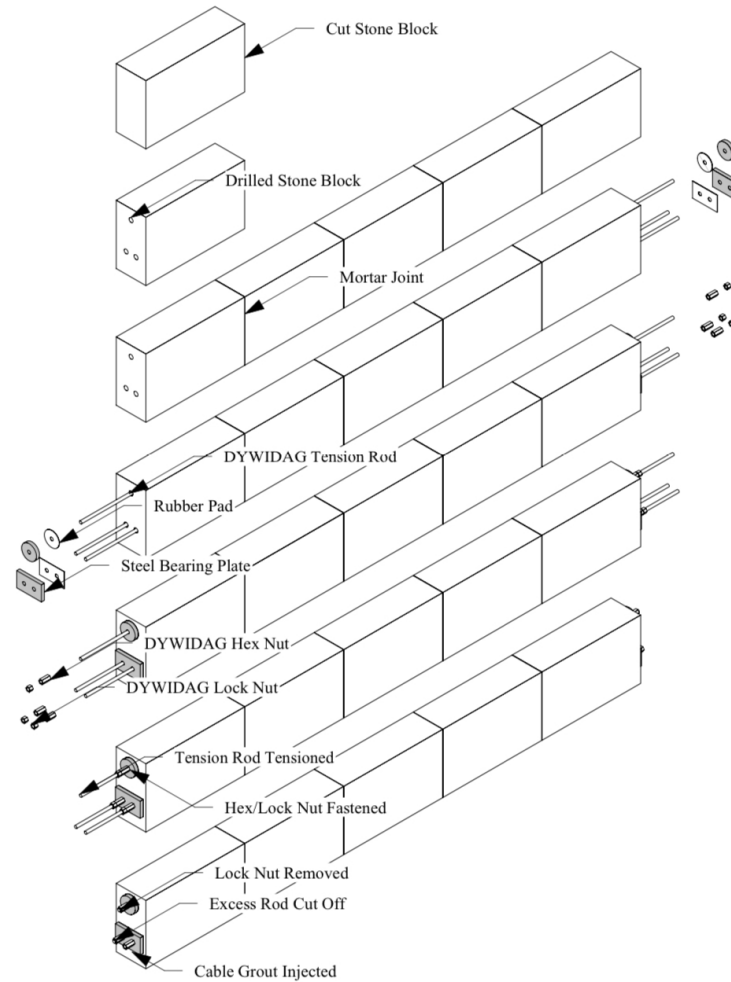




Concept 'précontraint' - Pierre Noël - 1968



Précontraint.



Assembly prestressed stone beam - The Stonemasonry Company - 2022



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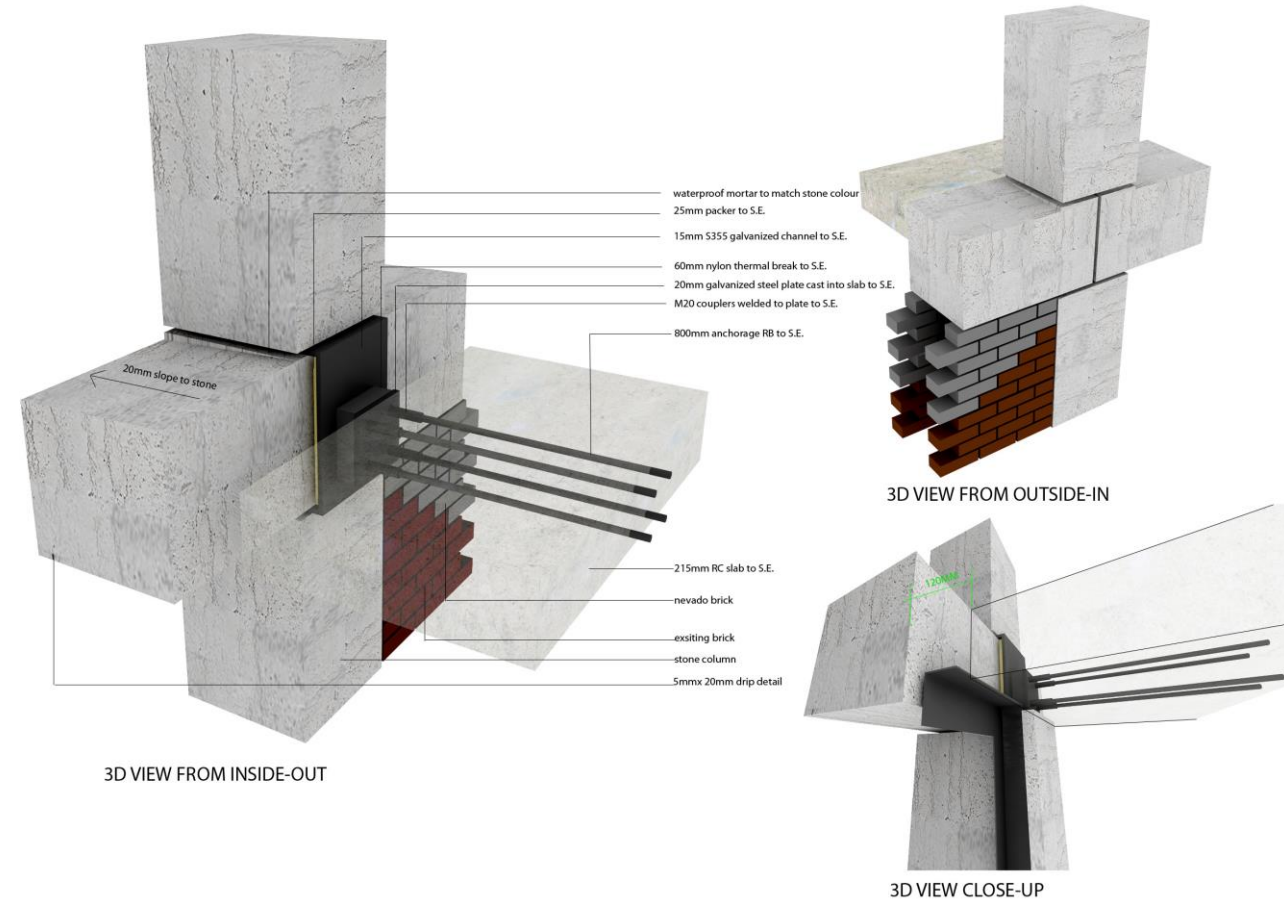






