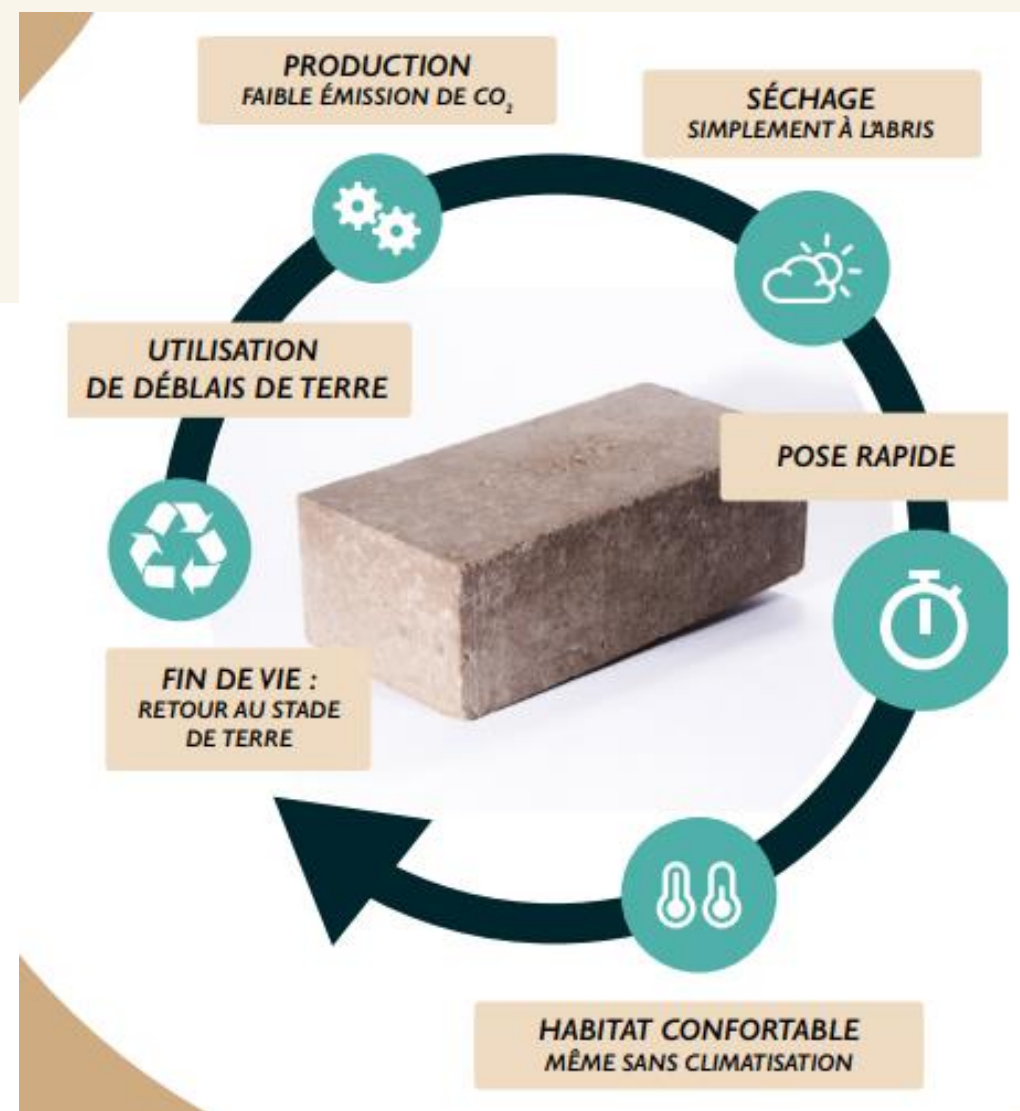




briques  
technic  
concept

The oldest building material – the material of tomorrow

## Earth : a truly ecological material



### A sustainable life cycle:

- Reduction of raw material *ressources*
- Reduction of **waste**

Solution  
**BTC:**  
**-60%**

in CO<sub>2</sub> emissions  
today!

### A limited impact on climate change:

- Reduction of **CO<sub>2</sub> emissions**
- Reduction of **energy consumption**



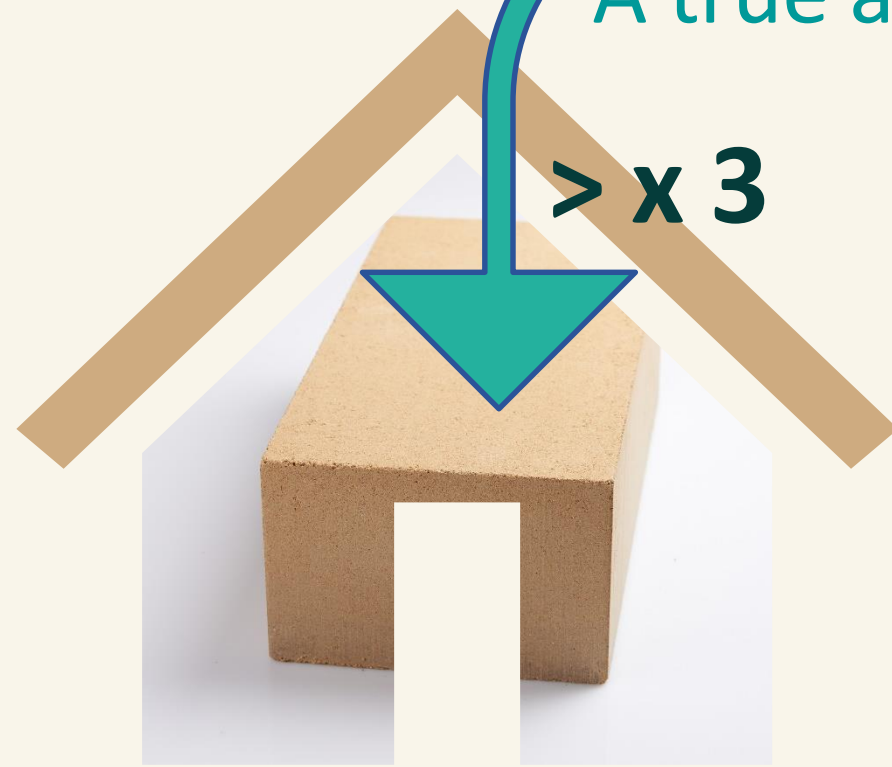
A building material with a proven performance

