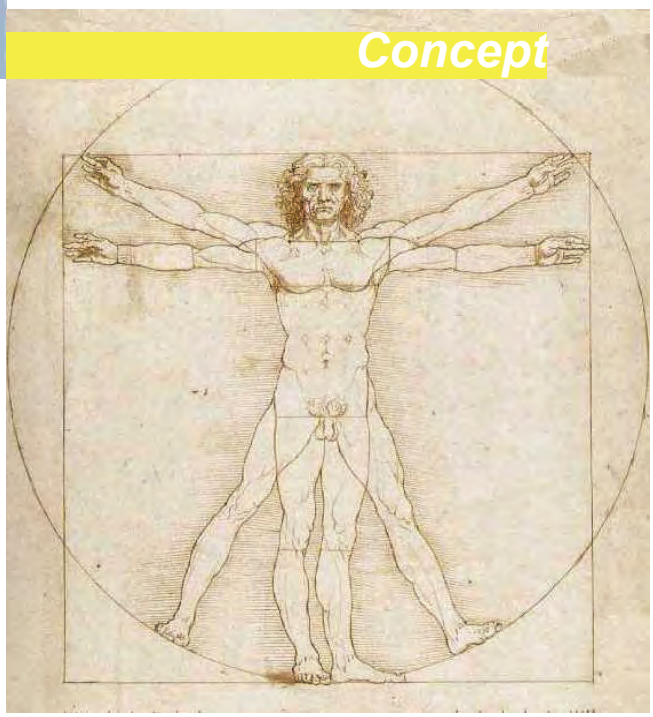
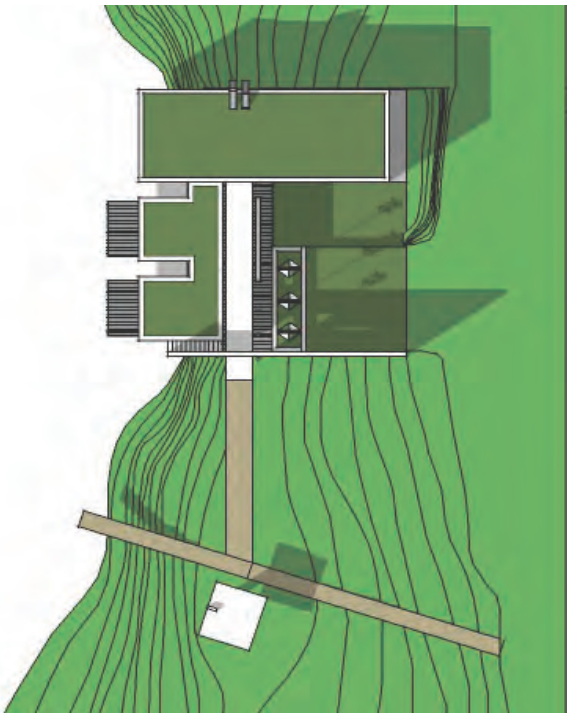

DOMUS AUREA

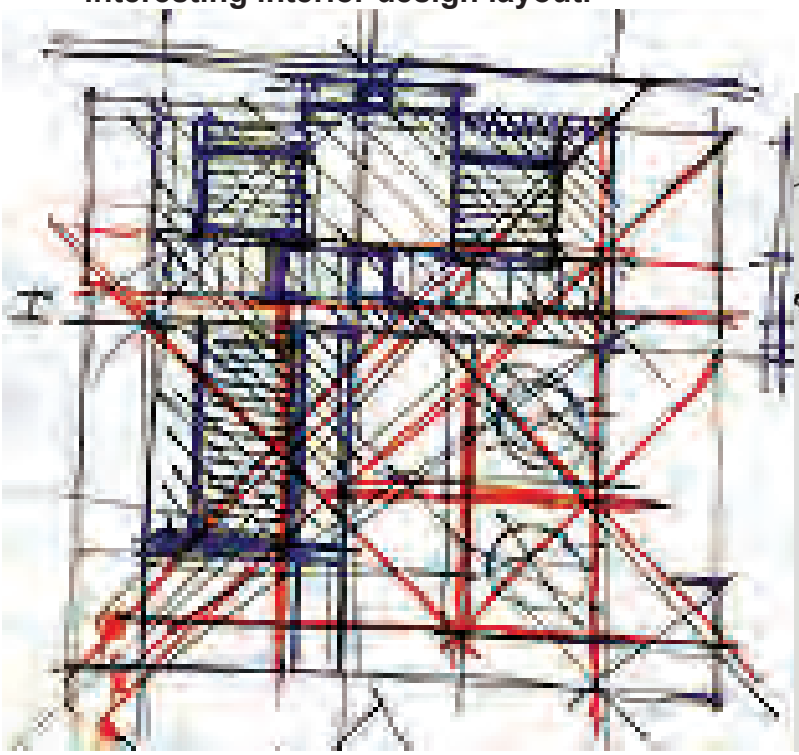
The house is shaped by **independent volumes** organized together according to the **hierarchy of internal functions**. The main volume hosts in a **double height space** the living areas. In this space **secondary volumes** (bathrooms, kitchen) are hosted and above them ***Robert office and Julia atelier*** are spatially connected with the main space of the house Two **secondary volumes** host respectively the **master room** and a bathroom and then the **guest room**. The first one is directly connected with the main spaces of the house, the guest room instead is more **autonomous volume** shaping a more **private** and discreet apartment. These volumes are **organized around the open space** of the garden which (as in a Roman villas) assumes the role of the **centre the house**. To underline such **classical composition** the **main entrance** to the house is

