





## Company

Amatec is a **full-stack** construction technology startup. We are a construction platform that provides the market the means to **mass produce panels for custom homes** using best-in-class automation. Amatec houses are drastically cheaper to manufacture, faster-to-produce, stronger and much eco-friendlier than any other in the market.

Our mission is to create a new segment within the global housing industry that has radically improved levels of automation/efficiency and sustainability without compromise.

# Team



**Mohsen Zehtabchian - COO**

Finance major with leadership prowess and experience on two startup teams



**Igor Stavrulov - CEO**

Introduced and successfully sold 5 new products and technologies. Developed HDG Technologies since 2014.



**Diana Fisler - Advisor**

Chair of ASHRAE TC 1.8 Mechanical Insulations and Chair of ASTM C16 Thermal Insulation



**Rex Donahey - Advisor**

Director of Innovative Concrete Technology and former Editor-in-Chief of Concrete International magazine

+ **Highly experienced engineers** implementing the Amatec vision

# Market Context

- U.S. demand for housing is skyrocketing, but builders are unable to catch up to it. There is a shortage of over **6 million** homes nationwide at this very moment.
- Labor productivity growth in construction continues to be **on the decline**. Adjusting for inflation, the cost of building a home today is twice as much in labor hours compared to the 1960s.
- The construction industry is continuing to utilize outdated and **labor-intensive** building materials such as lumber and concrete. This dependence continues to prevent the industry from experiencing its own long-awaited industrial revolution.
- 41 percent of the construction workforce is retiring by **2031** and there aren't enough young professionals replacing them.

## The widely accepted solution?

Industrial automated production.

# Problem

In order for the housing construction industry to meaningfully progress towards industrial production, new building materials that allow for new methods of construction are needed.

However, merely introducing a building material into the market demands all market participants including the contractors, architects and developers to figure out how to use it and retrain themselves.

Consequently, industry specialists confirm that the widespread adoption of such innovations could take as long as 20-40 years.

**The housing industry does not have that much time before a large-scale systemic collapse.**



# The Question

**How can the widespread adoption of a new building material be fast-tracked?**

1. Every market participant (end-clients, architects, developers, contractors) needs to get involved simultaneously
2. The transition must be a seamless process (minimal training)
3. The state-of-the-art software applications and maximal use of automation (minimal use of labor)



# The Amatec Solution

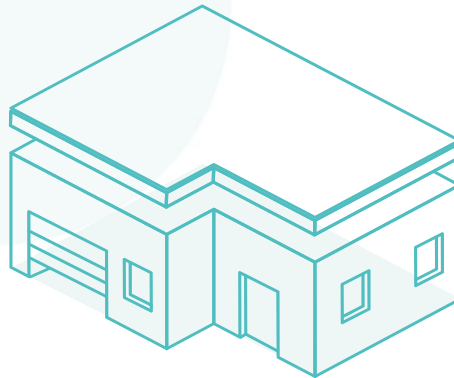
Amatec developed a technology that allows for the industrial production of ready-for-assembly panels, which form the walls, ceiling, floor, and provide the structure for any custom house. This is possible thanks to our **proprietary building material, HDG**, and advanced method of manufacturing.

The production of these panels requires zero manual labor.

