Vancouver House in Waldrebengasse, Vienna

Strategies for Affordable Timber Housing

einfach WALDREBE

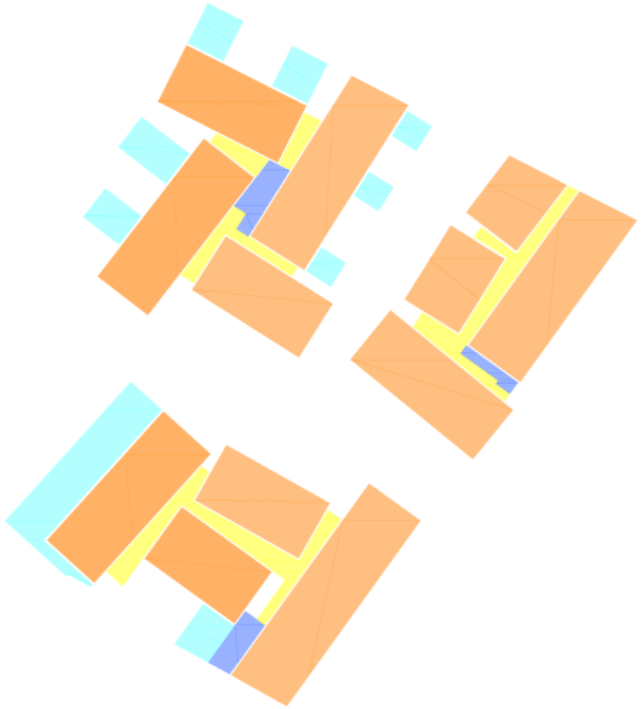
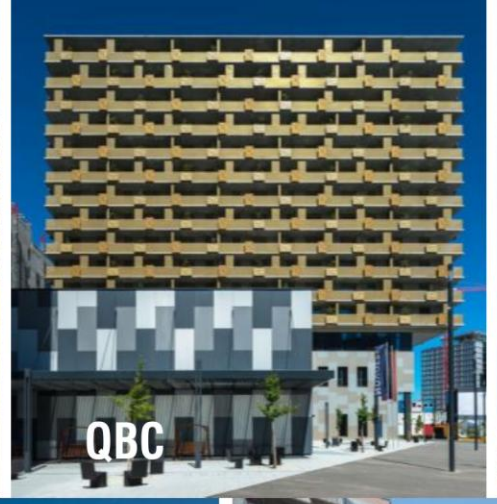




Photo: Nesvadba


Holzhochhaus


QBC


MGC


The Brick


WIKA


Sonn Ost


Biotope City


HoHo Wien


Gera


Wiedner HS


Hütt


MTH


Seilergasse

LOCATION IN THE URBAN AREA

VIENNA
CITY CENTER

VANCOUVER HOUSE
WALDREBENGASSE

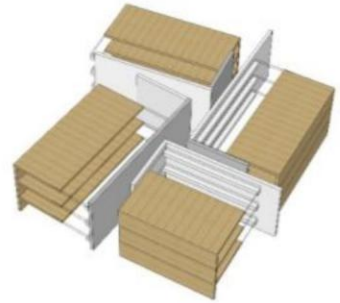
- 108 residential units
- 4-group kindergarten
- 15 apartments for assisted living – FSW
- 11 apartments for single parents
- 9 “housing first” apartments
- Wood construction system



- Site: 4.700 m²
- TGF: 10.400 m²
- Dens: 2,2

STRATEGIES

“OBSYS” – OPEN BUILDING SYSTEM





CLT



RIBBED CEILING



GLT CEILING



WOODEN CASSETTE CEILING



3D-ACOUSTIC CEILING



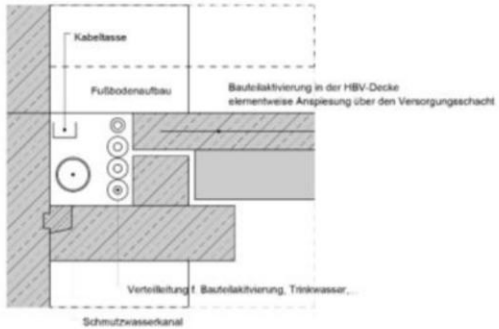
TCC CEILING



REINFORCED CONCRETE BACKBONE

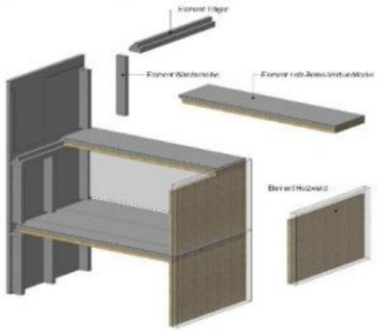
Build it simply

Horizontal shaft



Construction elements

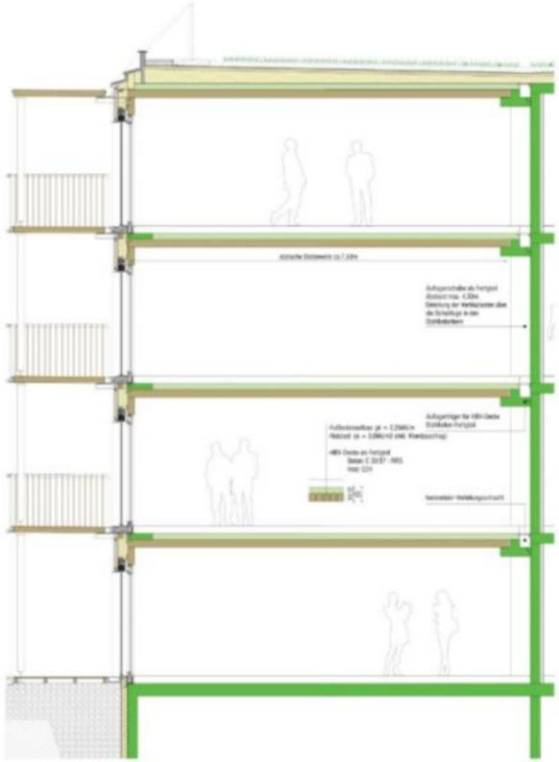
Easy transport and on-site processing.

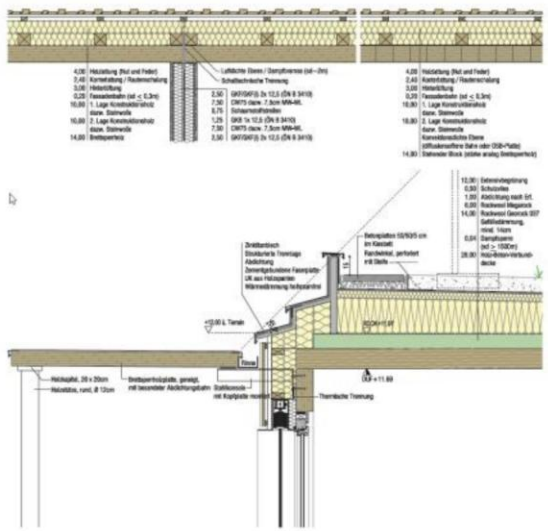


Façade

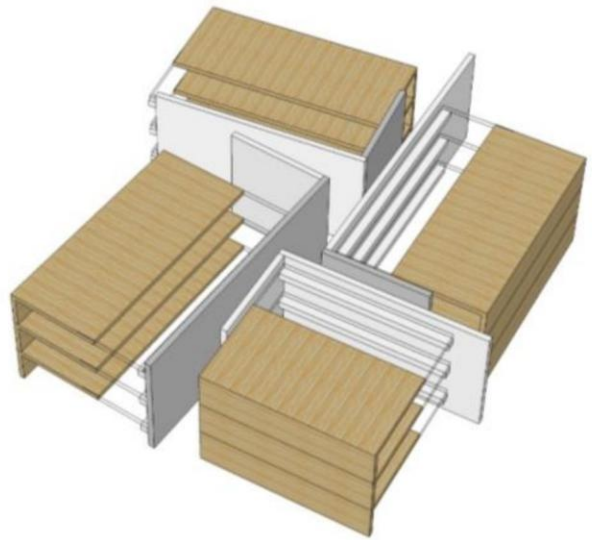
Simple "wooden bond" with three-dimensional relief.