# Earth : high performance material

Thermal capacity :

A true asset for **summer comfort!**

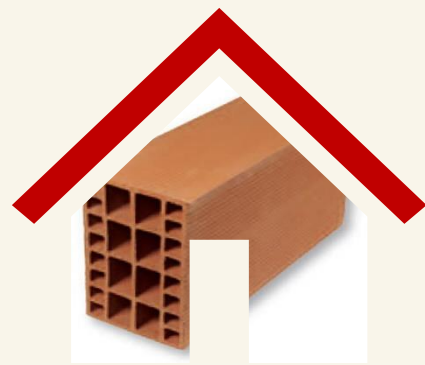
> x 3



Earth



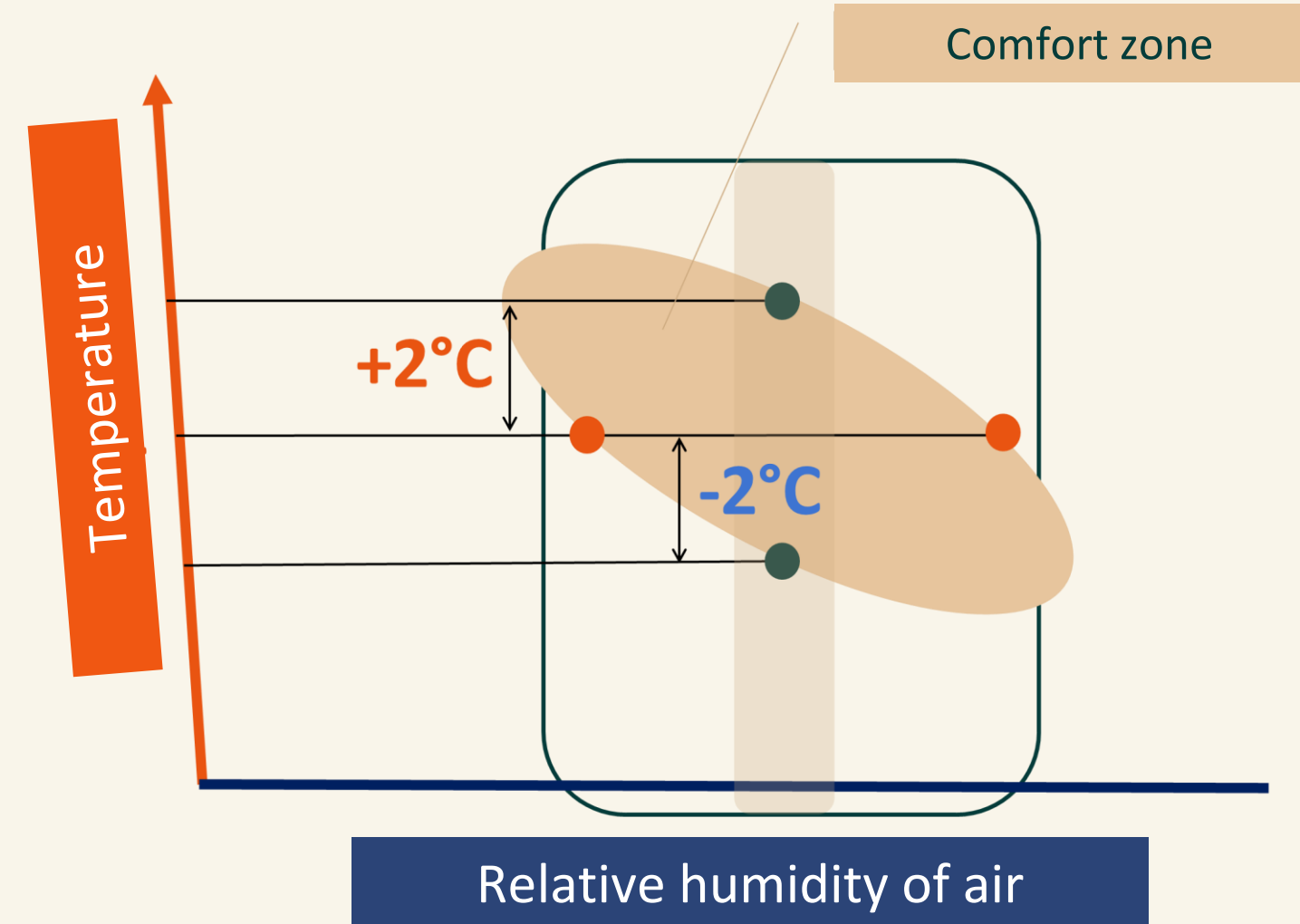
Concrete



Traditional brick

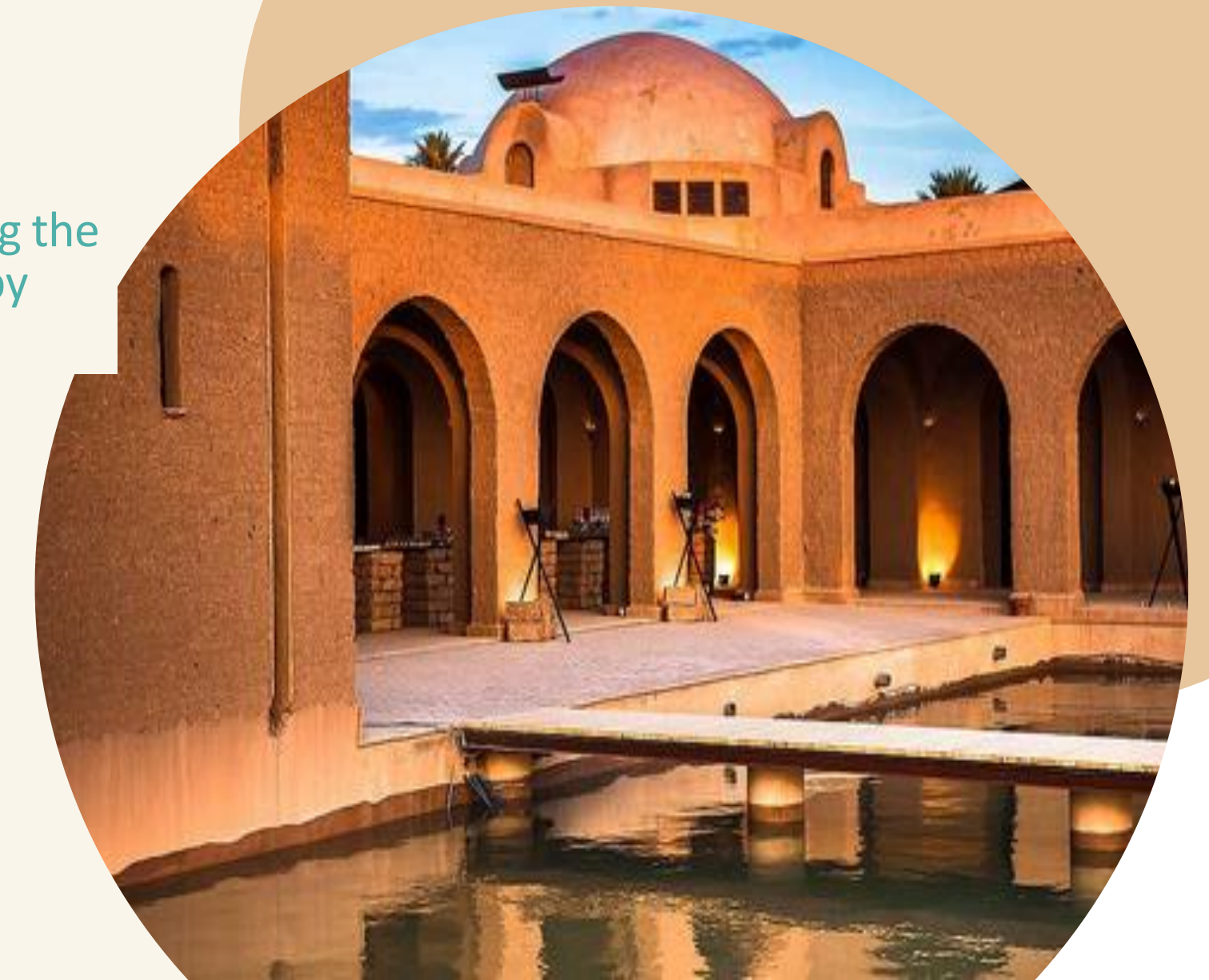
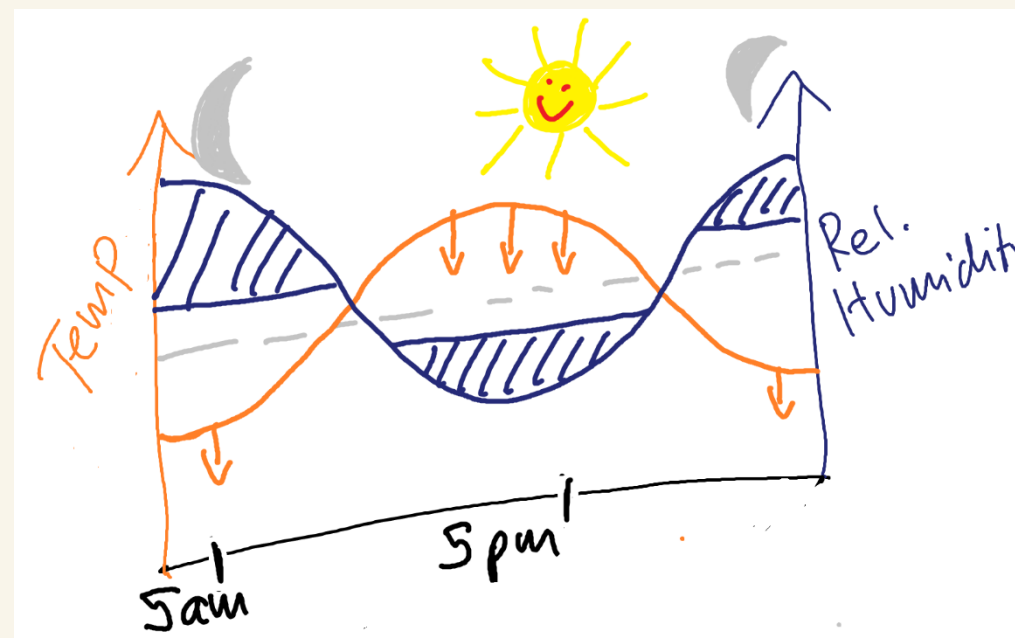


