GREENCITY
the sustainable Group

Prefabricated houses

Suitably designed segments make it possible to construct houses and housing estates with an unlimited number of living space combinations. Investor’s imagination is the only limit to the creativity and originality of the interior. Unrealistic...? Not at all.You only need to free up your imagination and think of your own dream place on Earth.

Prefabrication system

- Structural lumber
- The framing used in the construction system consists of GL24h class glued pine lumber. The lumber used for the house framing has been kiln-dried and planed on four sides. The moisture content of our structural lumber amounts to no more than 15%, as the building structure is enclosed.

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Prefabrication system

- Basic modules of the structure
- The beams used in the construction system are 60 mm thick. The width of the beams can vary from 80 mm to 360 mm.

Fig. 1) Wall structure

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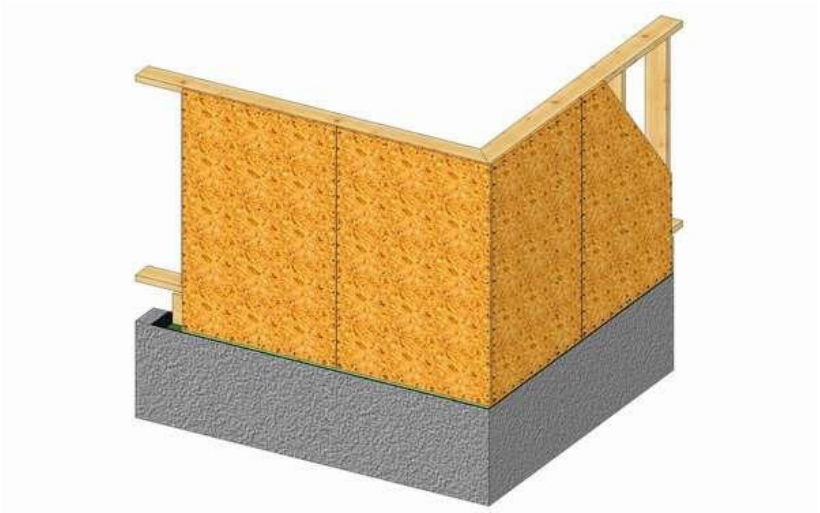
Prefabrication system

- Sheathing of ceilings, walls and roof
- Due both to the influence of atmospheric conditions and to the properties of the boards themselves, the following moisture-resistant boards are used to sheath ceilings, walls and roofs: wood-based OSB/3 boards and fiber-gypsum boards from such suppliers as e.g. Fermacell®, and Steico® wood fiber insulation board.



(Fig. 2) Exterior wall sheathing

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Prefabrication system

- Thermal insulation
- The construction system building envelope more than meets the thermal insulation requirements specified in the Ordinance of the Minister of Infrastructure (Journal of Laws, 2019, item 1065) concerning the technical conditions that all buildings and their location should conform to, and which have been set at 0.20 W/(m2 x K).
- The thermal transmittance of the building envelope in the system equals no more than 0.16 W/(m2 x K).

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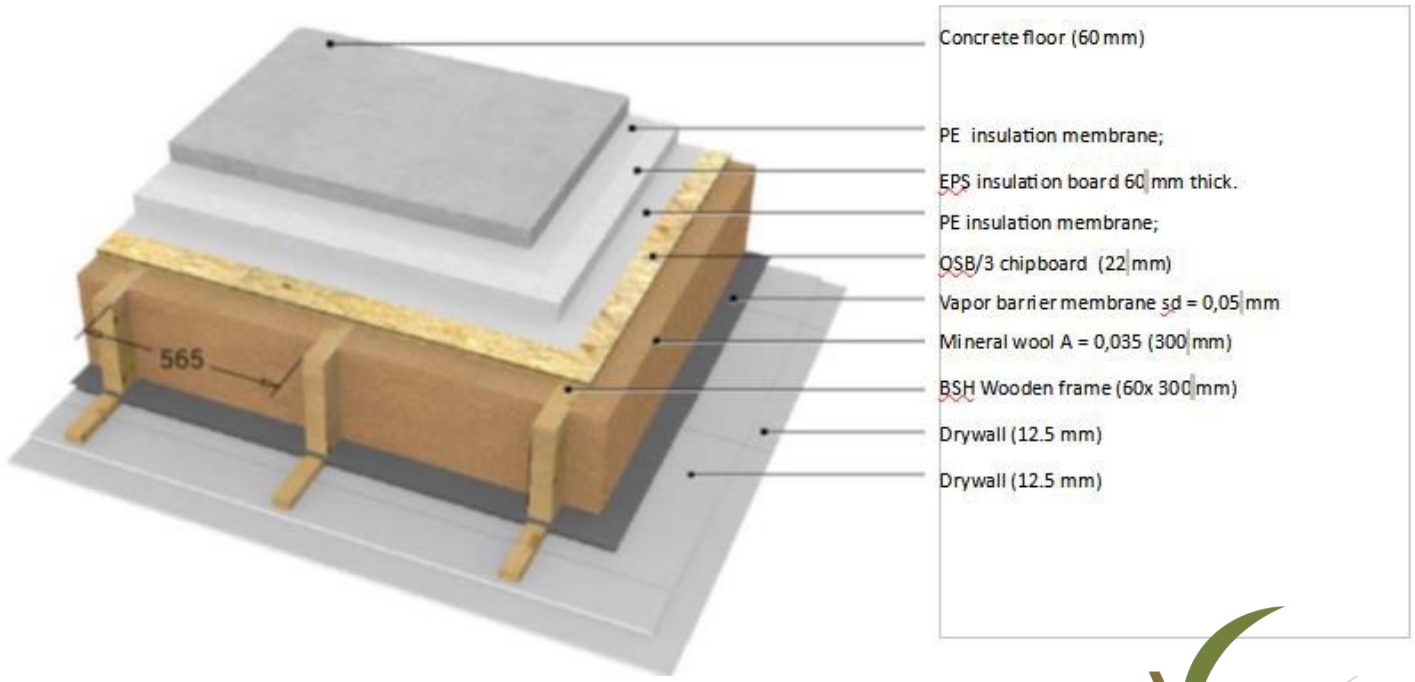
Prefabrication system