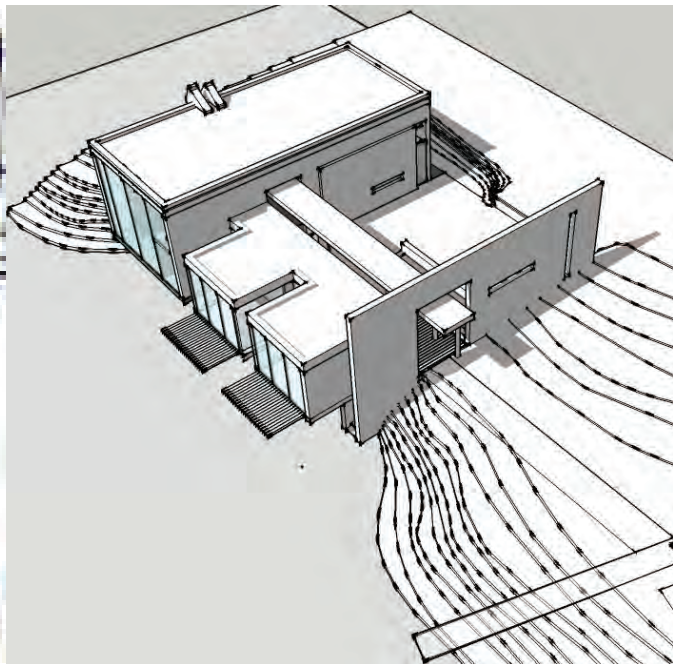
Concept



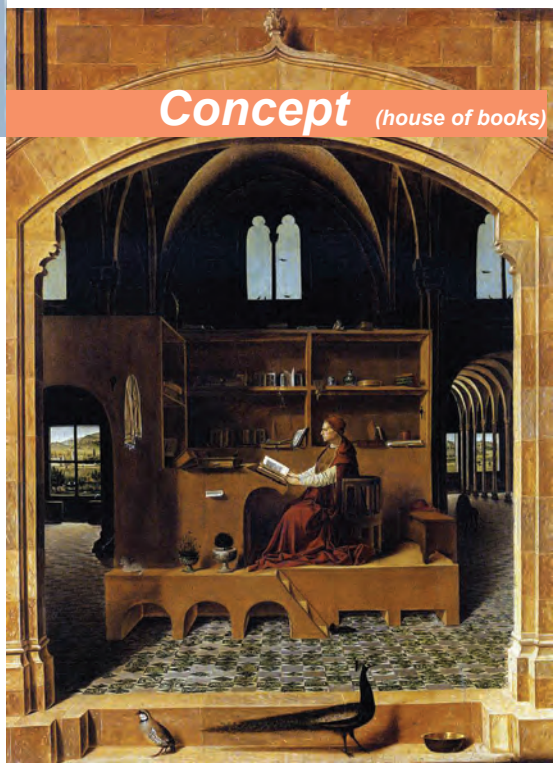


organized as **an axis** joining together all the spaces of the house. It is a **"promenade architectural "** that leads through the spaces of the house until meeting the **secondary axis** (which hosts the **fireplace** / **library** and the stair) that is reported. At the **intersection** between the two axis **two ventilation chimneys** stands outside like **sculptures**. This house even in **a small area** shapes a complex plan able to provide **an emotional spatial experiences** and always **different interesting views**. **Low maintenance** and **longevity** house become one of the main concern of this modern retreat house design ideas, formed by **compact exterior** and **interesting interior design layout.**