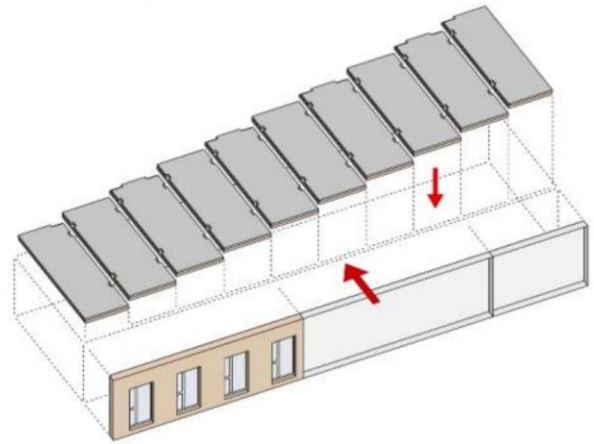


Simple Details

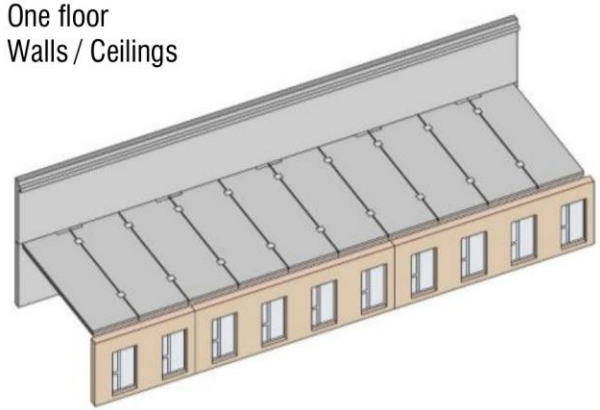
Construction

The house has a reinforcing mineral "backbone" with the technical infrastructure. The timber construction with solid wood ceilings, wooden supports, and solid wood exterior walls is attached to this.

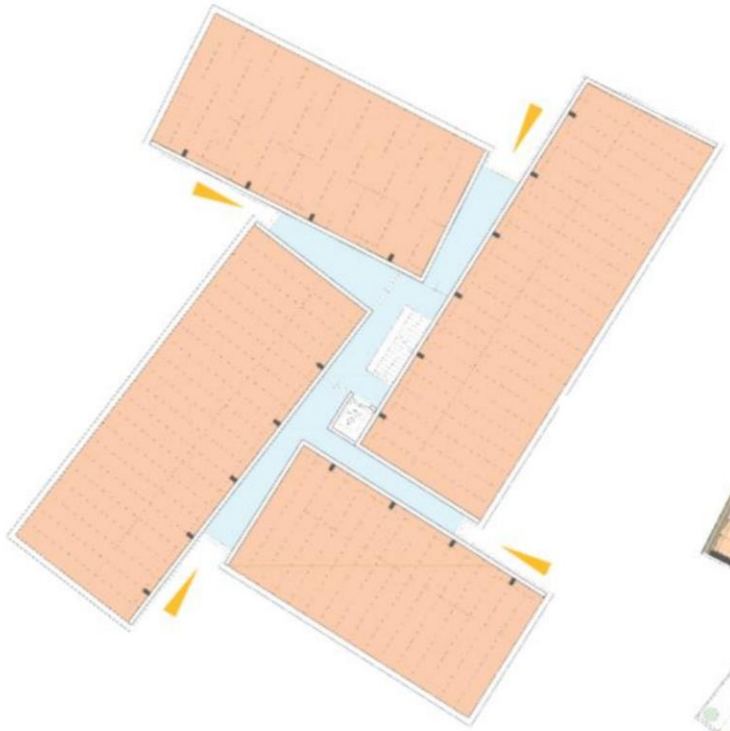
Reduction to 2 basic elements
Efficient economic implementation
Horizontal shaft
Flexible horizontal connections.



One floor
Walls / Ceilings

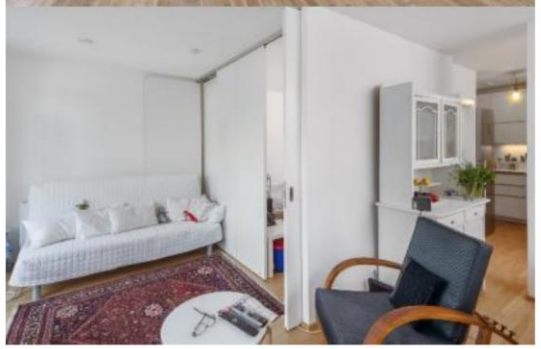


STRATEGIES
TYPOLOGICAL INTELLIGENCE





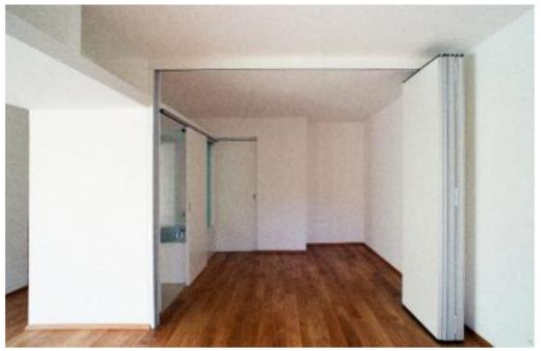














SOCIAL ASPECTS





- Common areas
- Rental apartment
- Rental apartment - Smart
- Rental apartment – Childcare
- Rental apartment - "MUKI-mobil"
- Rental apartment - Housing-First
- Vienna Social Fund - apartments
- Vienna Social Fund - commercial
- Kindergarten

GROUND FLOOR

1st FLOOR

SOCIAL ASPECTS



2nd and 3rd FLOORS

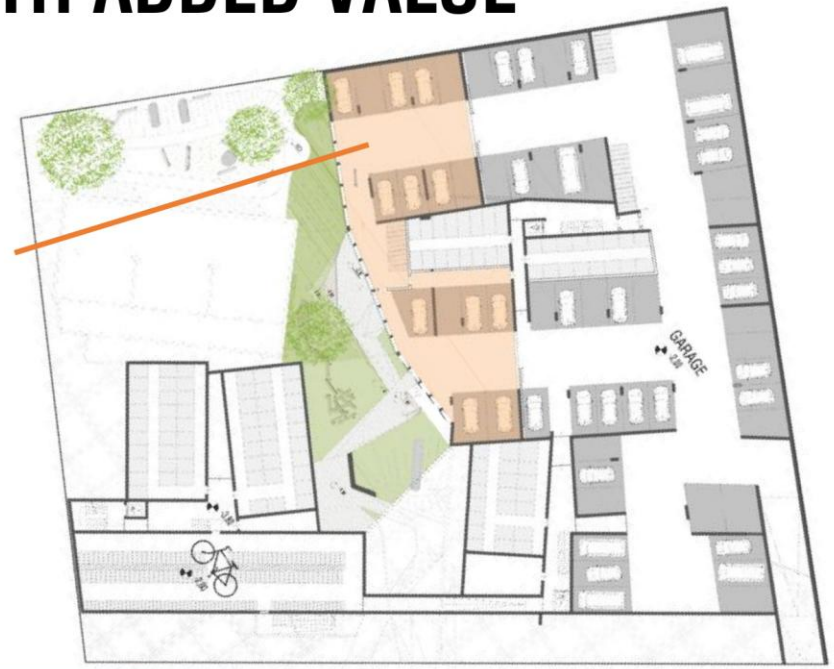


4th FLOOR

STRATEGIES

GARAGE WITH ADDED VALUE

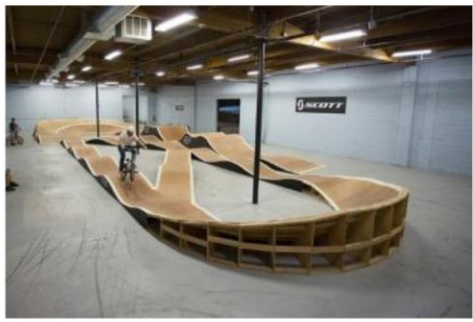
ADDED VALUE ZONE





Required mandatory parking places	
acc. to WGARG:	**70 P**
Equalization 30%	**21 P**
Established places 70%	**49 P**
of which added value zone 25%	**12 P**
Rental April 2026:	
rented places	**37 SP**
„free“ places	**12 SP**

















