

Sustainable Building Material for Informal Settlements

The collaboration between the two companies, Start Somewhere and Schönthaler, has spawned a special project of contributing to the challenges of basic needs requirements in Africa, as well as combating our biggest problem as a human society -

The climate change.

Challenge – The problems of informal settlements

An estimated 3 billion people will require adequate and affordable housing by 2030



Problems of informal settlements / slums:

Lack of
jobs



- High unemployment rate, e.g., 50 % in Kibera, Nairobi
- Residents of informal settlements mostly work as low-paid day laborers in big cities under unfair conditions

Unsafe,
unhealthy
homes



- Vulnerability to weather and disasters due to weak structures
- Fast spread of diseases due to no windows, dirt floor, leaky walls
- Fires spread quickly because of wood as construction material
- Costs for conventional buildings are too high

No secure
land tenure



- The permanent risk of eviction discourages people from investing their limited financial resources to better housing
- Many low-income inhabitants meet their immediate need for shelter with poor shacks



Housing and occupation are pressing issues that every third citizen of the earth faces.

A construction and production method that caters for the problems of informal housing



How can the situation in informal settlements be improved?

Lack of
jobs



Concrete block manufactories

Create know-how, jobs and value in concrete block manufactories within the slum area

Unsafe,
unhealthy
homes



Easy-to-build concrete houses

Affordable and flexible housing which is easy and quick to set up

No secure
land tenure



Reusability

Enable private home ownership in uncertain legal environments: 85% of the blocks can be dismantled and reused in case of eviction



Start Somewhere fosters resilience in slums and addresses some of the most urgent issues of vulnerable people.

TwistBlock pilot factory in Kibera Slum, Nairobi



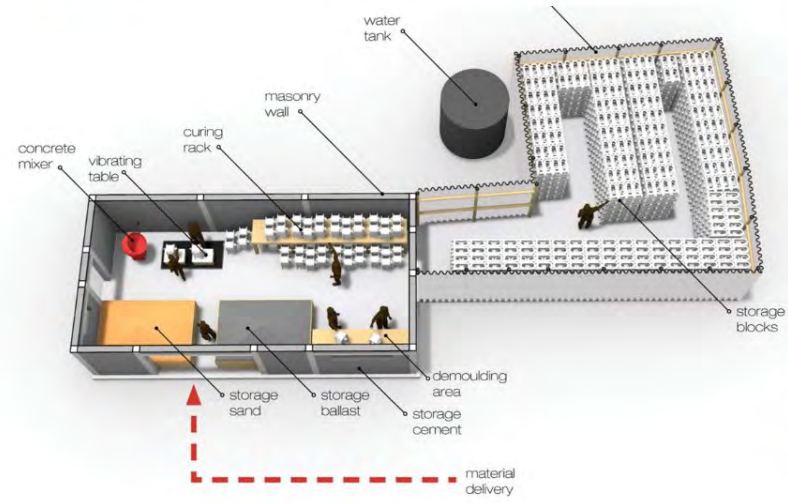
5 permanent jobs since November 2019 - 75 Blocks produced every day



GERMAN INNOVATION AWARD '21 WINNER



✓ patent filed in 10/2018



The factory pilot has proven the efficiency of the production method and was helpful to gain insights on size and processes. The approach won the German Innovation Award in the category "Excellence in Business to Business / Building & Elements".

Grade 2 Tr Harriet
Grade 1 Tr Agnes
Grade 2 Tr Dianah
Grade 3 Tr Irene
Grade 4 Tr Kevin
Grade 5 Tr Clinton
Grade 6 Tr Edwin
Grade 7 Tr Jerriah
Grade 8 Tr Mike

By management

Our library is made of TwistBlocks.

School finished and in use

The construction method has proven to work with instructions only via plan illustrations and video call



» The building was customized by its users and by the local “Fundis”.



Residents of Kibera apply the technology themselves

3 local shops built self organized by trained workers for residents of Kibera



The blocks find acceptance within the community and serve as advertising wall for shopfronts.

