

THE EASY BUILD

[SI-MODULAR][®]

[SI-MODULAR] – REINVENTING CONSTRUCTION

Our journey began in Spring 2011 when the Kastell Foundation of Stadtlohn commissioned myself to design and develop a modular building kit.

The objective: To provide safe, affordable and sustainable housing which could be constructed easily in emerging and developing countries all over the world.

The briefing specified that the kit should:

- Offer components which are widely adaptable.
- Be produced in line with industrial manufacturing techniques at an affordable price.
- Be easily assembled using a minimum amount of tools, which even the most inexperienced person could construct in a matter of hours.
- Be made of light weight, sustainable materials which could be packaged and shipped „knocked down“ at a low cost.

On this basis, an intense design and development process commenced, to create a modular building kit that would cover the brief but not restrict the stability and durability of the finished product.

After presenting the innovative result, our [SI-MODULAR][®] building kit quickly gained wide interest and evoked both great enthusiasm and positive feedback.

Soon after, we started receiving inquiries from interested parties within the private sector which gave us the incentive to continue developing our basic idea, to offer a range of designs to cover the whole market.

Today, we offer a sophisticated construction system, which provides high quality and stable building projects around the world. Our answer to stress-free and sensible construction became the perfect solution for many projects in the private, local and commercial sector.

Our mission is to make building easier. We welcome your inquiry.

Sincerely yours,

Hans-Ludwig Stell

Dipl.-Ing. Architect and Inventor
Managing Director at
STELL INNOVATION GmbH







THE BUILDING KIT – AN EASY CONCEPT

Remember your childhood? Building things with wooden blocks or miniature bricks from Denmark? How effortless it was to create something out of only a small amount of different parts?

Our [SI-MODULAR] building kit is based on this same concept: By using very few components you are enabled to, in no time, create the basic structure of a building.

The innovative [SI-MODULAR] plug-in system provides the wooden framework on which you are free to expand. Regardless of whether you require a small house, an office building or even a multilevel complex.

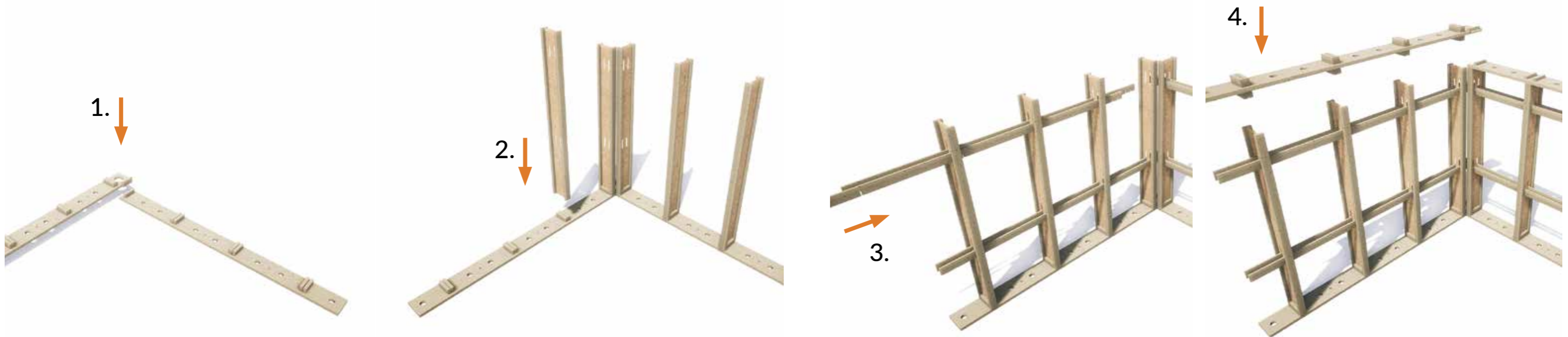
The basic construction method is a plug-in mounting system, which means that the only tool needed to start building is a hammer. It's that easy.

The kit includes all necessary components; e.g. pillars, sill plates, floor girders and rafters, which are required for the assembly. Even all the fixing for securing to the base plate (produced on site) are included in this package, as well as the structural analysis and the assembly instructions.

Below you can see the four basic steps needed to set-up the walls of our kit (without floor beams).

With minimal effort and time you are able to create a basic timber construction.

Thanks to the fact that you are enabled to immediately weather proof your building by quickly adding the roof panels, work can straight away continue inside, avoiding potentially long waiting times.

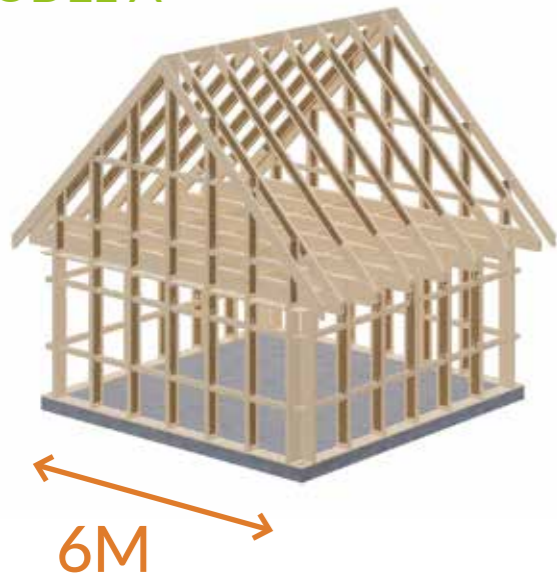


LIMITATIONS

MODEL A

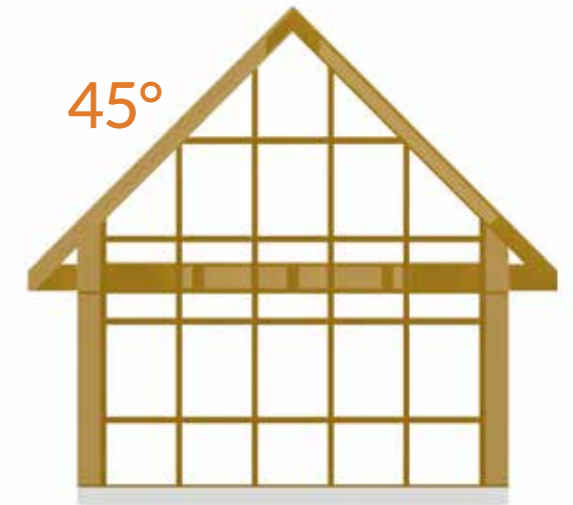


MODEL A+



Every system has its limits. In need of verifiable calculations, our building kits are based on a structural grid. Therefore certain characteristics and dimensions are pre-defined and these can not be changed.

- The interior width of our buildings is 5 or 6 meters. This is the first fixed size in our modular design. The external dimension is 5.7 or 6,7 meters excluding the facade/siding.
- Furthermore, the roof pitches are set: The gable roof has 45 degrees, the pent roof has a slope of 15 degrees.
- The extension of our buildings in length is possible in increments of one meter. The minimum and therefore the smallest size of one kit measures 5 x 5 or 6 x 6 meters (interior).



YOUR CHOICE – THE BASIC STYLES

We offer three basic house designs, which mainly differ in regard to the roof.

GABLE ROOF (MODEL A)

This kit is the most original variant. With a sloping roof of 45 degrees, it fits nicely into the most suburban areas.

PENT ROOF (MODEL B)

The most spacious building form in our family. This two-storey variant towers 7.5 meters in height. The roof has a 15 degrees inclination and is capable of supporting green roofing or eco friendly energy systems.

FLAT ROOF (MODEL C)

It could not be simpler. Our building kit with the quickest construction times. All while providing ample space for a nice interior.

MIX UP

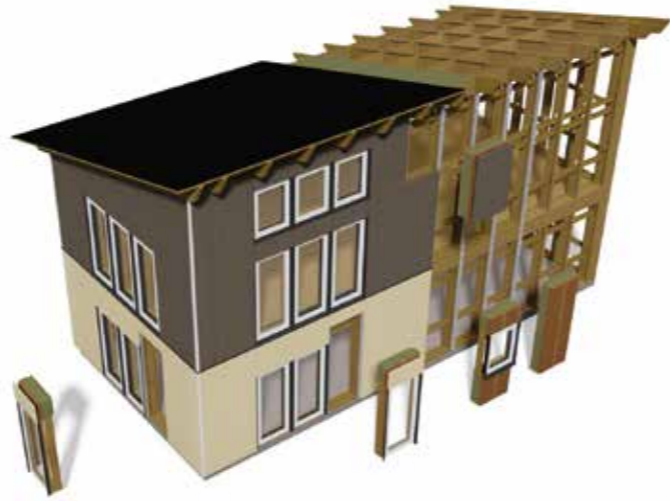
In addition, you may also combine several building structures to form a larger, more complex form, e.g. two MODEL C forming an L-shaped building.



GABLE ROOF: MODEL A



PENT ROOF, SINGLE STOREY: MODEL B1



PENT ROOF, TWO-STOREY: MODEL B2



FLAT ROOF, SINGLE STOREY: MODEL C1



FLAT ROOF, TWO-STOREY: MODEL C2

FROM TREE TO HOME

The main constructive material we use for our wooden framework is KERTO® as well as the FINNJOIST® I-beams produced by the company METSÄ from Finland. These lumber products, made of laminated veneer, are used in all types of construction projects. KERTO® is incredibly strong and dimensionally stable. The beams are similar in shape and function to the known I-profiles made of steel, only made of wood. These light-weight beams have been statically optimised that they can bear high loads, while requiring minimal use of material.

The individual wooden components are connected through precise plug-in connections that fit exactly into each other. Due to the dimensional stability of wooden beams and accurate CNC-milling results, we minimize assembly errors and keep the structure very stable and simple. For your first steps, the only tool needed is a hammer.



OUR GRID - FILL THE GAPS



[SI-MODULAR]® is based on a grid. Within this grid, the house can easily be enlarged length ways in one meter increments - providing almost unlimited possibilities.

Therefore the framework forms identical, accurately sized fields or bays, ready to be filled with different component types (Insulation, Windows, Doors, Siding elements).

These modules may be arbitrarily interchanged with each other.