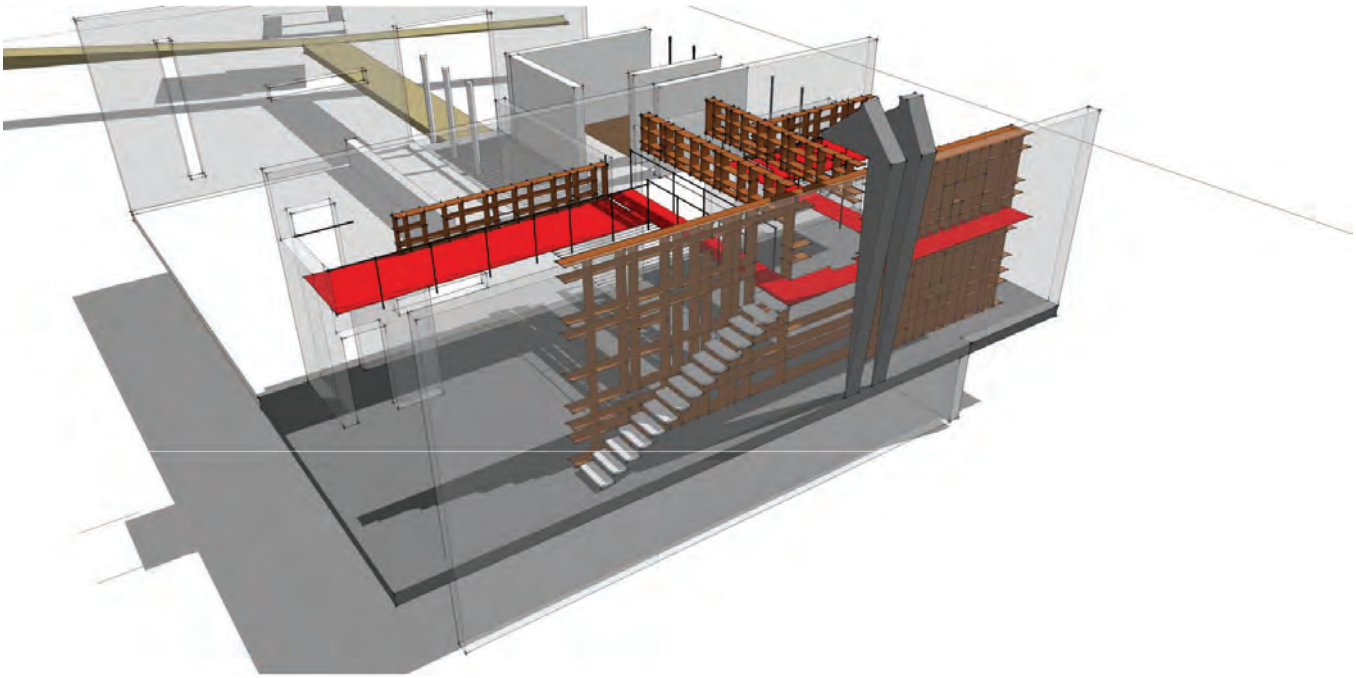


The ***Robert Office*** ***and Julia Art Studio*** are both open on a **large double high** clear and transparent space where the main living activities takes place and organized. Both the Studios are on the mezzanine level connected separately by a **linear stair** hidden by a big library and inner **briges**. These two spaces give them the opportunity to be in intimate and eventually **private space** with **comfortable connection** with the house and nice view on the landscape and the lake through the double high void. ***Robert office (more intimate) is open towards the landscape in the back***



Concept *(house of books)*

The project envisions a new space where Robert "*as a learned man of the Renaissance*," or like any true bibliophile, just wish to stay souranded by his books. This is a simple, confortable and artistic well designed space open to the nature and the landscape where he loves to sit down with a good book. Actually he didn't want to ruin real books for the sake of constructing his house so instead, the house incorporates **book-oriented designs** in everything from the furniture to the walls. ***So*** in our concept ***Robert*** is like ***St. Jerome in his study***, (the painting by the Italian Renaissance master Antonello da Messina). As Antonello stays in his room without walls seen from a kind of triumphal and arch, Robert sits in his **Office/Library** seen in this **modern retreat house**. From his Office/Library located at the mezanine of this ***double hight space*** he looks at the lake and the landscape sourroundig their home. The book he is reading represents the knowledge but also the **happiness** to stay in their retreat house. ***The house of books.***



How can they fit both an Art Studio and an Office\Library into such a small space?