STRATEGIES

OPEN SPACE – dynamic landscape, intensive use





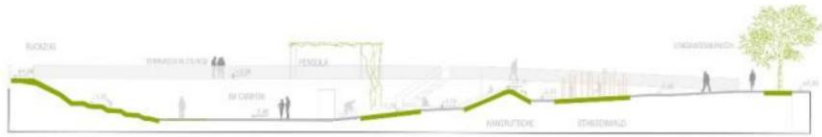




Multiple use on several levels



Cascade use of roof water



Living topography



Diverse greenery – differentiated areas

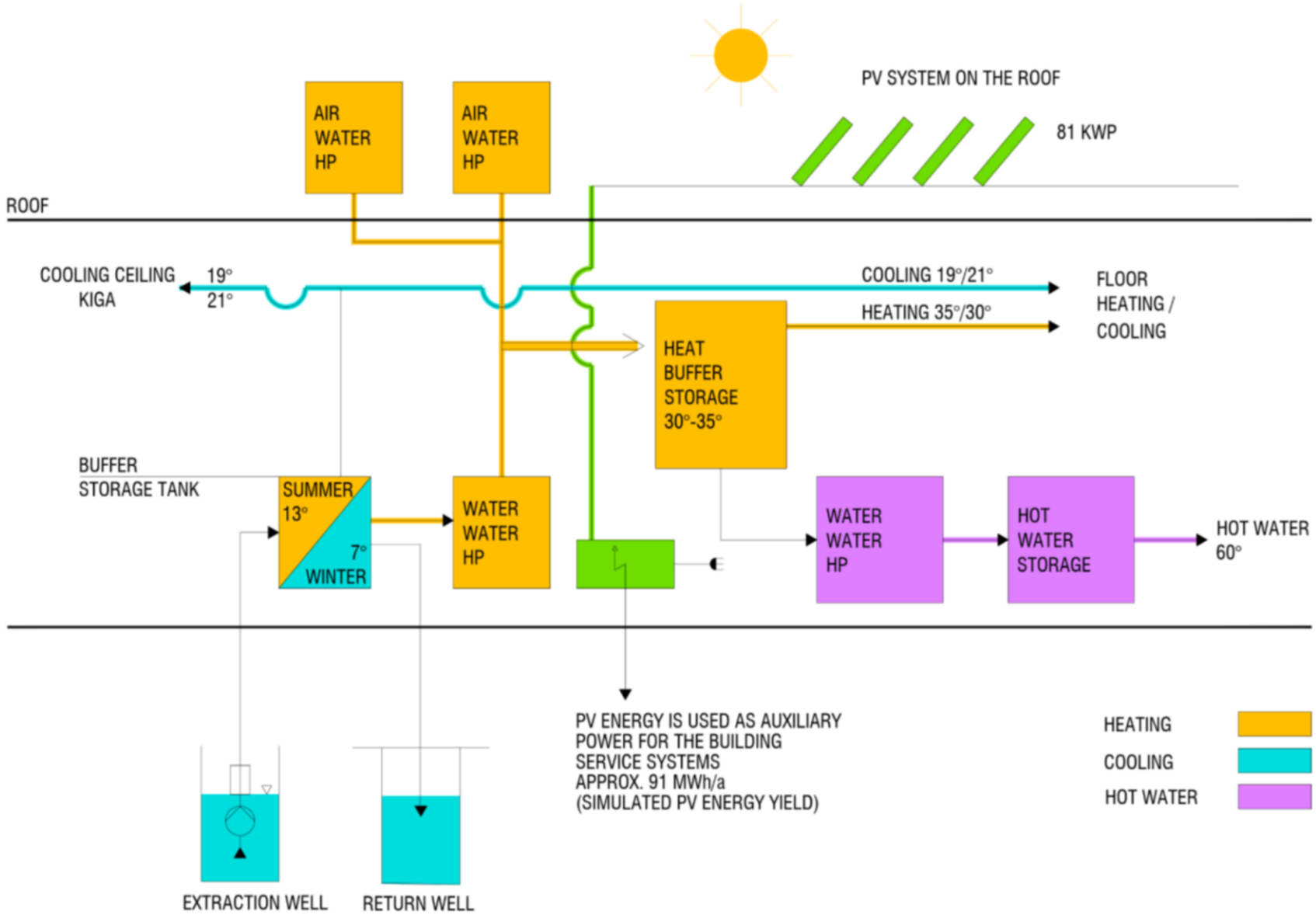








STRATEGIES - ENERGY SUPPLY

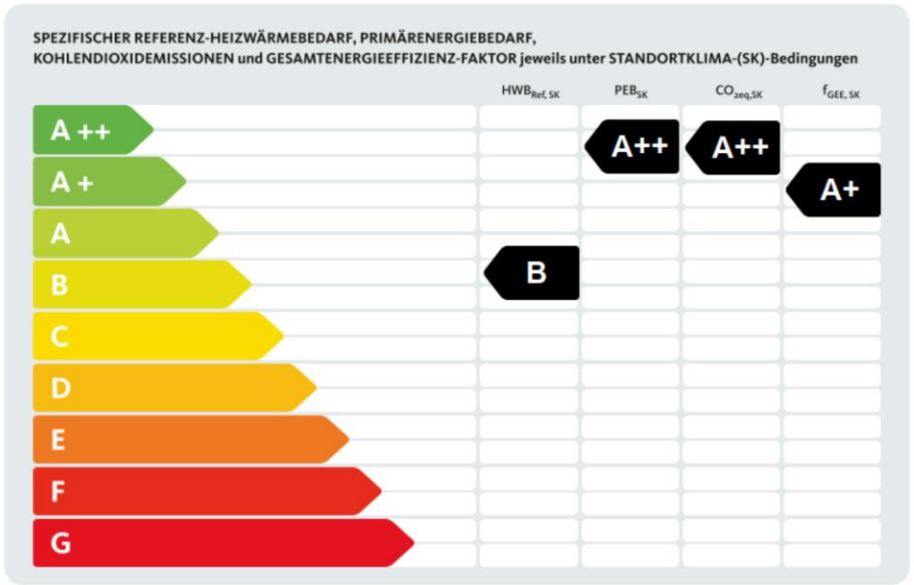


ENERGY SUPPLY





ENERGY EFFICIENCY / CO_2



SPEZIFISCHER REFERENZ-HEIZWÄRMEBEDARF, PRIMÄRENERGIEBEDARF, KOHLENDIOXIDEMISSIONEN und GESAMTENERGIEEFFIZIENZ-FAKTOR jeweils unter STANDORTKLIMA-(SK)-Bedingungen

	$HWB_{Ref,SK}$	PEB_{SK}	$CO_{2eq,SK}$	$f_{GEE,SK}$
A ++		A++	A++	
A +				A+
A				
B	B			
C				
D				
E				
F				
G				

WÄRME- UND ENERGIEBEDARF (Standortklima)