Furthermore, we developed our own siding system which includes a ventilated facade. After attaching a profile made from aluminium to the upright support beam, modules are hooked onto these rails from the bottom up. This solution offers you huge time advantages and great convenience during installation.

For other, alternative finishes of the facade, such as plaster surfaces, we offer a beam to provide an additional vertical fixation axis in the middle of one field. This item comes as part of our packages for insulating the outer walls.

Wall with insulation



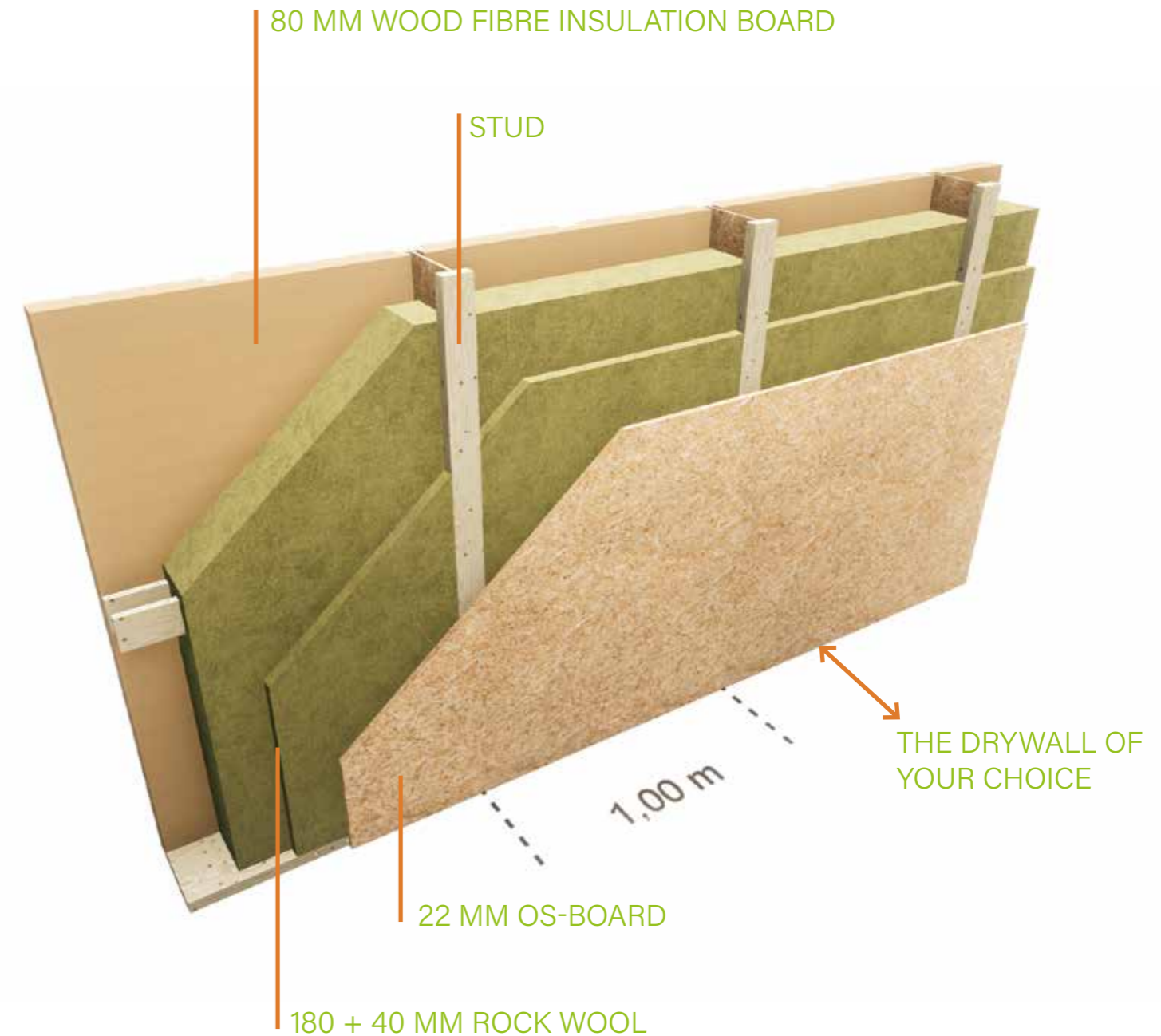
Walls with Insulation and Windows



WALLS - PLENTY OF SPACE FOR INSULATION

With a usable depth of 30 centimeters, the wall cross-section offers a multitude of possibilities for combining different materials and thus adapting the house to the exact requirements needed. Everything is feasible, from simple clay to cellulose to alternative wall insulations.

Our standard wall insulation set-up consists of an 80 mm thick soft wood fiber board, which comes tailor-fitted to the structure and is easily placed from the inside against the supports. This is followed by the installation of 220 mm insulation made of Rockwool® and a 22 mm inner planking (OSB/3). The latter serves to stiffen the building and form an excellent basis for further drywall construction. This can be done conventionally with plasterboard, or with clay boards which contribute to a very pleasant and comfortable indoor climate; clay surfaces absorb and diffuse water vapour, they are cool in summer and warm during winter.



A NICE VIEW – WINDOWS



As a solution for windows and french doors we offer you high-quality wooden windows made of pine. On the outside, a robust, powder-coated aluminum profile protects the lower window from all kinds of weather, increasing its durability. On the inside, these models normally showcase their natural wooden material.

The triple glazing keeps the heat loss of your building to a minimum.

However, if you prefer a different window model for your new home, this is possible as well. You may install any other window that has the same dimensions.

Due to our modular grid system, the windows can be installed in almost any position of the building.

A subsequent installation of an additional window or the change of one window's position can easily be achieved without the need for any major demolition work.



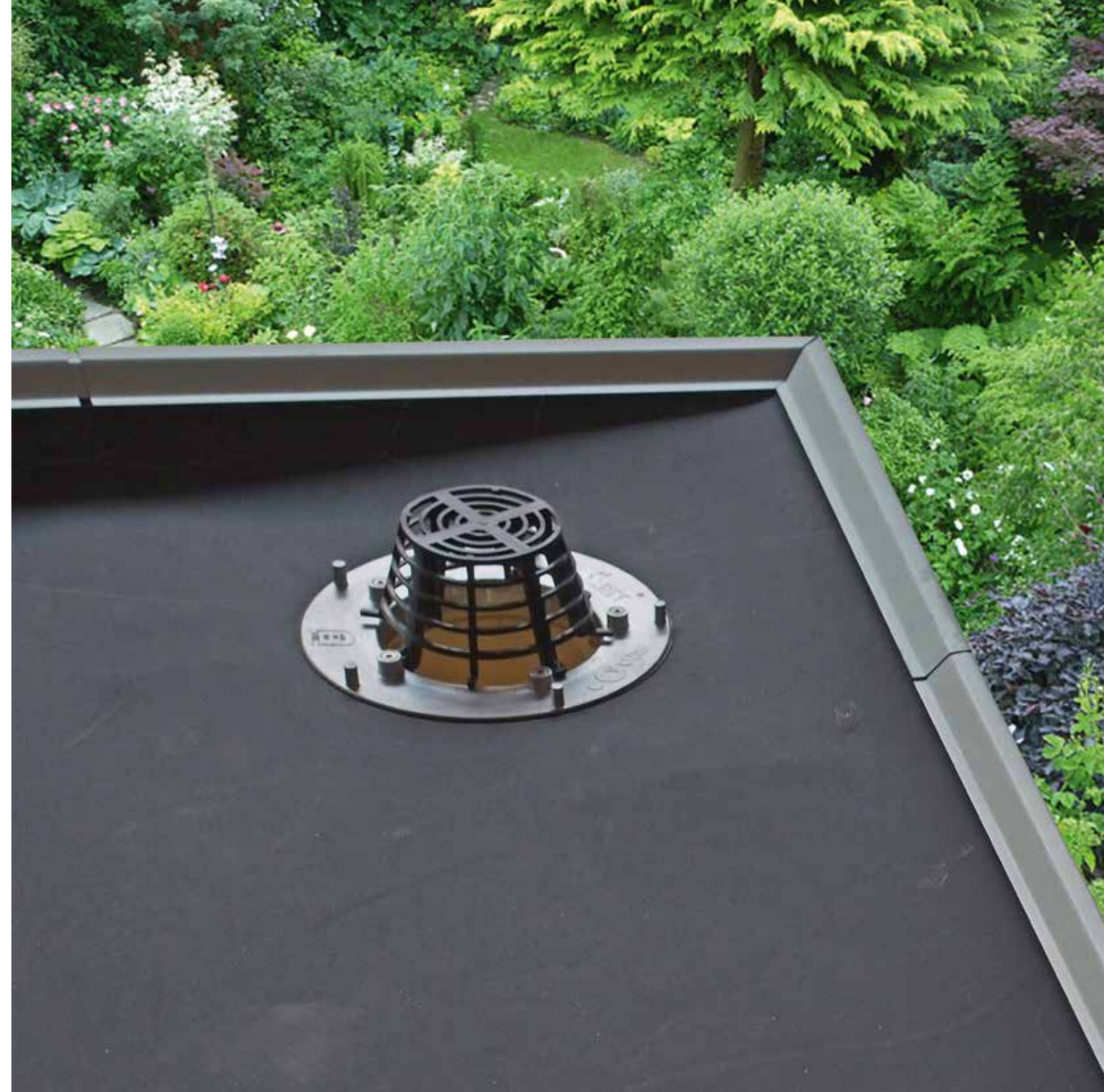
ON TOP – THE ROOFING

The respective roof structures, like the walls, are insulated from the inside with Rockwool® or alternative insulation materials.

The flat roof also receives a compressed slope insulation to drain accumulating rainwater to the sides. The seal is made with a so-called EPDM, an extremely durable synthetic rubber roofing membrane, which is prefabricated in one piece and works without welds. The roof's edges consist of a smart profile system, which is very easy to install.

In each of the four corners of the roof, a roof gullie is used. The downpipes are hidden in the building corners and led downwards.

For weighting the flat roof construction, an additional layer of gravel or a green covering with a weight of 80-100 kg / m² is necessary..