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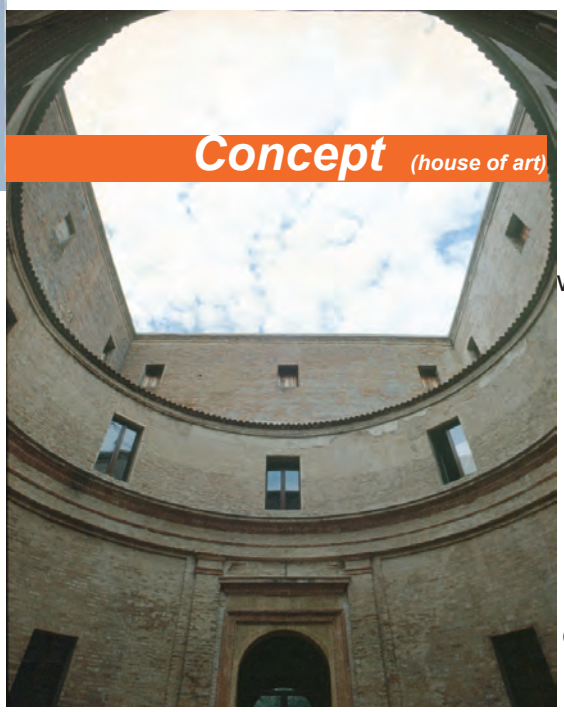
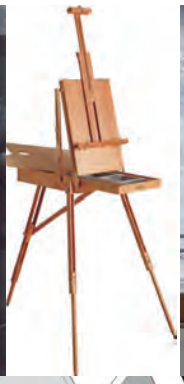
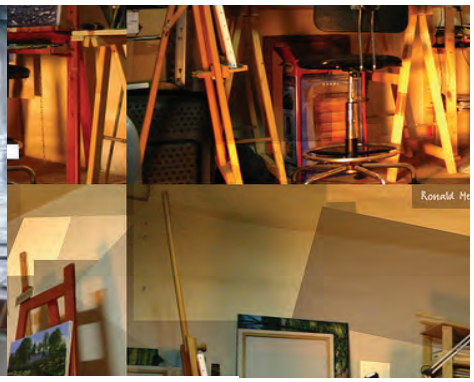


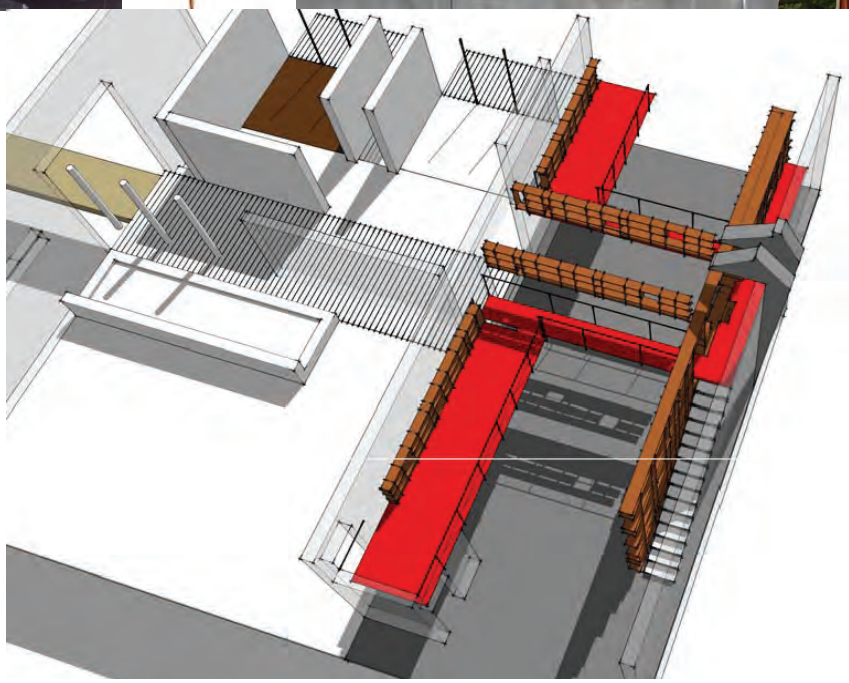
Concept *(house of art)*

The project envisions a new space where Julia as a *"En plein air painter,"* in the diffuse light provided by two opposite oriented very large windows wish to stay findig inspiration and her Muse, and from there get out painting in Nature as often as possible, with a feeling of joy at our unbridled creativity. Her Art Studio is a simple, confortable and artistic well designed space open directly related with the living space of the house as well as to the nature and the landscape. ***So*** in our project ***Julia*** standing in her **Art Studio** located at the mezanine of this ***double hight space*** looks while she is painting at the lake and the landscape sourroundig their home. Her **study expands in the house** domestic space and in the landscape outside. Her home is also the private art gallery space where her works are housed Thank to this new beloved house she fully realize that cannot exist a truly well designed home, without a **clear artistic order, semplicity** and moreover without beeing **functional.**

The house of Art.







How can they fit both an Art Studio and an Office\Library into such a small space?

Garden is a very important part of this new house project. Actually it is an **integral part** of the house, **a set of rooms** outside the house that **expand it outward**. Through the garden home defines its relationship with nature and lanscae.