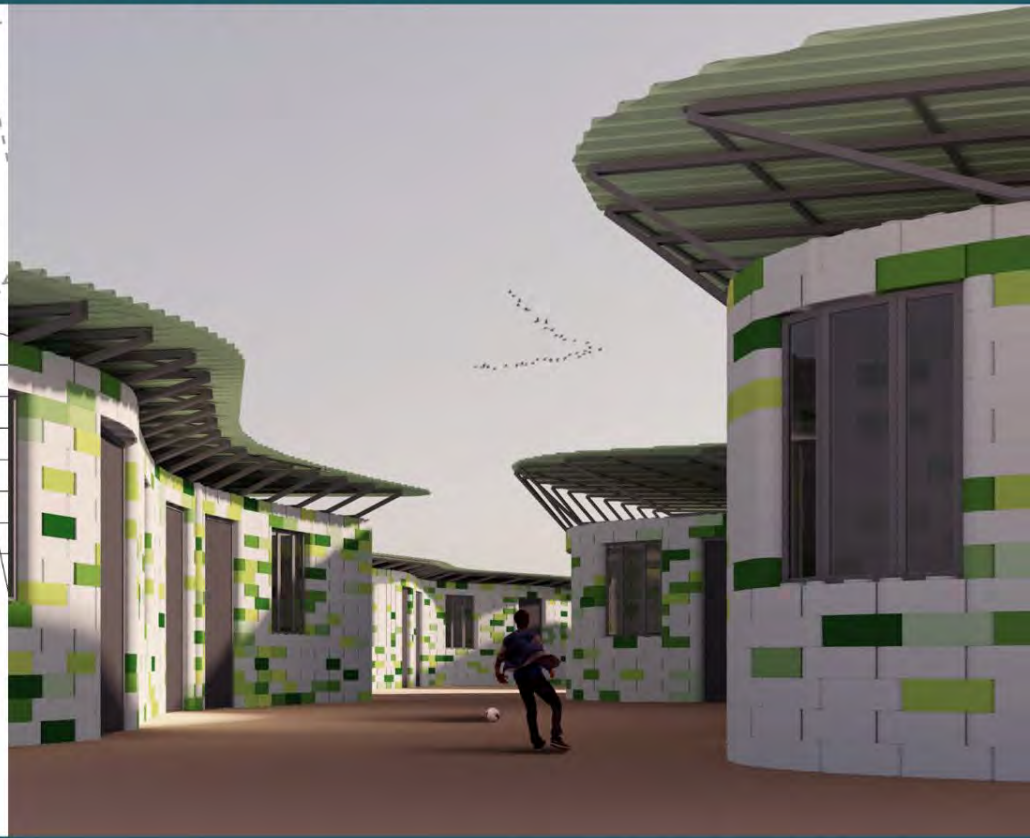
“Bethany Joy School” in Kawangware, Nairobi

Start Somewhere plans a new school double the size of the pilot project in Kibera



Factory and Campus “Go Fishnet” in Ahero

Start Somewhere currently sets up a new factory at Lake Victoria and plans a new campus



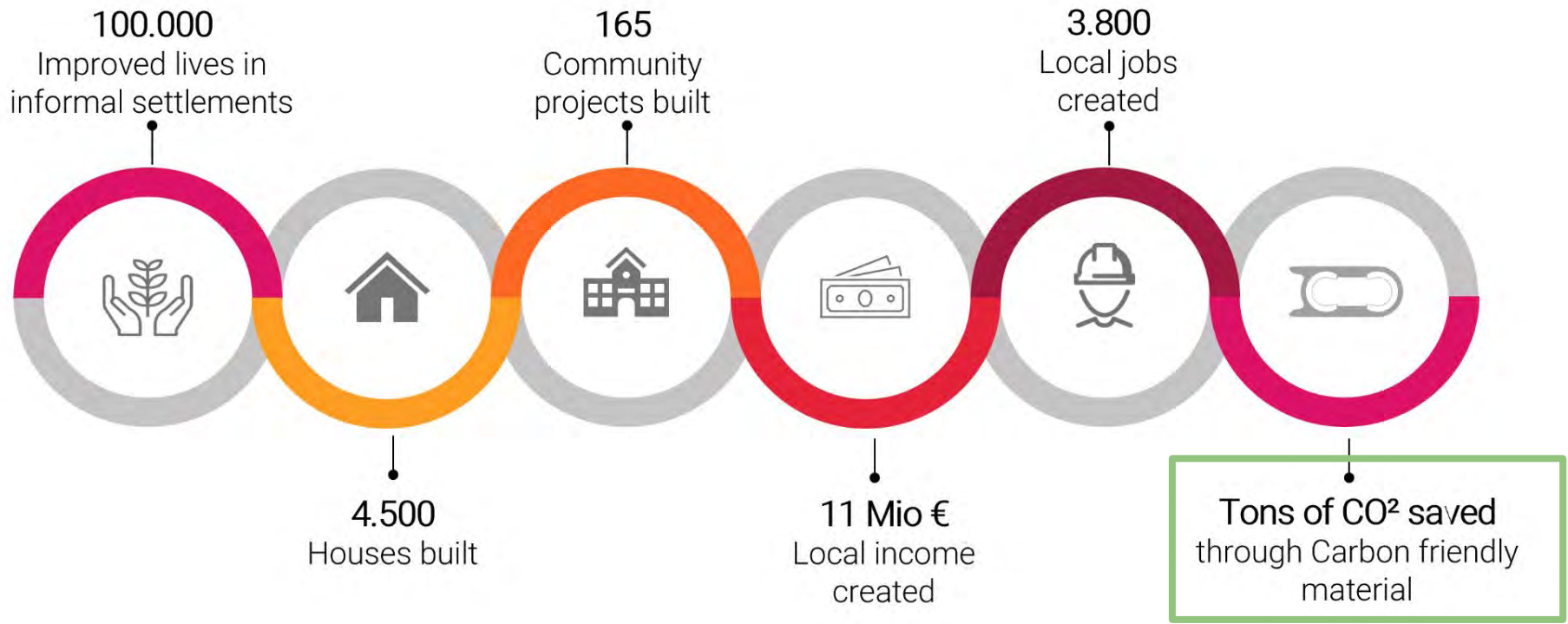
The project is in cooperation with the Austrian NGO “Förderverein Fishnet”, the Kenyan NGO “Go Fishnet” and “Habitat for Humanity” as co-sponsor and advisor. Habitat for Humanity aims to adapt the idea of the TwistBlock factory as a franchise model and scale it up.