Referenz-Heizwärmebedarf	$Q_{h,Ref,SK}$ =	83.185 kWh/a	$HWB_{Ref,SK}$ =	31,4 kWh/m²a
Heizwärmebedarf	$Q_{h,SK}$ =	69.522 kWh/a	HWB_{SK} =	26,2 kWh/m²a
Warmwasserwärmebedarf	Q_{tw} =	27.083 kWh/a	WWWB =	10,2 kWh/m²a
Heizenergiebedarf	$Q_{H,Ref,SK}$ =	42.900 kWh/a	HEB_{SK} =	16,2 kWh/m²a
Energieaufwandszahl Warmwasser			$e_{AWZ,WW}$ =	1,06
Energieaufwandszahl Raumheizung			$e_{AWZ,RH}$ =	0,17
Energieaufwandszahl Heizen			$e_{AWZ,H}$ =	0,39
Haushaltsstrombedarf	Q_{HHSB} =	60.356 kWh/a	HHSB =	22,8 kWh/m²a
Endenergiebedarf	$Q_{EEB,SK}$ =	79.755 kWh/a	EEB_{SK} =	30,1 kWh/m²a
Primärenergiebedarf	$Q_{PEB,SK}$ =	129.673 kWh/a	PEB_{SK} =	48,9 kWh/m²a
Primärenergiebedarf nicht erneuerbar	$Q_{PEBn.ern.,SK}$ =	81.145 kWh/a	$PEB_{n.ern.,SK}$ =	30,6 kWh/m²a
Primärenergiebedarf erneuerbar	$Q_{PEBern.,SK}$ =	48.528 kWh/a	$PEB_{ern.,SK}$ =	18,3 kWh/m²a
äquivalente Kohlendioxidemissionen	$Q_{CO2eq,SK}$ =	18.059 kg/a	$CO_{2eq,SK}$ =	6,8 kg/m²a
Gesamtenergieeffizienz-Faktor			$f_{GEE,SK}$ =	0,65
Photovoltaik-Export	$Q_{PVE,SK}$ =	5.046 kWh/a	$PVE_{EXPORT,SK}$ =	1,9 kWh/m²a

ERSTELLT

GWR-Zahl		ErstellerIn	RWT plus ZT GmbH
Ausstellungsdatum	2025-09-16	Unterschrift	
Gültigkeitsdatum	2035-09-15		
Geschäftszahl	20056		

RWT PLUS ZT GmbH, Zivilingenieure für Bauwesen
FN 270664 k, 1010 Wien, Karlsplatz 2
T +43 1 5049863 - 0 E office@rwt.at
W woschitzgroup.com/rwt

Heizwärmebedarf
Heating energy demand
HWB_{SK} = 26,2 kWh/m²a

Endenergiebedarf
total energy use intensity
EEB_{SK} = 30,1 kWh/m²a

Primärenergiebedarf
Primary energy demand
EEB including losses in all upstream stages of the energy supply chain
PEB_{SK} = 48,9 kWh/m²a

Äquivalente Kohlendioxidemissionen
annualized whole life carbon emmisions
CO_{2eqSK} = 6,8g/m²a



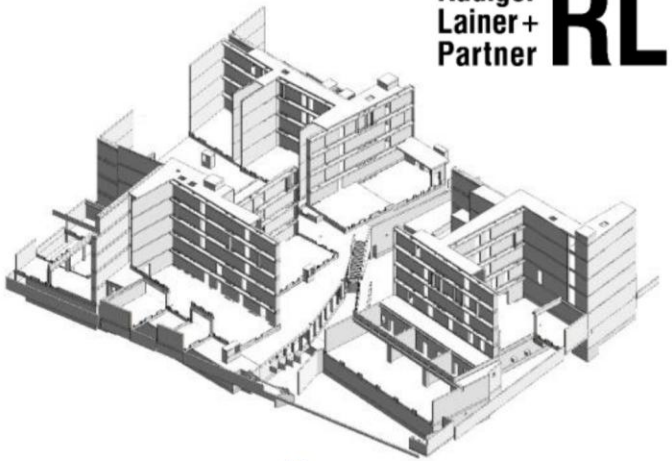
Guaranteed conditions for rental apartments – WBW status 2019

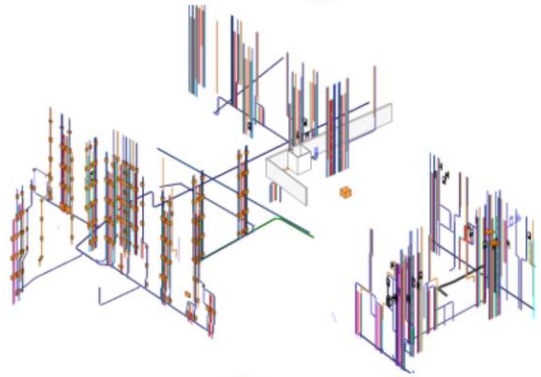
- Financing contribution €60/m²
- Rent/month: €7.5/m² including operating costs and VAT.