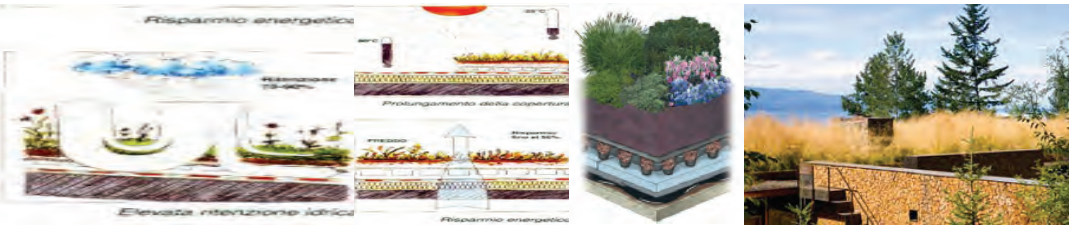
Gardens

It is not only the place where people usually relax, but in this project, the garden is set within the overall structure of the house. It is designed as a **sequence of four small theme gardens,** each with features, colours and scents. The result is dazzling and colourful garden with varied flowers that blossoms appropriate throughout the seasons, providing colour contrast. ***The four small garden create different small rooms, rispeclivelly:***

1.Vegetable Garden

2.Conceptual Garden

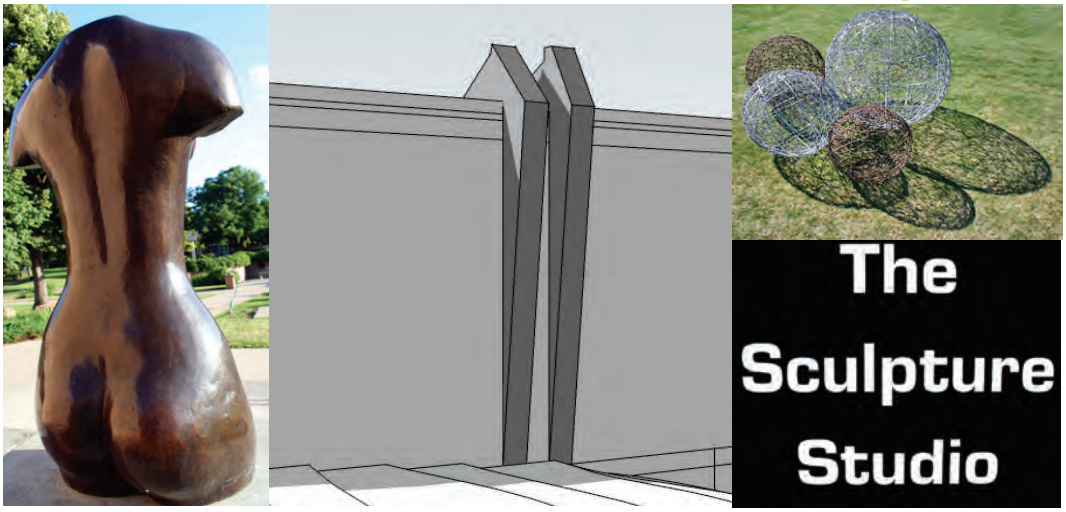
3.Garden Roof



4.Vertical Vegetable Garden

The vegetables garden combines the Robert passion for the kitchen with Julia's love for gardening. Actually growing **vegetable garden** is an excellent way to ensure that their kitchen will never lack fresh veggies. So in vegetable gardens, the plants grow upward, supported on props that come in various designs. As well as thanks to hydroponic they have a stunning **rooftop garden**.

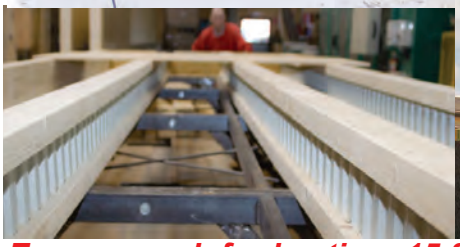
5.Garden of Sculptures

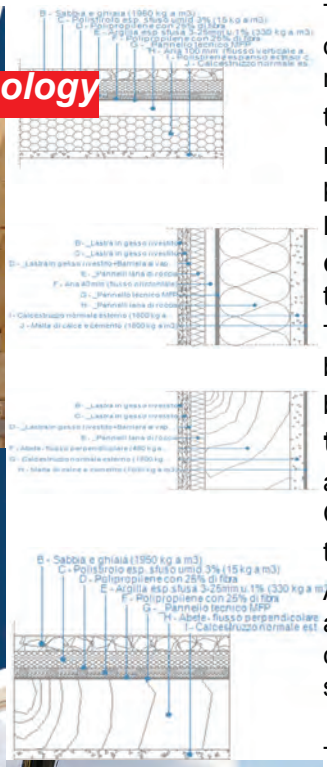


What is the proper way to integrate the outdoors (indoor\outdoor living)?