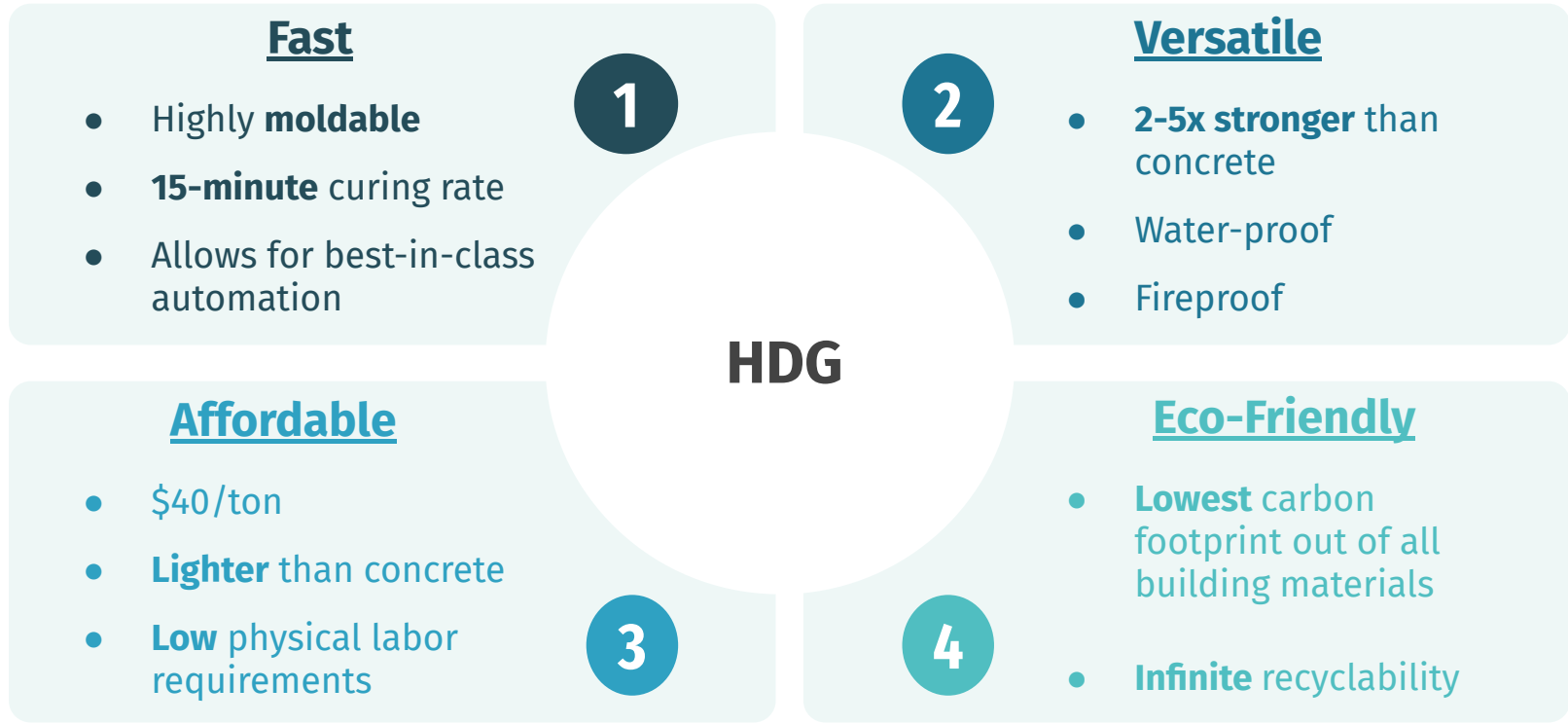
**Amatec Panels  
(white-box  
house kit)**