15 CLERKENWELL CLOSE







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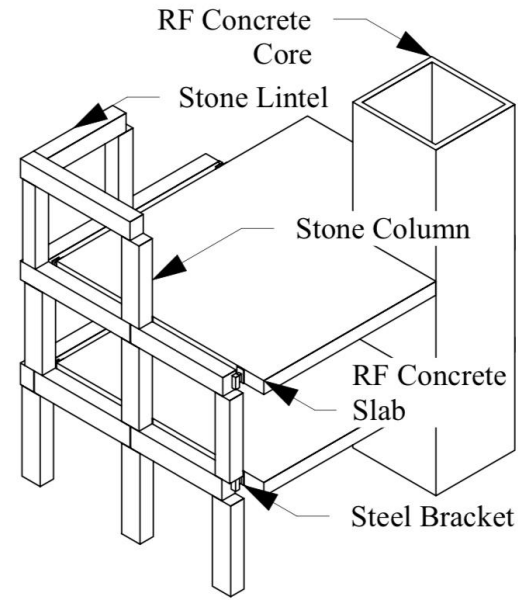
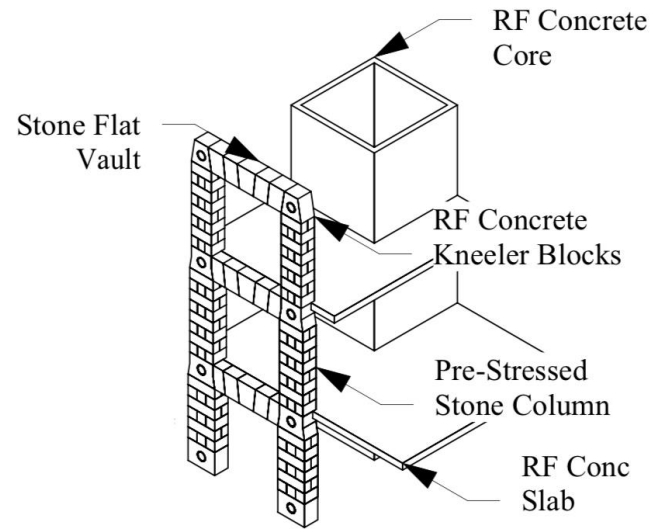
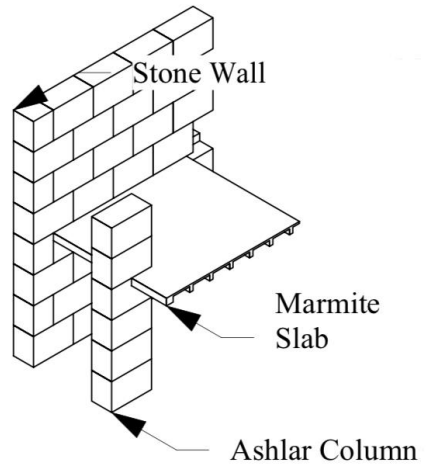
Meudon-la-Foret, Paris - 1960



Queens Building, Cambridge - 2000

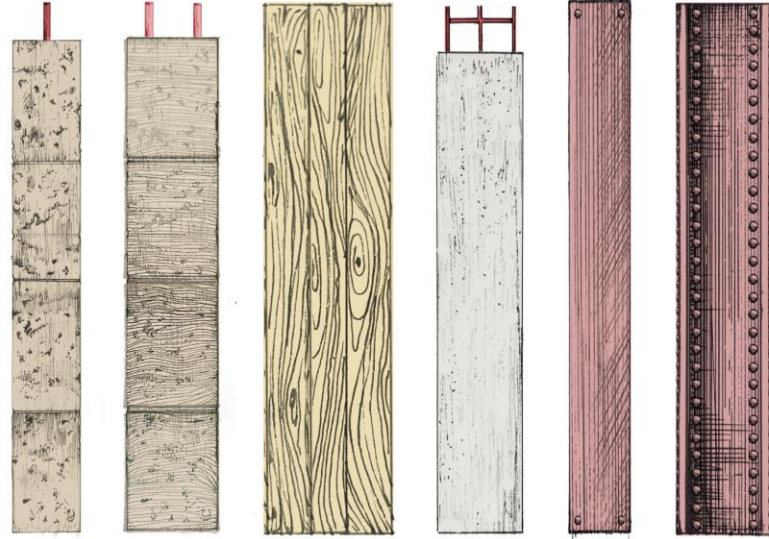


15 Clerkenwell Close, London - 2017



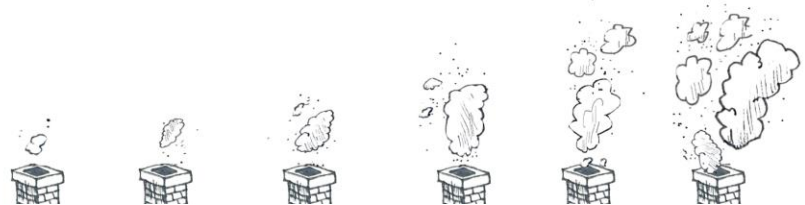


- COMPARISON OF DIFFERENT MATERIALS -
LOAD: 1000 kN - Length: 4m

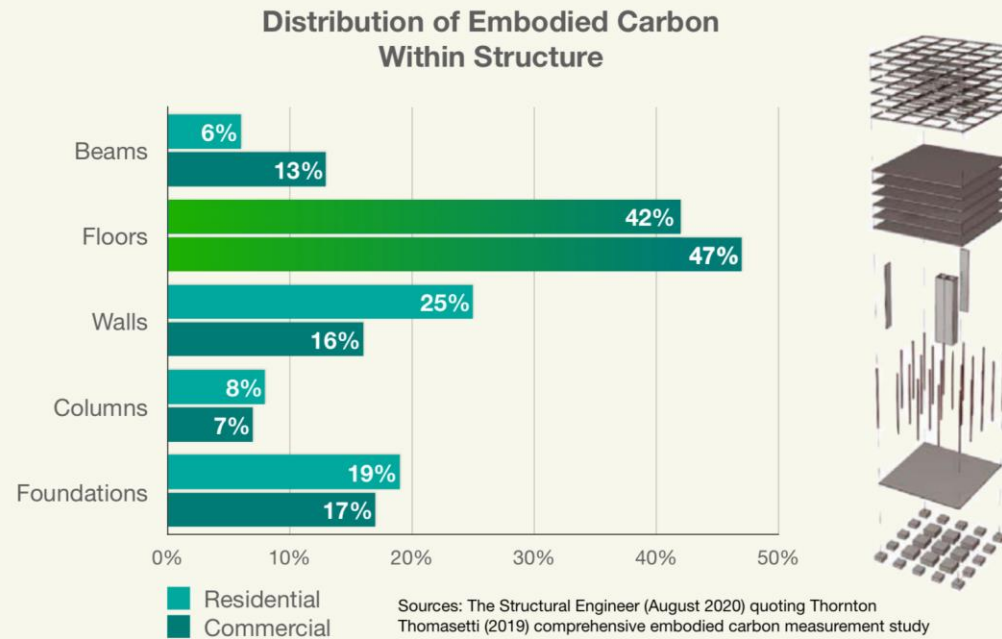


GRANITE REINFORCED LIMESTONE REINFORCED MASS TIMBER (GLULAM) REINFORCED CONCRETE STEEL HOLLOW PROFILE STEEL I-PROFILE

mm	150 x 150	200 x 200	340 x 340	200 x 200	140 x 140 x 125	HEA 240
GWP (kg CO ₂ e)	42	52	76	150	239	272