Concept. The New **Domus Aurea** is a net **zero energy** building:
-**very low energy requirements;**
-**energy consumed by production of renewable energy systems partially placed on site;**
-**connection to utilities such as flywheel energy networks;**
-energy balance calculated on the boundary of the site in terms of primary energy.
Goal: comfortable conditions with **minimised energy consumption**, to be covered partially by renewable energy.

Building Technology





The analytical study model of the energy behavior of the building suggested the choice of technology relating to thermal envelope components considering the need to use **ecologically sustainable materials**, extending the concept to the entire product life.

Main goal of the project was to ensure **a high level of comfort for the interiors.** Related with temperature, humidity, noiseand light.

To reduce the **ecological footprint** of the building we choose to create a cradle of wood, strong but lightweight materials, able to provide **high thermal resistance** due to be able to achieve a **high energy efficiency**.

Considerable windows facing south could maximize the **passive attitude** towards the solar gains,

An extensive **green roof,** has been used as instrument of environmental mitigation and compensation as well as return to the nature of the surface covered by building.

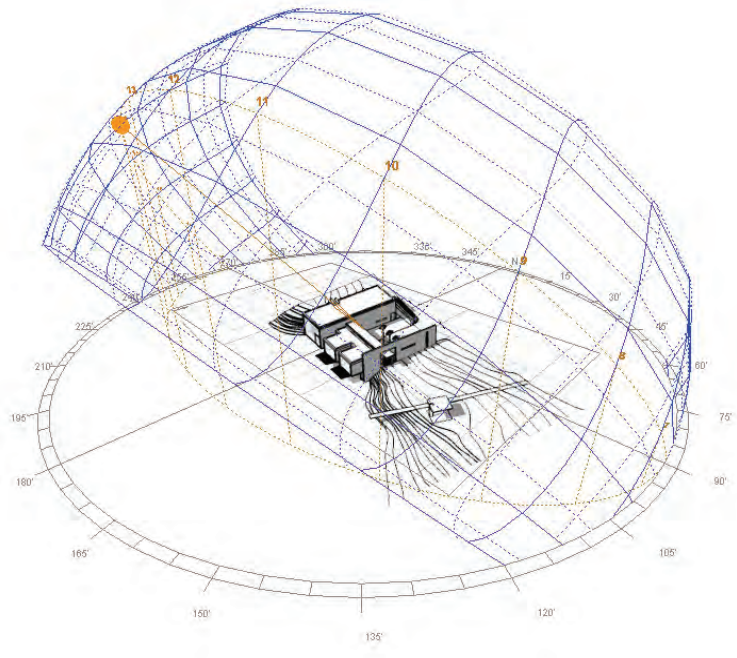
The **building envelope** is conceived as having a **low heat capacity** but a **high thermal resistance**.

From this point of view, great importance has, the factors related to **heat losses and free solar gains**

The windows are triple-selecitve low e-glass with glazing Argon (trasmittance Uw 1,1 W/m²K)

Energy need: for heating: 15.2 kWh/m² year.

for sensible cooling: 7.1 kWh/m² year.



The timber construction technology was selected based on:

Energy performance (insulation and thermal storage);

Assembly speed ("on demand" prefabrication + dry assembly);

Durability and mainetence. Walls and floors will be built with a very insulated, **mixed system in timber + concrete.** This will be fabricated off-site and assembled on site.Thermal loads (occupation and solar gains) are absorbed, during the day, by thermal masses exposed indoors (ceiling, walls and floors).This energy **is flushed away by night ventilation (activated by opening the chimneys).**