1 to 2-day assembly by contractor

**White-box house  
(unfinished  
interior)**



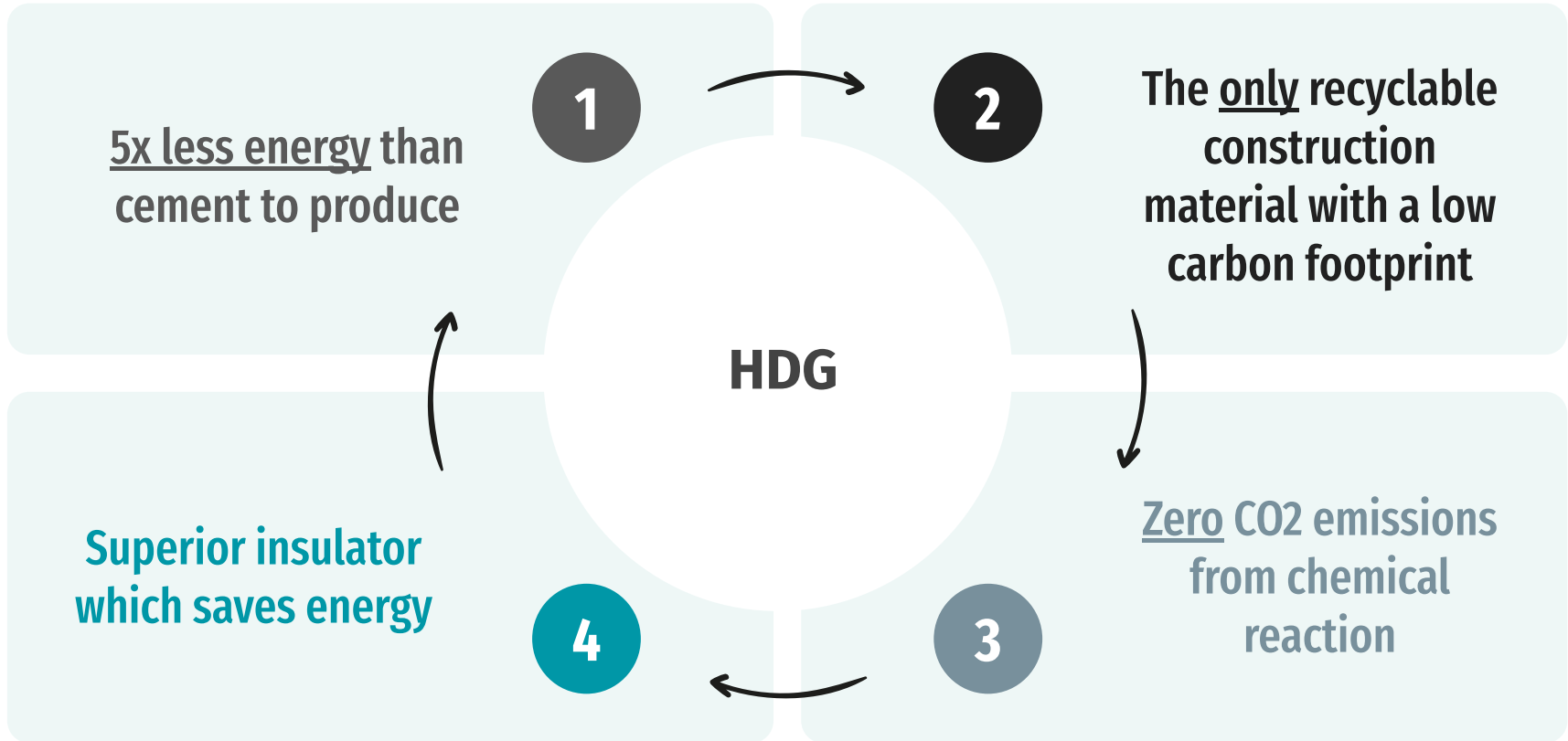
# Benefits of Using HDG in PreFab



**And that's not all!**



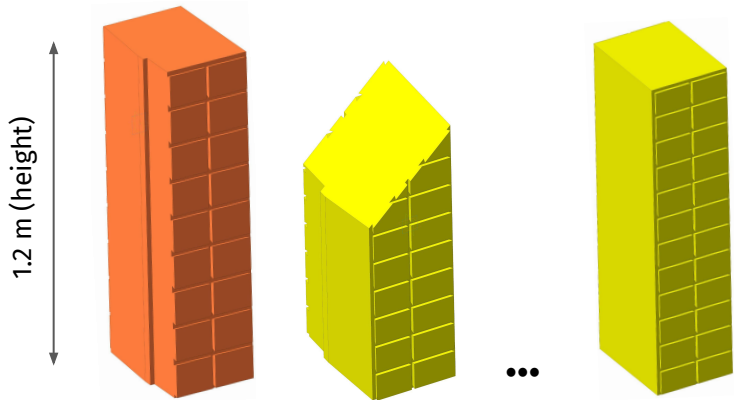
## Benefits for Climate



# Functional Panel Units (FPUs)

## Is the industrial manufacturing of panels for *custom* houses possible?

Yes, only if what's being mass-produced is the *elements* that make up the panel. AMATEC produces its very own elements out of a porous modification of HDG called Functional Panel Units (*FPU*).



- Mass-produced
- Used to produce panels of any form and size
- A porous modification of HDG (aerated HDG)
- A superior thermal insulator for all climatic zones
- Light-weight
- Not uniform - Amatec produces several kinds for different functional purposes (floor panels, wall panels with windows, etc.)