Floors Lock Most of Embodied Carbon



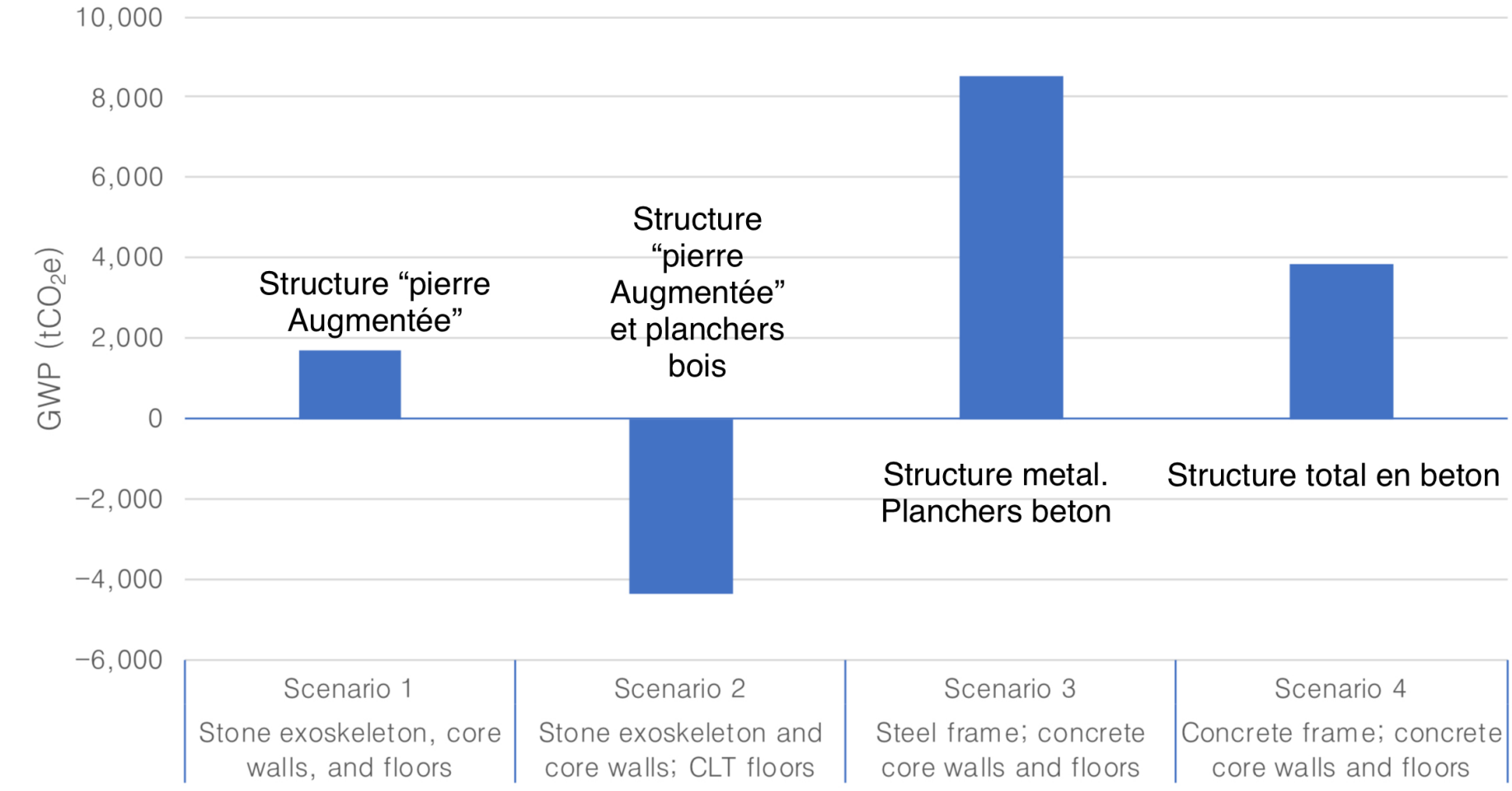
47% Up to
of carbon in modern
buildings is embodied in
floor planks due to the
substantial volume of
material required.



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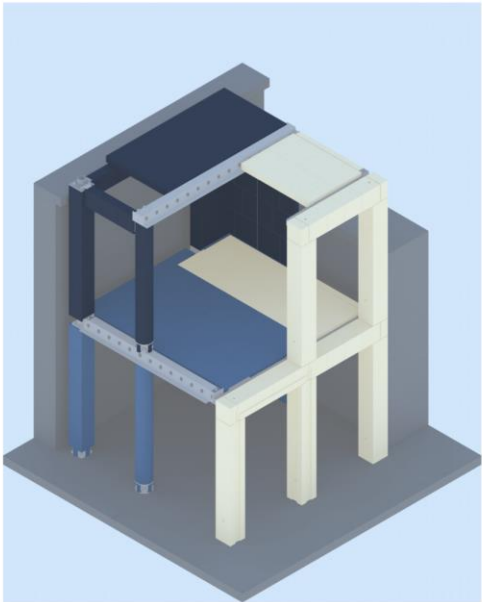


Comparison of the construction-related embodied carbon values of
Scenarios for Stone Tower

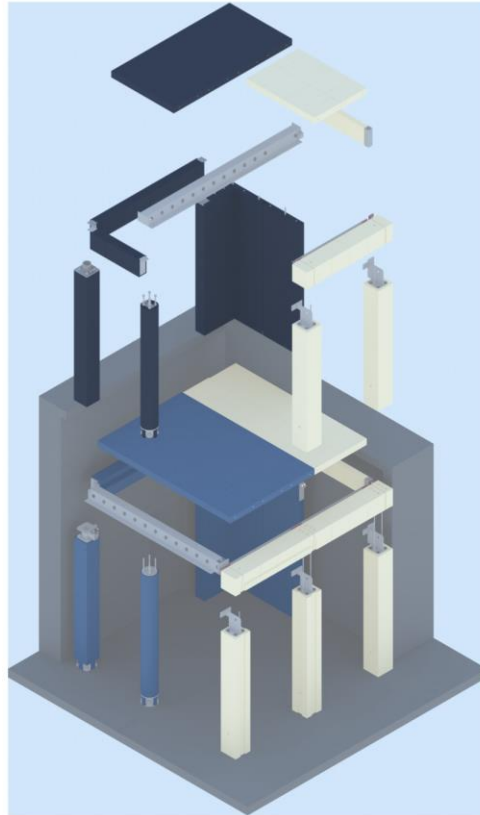


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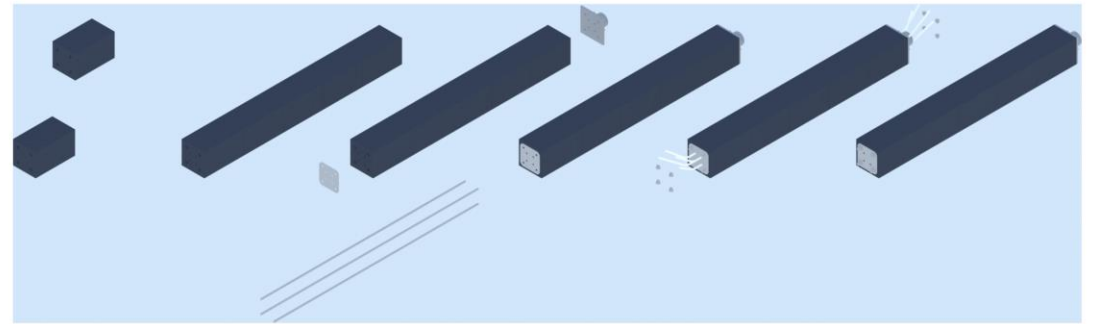




