

# MOASTEEL HOUSE



WE ARE PART OF THE  
**#1000SOLUTIONS**  
TO CHANGE  
**THE WORLD**

## EFFICIENCY ASSESSMENT REPORT

### MOASTEEL HOUSE

We make contemporary homes low consumption with sustainable and recyclable materials

Solution ID: 11370  
Company: AVENIR ACIER

Country: France  
Export Date: 13.07.2020

## ASSESSMENT RESULTS



APPROVED

# MOASTEEL HOUSE



Presentation of the MOASTEEL HOUSE solution.

Our solution is a new way to build ecological, Energy-Positive houses.

The walls and roof are made with prefabricated insulation panels in the workshop with 30 years of warranty.

They are then screwed onto a metal support structure. Our homes are built to withstand earthquakes and hurricanes.

With targeted metal pile foundations, we can install our homes on all types of soil and especially without the use of concrete.

A great saving of time, energy consumption and an excellent option to preserve our planet.

# PROBLEM



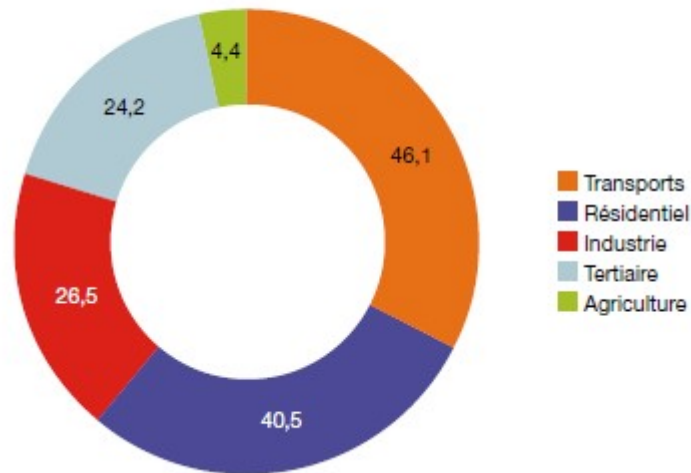
To limit greenhouse gases on construction sites, water consumption must be reduced, transport use and CO2 emissions into the atmosphere.

We must reduce the consumption of fossil energy for heating.

We must reduce the impact on soils and preserve biodiversity in order to act on the three sectors that consume the most energy.

## CONSOMMATION FINALE PAR SECTEUR EN FRANCE

TOTAL EN 2017 : 141,8 Mtep (données non corrigées des variations climatiques)



# MAINSTREAM



Individual houses and housing buildings are currently being built either:

1. In traditional masonry with concrete blocks or with terracotta bricks on concrete floors and covered with a traditional terracotta tile roof on wood frame.
2. In wood frame with a finish in Thermal Insulation by the Outside covered with a projected coating? covered with a traditional clay tile roof on wood frame.
3. MOASTELL HOUSE bring a better positive Impact with less than 55 tones of CO2 than french traditional houses and less than 7.5 tones of CO2 than Wooden houses.

# MOASTEEL HOUSE SOLUTION



We imagined to build houses completely differently than existing methods by reducing the installation time on the job site and by making as many factory components as possible. We therefore chose to use the metal piles directly screwed into the ground to make the foundations. This system can be implemented on all types of terrain and allows me not to use concrete. On these piles, are bolted together, the floor, poles, crossties and all elements of the metal structure. It is made to measure and can be built on several floors.

The computer sizing allows to take into account all the climatic and seismic constraints at any place of the planet and to meet the construction standards of each country.

Structural elements made of commercial metal profiles are manufactured in the workshop and are protected against corrosion.

The galvanized steel sheets of the floors are screwed or nailed to the structure. They may or may not be filled with concrete as they may be sized to directly support operating loads.

A minimum PIR 100 mm foam insulation is installed and covered by the final floor.

The walls are made of factory-made panels. They consist of a minimum PIR foam insulation of 100 mm trapped between an inner sheet and a pre-lacquered galvanized steel outer sheet.

This facade coating has a 30-year warranty against corrosion.

The panels are recessed and screwed onto the metal structure.

This unique operation makes it possible to obtain permanently completed facades.

# MOASTEEL HOUSE SOLUTION



The cover is also made with this same type of panels with a minimum thickness of 140 mm in PIR foam. The outer sheet is either ribbed or with the shape and color of tiles. Our constructive system is particularly suitable for realizing accessible terrace roofs and vegetated roofs. This system also makes it possible to build offices and housing buildings.



# DETACHED HOUSE MARKET



The single-family home market in France represents 125,000 buildings per year in 2019.

The single-family home market in Europe represents 865,000 buildings per year in 2019.

Since the beginning of the health crisis, many urban dwellers have been planning to leave the city to enjoy a greener environment.

This trend in the housing market, which began at the end of 2018, is accentuated by the confinement and development of telework.

# BUSINESS MODEL



We have defined 2 development axes on the French market and our goal in 2026 will be to represent 1% of the French market or 1,250 houses built per year.

The first axis will be to establish commercial agencies first in the GRAND EST and the Paris region, and then throughout France.

The second priority will be to develop a system of franchises throughout France.

Each franchise will consist of a sales department and team of installers. All the services of filing of permits, thermal studies, technical studies, supply of the metal frame, supply of panels and joinery, will be assured by the headquarters to allow to guarantee the performances of the constructions.

As stated by the second expert in the report of the SOLAR IMPULSE foundation on the criterion of profitability of the seller: "the solution has been cost-effective since 2018, and profitability can even be improved by expanding the market and automating more construction processes such as consolidating the technical facilities of the kitchen, toilet, laundry and bathroom."



# MOASTEEL HOUSE STAFF

Philippe RIGOLOT: Founder and CEO MOASTEEL HOUSE

Laurent Georgelet: works supervisor

Corinne Galland: Administrative department

Darius Zurawski: Specialized fitter MOASTEEL HOUSE

Flavien Emond: Specialized fitter MOASTEEL HOUSE



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# DEVELOPMENT PERSPECTIVE



Our houses are currently produced individually and tailor-made.

We hope to be able to scale-up the production of our system to reduce costs.

Our system allows us to completely rethink the way we do individual homes.

It is necessary to produce in the factory a central core which includes the equipped kitchen, the bathroom, the toilet the technical room with a laundry area for the washing machine and the dryer.

This transportable assembly on a road gauge is directly mounted in the center of the house and serves as a stable base for the entire structure of the house.

All electrical wiring is on hold in the central module before being deployed along walls and floors.

From this central module, the different parts will be assembled according to the customer's choice of volumes and exterior finishes.

We also hope to improve the digitization of the commercial part by allowing our customers to choose and design their home in 3D.

# FUNDING APPLICATION



To be able to realize our development either in agencies or in franchises, we need a financing of 800000€.

Our certification by the SOLAR IMPULSE Foundation and especially the excellent feedback of the international experts, allows to guarantee to the future investor the seriousness and the relevance of our invention of low consumption houses.

Faced with the ecological challenges that we must take into account in future years, our development, first national and then international, is obvious to fight effectively against global warming.

The thermal and acoustic performances, the optimal use of recyclable and sustainable materials, the architectural modernity will make the commercial success of the MOASTEEL HOUSES.

We also plan to build model MOASTEEL houses in each major European region.