Factory and Campus “Go Fishnet” in Ahero

Start Somewhere currently sets up a new workshop at Lake Victoria and plans a new campus



Factory is ready to receive TwistBlock Moulds and start production for the campus and homes in rural Kenya.





Conventional building practices are becoming increasingly unsustainable worldwide. Not only that we are confronted with the need to build homes for growing population, but we are also putting increasing pressure on our ecosystem as we exploit our natural resources at an unstoppable rate.

some facts*

- 40% of the CO² emissions come from the construction industry
- 50% of all waste comes from the construction industry !
- 50% of the total energy consumption comes from the construction industry

Hemp and Lime- building material of the future

The symbiosis of the oldest plant cultivated by mankind (hemp) with one of the oldest and most tried-and-tested building materials (natural lime) is the building material of the future..”

- Building without insulation
- Fire resistant
- Resistant to water and insect
- Clean indoor air
- Durable/suitable for generations



- Strong, Light, Breathable
- Energy efficient
- Incredible insulation and heat accumulator
- 100% nature without compromises
- Reusable- Cradle to Cradle

CARBON NEGATIVE- 90%!

Industrial Hemp



Uses and benefits

Seeds



Food



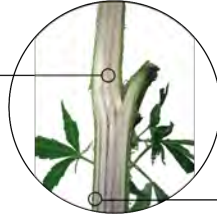
Cosmetics

Leaves & Flower



Oil

Stalk



Fiber



Textile



Paper



Insulation

Shives



Building material-
Hemp brick | *Hempcrete*



Lime



Hemp Stem Shives



From the chips that remain after the fiber separation process, We use them to produce hemp lime-based bricks.

These two materials are pressed to form the brick.

The combination of hemp shives with natural limestone and minerals make the material as hard as stone and resistant to external influences.



HEMP PLANT PROCESS

from the field to our product

1 Agriculture

Local farmers grow and process the plant that eventually all its parts will be used: Seeds, Flower, Fiber and Shives.



2 Decortication Process

after harvesting the hemp stems, the decortication process begins- With a machine that separates the stem from the fibers.



HEMP PLANT PROCESS

from the field to our product

FOOD

3 Seeds & Flower

The farmers produce from the seeds / flowers various products such as food, cosmetics, CBD oil etc.



CLOTHING

4 Fibers

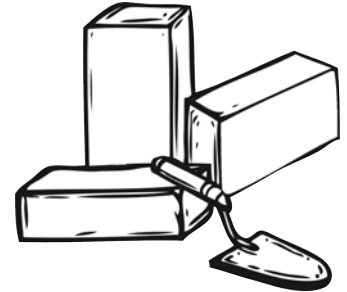
Out of the Fiber can be made Textile, paper, fiber insulation



HOUSING

5 Shives- residue of the stem

The shives are used for the construction industry: Hemp brick, Hempcrete and plaster.







Buildings made with Hemp-Lime



The Team



Oliver von Malm

*Architect, Founder of
"Start Somewhere"*

Founder, Director at Start Somewhere non-profit GmbH PhD
Candidate at University of Innsbruck.



Werner Schönthaler

Pioneer Hemp brick Producer

own the Schönthaler family business -
a construction company founded in 1964.

Werner has been researching ecological building materials
for a decade, with the goal of producing alternative
methods to existing construction.
After in-depth research and endless testing he began
producing bricks made of hemp and lime.



Partners / support



Dr. Andreas Saxer
Universität Innsbruck
Arbeitsgruppe Materialtechnologie



Daniel Boschung
ETH Zürich
Prof. Dep. Biologie
Artist in Residence



Kofler Ingrid
Universität Bozen
Fakultät Design und Künste
Soziologie





Schalungssystematik - Vorschlag 1:

Horizontale Befüllung; potentieller Nachteil:

- Keine konstante Steinhöhe?
- Eindrücken des „Stempels“ nicht möglich?