4 Axonometric
Scale: 1:70



5 Exploded Axonometric
Scale: 1:70

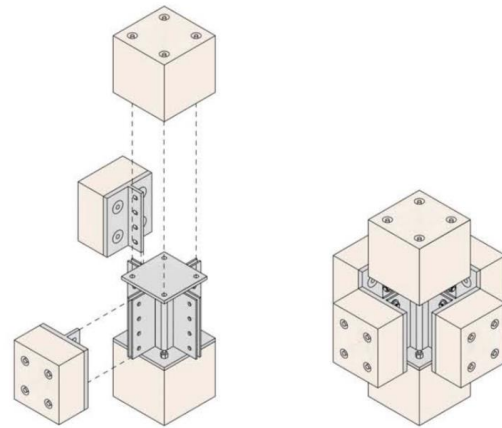
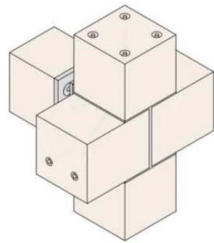
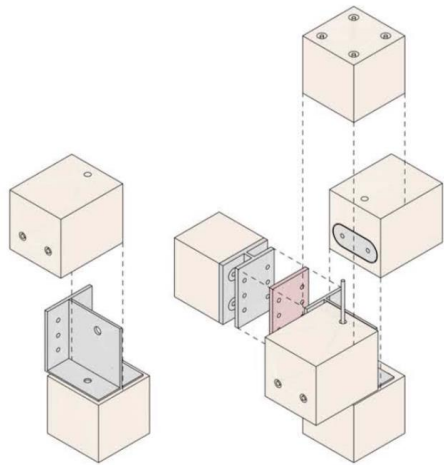
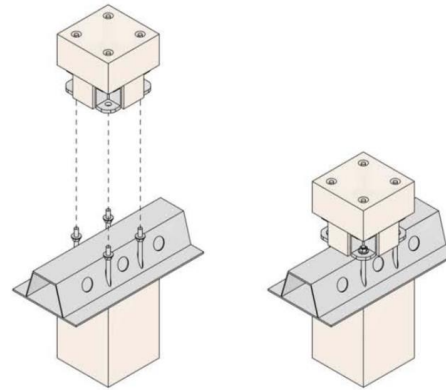
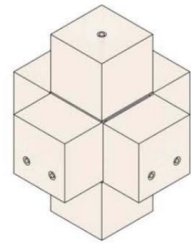
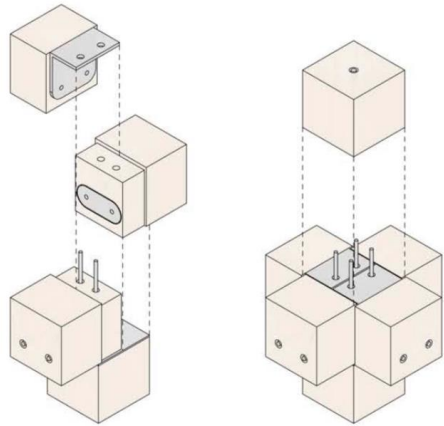