- Building envelope structure
- Inter-storey ceiling (from above)



(Fig. 4) Layout of the inter-storey ceiling layers

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Prefabrication system

Top finishing layer of the floor	Concrete or laid floor, depending on the design Polyethylene (PE) insulation membrane Extruded polystyrene (EPS) insulation board, 60 mm thick
Ceiling sheathing	OSB/3 wood-based board, 22 mm thick
Ceiling structure	BSH glulam frame, 60 mm thick and 300 mm wide
Acoustic insulation	Mineral wool with A = 0.035 W/(m x K), 300 mm thick Acoustic insulation > 50 dB
Moisture insulation	Vapor barrier membrane, 0.15 mm thick Water vapor permeability < 10 g/m^2/24h
Interior finishing	Batten grid, 30 mm thick and 50 mm wide *2 x drywall, 12.5 mm thick*
Thermal transmittance	0.12 W/(m^2 x K)

Note: The elements of the building envelope written in italics to be made on the construction site.

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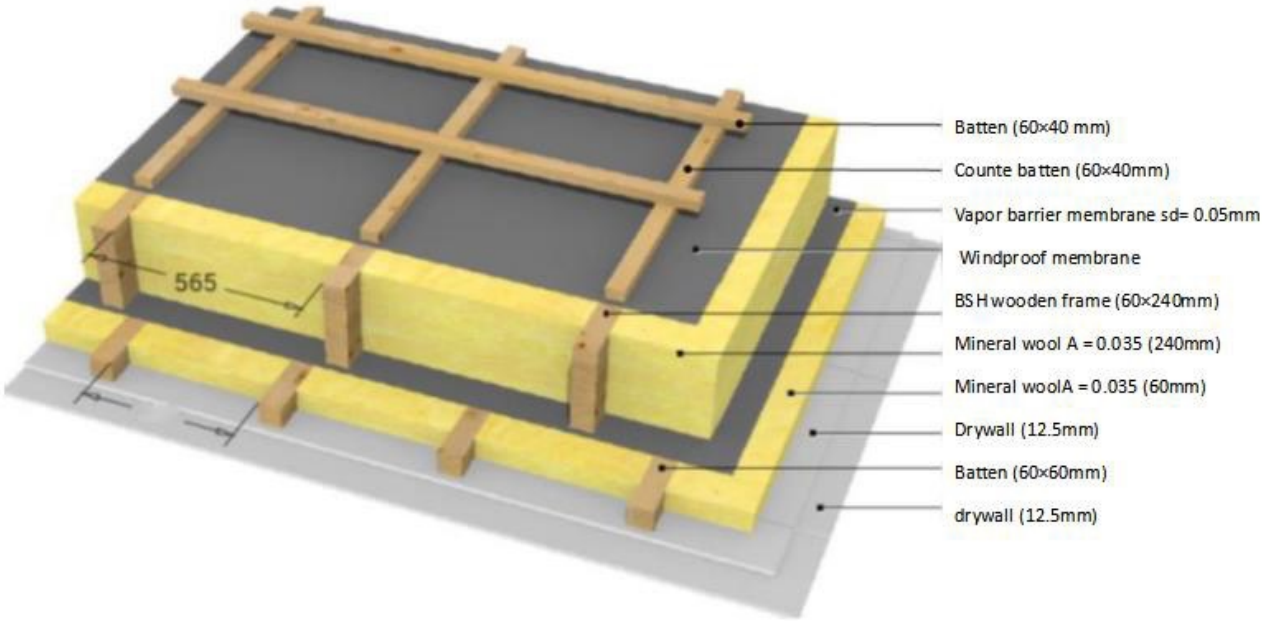
Prefabrication system

- Building envelope structure
- Roof panel and flat roof (from inside)



(Fig. 5) Layout of the roof panel layers

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Prefabrication system

Interior finishing	A batten grid, 60 mm thick and 60 mm wide Mineral wool with λ = 0.035 W/(m x K), 60 mm thick; 2 x drywall, 12.5 mm thick;
Moisture insulation	Vapor barrier membrane 0.15 mm thick Water vapor permeability < 10 g/m^2/24h
Wall structure	BSH glulam frame, 60 mm thick and 240 mm wide, attached to the top plates and roof ridge
Thermal and acoustic insulation	Mineral wool with A = 0.035 W/(m2 x K), 200 mm thick Acoustic insulation > 50 dB
Wind and moisture insulation	Windproof membrane, 0.3 mm thick Water vapor permeability > 1000 g/m^2/24h
Exterior finish	Batten and counter batten grid, 30 mm thick and 50 mm wide *Steel tile or coated modular metal sheet, depending on the design, with air supply in the roof eaves and air exhaust in the ridge* *Alternatively, other roofing, laid in accordance with the relevant technical and installation requirements*
Thermal transmittance	0.14 W/(m^2 x K)

Note: The elements of the building envelope written in italics to be made on the construction site.