STRATEGIES

ECI AND BIM

Rüdiger Lainer + Partner RLP

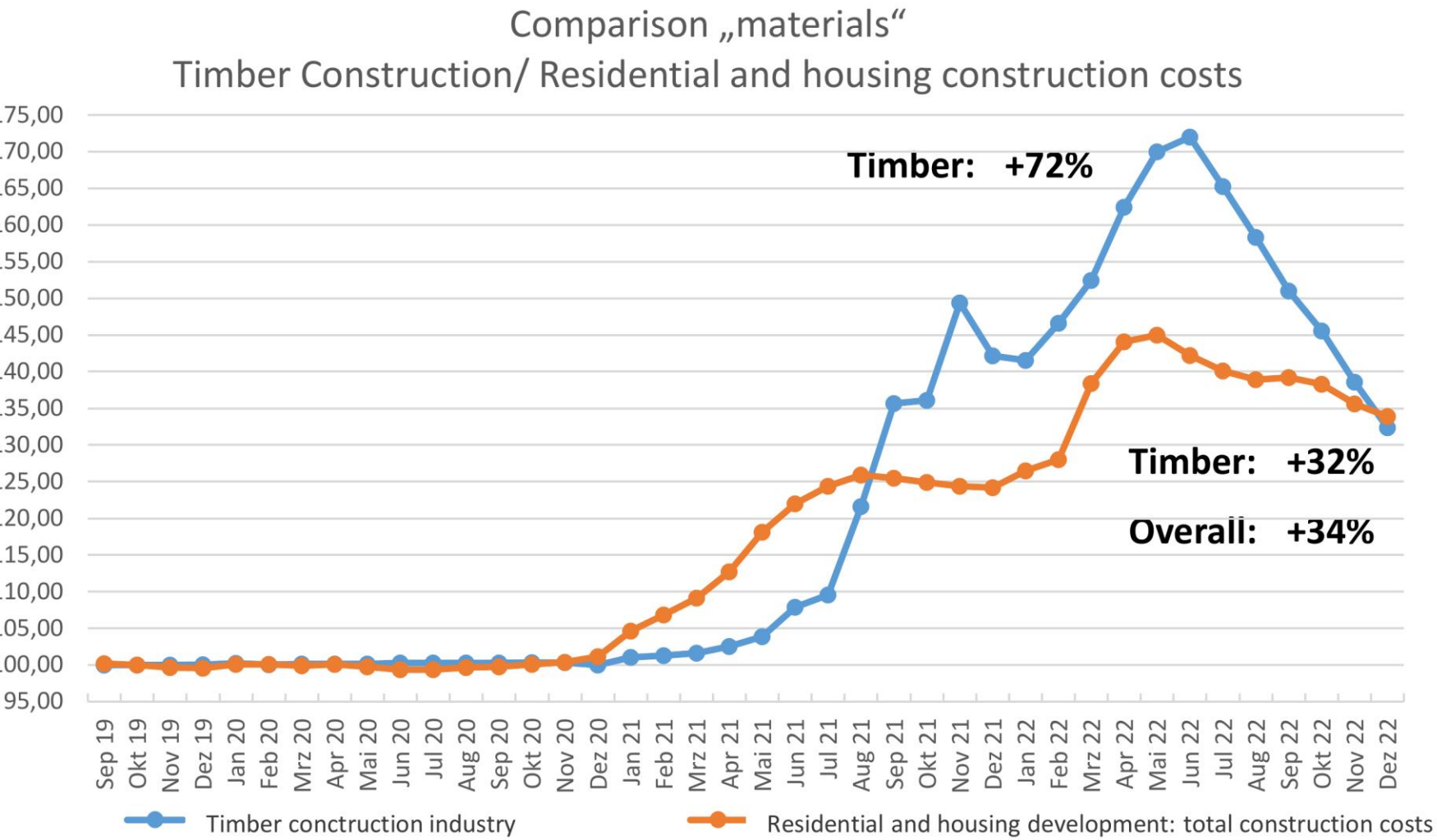




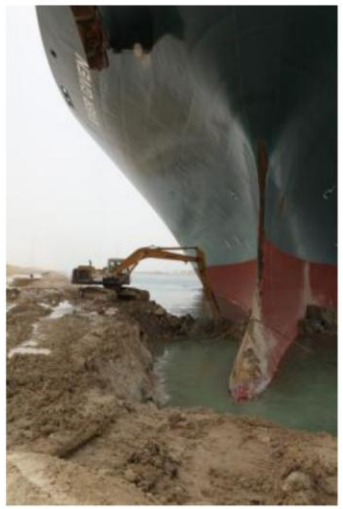


INCREASE IN COSTS

09 / 2019 -> 12 / 2022

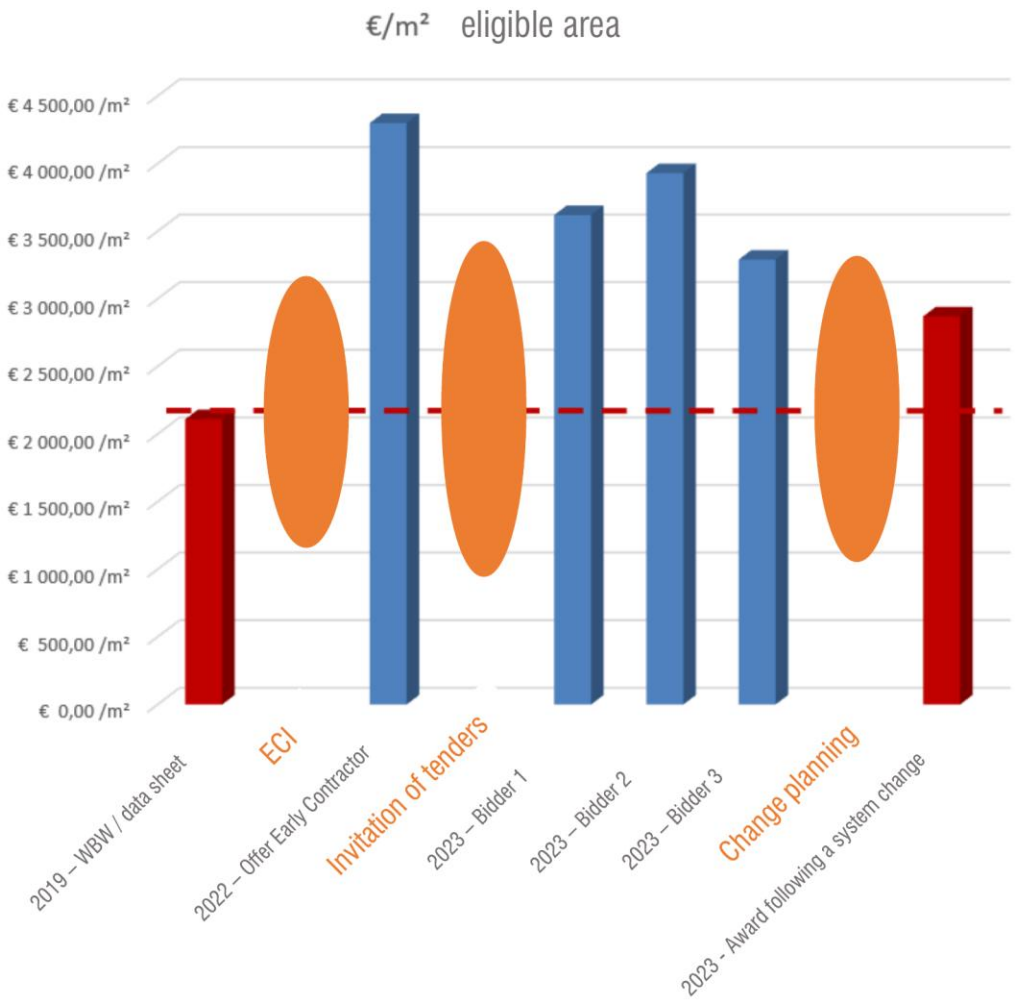


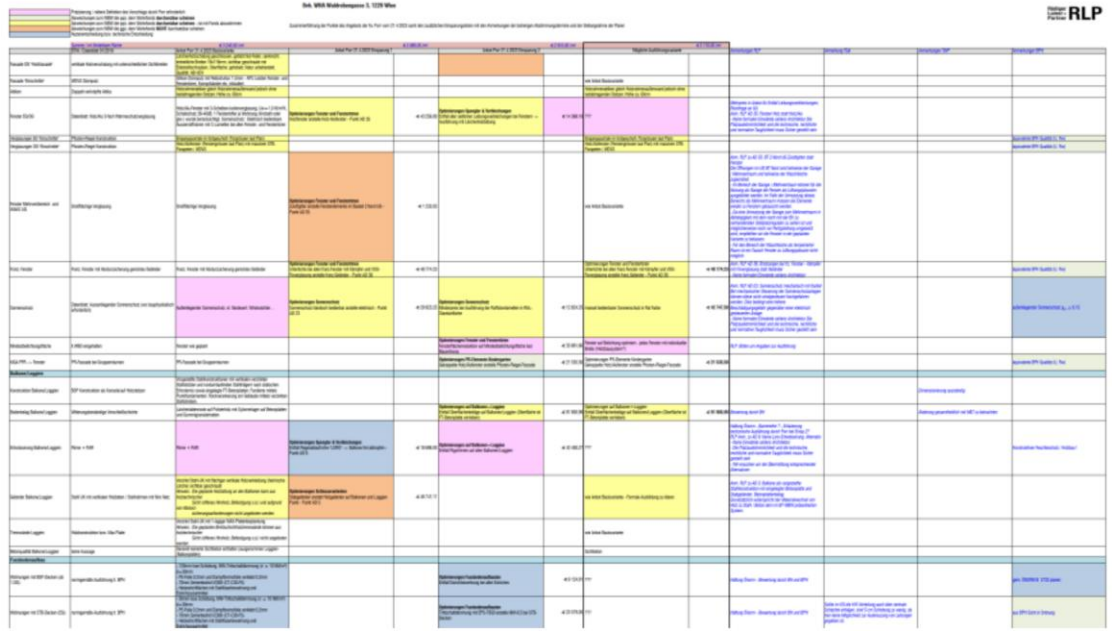




PRICE DEVELOPMENT

ECI – TENDER PROCESS – CONTRACT AWARD WITH A MODIFIED SYSTEM



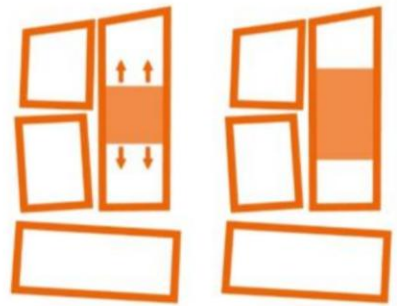


CHANGE THE PROJECT - MAINTAIN QUALITY

Rüdiger Lainer + Partner RLP



TYPOLOGICAL DIVERSITY



VARIABILITY



IMPRESSION



HYBRID CONSTRUCTION



MULTIFUNCTIONAL GARAGE

Structural CHANGE

-> REDUCTION

300 t

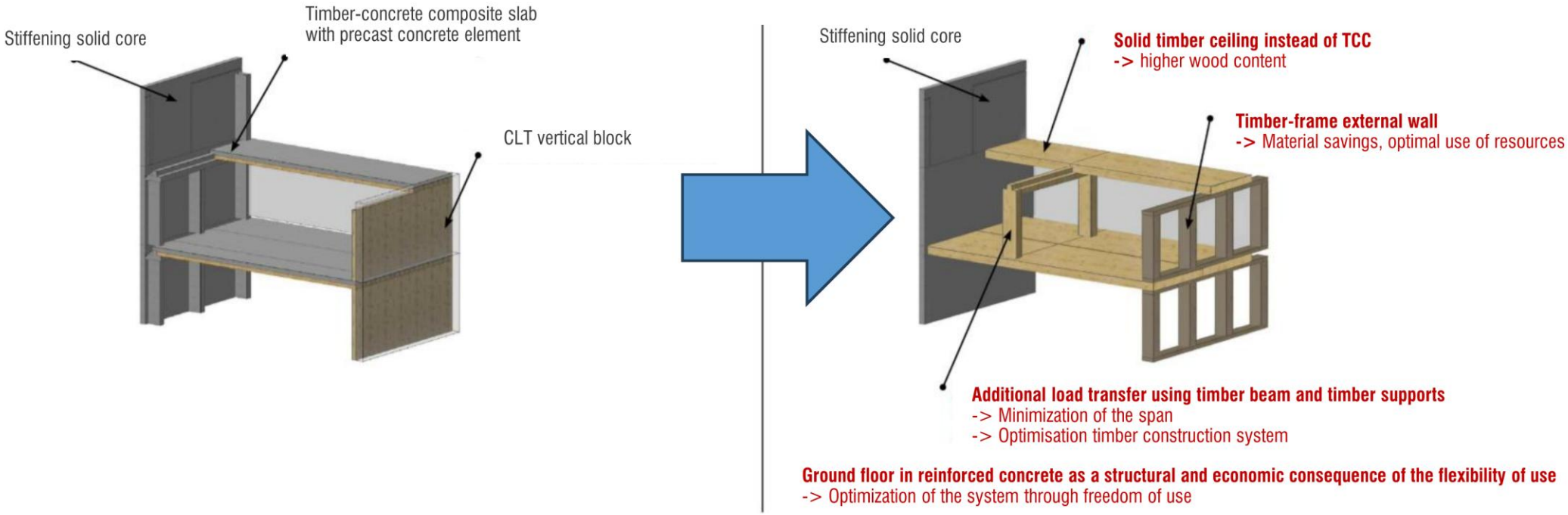
16 t

CO_2 340 t

TCC CEILING: 16 cm BSP + 12 cm CONCRETE
EXTERIOR WALL: 18 cm CLT

Vertical Structure (Timber):

- WOODEN CEILING: 22 cm CLT (cross-laminated timber)
- EXTERIOR WALL: 24 x 6 cm FRAME CONSTRUCTION
- WOODEN BEAMS: 28 x 40 cm GLT (glued laminated timber)
- SUPPORTS: 28 x 28 cm GLT





TYPOLOGICAL INTELLIGENCE

VARIABILITY



2 APARTMENTS

8 APARTMENTS in total

ACTUAL PLANNING



Schaft positions and support placing



Schafts with offset sections
Reinforced concrete corridor walls with
predetermined breaking points

VARIABILITY





RESIDENTIAL CLUSTER
SMALL LIVING UNITS IN COMBINATION WITH LARGE SHARED LIVING ROOMS / A COMMUNAL KITCHEN / SPACES FOR HOME OFFICE