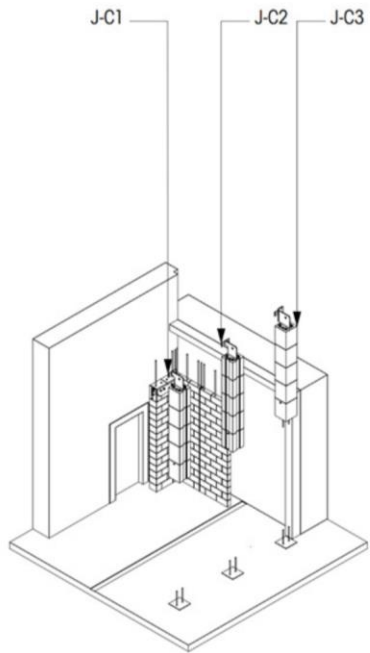
6 RF Column Assembly
Scale: 1:30



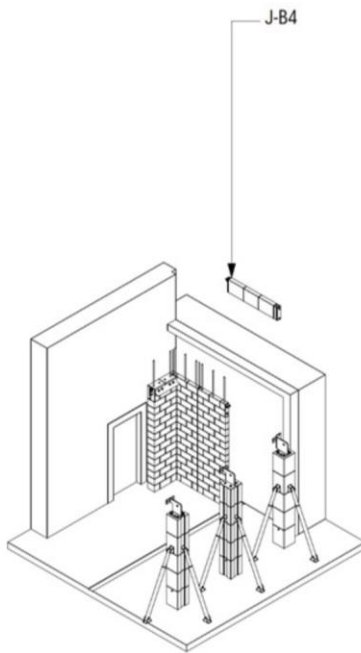
7 PT Column Assembly
Scale: 1:30



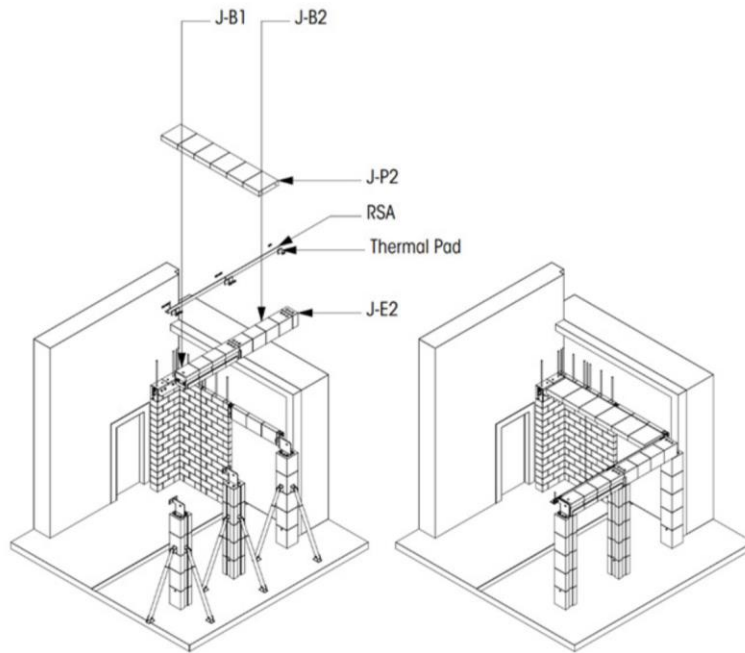




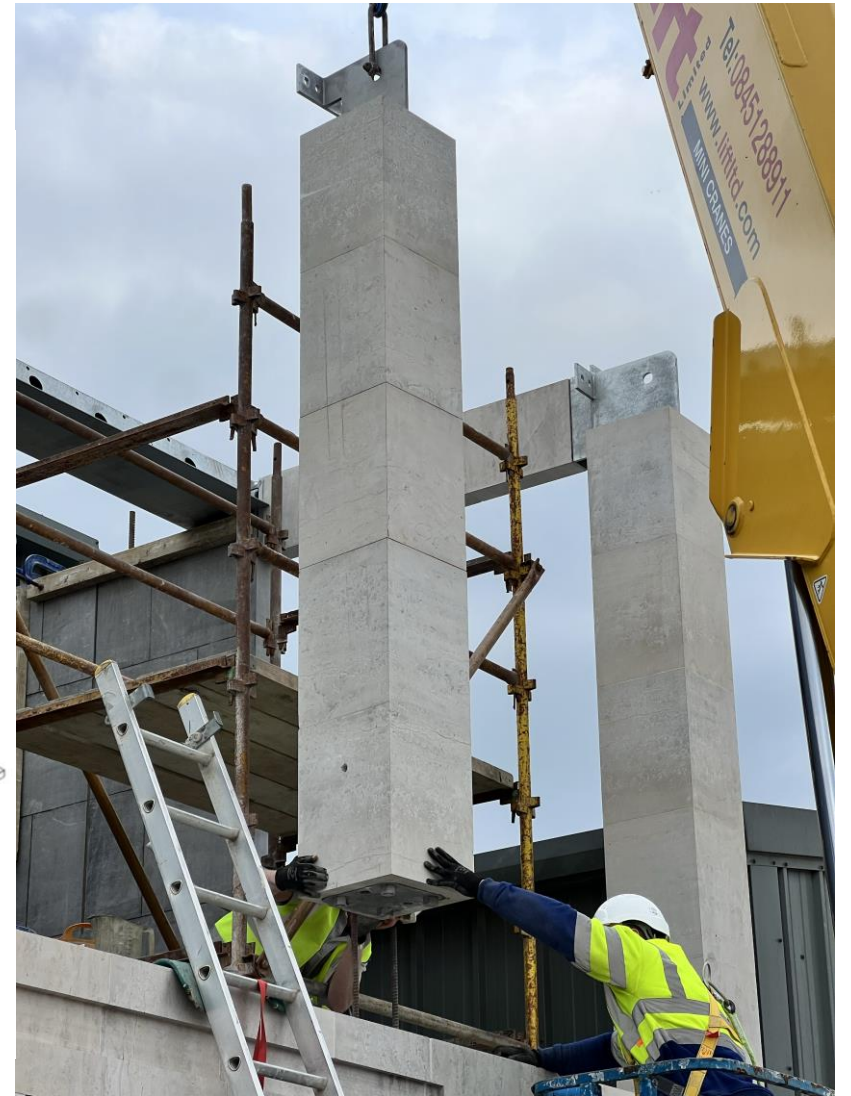
1. Setting out
2. Drill holes in concrete slab
3. Mortar bed
4. Temporary props



1. Scaffolding
2. Install beam with thermal pad and M20 bolts



1. Mortar bed
2. Lower beams onto column heads
3. Fasten RSA angles onto column nodes
4. Mortar bed on RSA
5. Lower floor plank

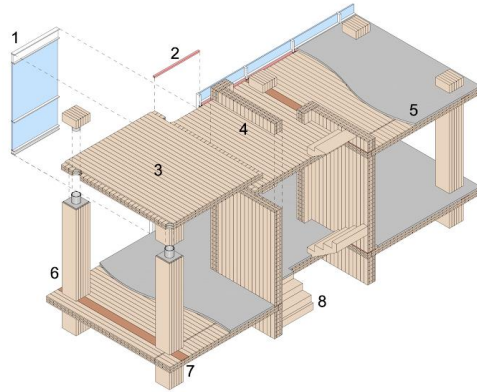




ZERO
BETON

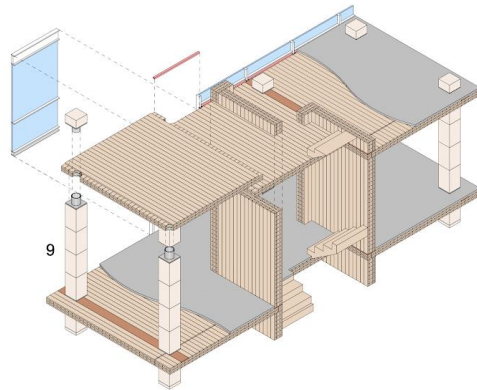






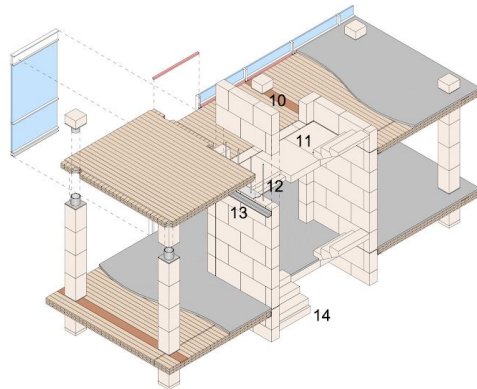
CLT core, floor plate
+ glulam columns

- 1 Curtain wall
- 2 Cavity barrier
- 3 Two-way span CLT panel
- 4 CLT wall panel
- 5 Screed topping
- 6 Glulam column
- 7 Flooring joint
- 8 CLT stair



CLT core, floor plate
+ stone columns

- 9 Reinforced stone column

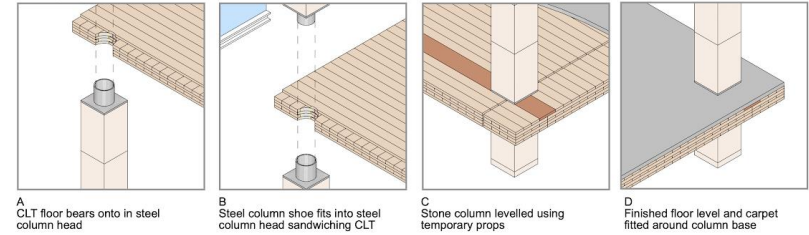


CLT floor plate
+ stone core, columns

- 10 Reinforced stone wall panel
- 11 Pre-stressed stone landing
- 12 Protruding rebar
- 13 RSA
- 14 Pre-stressed stone stair

9 Reinforced stone column

Stone grade: 2
Section: 350x350mm
Axial capacity: 2000kN
Building sequence:



A CLT floor bears onto in steel column head

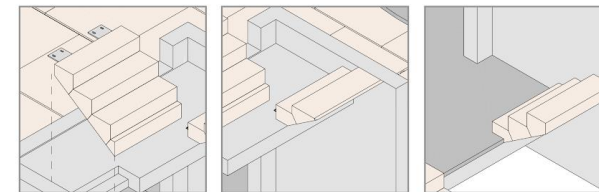
B Steel column shoe fits into steel column head sandwiching CLT

C Stone column levelled using temporary props

D Finished floor level and carpet fitted around column base

11 Pre-stressed stone staircase

Stone grade: 2
Waist: 120mm
Span: 2m
Capacity: 3.5kN/m2
Building sequence:



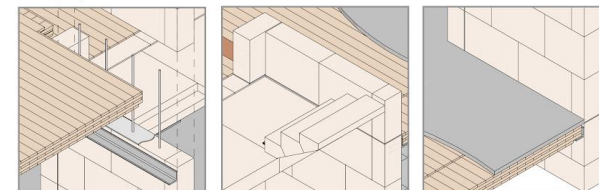
A Steel top and bottom bracket fit onto slab rebate