GABLE ROOF

The pitched roof (MODEL A) is designed for a maximum roof coverage of 60 kg / m². Therefore you may cover this roof with classic roof tiles.

For very quick installation of the gable and pitched roof, we also offer you high quality steel roof profiles with a standing click-on seam.

Almost entirely without visible screws, this is an attractive alternative to classic zinc roofs. Thanks to the click-on plug-in system, this roof can be fitted quickly and easily because the profiles simply have to be clicked together. In addition, this material does not release heavy metals substances or other chemicals into the environment together with rain water.



PRODUCTION AND DELIVERY

Every structure is build to order and tailor-made for your building project. The production lead time of our products is usually 12 weeks.

The delivery takes place upon your request, either in one or two 40' containers or by truck with trailer and a take-along forklift. The latter drives the packages of your modular system to the point of use as far as the driveways allows. Two hours are scheduled for the actual unloading.

We also offer you transportation via sea-freight container, for unusual paths such as narrow streets or obstacles on site that require a truck with a crane.



EXAMPLES & INSPIRATIONS

With our building kits, a large variety of constructions can be realised. Below we show some planning examples to give you inspiration for your project.

Please note: Not all details shown are available yet!

Some are technically feasible, thus refer to future possibilities.

We are constantly developing our product range.

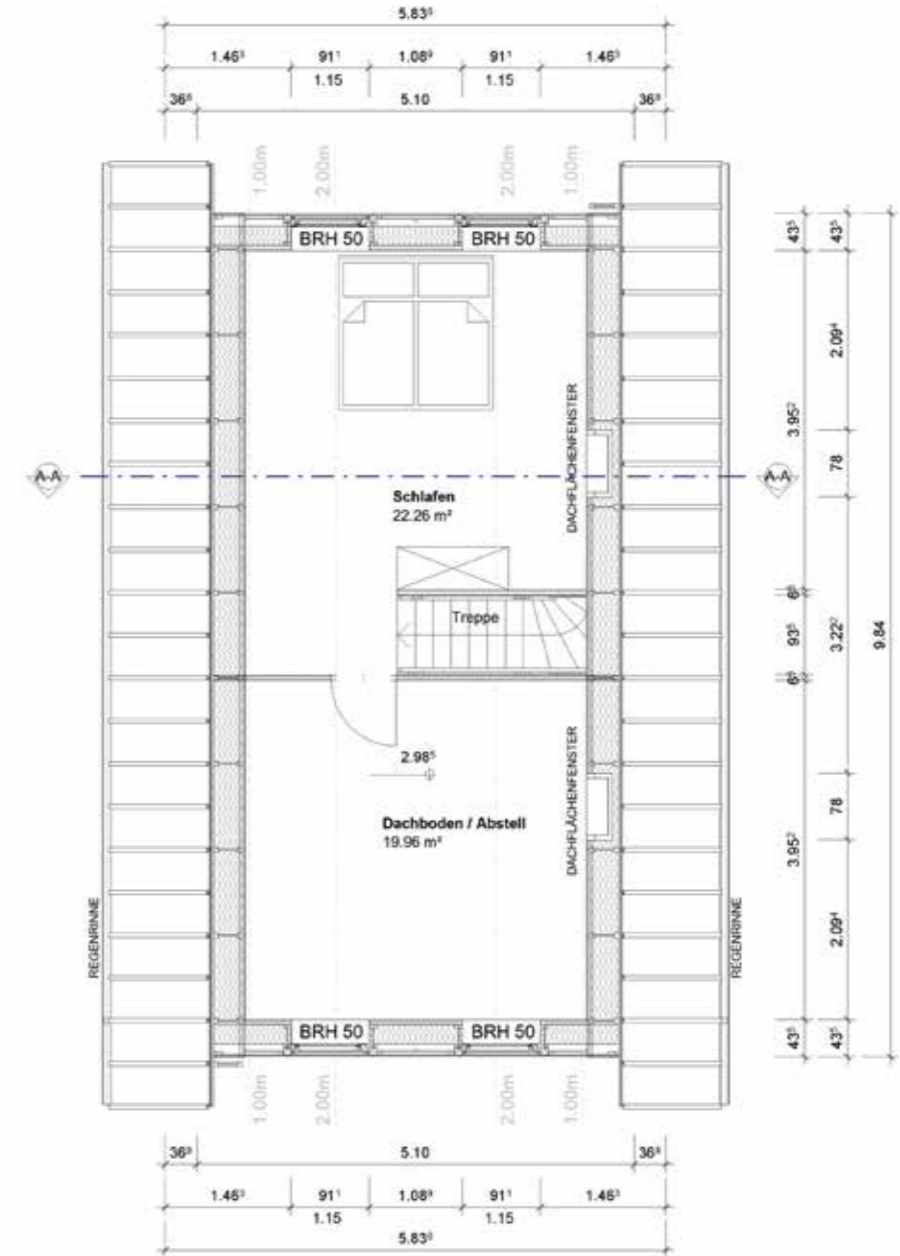
All measurements are in meters (metric units).



MODEL A 1.9



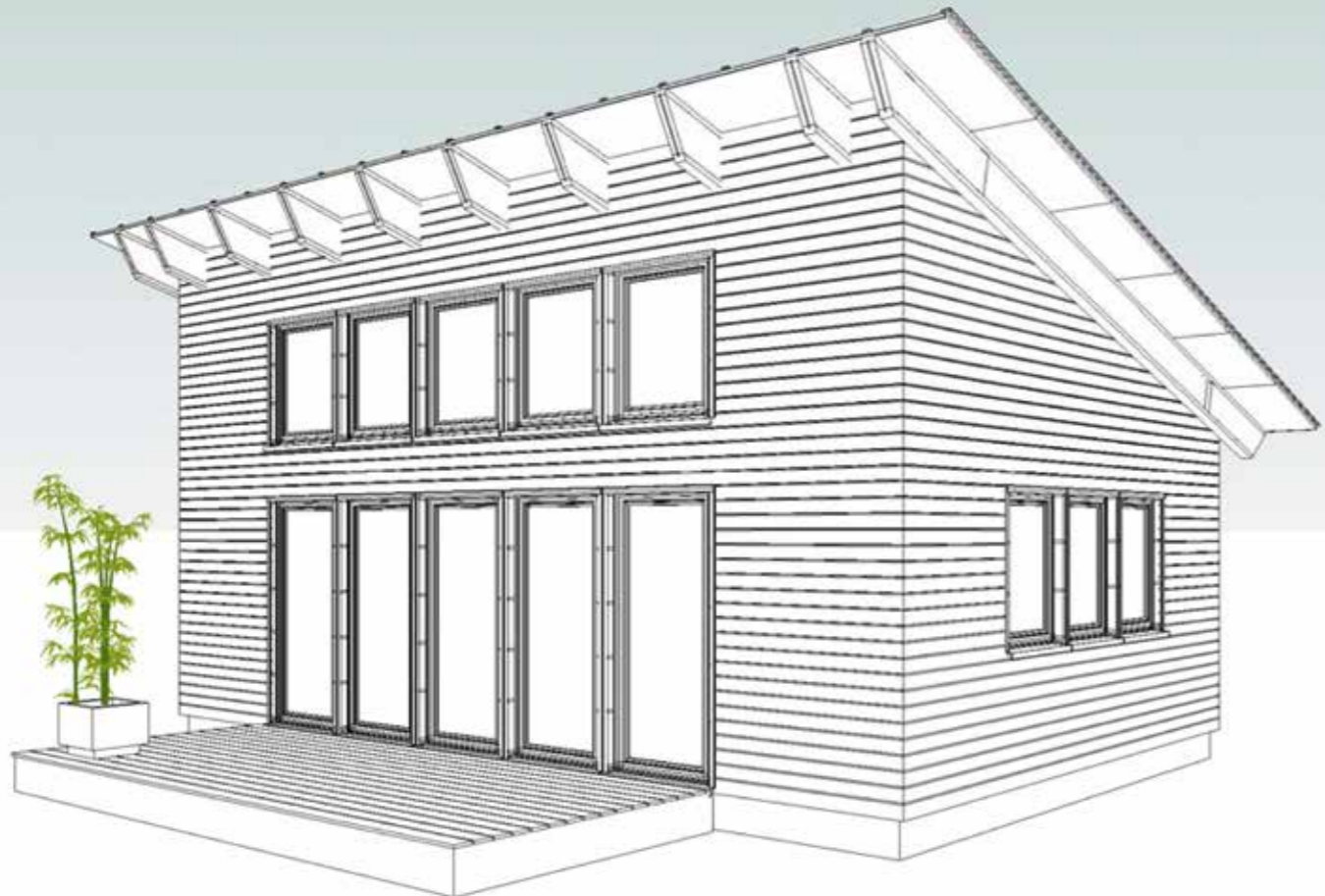
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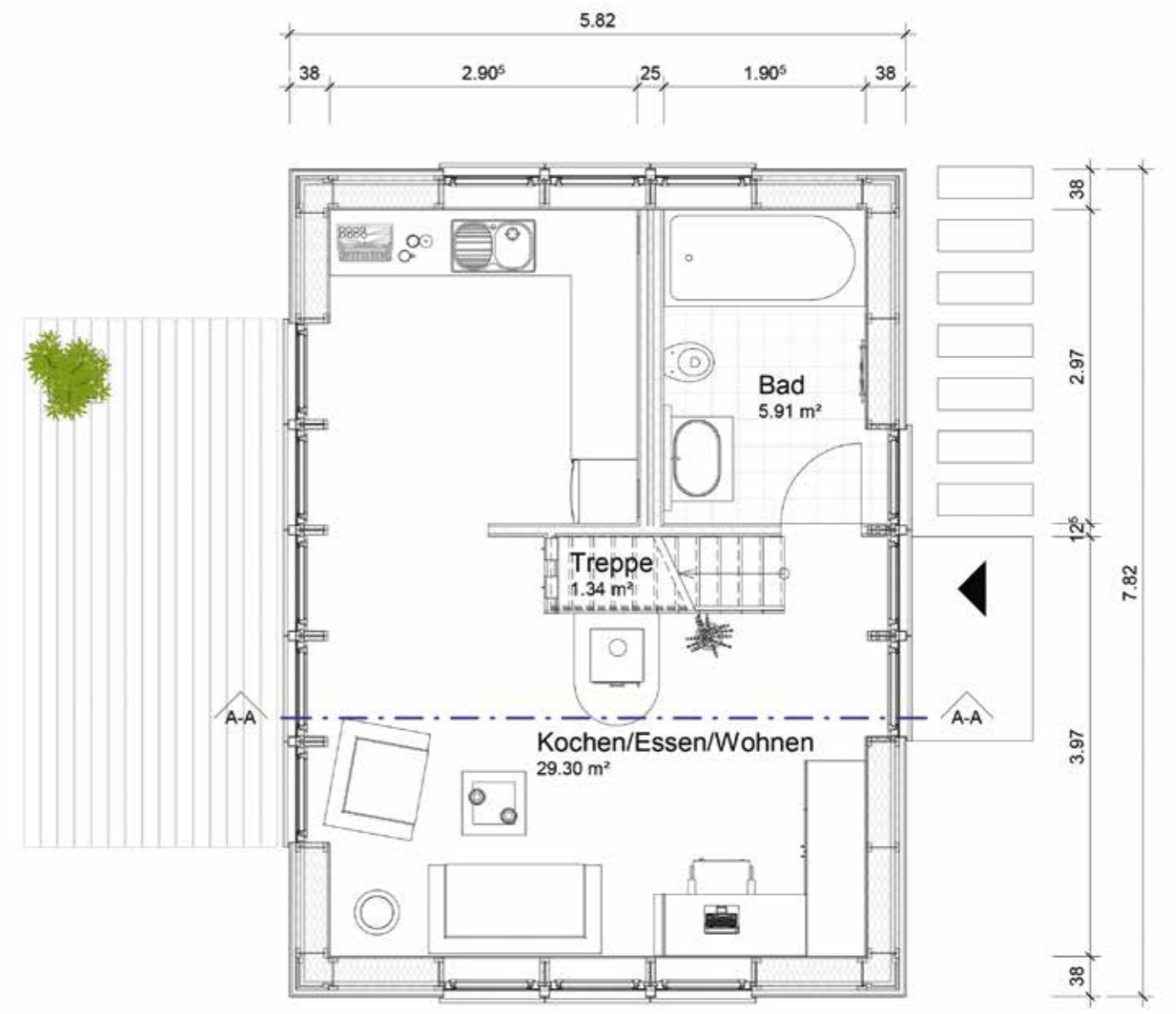
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GROUND FLOOR