Prefabrication system

- Building envelope structure
- Exterior wall (from inside)

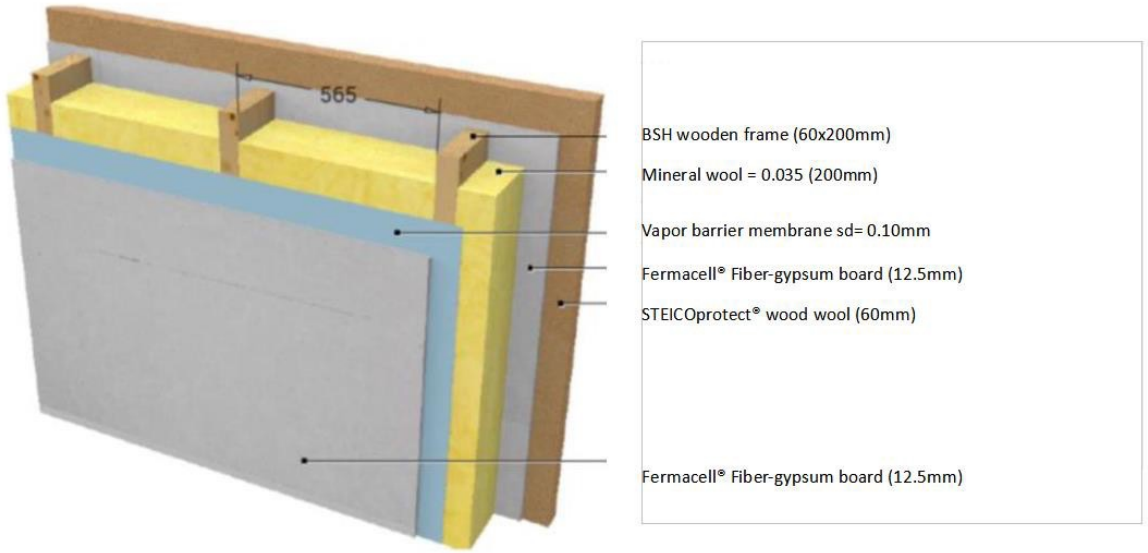

Fig. 6) Typical layout of the external wall layers

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Prefabrication system

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Interior finishing:	Fiber-gypsum board, 12.5 mm thick (e.g. Fermacell® or Fibris®) Board glued to the panel's wood structure
Moisture insulation:	Vapor barrier membrane, 0.15 mm thick Water vapor permeability < 10 g/m^2/24h
Wall structure:	BSH glulam frame, 60 mm thick and 200 mm wide
Thermal and acoustic insulation:	Mineral wool, λ = 0.035 W/(m x K), 200 mm thick Acoustic insulation > 50 dB
Exterior sheathing:	Fiber-gypsum board, 12.5 mm thick (e.g. Fermacell® or Fibris®) Board glued to the panel's wood structure
Exterior finish:	STEICOprotect® wood wool board, 60 mm thick. *Lightweight mineral plaster on fiberglass mesh glued to wood wool* *Alternatively, facade materials with a ventilation gap: vinyl siding, wood siding, brick or clinker tile, installed in accordance with the relevant technical and installation requirements*
Thermal transmittance:	0.16 W/(m^2 x K)

Note: The elements of the building envelope written in italics to be made on the construction site.

Prefabrication system

- Inner wall

Interior finishing:	Fiber-gypsum board, 12.5 mm thick (e.g. Fermacell® or Fibris®) Board glued to the panel's wood structure
Wall structure:	BSH glulam frame, 60 mm thick and 80 mm wide
Thermal and acoustic insulation:	Mineral wool, $\lambda = 0.035$ W/(m x K), 80 mm thick Acoustic insulation > 40 dB

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D 35 A

Parameters

- Usable floor area: 27,18 m2
- Construction area: 34, 96 m2
- Total area: 34,96 m2
- Building height: 5,09 m
- Building dimensions: 6,77 m x 5,87 m
- roof angle: 35 °

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D 35 A

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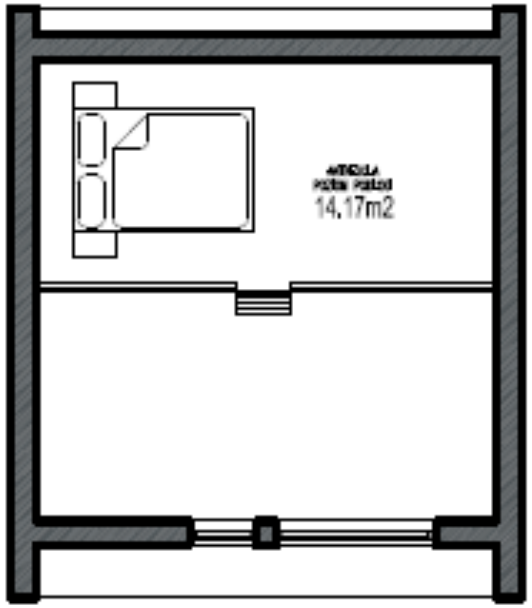
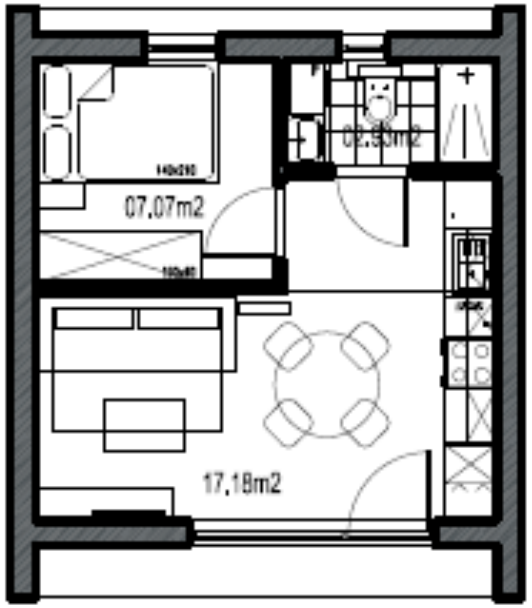
Floor plans