# The Amatec Panel Production Process

To illustrate how rapid and simple the manufacturing process is, on the right is an illustration of Amatec's 4-step procedure for producing a ready-for-assembly wall panel.

Note: In step 1, the FPUs are laid side-by-side. In steps 2 & 4, the liquid HDG mechanically attaches to standard elements when cured (refer to the lateral view's trapezoid extensions on the previous slide). Curing takes 15 minutes.

**Total time : < 1 hour**

**Fully automated process? Yes.**

1



2



3



4



->

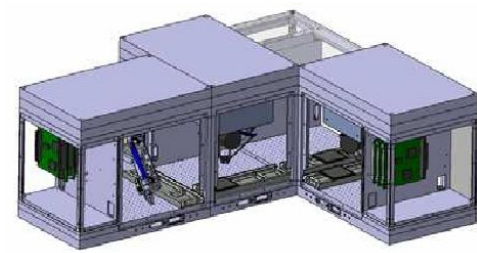


# The *Smart* MicroFactory

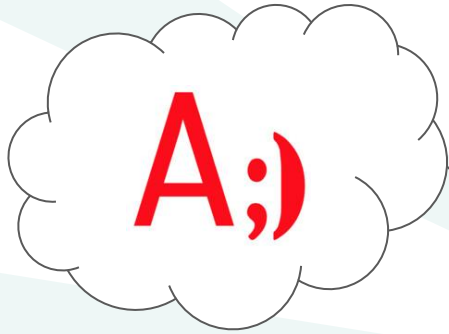
Amatec's automated equipment (for the production of ready-for-assembly panels) will be placed into a separate, inexpensive, compact plant - called a *Smart* MicroFactory.

All FPUs get mass produced in a separate production facility and sent to its network of Smart MicroFactories.

In the future, most MicroFactories will be owned and operated by existing contractors through franchise agreements with Amatec. The collaborative expansion opens up the possibility for **exponential YoY growth**.



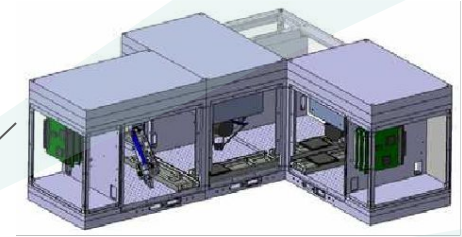
# The Essence of Amatec



**Software**



**FPU's**



**Smart Microfactory**

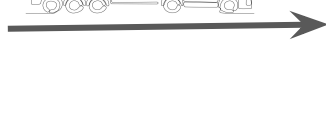
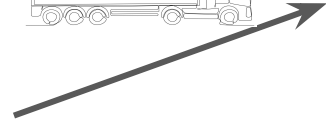
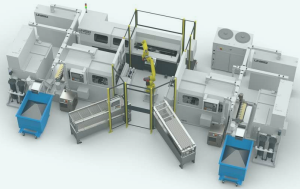


**Amatec Panels**

- ➔ No manual labor requirements for panels (white-box house kit)
- ➔ Record-low cost of production
- ➔ Minimal labor requirements for assembly of white-box and finishing
- ➔ Enormous Amatec profit margins not visible to stakeholders

# Manufacturing Process - B2B2C Perspective

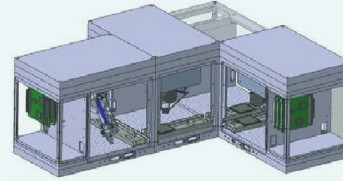
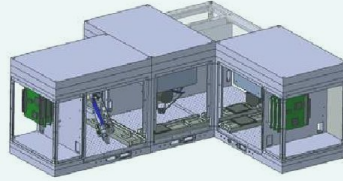
FPU mass-produced by  
Production Plant



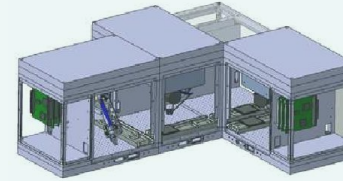
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Panels manufactured in  
*Smart MicroFactory*  
by franchisees



...