SECOND FLOOR

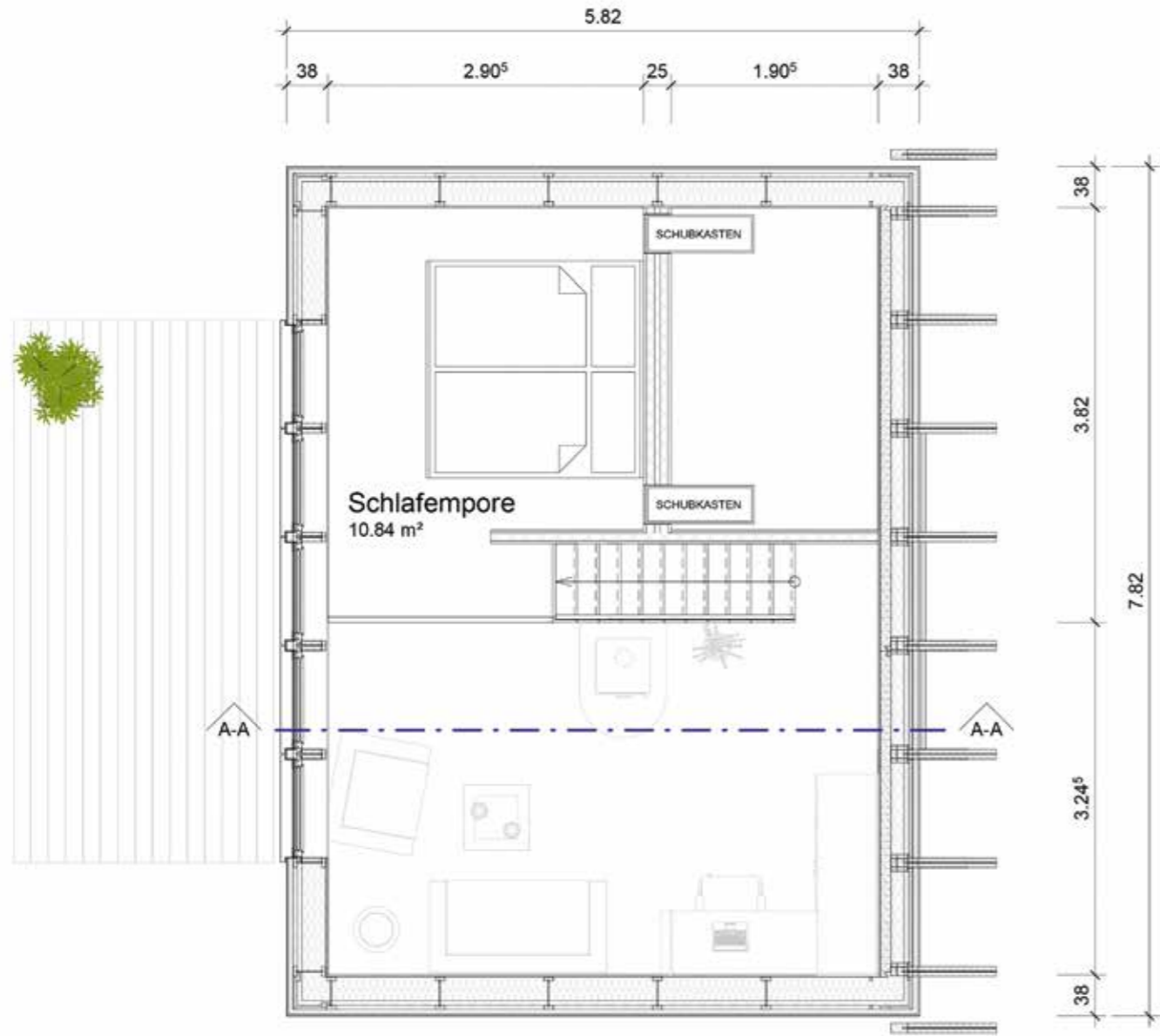


MODEL B1.5



(Not to scale!)

GROUND FLOOR



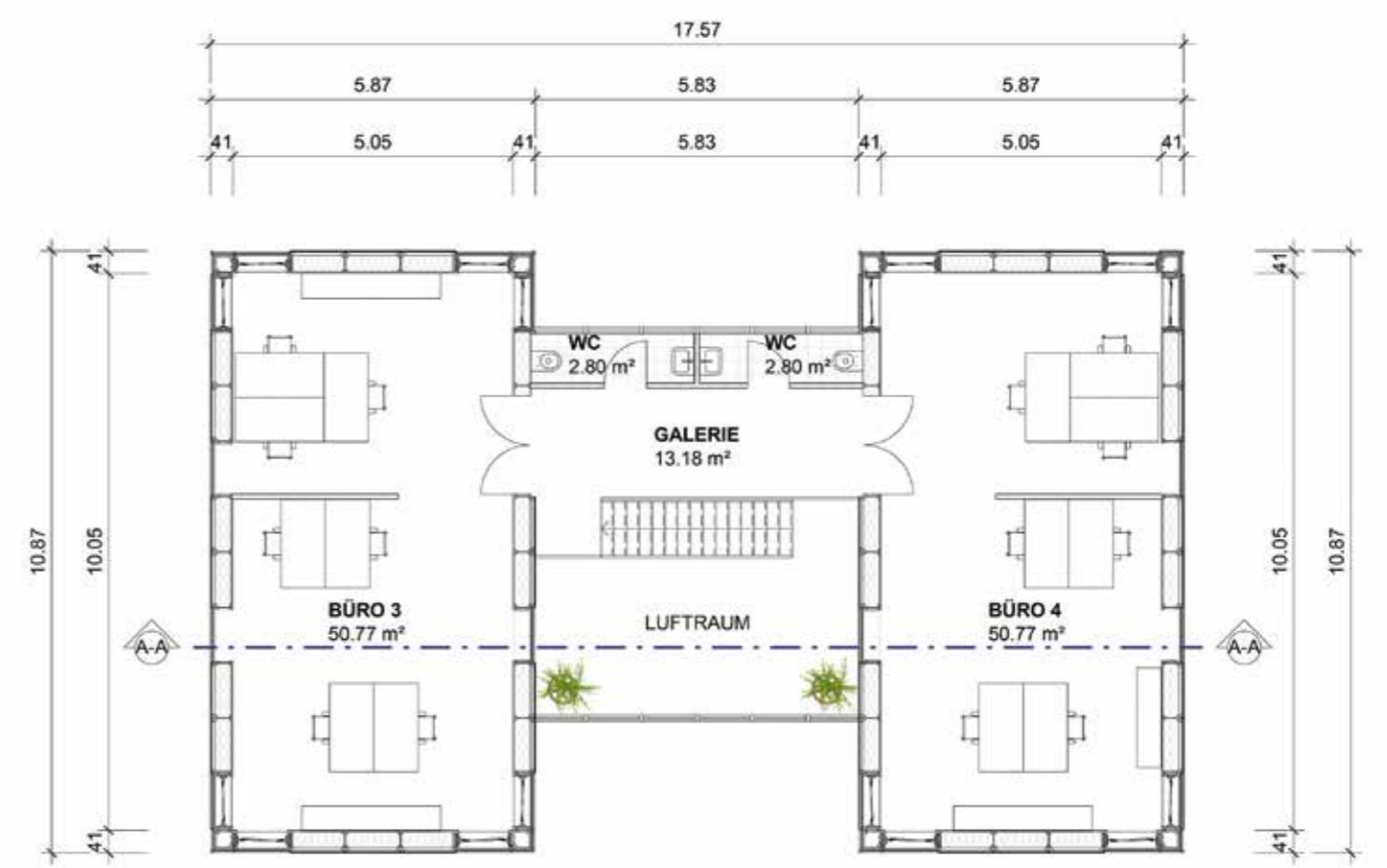
SECOND FLOOR

(Not to scale!)