CELL OFFICES / GROUP OFFICES / COMBI OFFICES / TEAM OFFICES / OPEN SPACE

Rüdiger Lainer + Partner RLP



START OF CONSTRUCTION - June 2024

Rüdiger Lainer + Partner RLP

BASEMENT + CORE – Oct. 2024



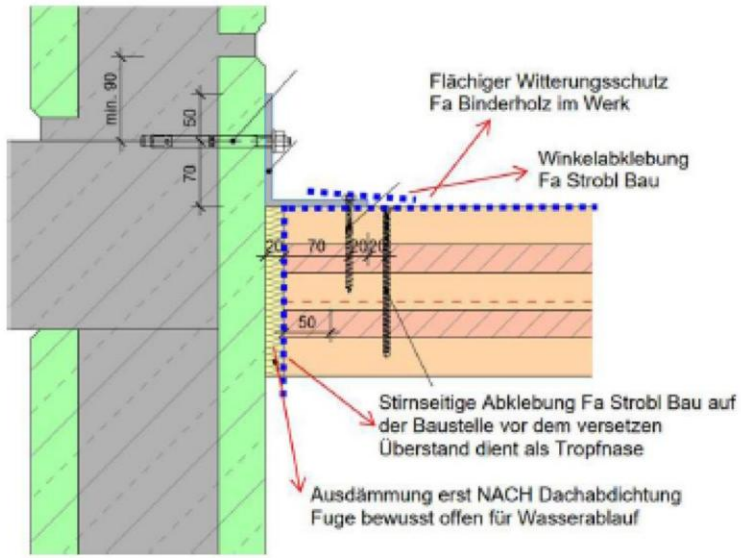
PREFABRICATED PRODUCTION – Nov. 2024

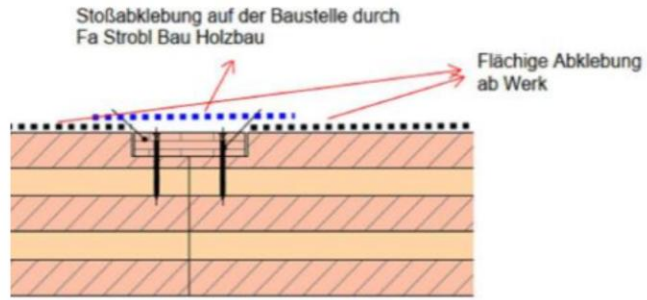


Rüdiger Lainer + Partner RLP

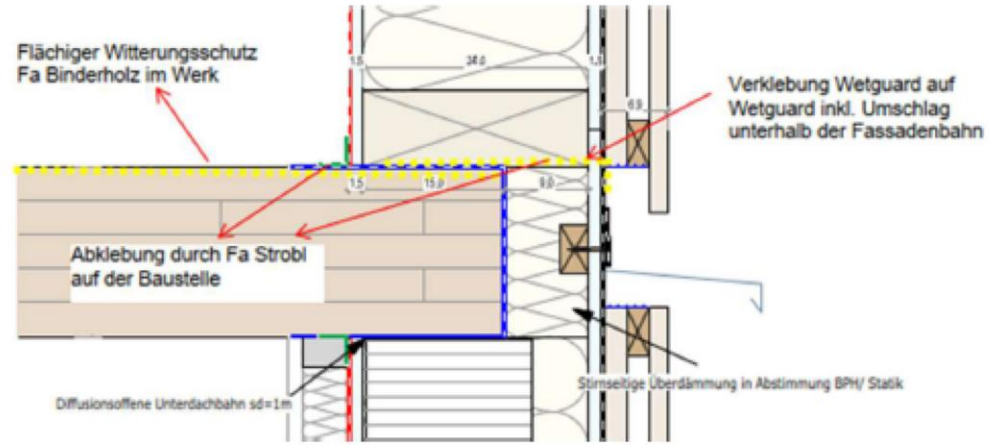
Rüdiger Lainer + Partner RLP

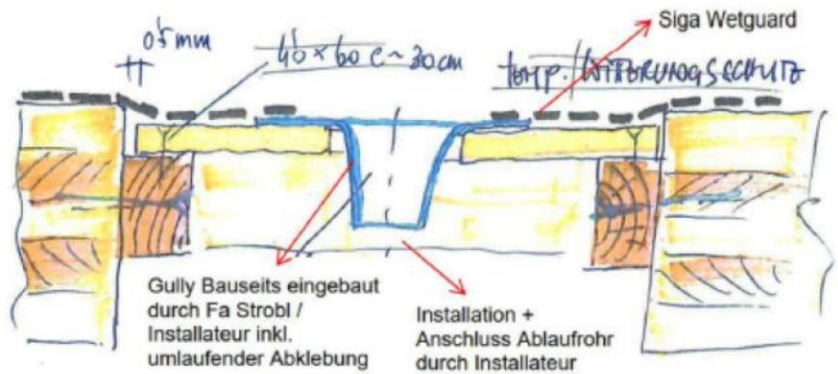
Anschluss an Betonwände





Anschluss an Holzrahmenbau Außenwände





WINTER CONSTRUCTION



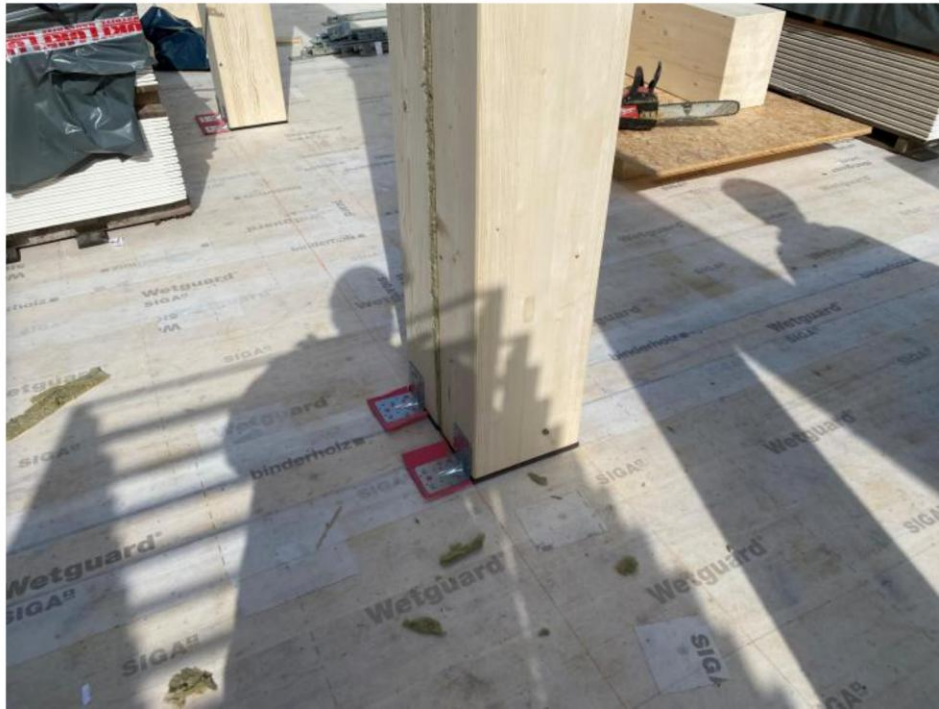
ASSEMBLING – Nov. 2024



Rüdiger
Lainer +
Partner
RLP



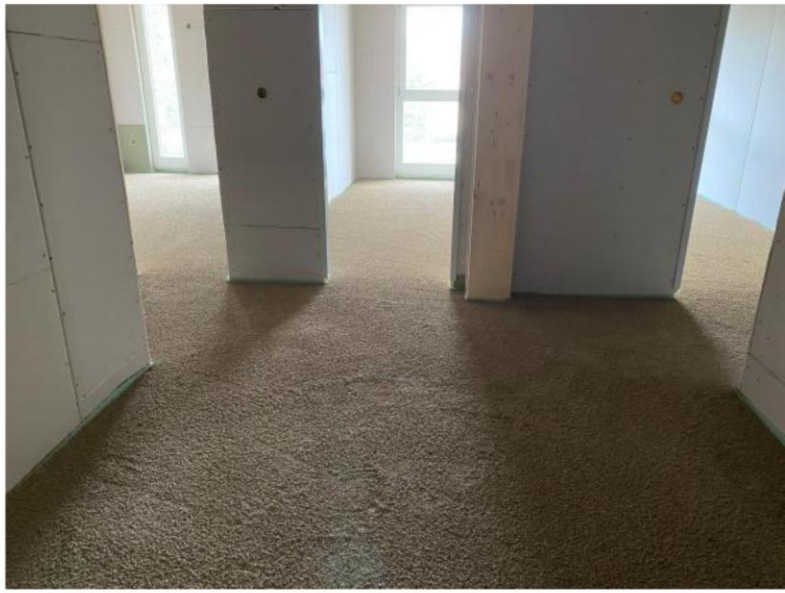




EXPANSION WORK – Feb. 2025

Rüdiger
Lainer +
Partner
RLP

EXPANSION WORK – April 2025





Rüdiger Lainer + Partner RLP

Facade – August 2025



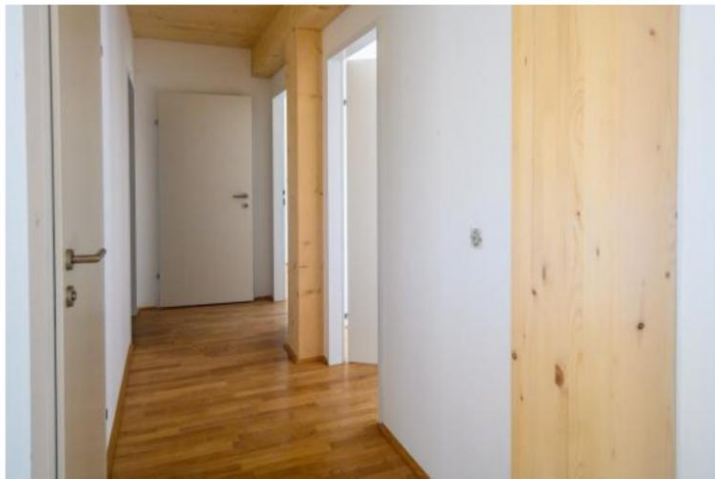


Photos: Nesvadba

Rüdiger Lainer + Partner RLP

Apartments – August 2025





Photos: Nesvadba





Rüdiger Lainer + Partner RLP

WORKSHOP BAUMSTAMMWÄCHTER – MAI 2026



Guaranteed conditions for rental apartments – as of 2025

Financing contribution €60/m²

Rent/month: €8.49/m² including operating costs and VAT (€4.19/m² net)



International Building Exhibition Vienna 2016 - 2022

IBA WIEN

CRITERIA

Realization of timber construction
OBSYS – Open building system with serial prefabrication
Extensive greening of facades and urban gardening
Sponge city
Garages can be MORE

WINNER

EINFACH WALDREBE

DEVELOPER: Frieden **ARCHITECTURE:** Rüdiger Lainer + Partner

The winning project is characterized by many innovative approaches: The three sophisticatedly set structures in hybrid construction of wood and concrete follow a clear construction principle. Unsupported spans of 7.5 m allow a further development of the qualities of the Viennese Gründerzeit buildings. The distribution of the supply and disposal lines via horizontal shafts creates a high degree of flexibility, variability and variety of apartment floor plans and possible uses. The wooden facade with a plastic relief and the visible wooden surfaces of the ceiling and exterior walls in the interior make the experience of timbre construction palpable.

Open-plan structures are offered next to classical apartments. Flexible wall elements allow for individual zoning even in the smallest space. Lofts are designed with the use of mobile room cells. By modelling the terrain, the level in the courtyard is lowered and the garage is naturally lit. This innovative approach also upgraded these sub-areas in a sustainable fashion.

In the event of future changes in mobility behavior and associated reductions in the amount of required parking space, an additional range of high-quality rooms will become available for communal activities.

The common room of Waldrebengasse with the pop-up knowledge area of the Science Center Network association, which provides easily accessible information on science and technology, has an effect beyond the building site and thus serves to build a neighborhood. The cooperation partner "United in Cycling" will offer bicycle courses for children and bicycle excursions. In addition, a studio/atelier and a workshop can be rented on a flexible basis.