Mezzanine floor plan



Ground floor plan

D 35 A

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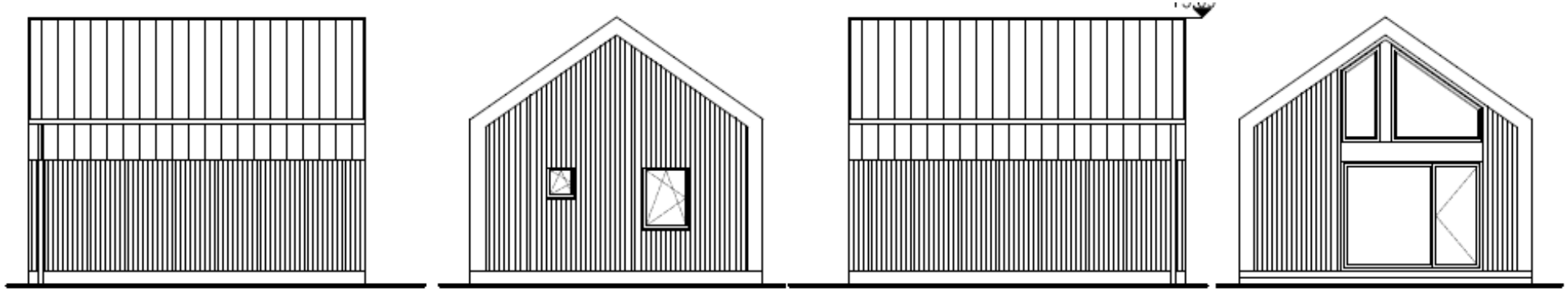
Elevations



side elevation | rear elevation | side elevation | front elevation

D 35 A

GREENCIT GROUP

Visualizations

D 35 B

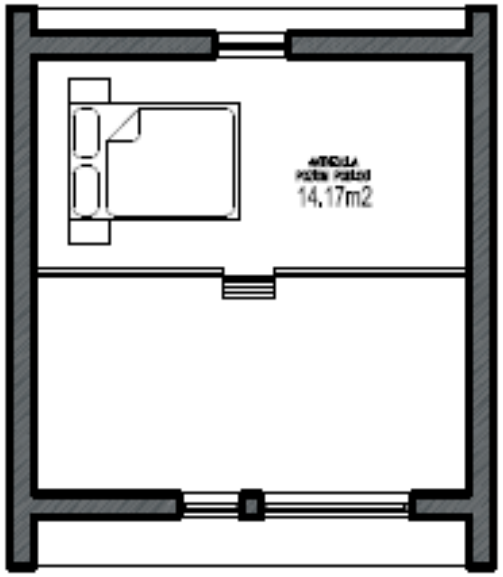
Parameters

- Usable floor area: 27,18 m2
- Construction area: 34, 96 m2
- Total area: 34,96 m2
- Building height: 5,09 m
- Building dimensions: 6,77 m x 5,87 m
- roof angle: 35 º