MODEL C2



(Not to scale!)



(Not to scale!)

GROUND FLOOR

SECOND FLOOR



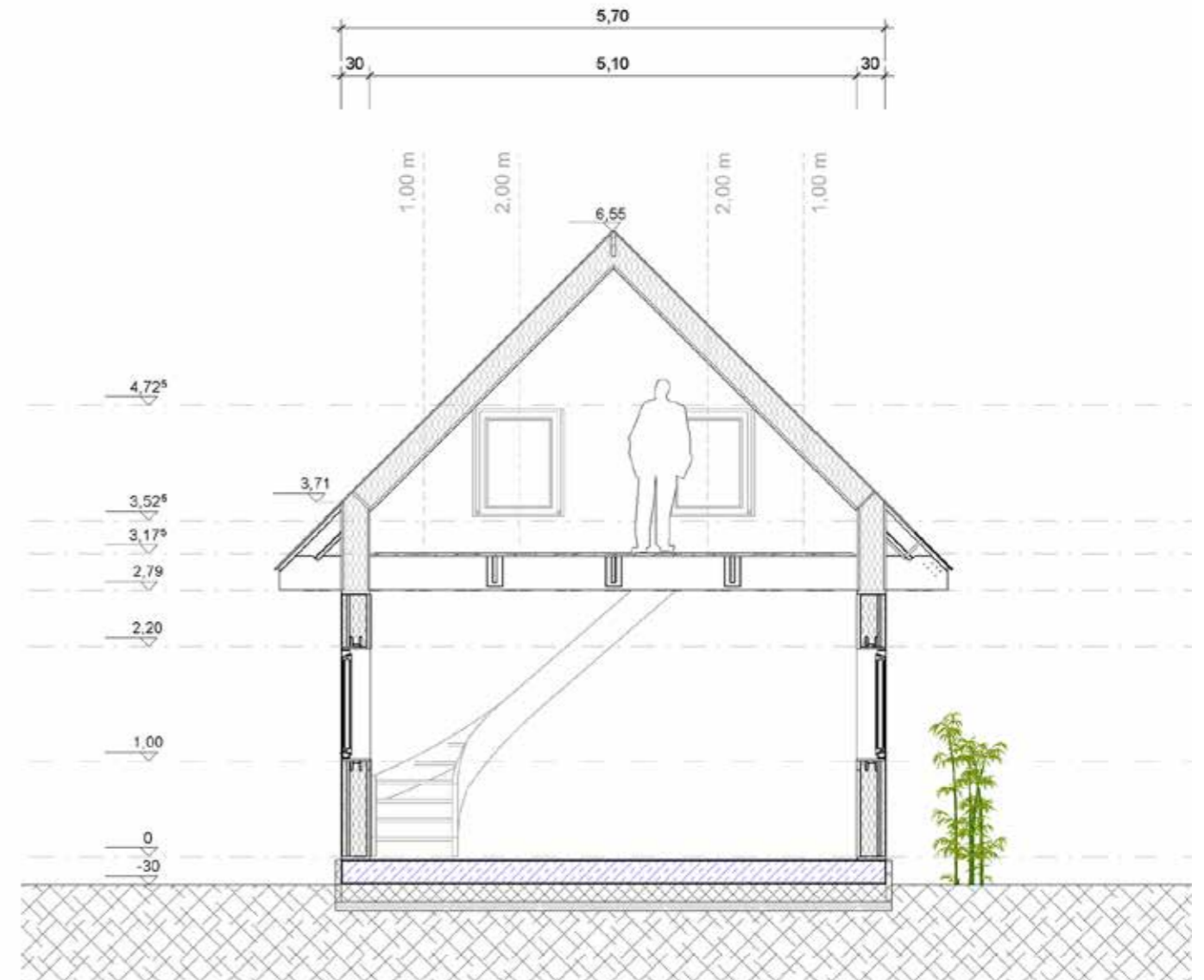
ANNEX

On the following pages you will find sections, dimensions, numbers and facts about our modular building kits. If you do not find all necessary information you need, please feel free to contact us.

Since our system is a modular plug-in system that uses components with the same dimensions, we have defined certain boundary conditions during development.

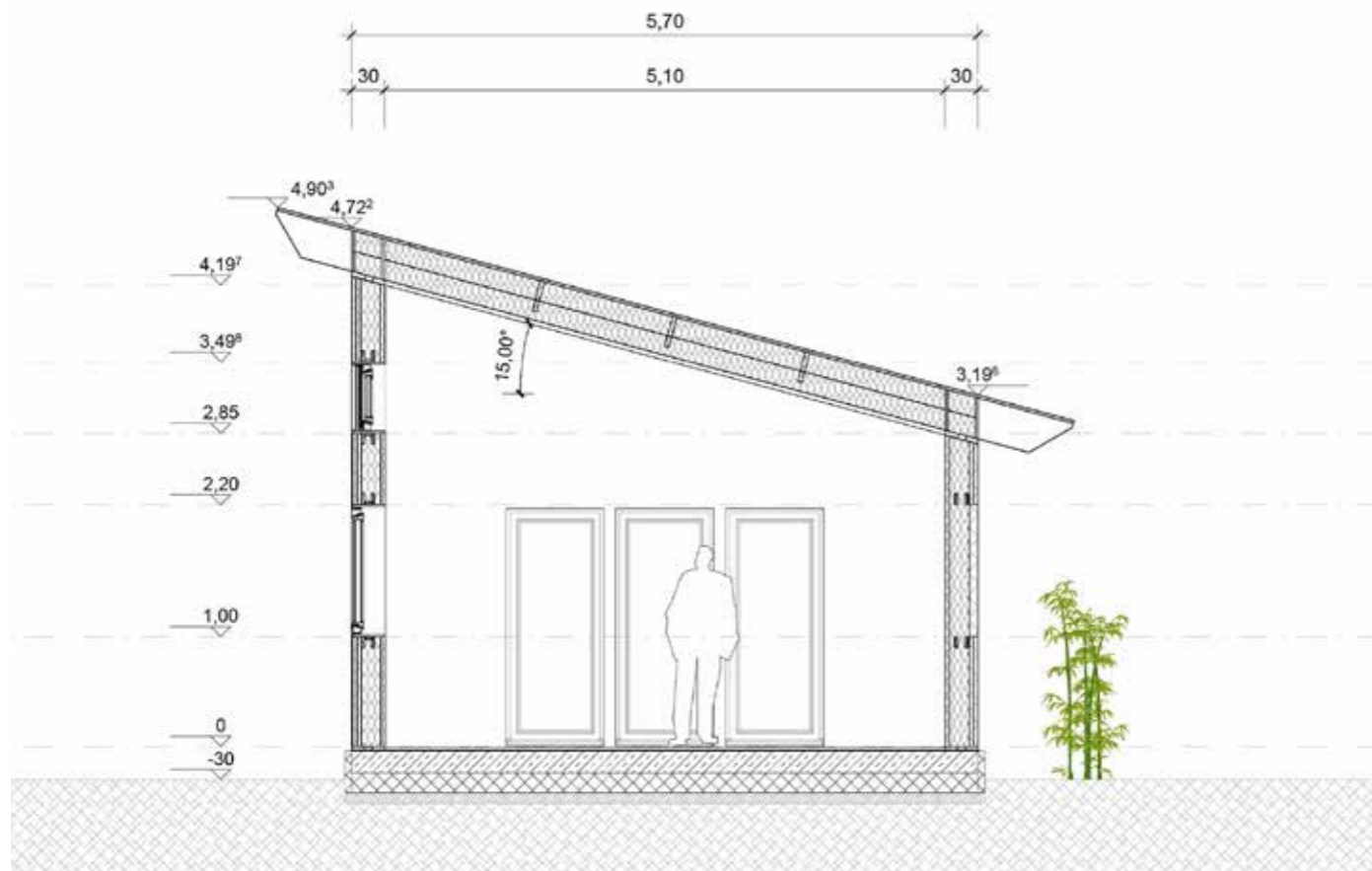
The underlying static analysis allows us to use recurring basic data for every size of building, regardless of whether your house is 5, 10 or 20 meters long.

There are some things to consider, which we also want to introduce you to on the following pages.