TIMBER CONSTRUCTION:

- Wooden hybrid construction from ground floor consisting of two basic elements (wall, ceiling)
- External wall made of cross laminated timber including window element and facade
- Wood-concrete composite slabs, precast concrete elements in the support area
- System construction as an open construction system for the use of different component variants depending on availability
- Demountable construction: detachable connection techniques, defined joints

ENERGY:

- Geothermal heat storage tank with depth probes, air-water heat pump
- Component activation, floor heating/cooling with individual room control
- Central hot water preparation via heat pump and electric heating cartridges
- Photovoltaic system with 90 kWpeak on the roof surfaces for partial coverage of the electricity demand
- Optional: use of waste heat from sewerage

KEY DATA:

Net floor space above level (m²)	7,535
Total residential units	107
thereof SMART apartments	54
Equity capital (excl. VAT €/m²)	60
Monthly user costs (incl. VAT €/m²)	7.50
Planned start of construction	2022
Planned occupation date	2024

IBA WIEN KANDIDAT Neues soziales Wohnen

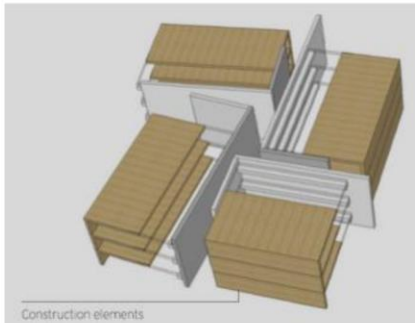
EINFACH WALDREBE

wiener bauträger_wettbewerb

The housing offer pays special attention to the needs of single parents:

In cooperation with Caritas, follow-up apartments are offered for those who have stayed in a mother-child house. A centrally located apartment is reserved for a childminder. Storerooms for baby carriages on the floors additionally facilitate everyday life. The kindergarten is located on the courtyard side in the quieter area of the building site and is accessed via the central courtyard. Directly above it is the group of studio apartments (Garconnierenverbund) of the Vienna Social Fund (Fonds Soziales Wien). The offered favorable rental conditions meet the goals of affordable living.

The topographical division of the small-scale open space offers exciting zones for different uses, which extend as far as Waldrebengasse. Due to the compact arrangement of the garage, a considerable amount of [Kein Titel] ees. Together with a facade greening and the storage of rainwater for irrigation following the "Sponge-City Principle," the design makes a valuable contribution to the improvement of the urban climate.



IBA VIENNA CANDITATE New Social Housing



VIENNA HOUSE

City cooperation due to an exhibition

„The Vienna Model: Housing for the 21st-Century City"
May - July 2017, Museum 1100 Chestnut Street, Vancouver

The Vienna Model: Housing for the 21st-Century City

Dates: May 17 to July 16

Venue: Museum 1100 Chestnut Street, Vancouver

Tickets: Adults, $18; students with valid ID, $15; seniors 65+, $15; available in advance online and at the door

VIENNA HOUSE in Vancouver

ARCHITECT: YAMAMOTO Architect (Phase 1)
PUBLIC Architecture + Communication

DEVELOPPER: BC Housing / More Than A Roof /
VAHA-Vancouver Affordable Housing Agency





WS 1:	24.06.2020
WS 2:	27.08.2020
WS 3:	18.03.2021
WS 4:	15.02.2022
WS 5:	09.03.2023
WS 6:	12.10.2023
WS 7:	05.06.2023
WS 8:	13.03.2025
WS 9:	**08.04.2026**







FACTS and FIGURES

FACTS AND FIGURES	Vancouver House Waldrebengasse, 1220 Wien	*Vienna House* *Vancouver*
construction timeline	April 2024 - Jan 2026	*Nov 2023 - June 2026*
construction budget	No information available	*$ 54,9 Mio*
residential units	107 + kindergarden	*123*
site area	4.713 m²	*2.968 m²*
total gross floor area	10.432 m² (above the adjacent terrain)	*13.039 m²*
net floor area	7.305 m² (leasable space)	*10.446 m²*
building height	16,24 m (12 m on average)	*22,64 m*
volume of mass timber	1.137 m³ of CLT + 126m³ of GLT + 256m³ of solid timber	*1.194,67m³ of CLT*
annualized whole life carbon emmisions	6,8 kg CO2e/m²/year	*7,8 kg CO2e/m²/year*
total energy use intensity	30,1 kWh/m²/year	*49 kWh/m²/year*
Project team		
Owner	Frieden Gemeinnützige Bau- und Siedlungsgenossenschaft	*More Than A Roof Housing Society*
Land	Frieden Gemeinnützige Bau- und Siedlungsgenossenschaft	*Non-Market Housing Development & Operations*
Architect	Rüdiger Lainer + Partner Architekten ZT GmbH	*PUBLIC Architecture*
General Contractor	PORR Bau GmbH	*Kindred Construction Ltd.*
Onwers BIM Consultant	-	*Summit BIM*
Design BIM Consultant	Plandata GmbH	*BIMOne*
Construction BIM Consultant	-	*Modelo Tech Studio*
Structural Engineering	RWT Plus ZT GmbH	*Wicke Herfst Maver Consulting Inc.*
Mechanical and Electrical	RWT Plus ZT GmbH	*Introba*
Fire Suppression	Kunz + iFSS	*Introba*
Energy Modeling	RWT Plus ZT GmbH	*Introba*
Passive House Consultant	-	*Introba*
Embodied Carbon Modeling	RWT Plus ZT GmbH	*Introba*
Civil	RWT Plus ZT GmbH	*Core Group Civil Consultants Ltd.*
Landscape	zwoPK Landschaftsarchitektur	*Matthew Thomson Design Ltd.*
Building Code	Rüdiger Lainer + Partner Architekten ZT GmbH	*GHL Consultants Ldt.*
Building Envelope	Rüdiger Lainer + Partner Architekten ZT GmbH	*Morrison Hershfield*
Acoustical	RWT Plus ZT GmbH	*BKL Consultants Ltd.*
Passive House Certification	-	*Steven Winter Associates Inc.*
Elevator	Rüdiger Lainer + Partner Architekten ZT GmbH	*GUNN Consultants*
Project Management	Rüdiger Lainer + Partner Architekten ZT GmbH	*CPA Development*
Research Management	Rüdiger Lainer + Partner Architekten ZT GmbH	*Scius Advisory*
	Information from RLP, March 2025	*Information from BC Housing, March 2026*

lessons learned

- **Flexible structures allow for adaptation to technical and economic changes**
- **The OBSYS system defines the options for the final selection of materials and systems based on current economic parameters**
- **multiple uses of the underground parking garage and open spaces create added value and balance economic changes**
- **cooperative planning processes closely integrate architecture, technical planning, and the developer from the very beginning**
- **The use of industrial prefabrication reduces risks and stabilizes costs**
- **Strategic approaches determine the feasibility of urban timber construction projects**
- **You always build a house together!**

Rüdiger
Lainer +
Partner
RLP



TEAM

Vancouver House in Waldrebengasse, Vienna

Strategies for Affordable Timber Housing

einfach WALDREBE

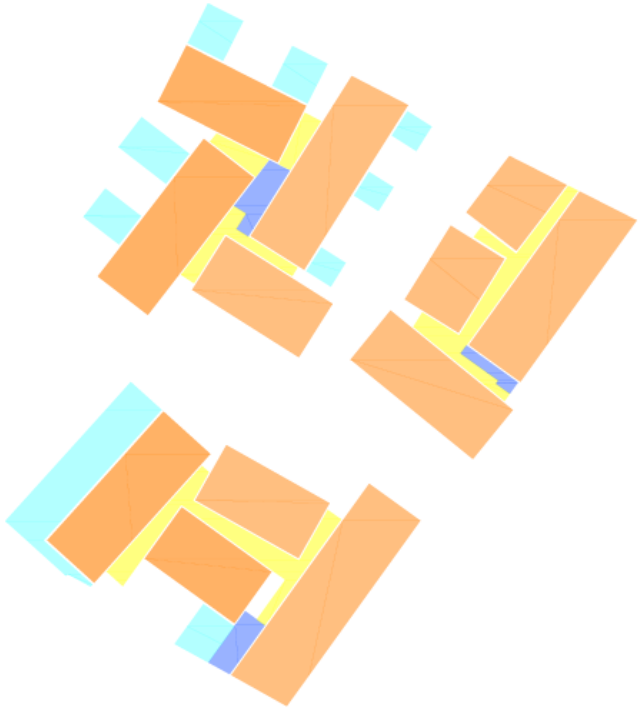




Photo: Nesvadba