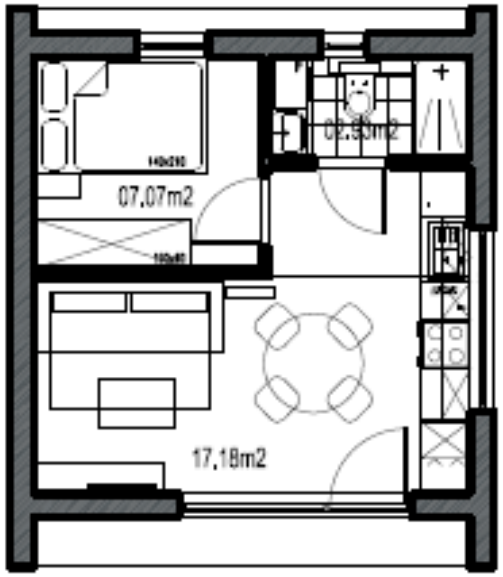
D 35 B

GREENCIT GROUP

Floor plans



Mezzanine floor plan

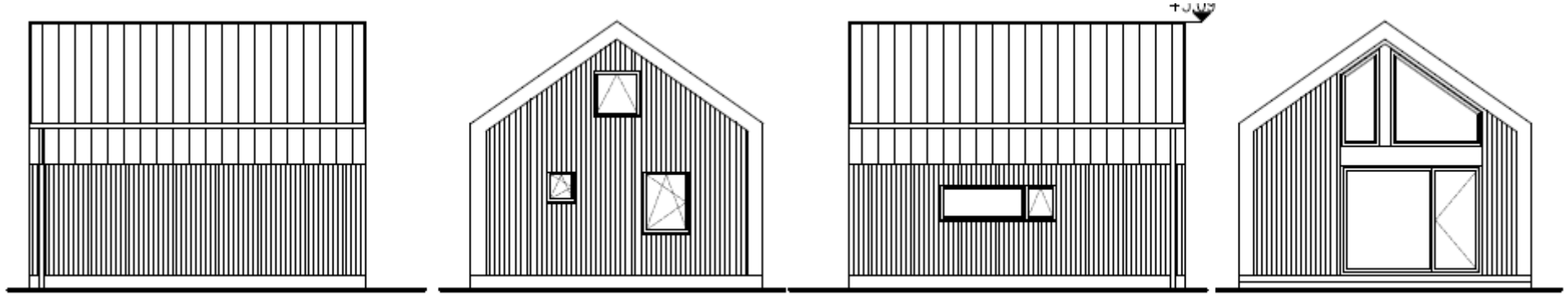


Ground floor plan

D 35 B

GREENCITY GROUP

Elevations



side elevation | rear elevation | side elevation | front elevation

D 35 B

GREENCITY GROUP

Visualizations

D 35 C

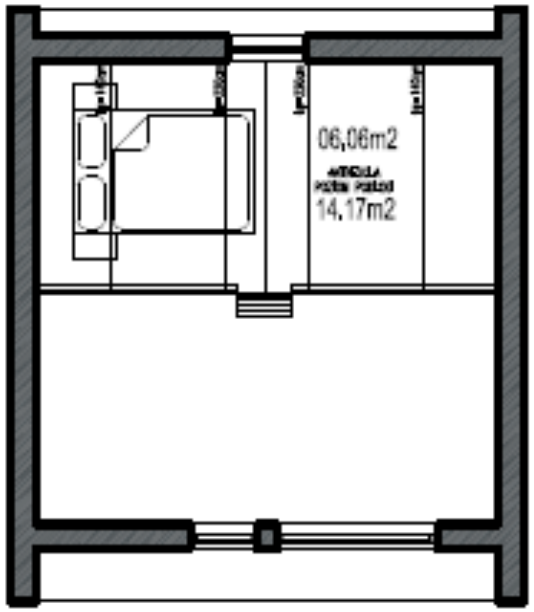
Parameters

- Usable floor area: 33,24 m2
- Construction area: 34, 96 m2
- Total area: 49,13 m2
- Building height: 5,77 m
- Building dimensions: 6,77 m x 5,87 m
- roof angle: 35 º

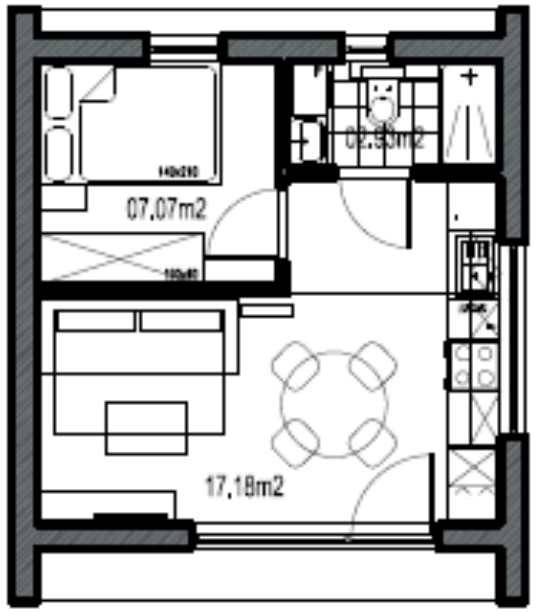
D 35 C

GREENCIT GROUP

Floor plans



Mezzanine floor plan

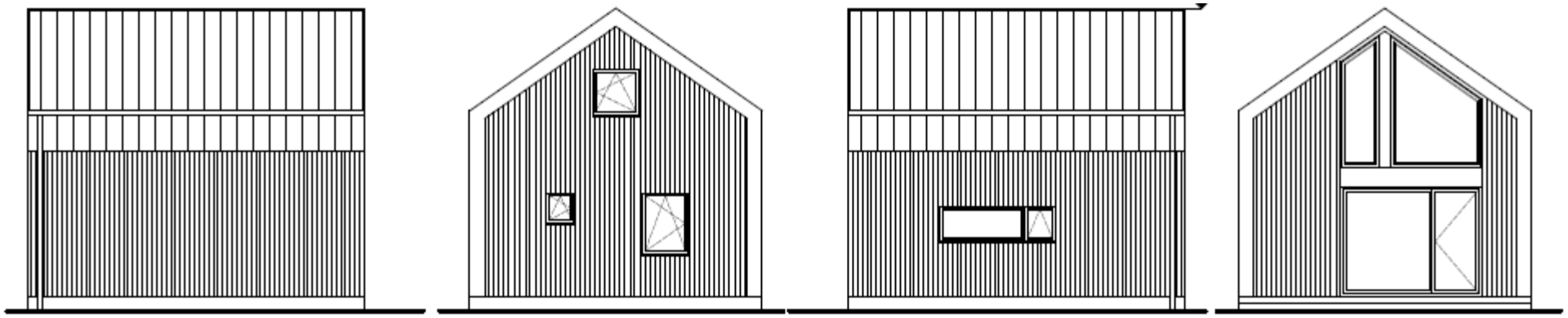


Ground floor plan

D 35 C

GREENCITY GROUP

Elevations



side elevation | rear elevation | side elevation | front elevation

D 35 C

GREENCITY GROUP

Visualizations

D 115, D 115 L, D 115 A, D 115 A L

Parameters

- Usable floor area: 114, 94 m2
- Construction area: 142, 69 m2
- Total area: 142, 69 m2
- Building dimensions: 17,91 x 7,97 m
- Building height: 6, 02 m
- roof angle: 35 º