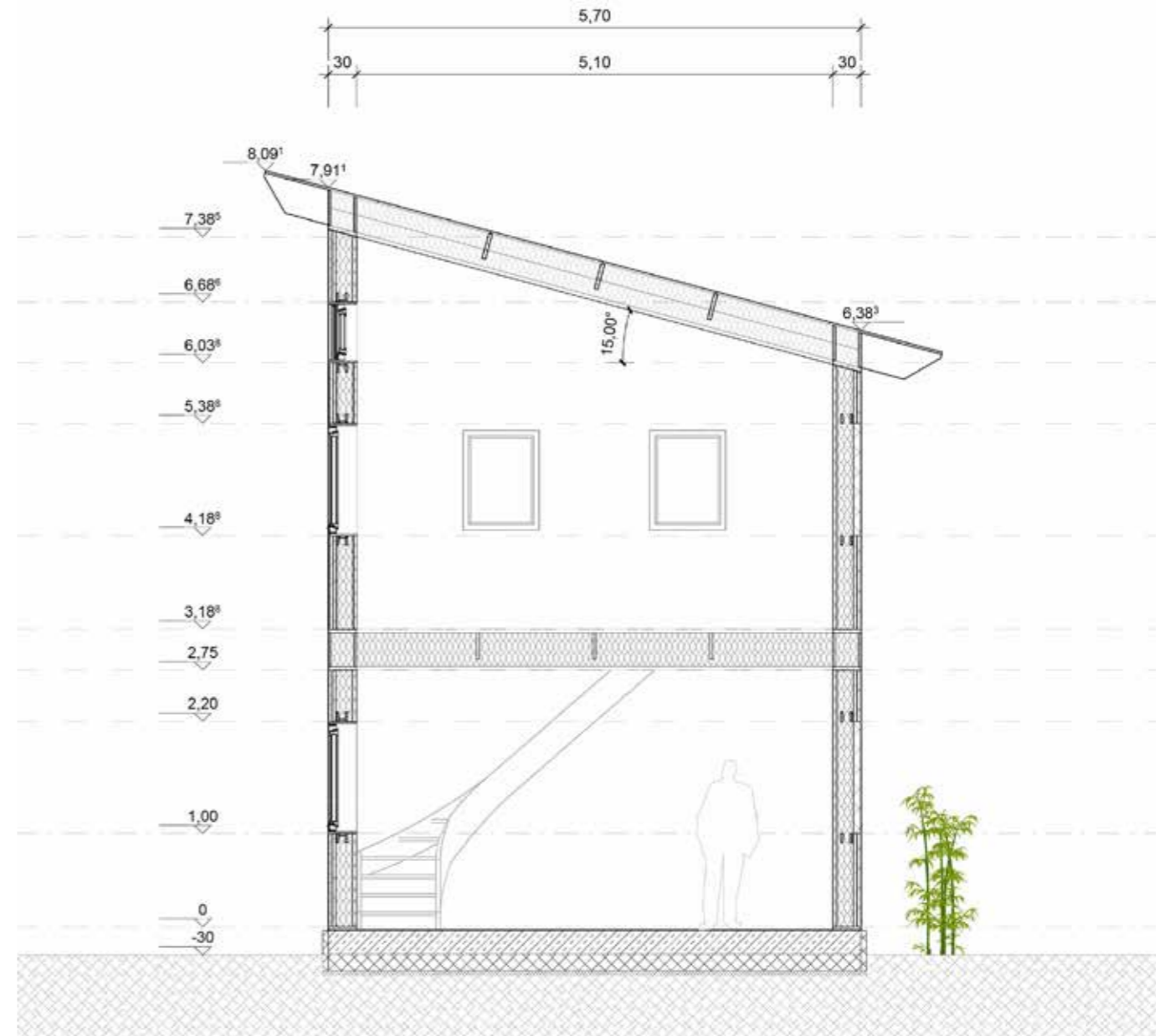
(Measurements in meters - Not to scale)

CROSS SECTION MODEL A1



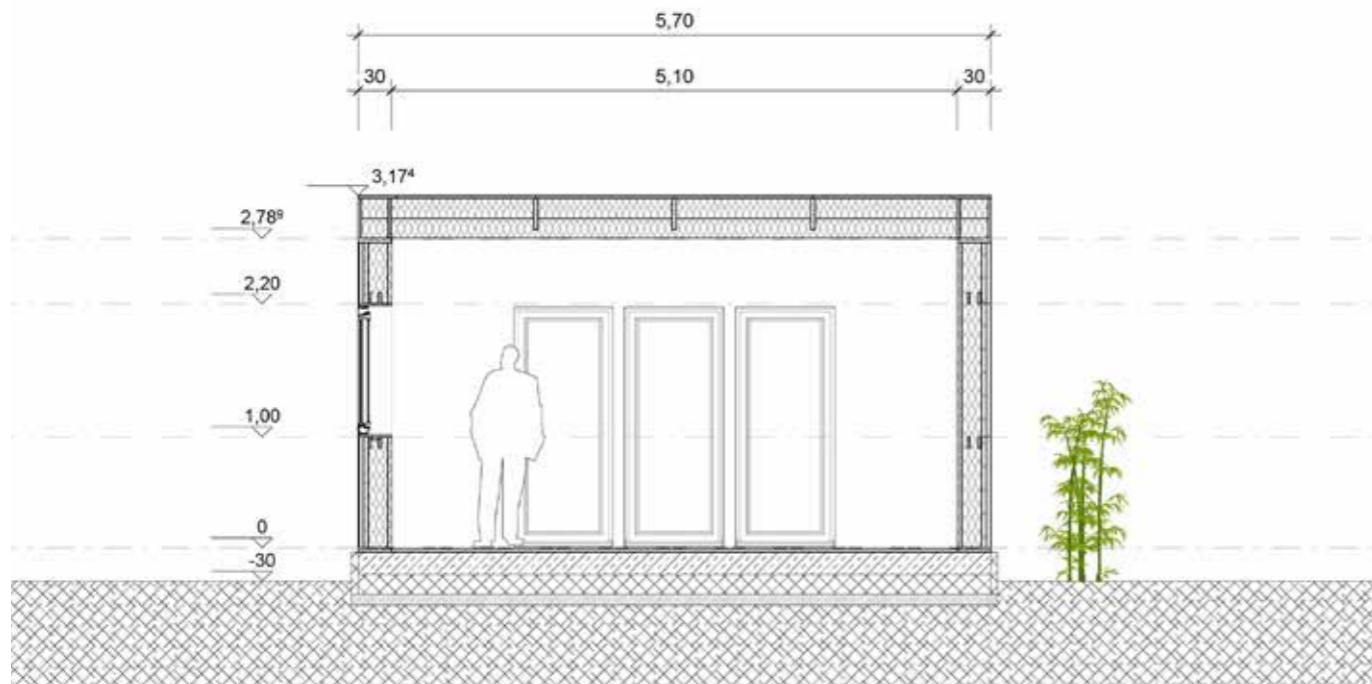
CROSS SECTION MODEL B1

(Measurements in meters - Not to scale)



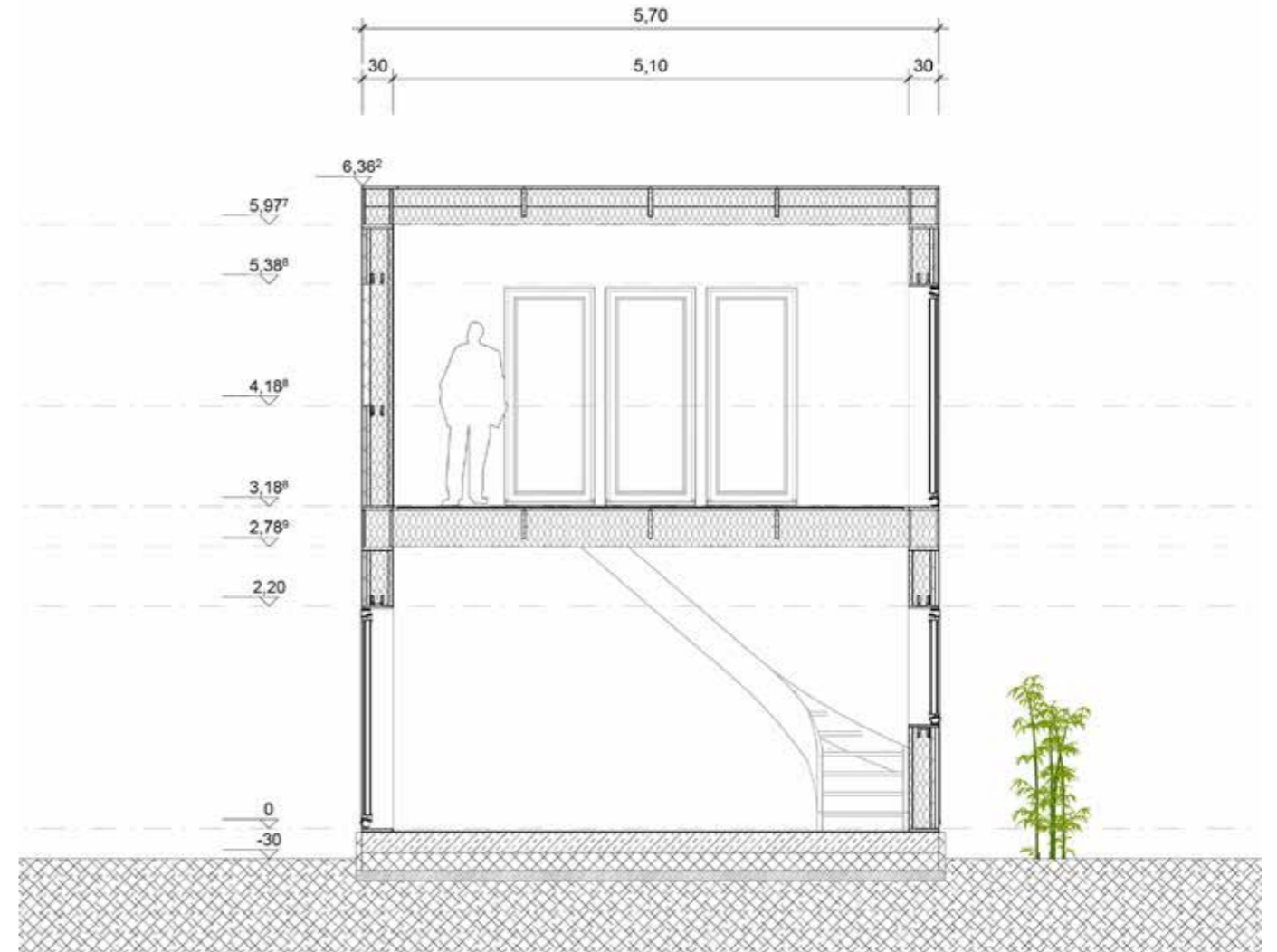
(Measurements in meters - Not to scale)