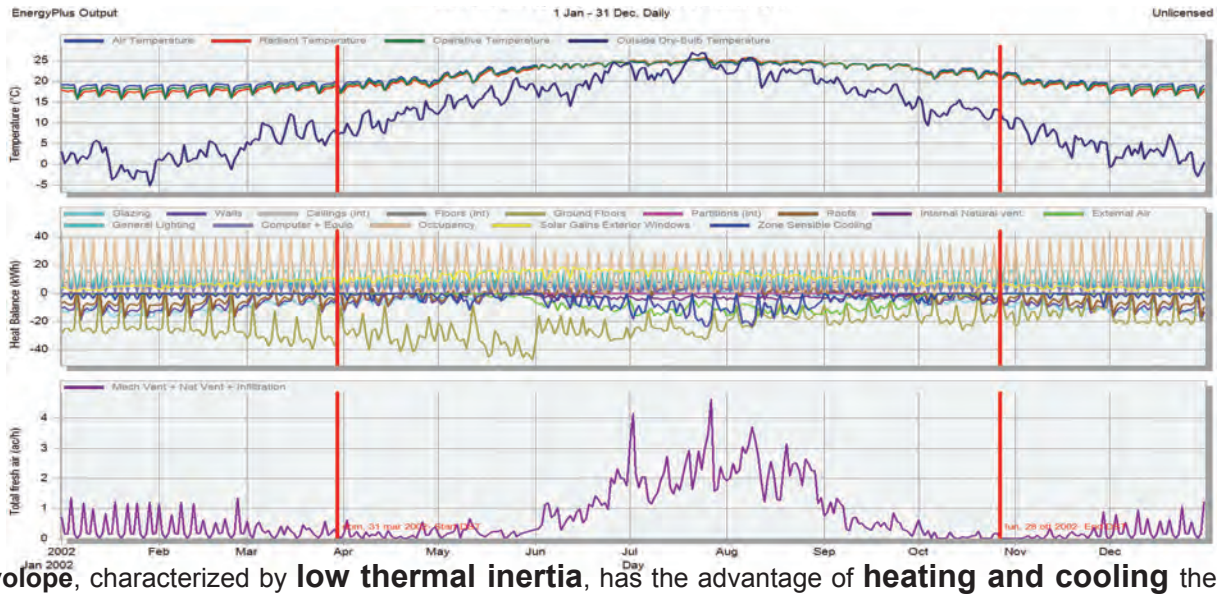
Internal surfaces are able to absorb, during the day, 42 kWh (28 kWh in the floor, 7 kWh in the wall and 7 kWh in the ceiling).

What can be done with the home to make it durable from both a mainnance nd longevity perspetive?

DOMUS AUREA wants provide **a high level of comfort within the living space**. A **radiant floor heat** has been considered the more sutable choice for generating a **uniform distribution of temperatures**, close to the ideal thermal comfort. For the heating fluid circulating in the underfloor heating working at low temperature, the connection is provided with **a heat pump, air/water-driven electricity** (provided eventually by renovable sources) The **heat pump** extracts heat from the ground **using geothermal**, and then providing it to the interior. The energy thus obtained, together with a small solar thermal system, in coverage, **is sufficient to cover the heating requirements** of **heating and hot water** for domestic use. In this way the resource efficiency is maximized, creating a building with **no CO_2 emissioni** and smoke caused by burning. The house eventually

Building Technology

be provided by one system of few **small high quality, high performance, and attractive vertical axis wind turbines (4Kw)** able to power the home and sell excess electricity back to the utility company **making**

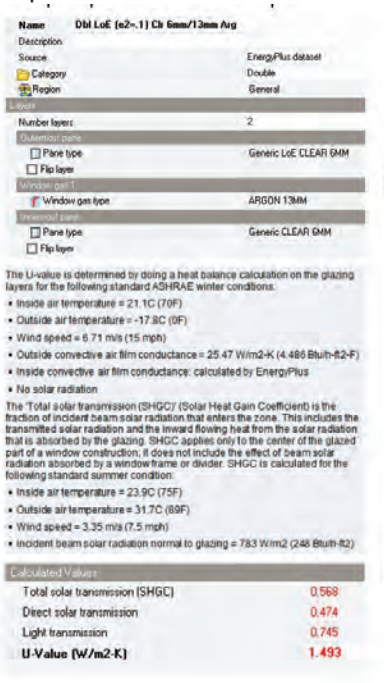


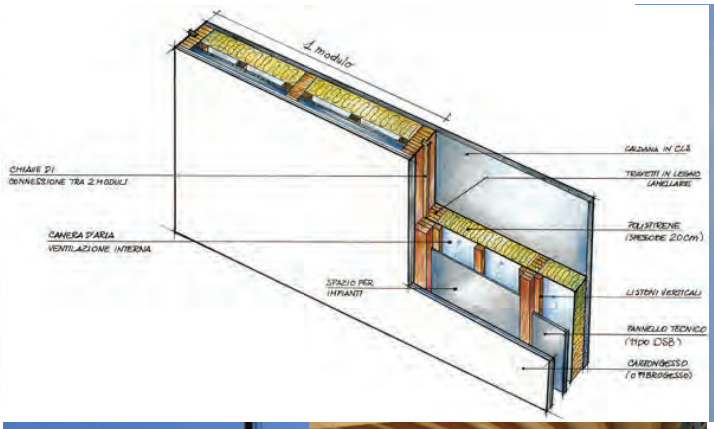
The wood envolope, characterized by **low thermal inertia**, has the advantage of **heating and cooling** the inner layers of the walls **quickly**, helping to improve the operating temperature.

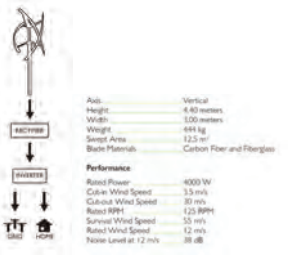
The operating temperature is the temperature actually received by people inside the premises and is influenced by both the air temperature is the temperature of surfaces that define the environment, properly weighted.