Wood



The air humidity regulation for an increase of the human comfort zone by **+2°C** in summer and **-2°C** in winter!

low-tech air conditioning by using the power of evaporative cooling generated by the variation of air humidity



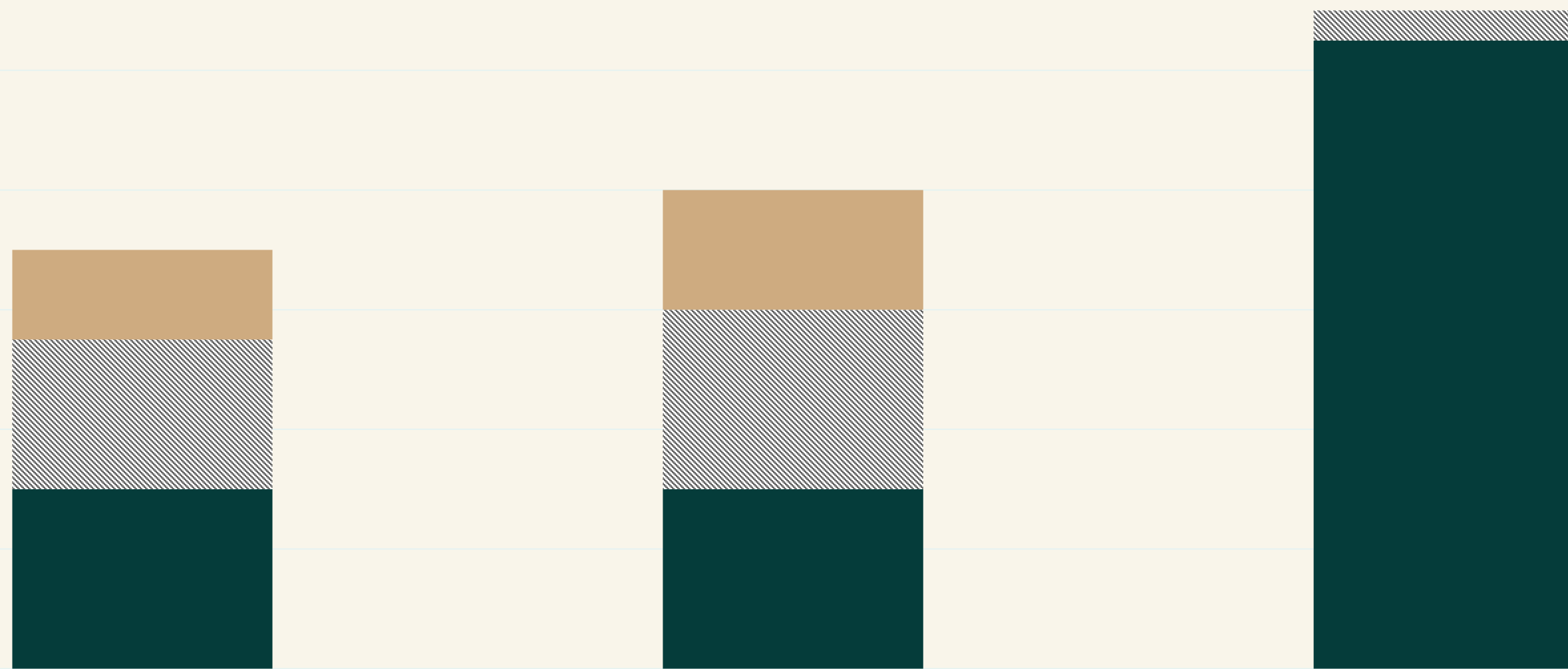
NO endocrine disrupting chemicals



Fire resistant

Using earth materials

# Building with earth : creating jobs on a local scale



■ Salaries   ■ Energy   ■ Raw Materials

Solution cost composition

Inflation on conventional solutions



Potential of earth building



Towards a competitive offer





***Briques Technic Concept***  
***Our solution for Mining the future***

Making tunnels and sell earth bricks

*It is a good idea.....*



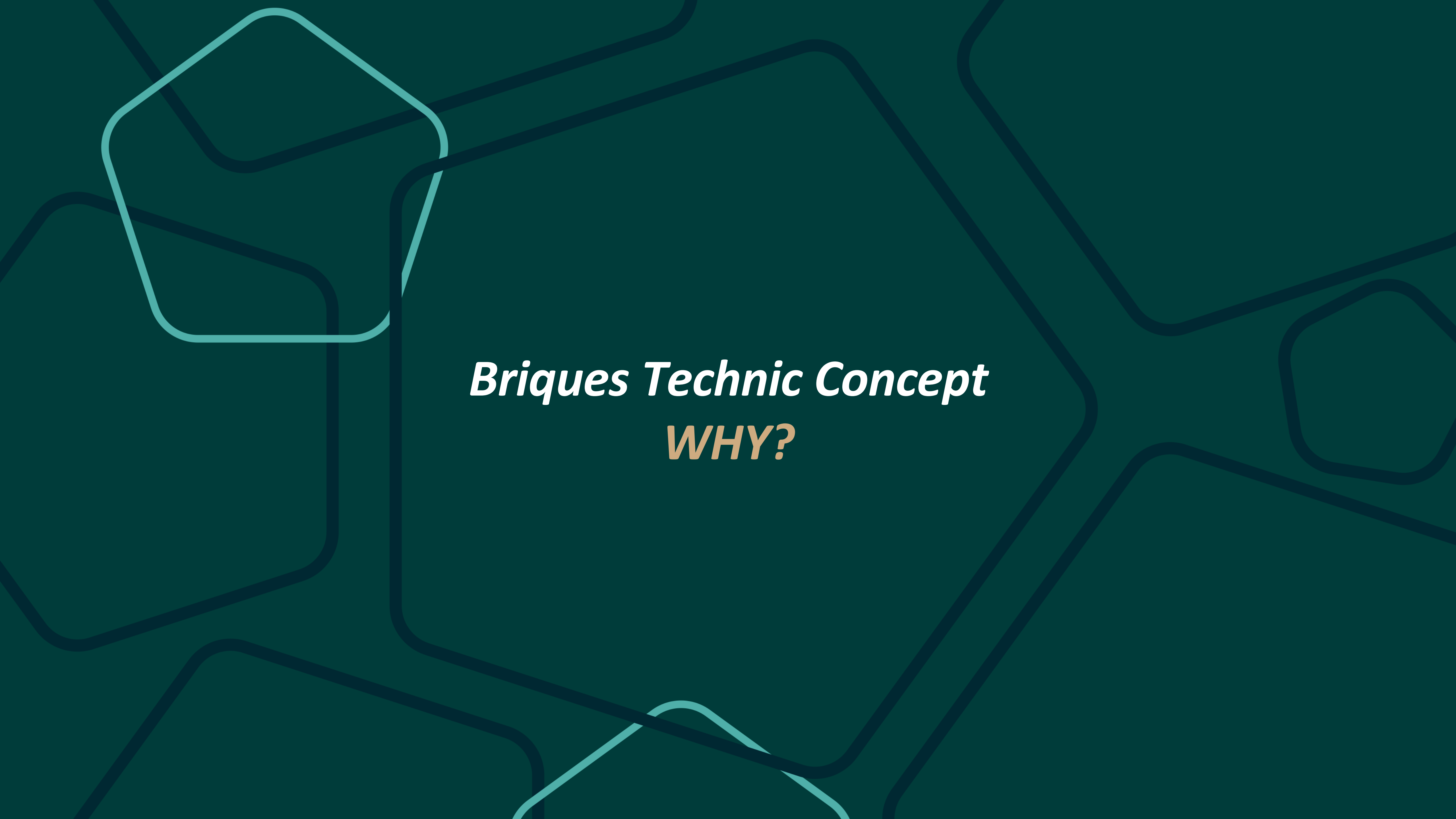
The video player displays a presentation slide on the left and a speaker on the right. The slide, titled "Bricks", lists the following information:

- Bricks**
- 15%** tunneling cost is dirt removal
- \$0.10/brick** pays for dirt removal
- Free Bricks** for affordable housing
- Pavers** great for patios

The speaker is a man in a plaid shirt, gesturing while speaking. The video player interface at the bottom shows a play button, a progress bar at 0:24 / 6:09, and a mute icon.