B Top and bottom bracket fixed to slab with fasteners

C Finished floor level and carpet fitted around stair top and bottom treads

10 Reinforced stone wall panel

Stone grade: 1
Thickness: 250mm
Axial capacity: 3000kN/m
Building sequence:



A Wall panel lowered onto protruding rebar

B Wall panel levelled and grouted in position with temporary props

C CLT floor panel supported by RSA and topping poured and cast around top and bottom of wall





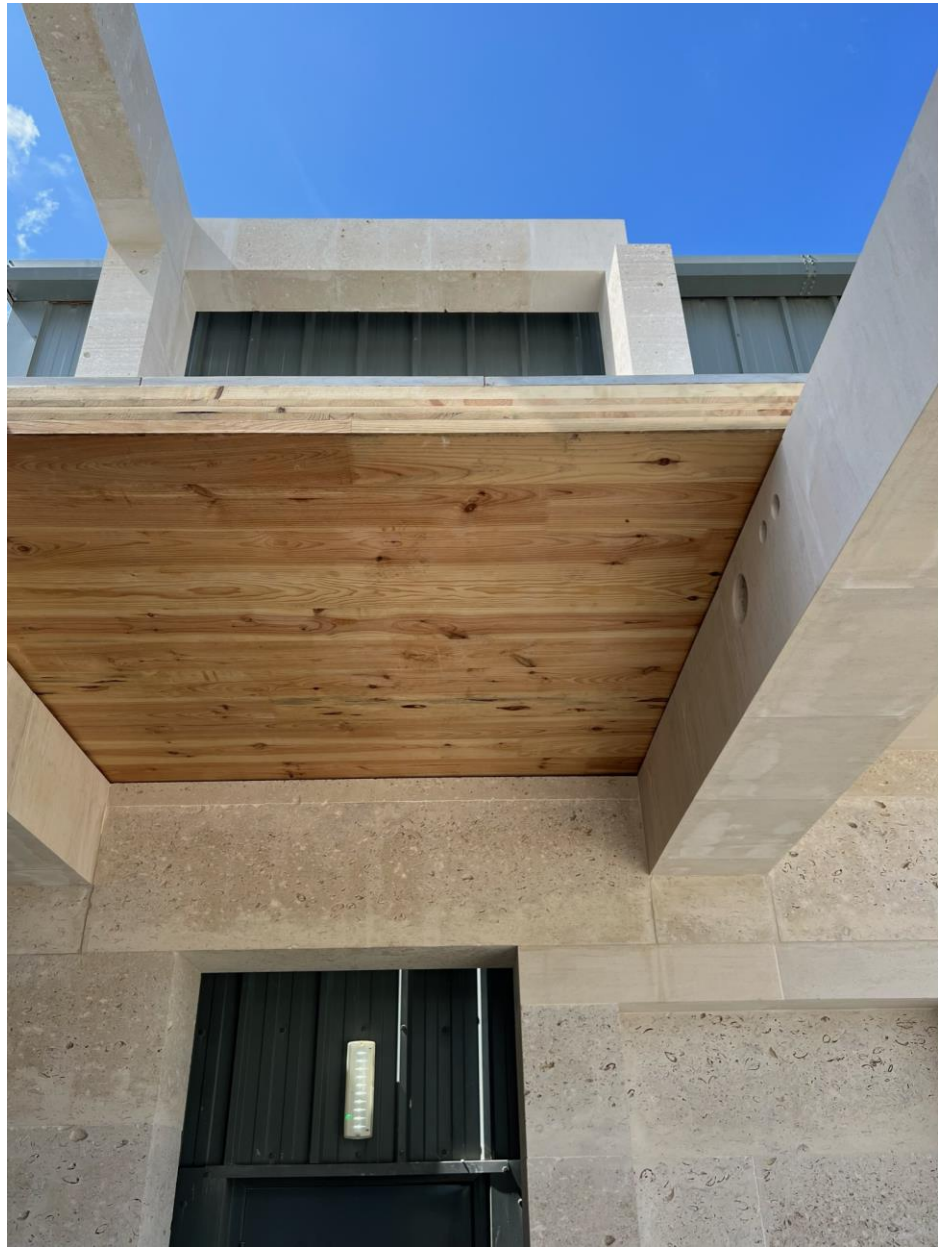


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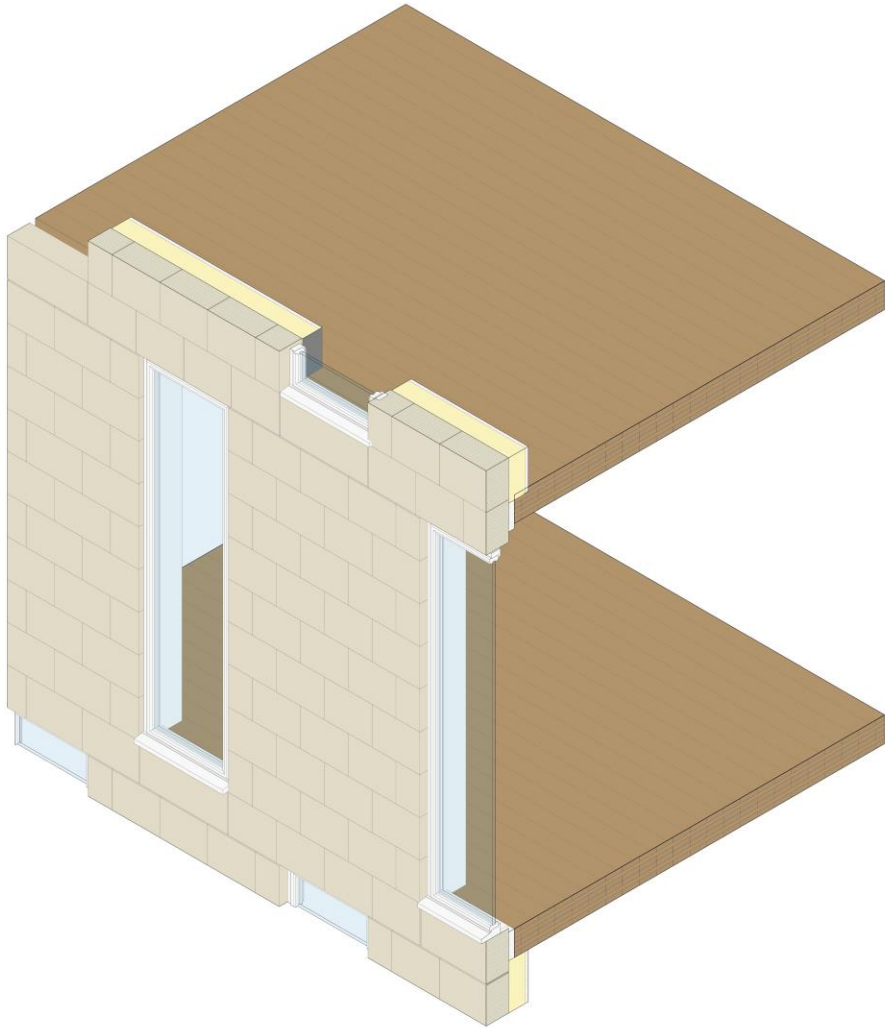