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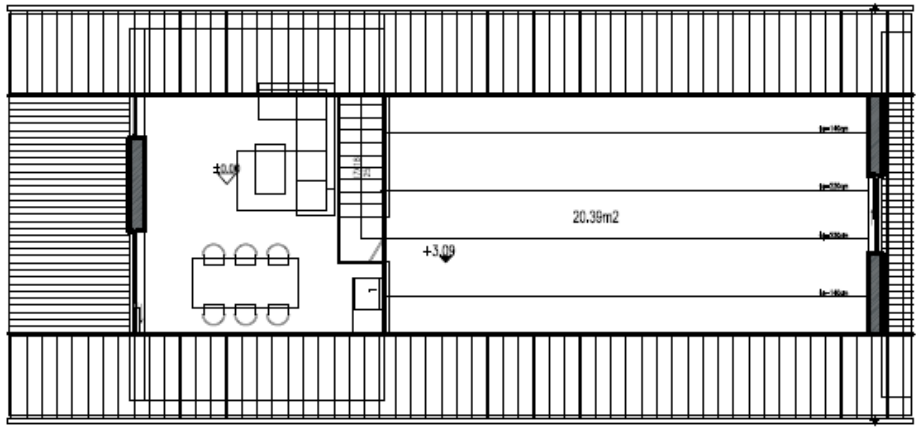
D 115