What never happened in Las Vegas,  
will happen in Europe!





***Briques Technic Concept***  
***WHY?***

# Briques Technic Concept

## The walls of tomorrow – ready to use

### + buildings



**ARIA**  
// CORNEBARRIEU



**MAISON BIGRE**  
// BIGANOS



**CARRÉ FLORE**  
// CORNEBARRIEU



### + possibilities

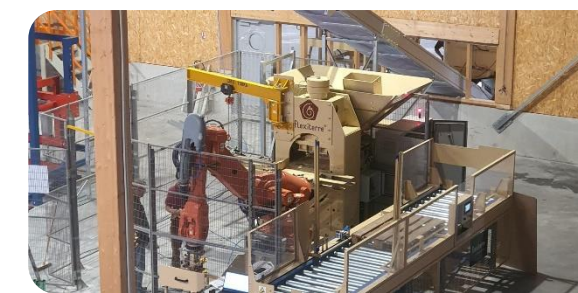


**ATEX CAS « A »**  
// load bearing  
masonry R+3



**Motivated  
ECOSYSTEME**  
// bureaux de  
contrôle

### + production capacities



**MACHINES**  
//  
PERFORMANT



**TOULOUSE PLANT**  
// 2022



**TRAVELLING PLANT**  
// 2022





Our offer today

# A true industrial approach – for a competitive solution



**La terre crue fait sa révolution industrielle** p. 42

**RE 2020**  
Deux mois après,  
le premier bilan p. 8

**Réglementation**  
Le droit de surplomb ou  
l'ITE chez le voisin p. 58

**Génie civil**  
Eaux usées mais  
station dernier cri p. 52

Our offer today

## *More speed for the job site – Prefab elements to speed-up installation*



- > 50 m<sup>2</sup> / day for our first project !
- Speed more than **x 4**
- Improved handling and logistics