CROSS SECTION MODEL B2



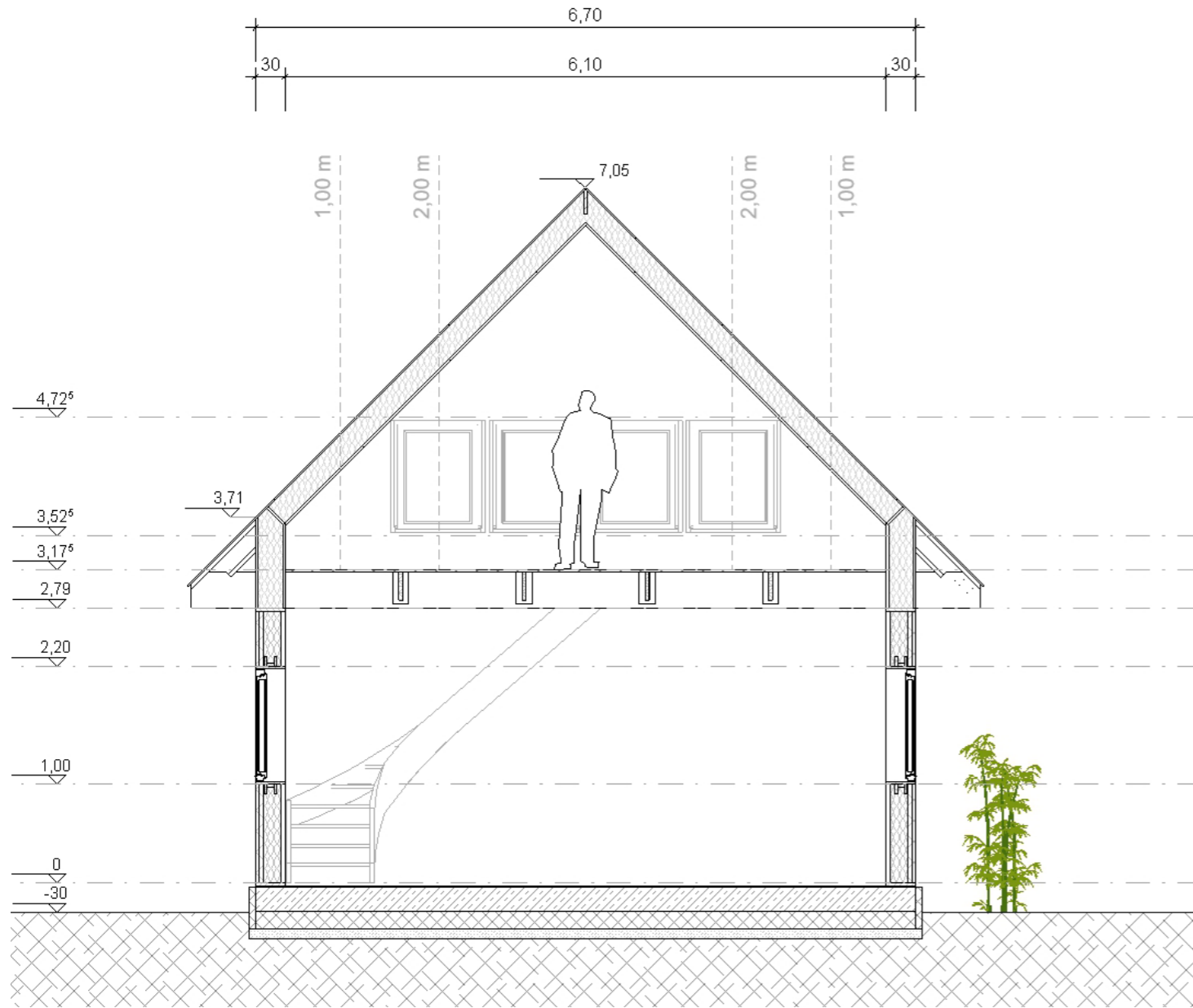
CROSS SECTION MODEL C1

(Measurements in meters - Not to scale)



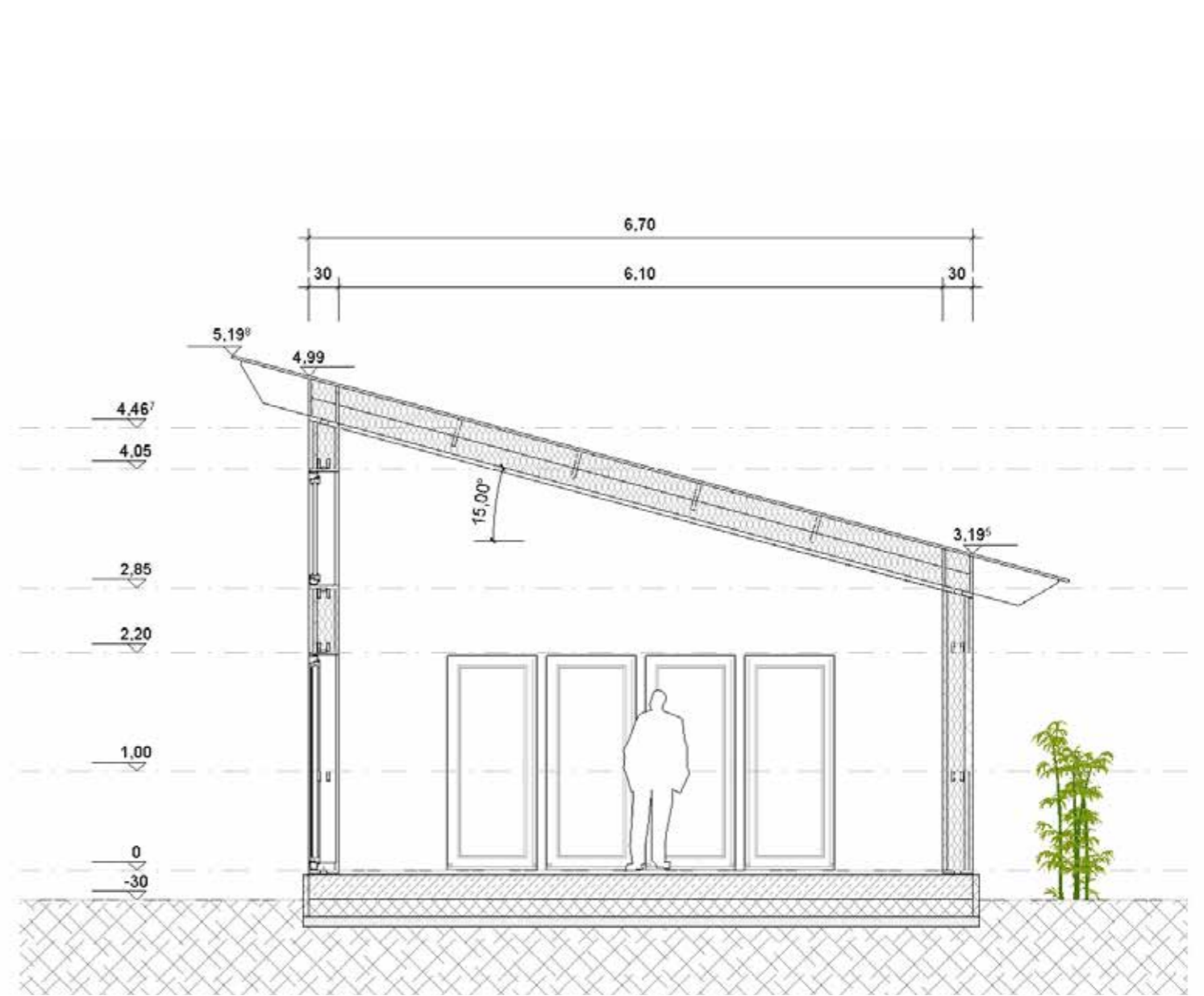
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CROSS SECTION MODEL C2



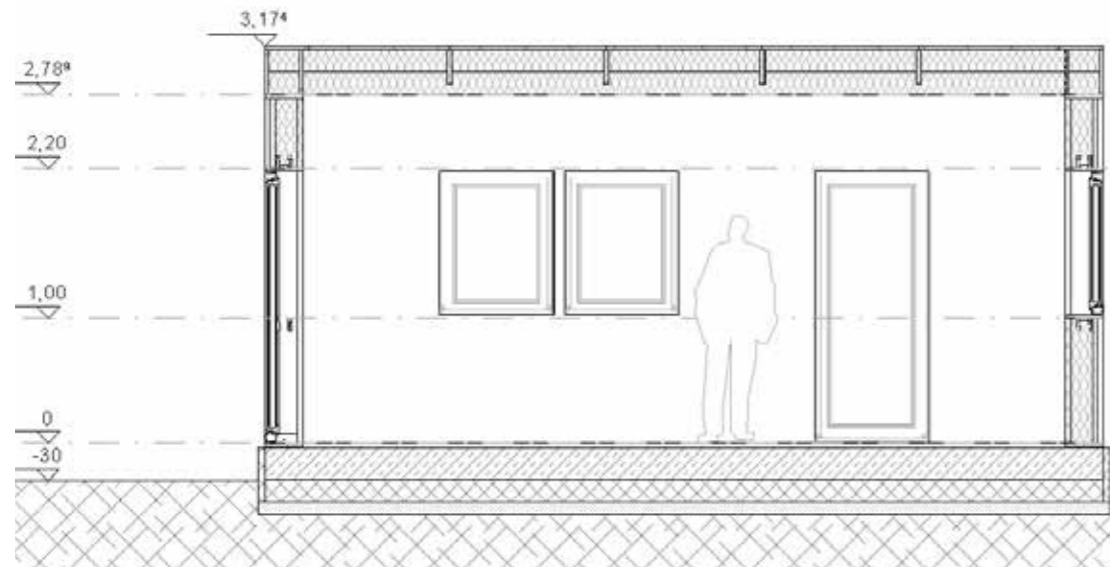
CROSS SECTION MODEL A+

(Measurements in meters - Not to scale)