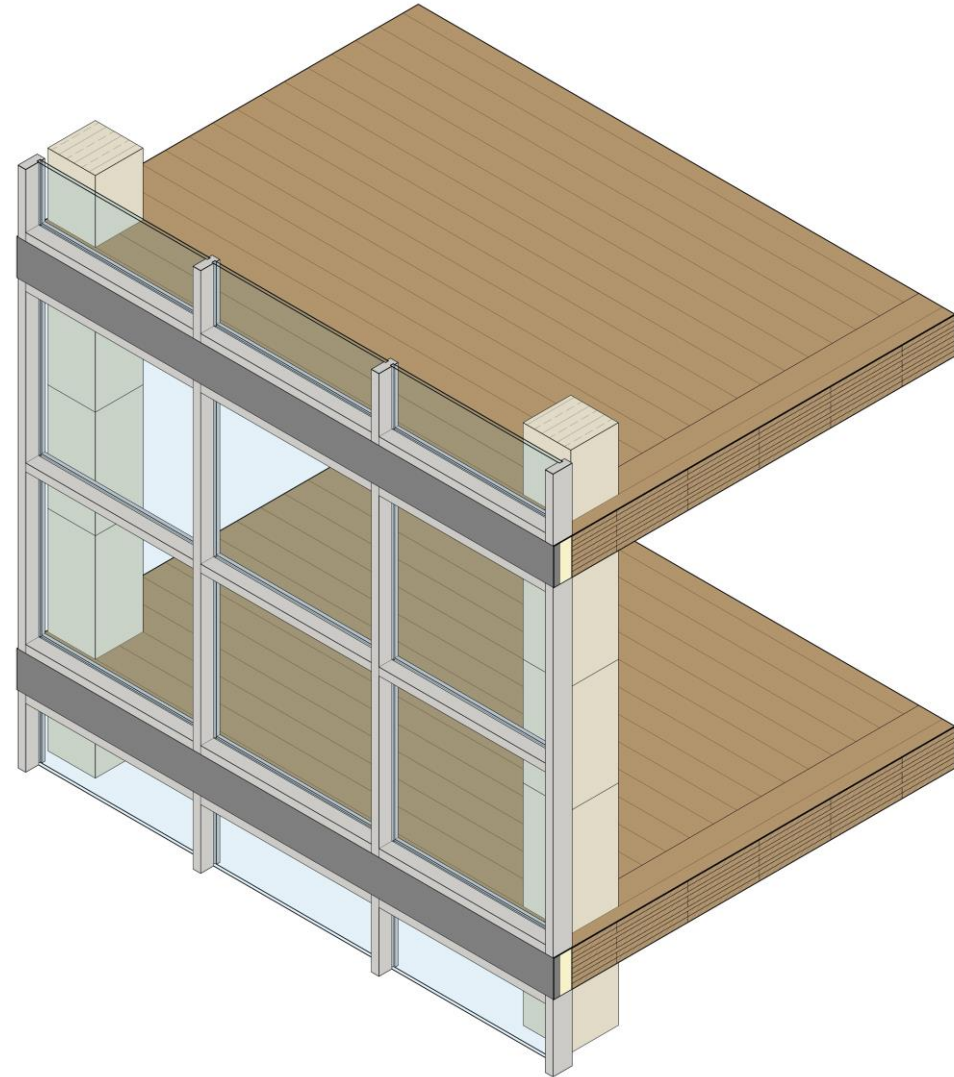
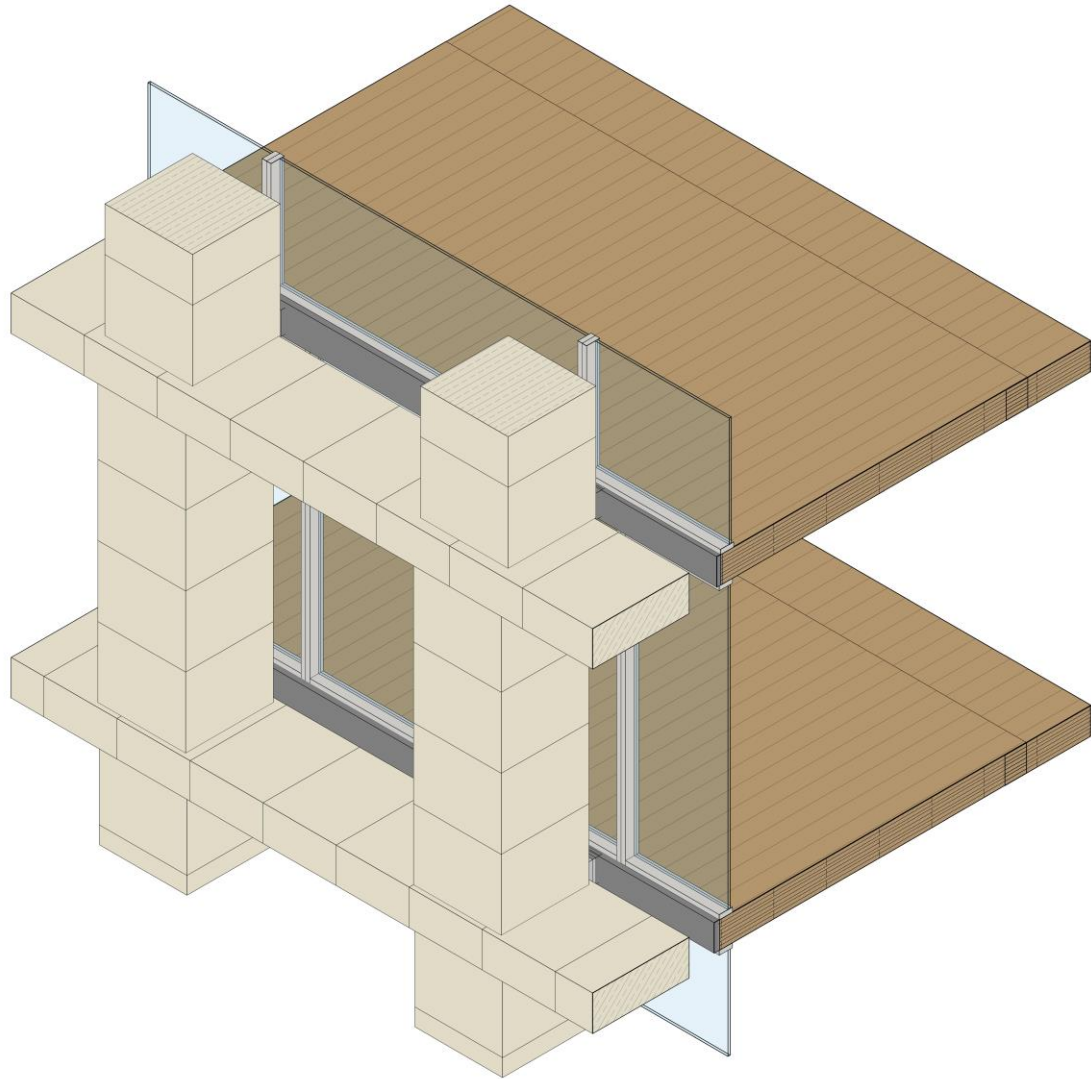
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Atelier Archiplein. Geneve