Our offer today

# Certified solutions – speed-up the design process



Load bearing masonry up to 3 floors

2021



Prévenir les désordres,  
améliorer la qualité  
de la construction

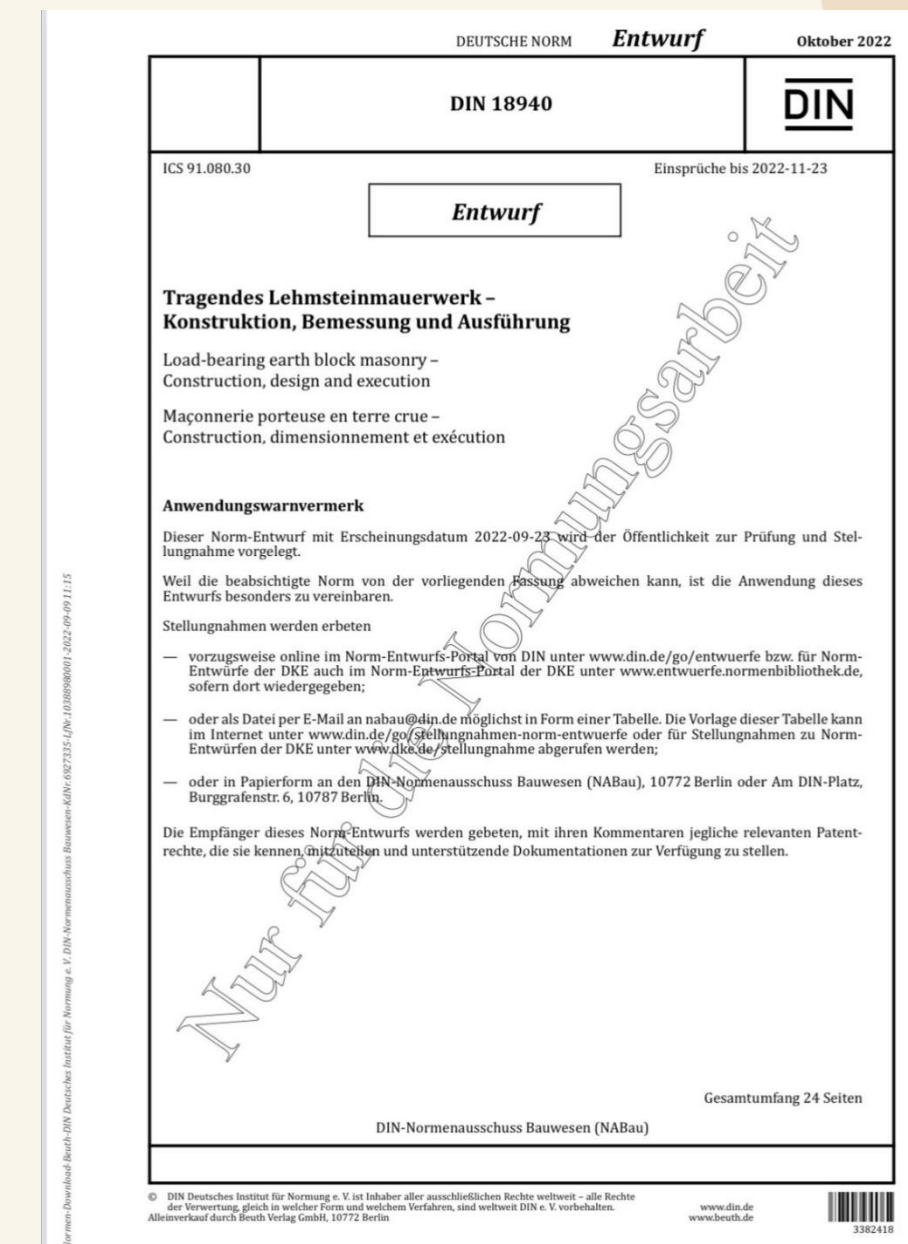
## RÈGLES PROFESSIONNELLES ACCEPTÉES PAR LA C2P

■ Blocs de Terre Comprimée (BTC) Mayotte  
(Règles professionnelles juillet 2022, ART.Terre Mayotte)

Façade and interior walls

2022

## DIN 18940



Load bearing masonry up to 4 floors  
Includes pure earth bricks!

2023



***Briques Technic Concept***  
***HOW?***

What we did

# Formulation of your resource – *confirmed faisability*



## Supplemental Material 3: Solution Relevance

### 1) Relevance of the process with respect to material to be excavated

The relevance of the solution is demonstrated by the following facts:

1. The targeted volume of 300,000 cubic meters represents **10% of the upcoming excavated** geological material and Haas et al (2020) states that various clayey and loamy geological materials will be available (page 5), **especially weak and very weak marls.**
2. The material already excavated that we analyzed (see below) seems very likely to represent **these weak and very weak marls.**
3. **The full-scale test performed was convincing** (see main application form at section 2 below) as we added a **small amount of corrective clayey material.**
4. **The corrective clayey material has no specificity**, it can be considered as in the average of this kind of material to find, hard to recycle outside of our process and has a negative value. For these reasons we assume that something equivalent will be also available on the worksite of the FCC.

To support this 4<sup>th</sup> point, we now give some more details about this clayey material and especially about its grading curve and clay activity as well as the effect of the correction on the material already excavated on the future FCC's worksite.

### Usual criteria for basic materials to make compressed raw earth bricks

According to the French XP-P 13-901 standard published in 2000, a soil can a priori be used to manufacture compressed raw earth bricks if the two following conditions are satisfied:

- **The grading curve** of the prepared material must be embedded in the range below:

# OK for load bearing walls according to our certification (ATEX)



EN 772-1 Test



XP-P 13-901 Test



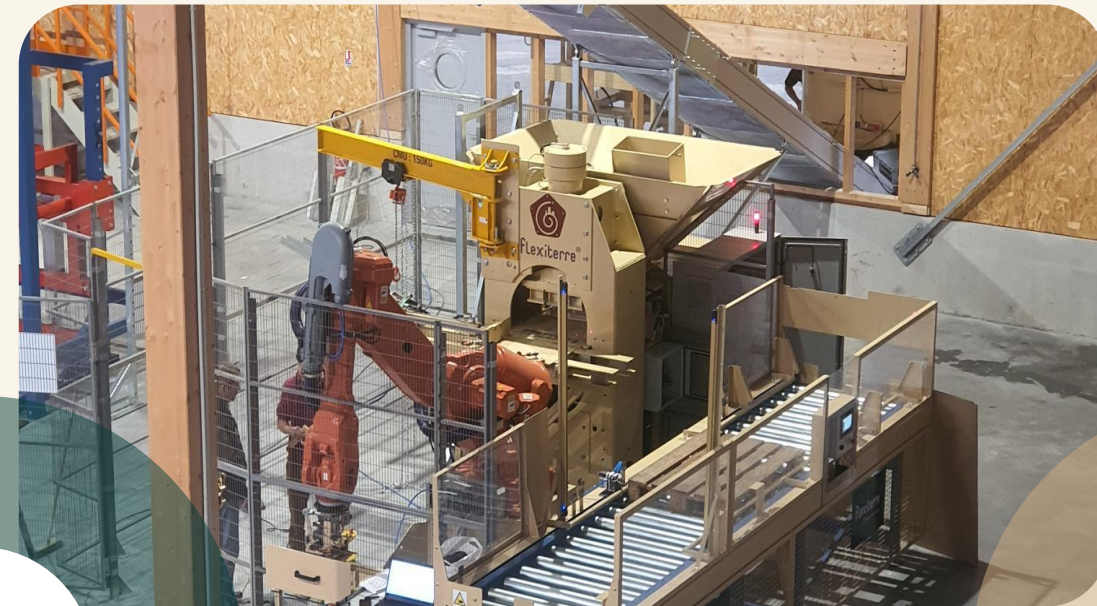
Capillarity test



Result of capillarity test

Permanent installment of a production capacity

## ***Building a factory with a capacity of up to 60 kT / year***



### **FLEXITERRE**

Capex : 1.2 M€

Surface : 3.400 m<sup>2</sup>  
to 4.400 m<sup>2</sup>



### **NOVATERRE**

Capex : 2 M€

Surface : 4.500 m<sup>2</sup>  
to 6.500 m<sup>2</sup>



### **ALL TOGETHER**

Capex : 3 M€

Surface : 6.600 m<sup>2</sup> to 9.600 m<sup>2</sup>

Production capacity : up to 30 kT  
/ year

**18 months** to start up the production  
**+ 12 months** to be in regular operation

Sales and development

## ***Sell the bricks and blocks !***

- **CERN buildings as prototype**
- Additional certification
- Additional evidence of **performance**
- Promote the solution **in the region** with its 2 M population