GREENCITY GROUP

Floor plans



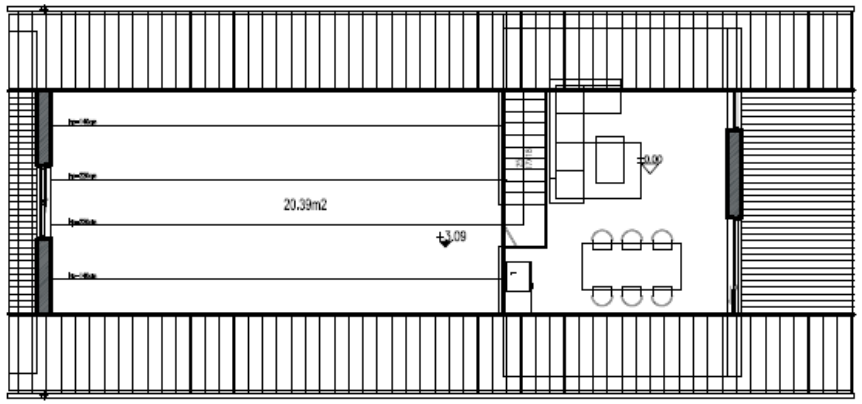
Mezzanine floor plan

Ground floor plan

D 115 L

GREENCITY GROUP

Floor plans



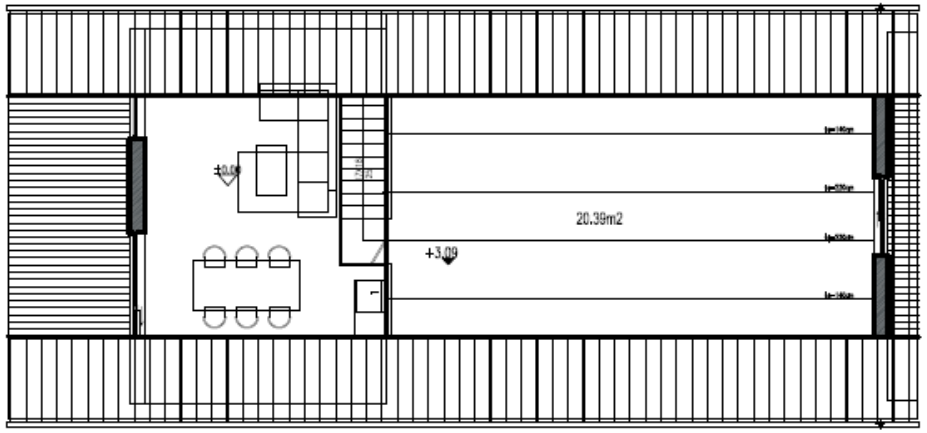
Mezzanine floor plan

Ground floor plan

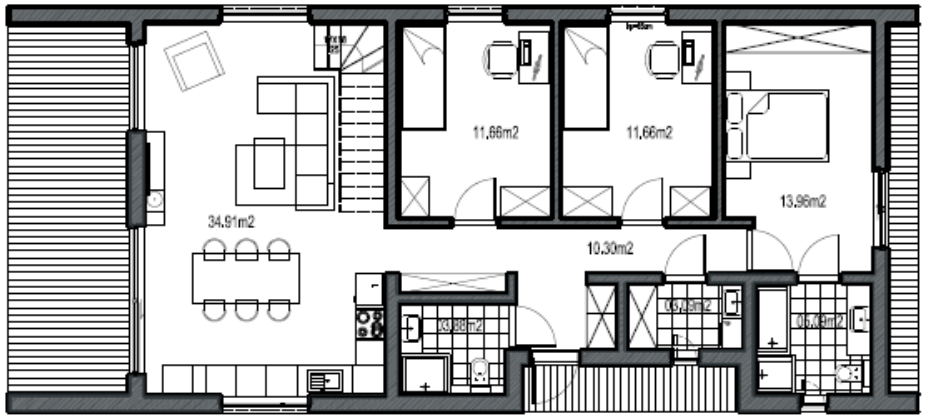
D 115 A

GREENCIT GROUP

Floor plans



Mezzanine floor plan

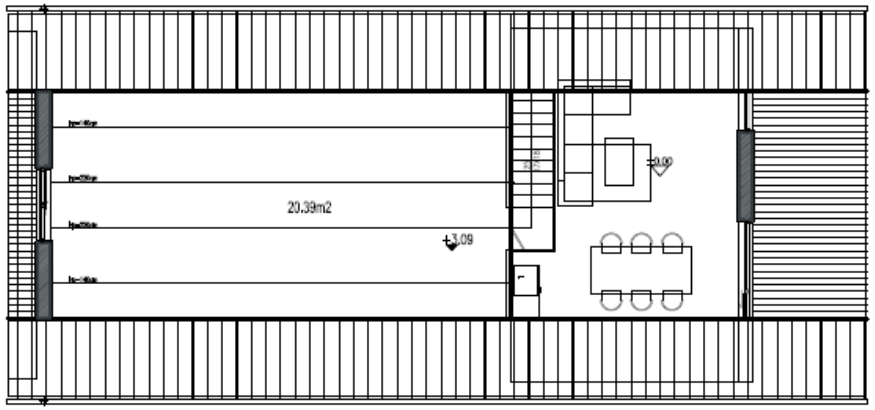


Ground floor plan

D 115 A L

GREENCIT GROUP

Floor plans



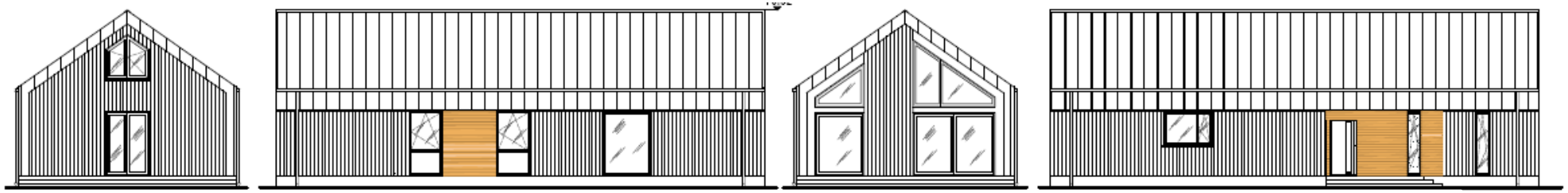
Mezzanine floor plan

Ground floor plan

D 115

GREENCIT GROUP

Elevations



side elevation

rear elevation

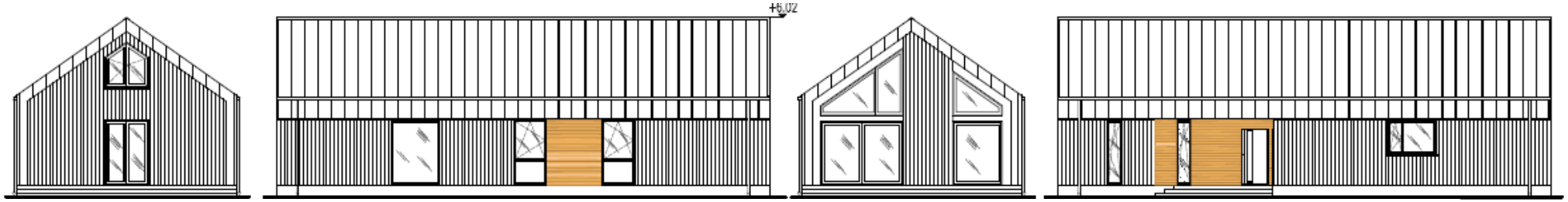
side elevation

front elevation

D 115 L

GREENCIT GROUP

Elevations



side elevation

rear elevation

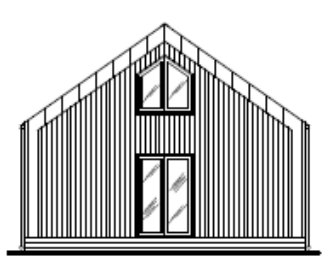
side elevation

front elevation

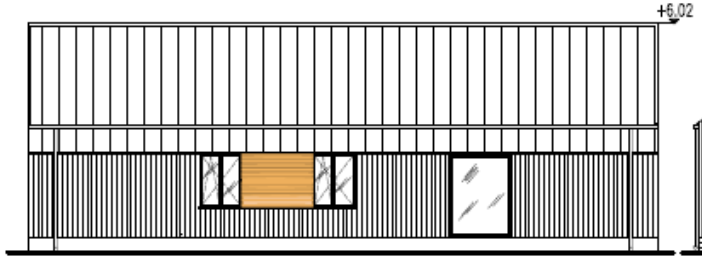
D 115 A

GREENCIT GROUP