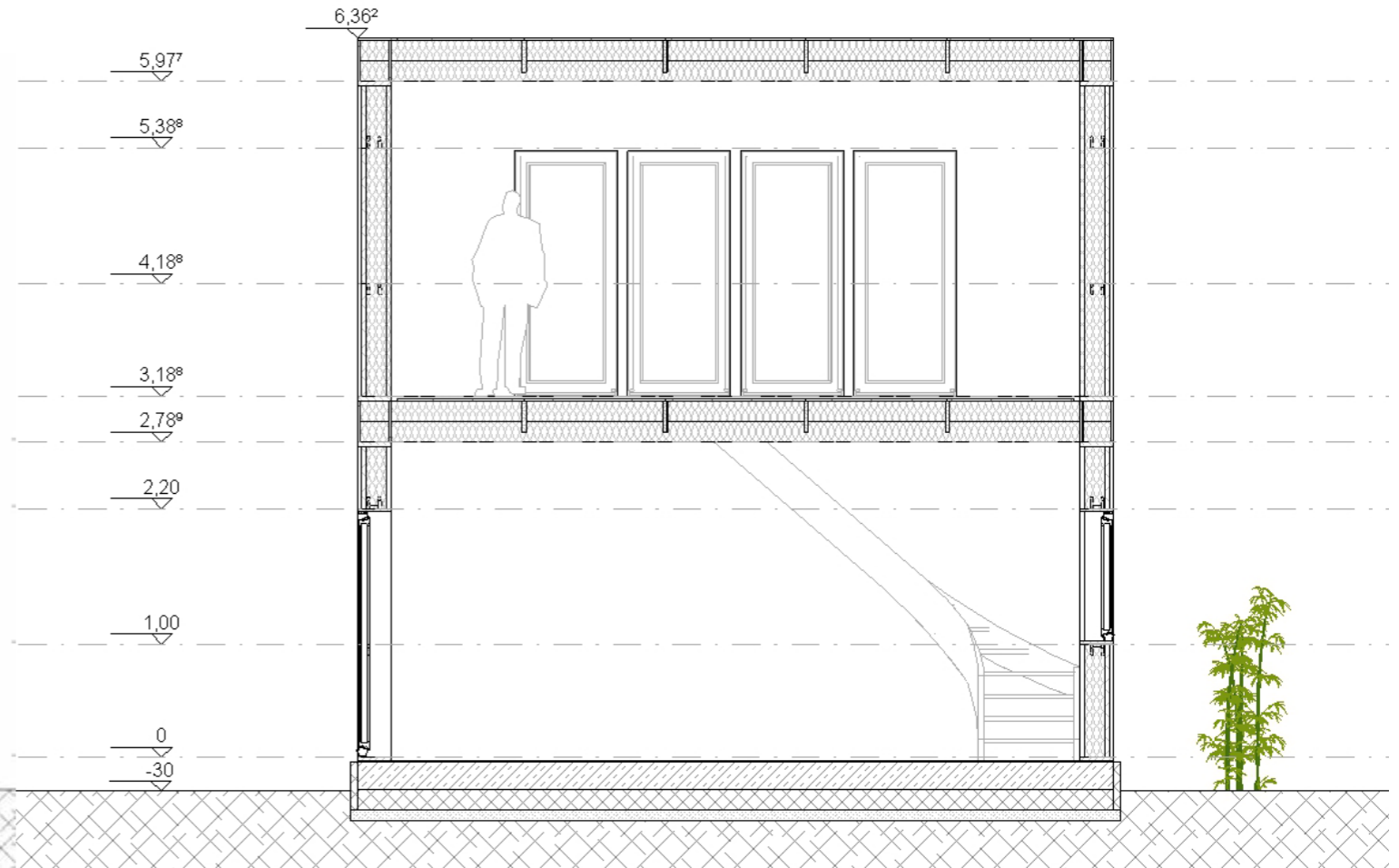
(Measurements in meters - Not to scale)

CROSS SECTION MODEL B+



CROSS SECTION MODEL C1 +

(Measurements in meters - Not to scale)



(Measurements in meters - Not to scale)

CROSS SECTION MODEL C2 +

WIND AND SNOW

A good climate is not only important indoors. Germany has quite a number of different weather zones. From the rather windy coastal regions on the North and Baltic Seas to the snowy ski resorts in the Alps, buildings have to meet a wide variety of requirements.

With the key measures of the static analysis of our building structure, we have tried to cover as many different load requirements as possible.

However, in order to ensure an economical production of the components for you, there are some locations in Germany where the building construction kit can unfortunately not be erected without further ado. If you have a property in such a region, i.e. where higher loads occur, we will have to carry out a case-by-case assessment.

In order to find out at which altitude your property is located, we recommend a visit to the website www.mapcoordinates.net.

After entering your address, the site will show you the height of your property above sea level, accurate to the meter. (ü. NN = above sea level)

The following regions are verified *) within SI-MODULAR static analysis:

Normal requirements (ca. 2/3 of Germany)

Wind Zone: 1 - 2
Snow Zone: 1 - 2
Height above Sea Level: max. 300 m

Snowy regions

Wind Zone: 1 - 2
Snow Zone: 1 - 3
Height above Sea Level: max. 750 m

On the following two pages you will find the respective overview maps of the snow and wind load zones in Germany.

If you are unsure whether you may build on your property with our system, please contact us. We will check this for you free of charge.

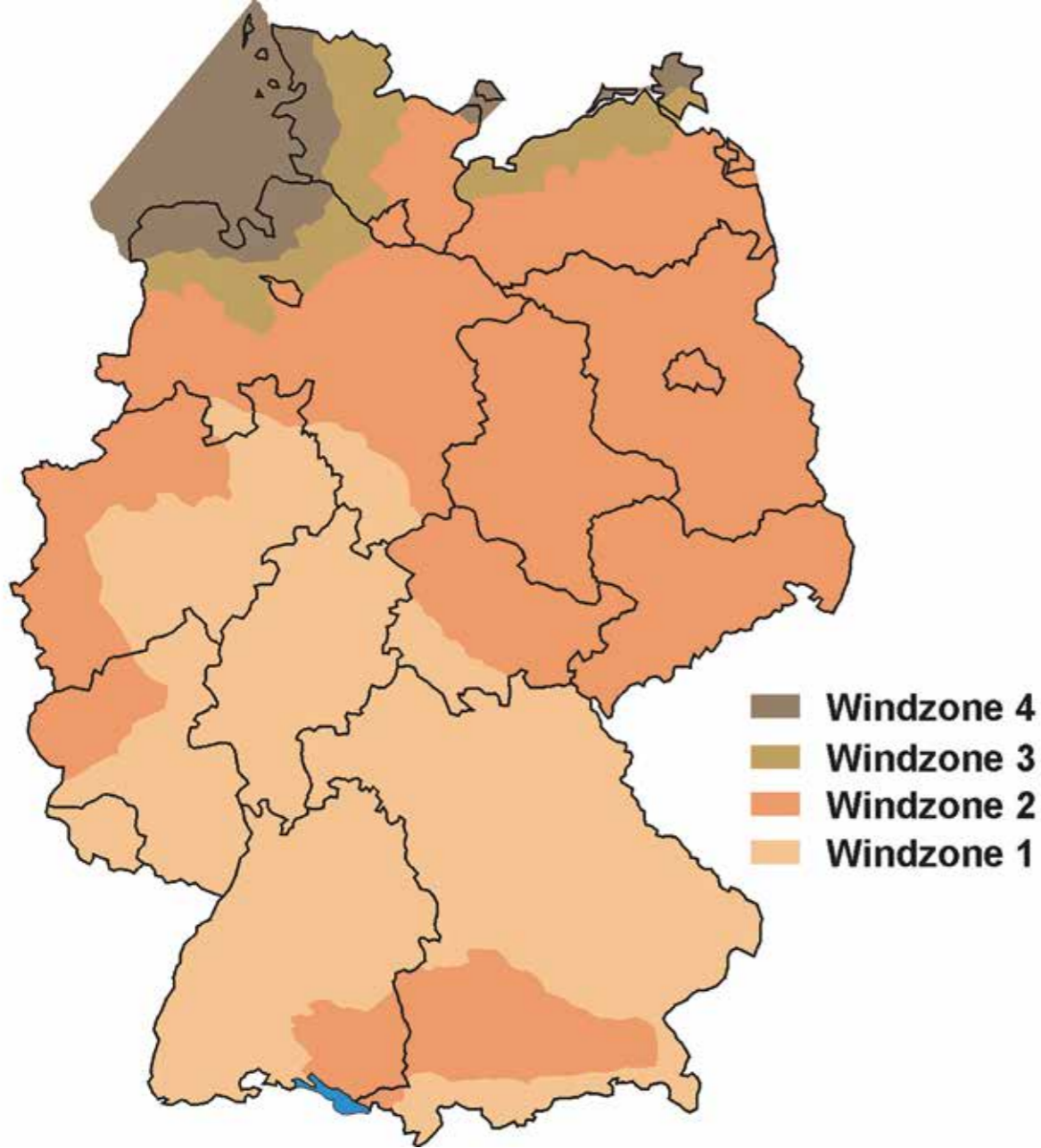
*) The new MODEL + structures with 6 meters width have to be evaluated for snowy and windy areas (snow zone >2 and above 300 m a.s.l. and wind zone >2) in an individual analysis.

This costs around 400,- to 500,- EURO plus VAT.



MAP OF SNOW LOAD ZONES IN GERMANY

NOTES



MAP OF WIND LOAD ZONES IN GERMANY

KONTAKT

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Web Site



YouTube Channel

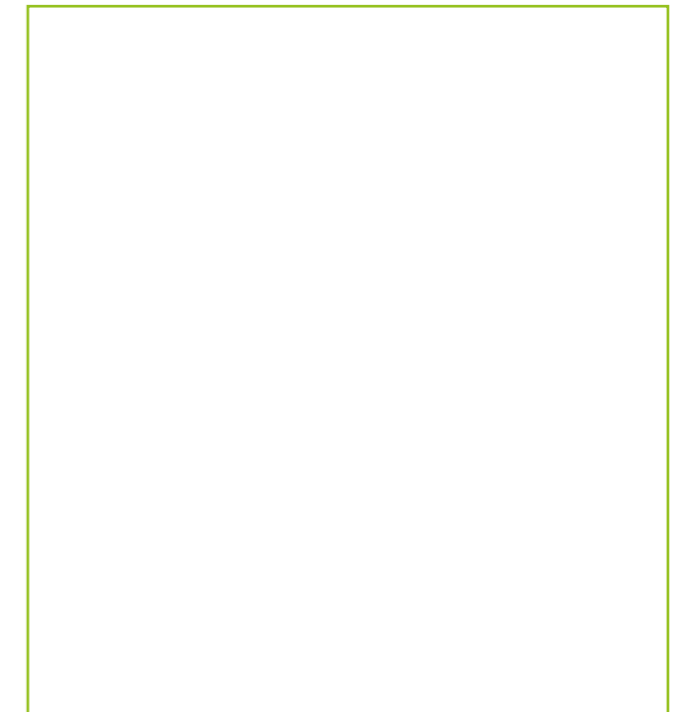
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Errors and omissions excepted!

If you are interested in our [SI-MODULAR]® building kits, please do not hesitate to contact us.

www.si-modular.net

Your local [SI-MODULAR]® – Partner:





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