This is of fundamental importance in the sphere of our project, where **every effort is intended to make technology choices that can achieve the highest level of thermal comfort** in synergy by integrating the study of plants to ambient relative humidity control and the quality of 'indoor air.

Then presence eventually of **mechanical ventilation**, in fact, could lowers the **levels of CO2 concentration**, the effect of parts, but also to filter the outside air effectively **removing traces of pollen**, and other VOCs that may be present in micro-environments .





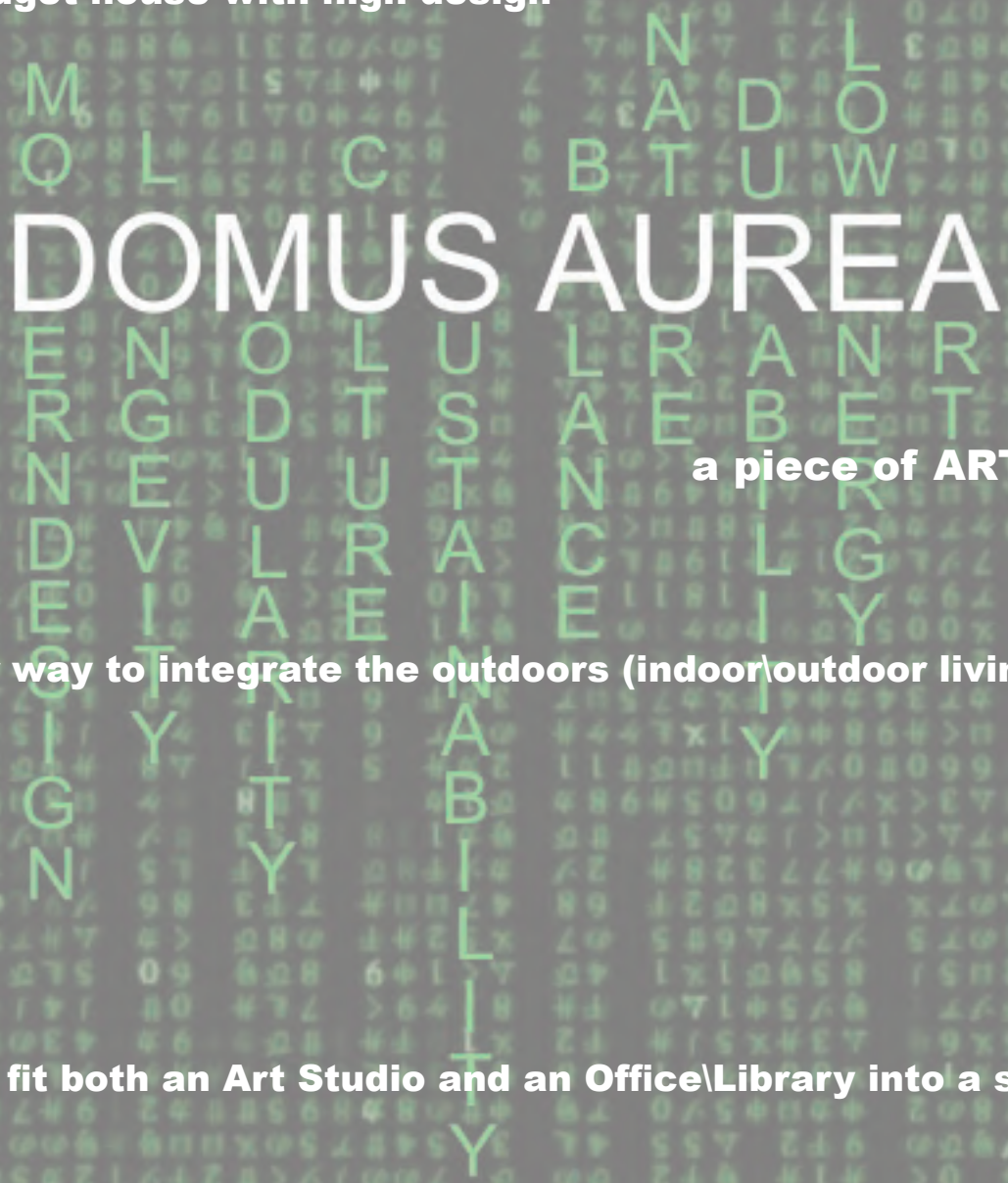


What are the most affordable, impactful ways to make their home greener?

An affordable, impactful ways to make their home greener

A durable home from both a maintenance and longevity perspective

A limited budget house with high design



a piece of ART not just a

A proper way to integrate the outdoors (indoor\outdoor living)

A way to fit both an Art Studio and an Office\Library into a small space