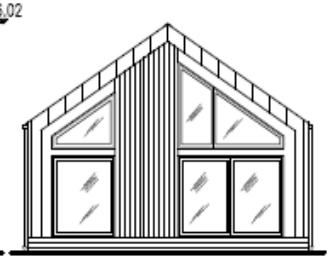
Elevations



side elevation



rear elevation



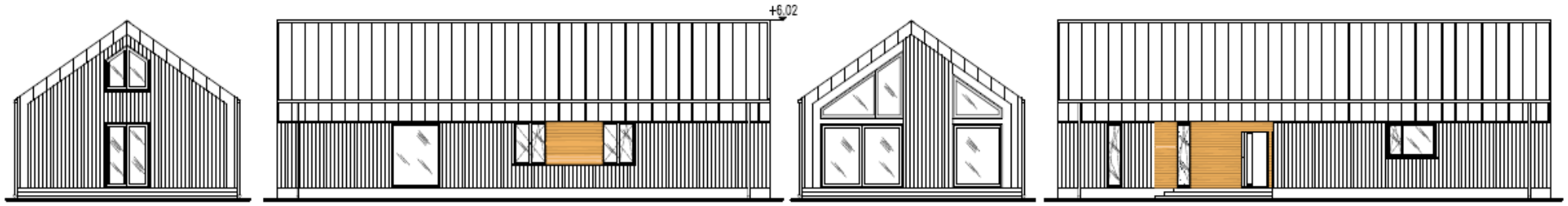
side elevation

front elevation

D 115 A L

GREENCIT GROUP

Elevations



side elevation | rear elevation | side elevation | front elevation

D 126

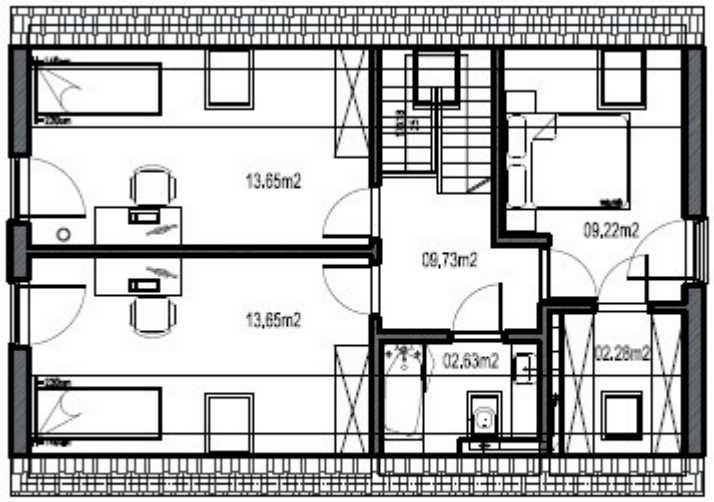
Parameters

- Usable floor area: 126,37 m2
- Construction area: 90, 77 m2
- Total area: 181,54 m2
- Building dimensions: 11,35 x x8,00 m
- Building height: 7,56 m
- roof angle: 40 º

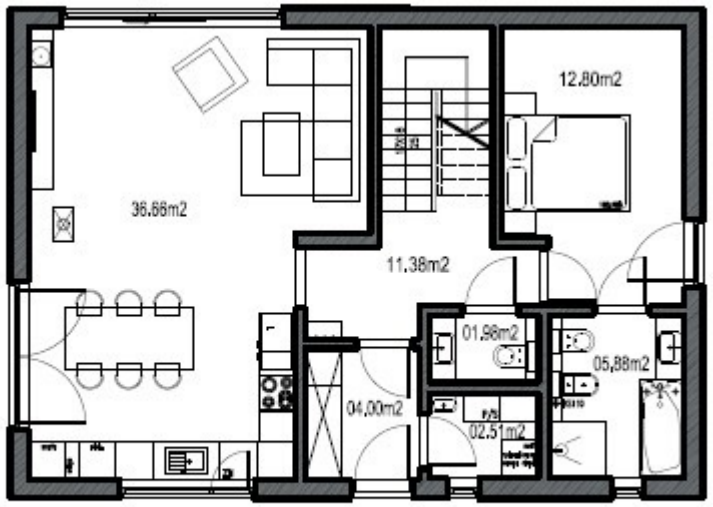
D 126

GREENCIT GROUP

Floor plans



Loft floor plan



Ground floor plan

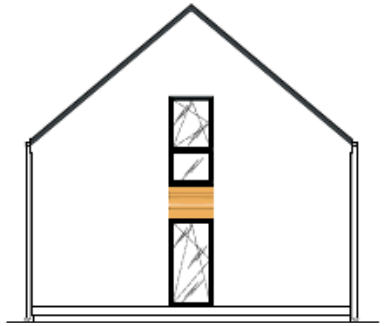
D 126

GREENCIT GROUP

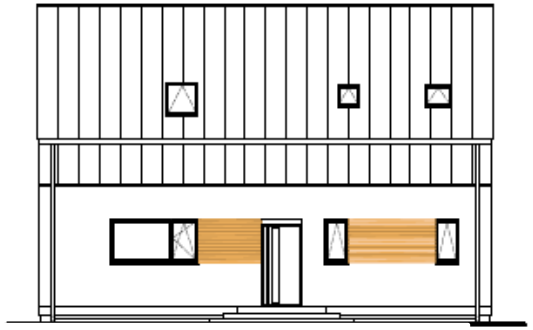
Elevations

side elevation

rear elevation



side elevation



front elevation

D 126

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Visualizations