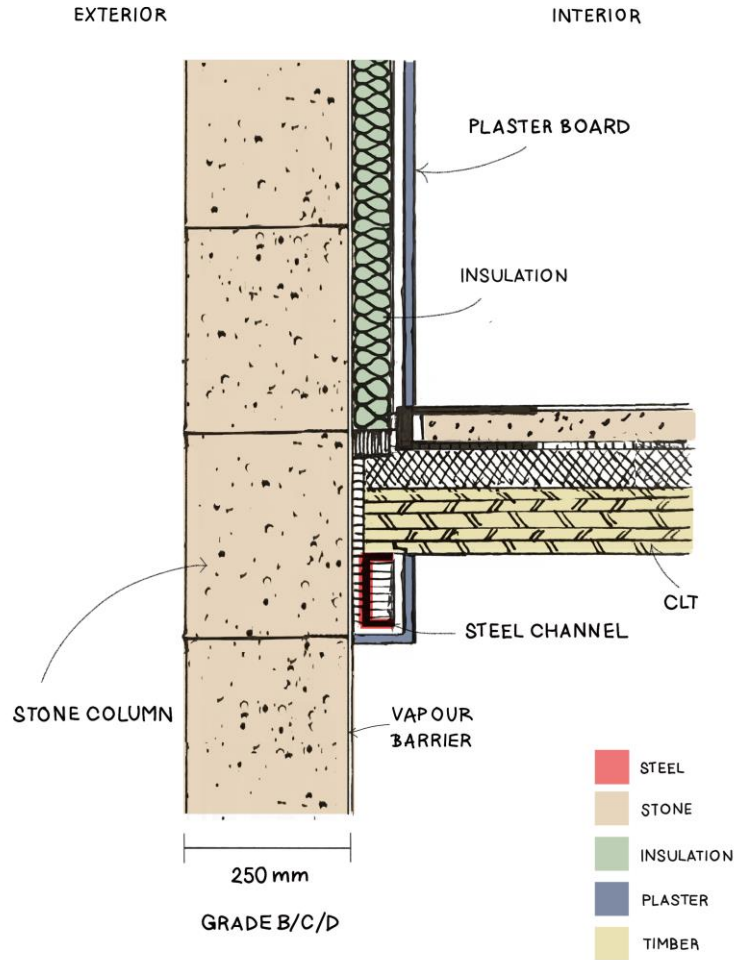


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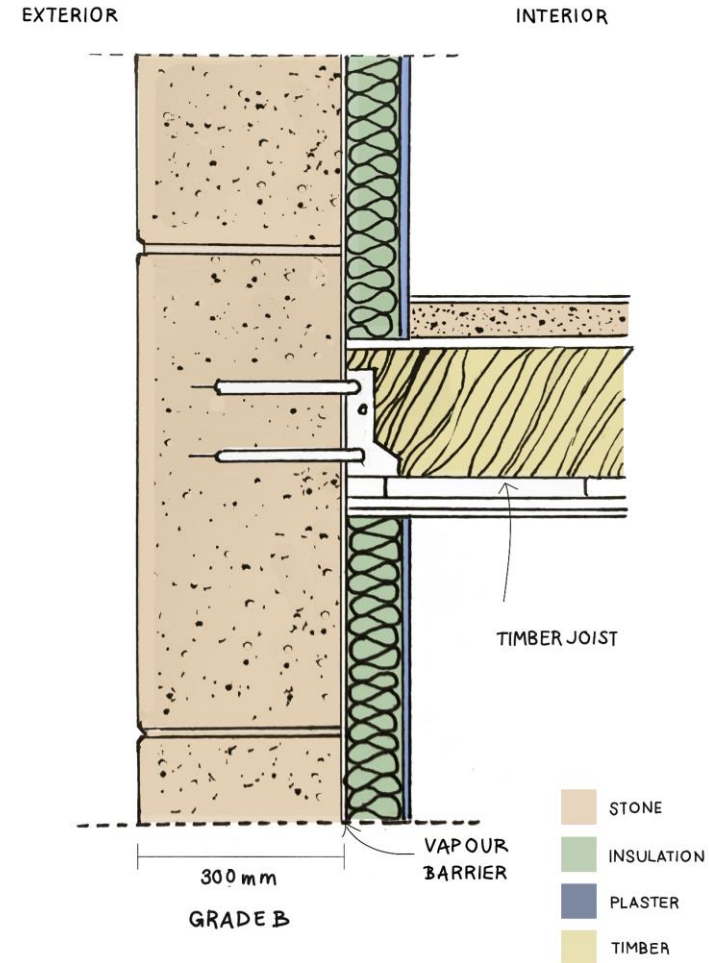




SINGLE WALL CLT FLOOR



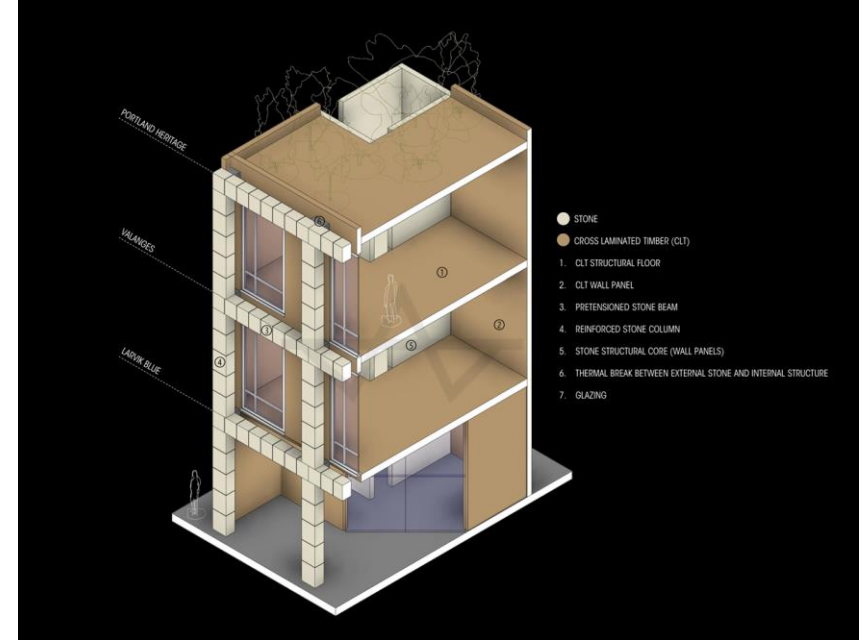
SINGLE LOAD BEARING OUTSIDE WALL



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Together We Are Solving a Big Problem at Scale Before 2030

- 1 Readily Available
- 2 -80% CO₂ emissions vs Conventional Concrete
- 3 No Sand + No Aggregate Extraction
- 4 No Finish + Very Low Lifecycle Cost
- 5 Reusable in Multiple Construction Cycles
- 6 No Need for Carbon Compensation



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**WEBB
YATES** ENGINEERS



POLYCOR



LUNDHS



ALBION STONE
Portland Stone - Naturally



CARRIERES DU HAINAUT



FRANKEN  SCHOTTER

smithandwallwork
engineers