*Execute the **Business Plan***

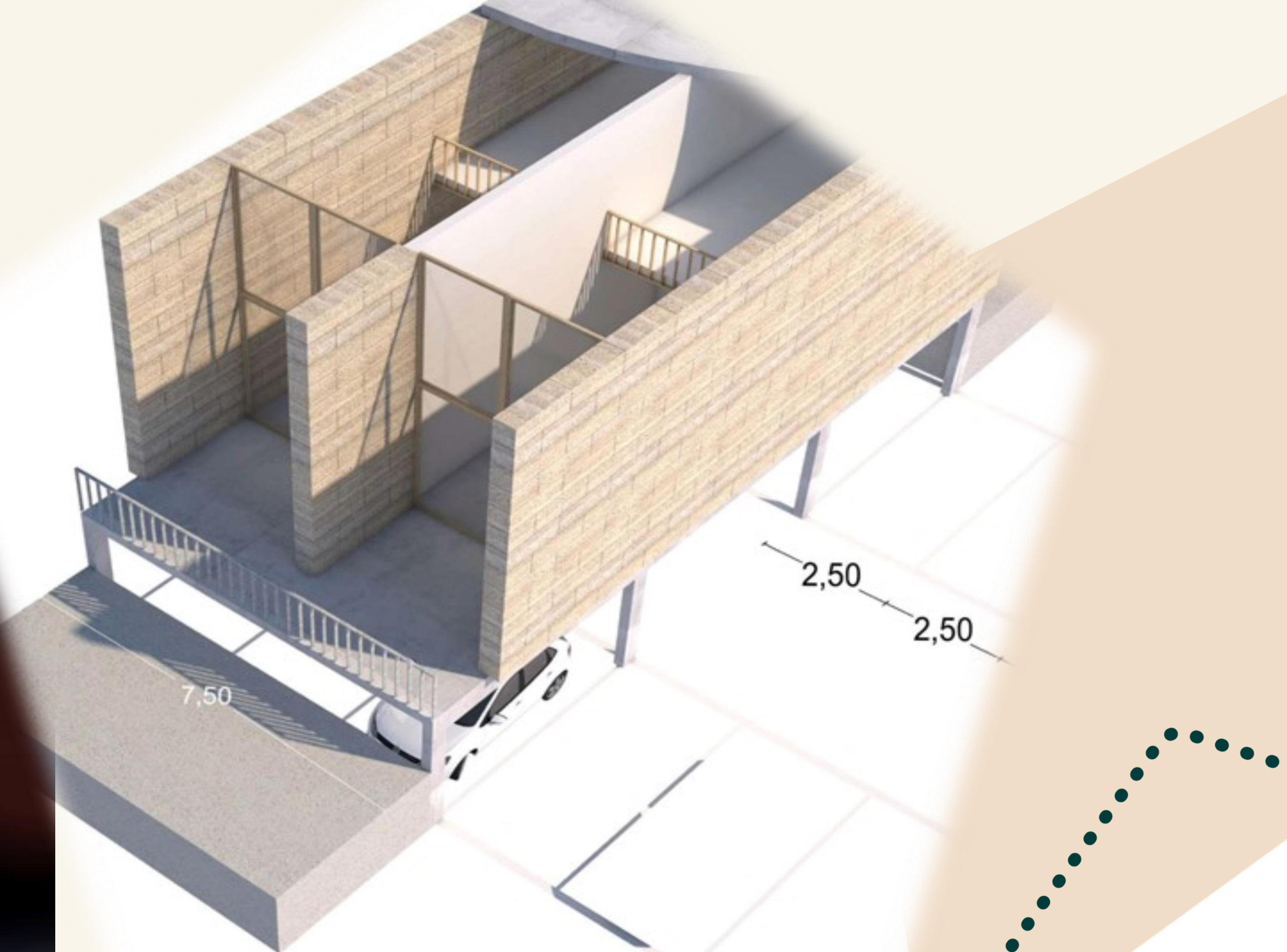
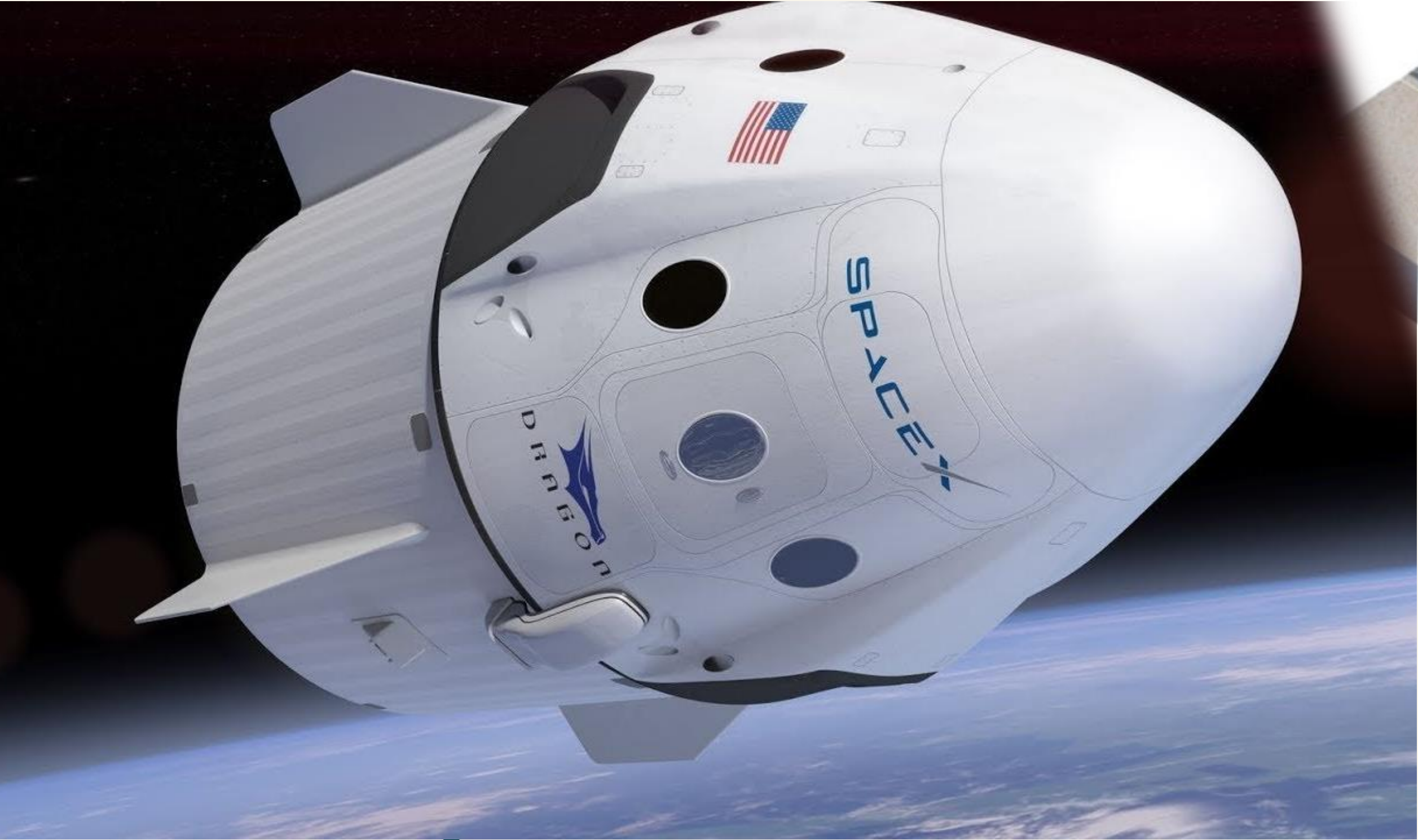


Business Plan Material Producer		N	N+1	N+2	N+3	N+4	N+5	N+6	N+7	N+8	N+9
Sales	in k€	4 950	4 950	5 002	5 246	5 505	5 780	6 072	6 381	6 709	7 057
Cost	in k€	1 950	2 005	2 062	2 123	2 186	2 252	2 321	2 394	2 470	2 550
Fix Cost	in k€	960	979	999	1 019	1 039	1 060	1 081	1 103	1 125	1 147
<b>EBITDA</b>	<b>in k€</b>	<b>2 040</b>	<b>1 966</b>	<b>1 940</b>	<b>2 104</b>	<b>2 280</b>	<b>2 468</b>	<b>2 670</b>	<b>2 885</b>	<b>3 114</b>	<b>3 359</b>

And now ?

***Just Do It!***

If this is working.....



....we should also be able to do this!



***Thank you, Merci & Dankeschön***