House assembled

1



2



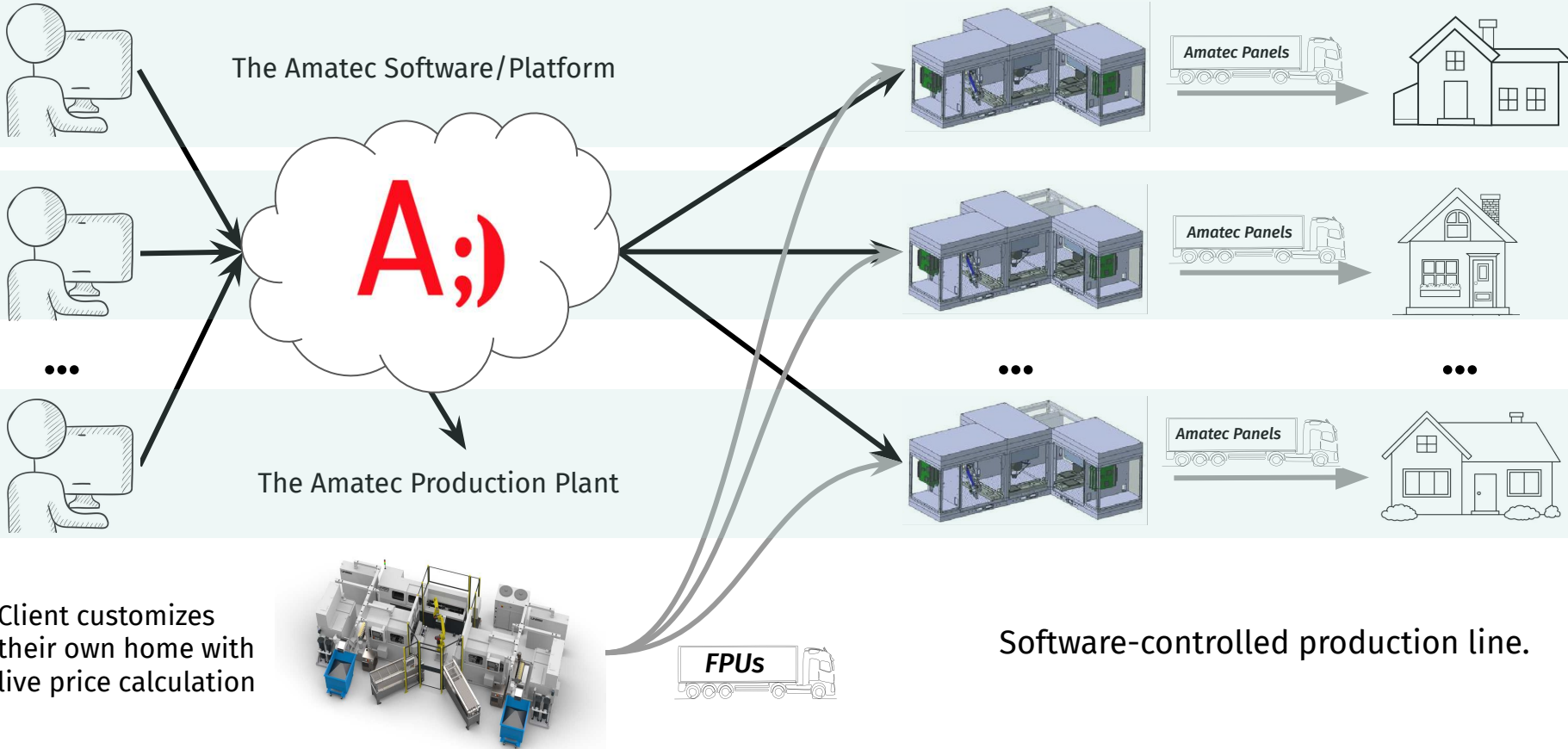
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X



Automated production line, 3-step process

# D2C Business Model



# Traction



KPMG's list of 2022  
Real Estate  
Innovations



Solar Impulse  
Efficient Solution  
Label



Builtworlds Top 50  
Building Tech of  
2023



Admitted into  
HAX/**\$250,000**  
**Initial investment**  
**from SOSV**



MOU signed with  
Cavan



Member of V4C  
(2023 cohort) with  
<\$100,000 of  
grant funding



