

# CIRCULAR ECONOMY IN CITTÀ

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**Perchè ricominciare a produrre in città è  
fondamentale per la circular economy**

# ENRICO BASSI

Ricercatore, Designer e Consulente per l'innovazione



# IL TUO DOCENTE

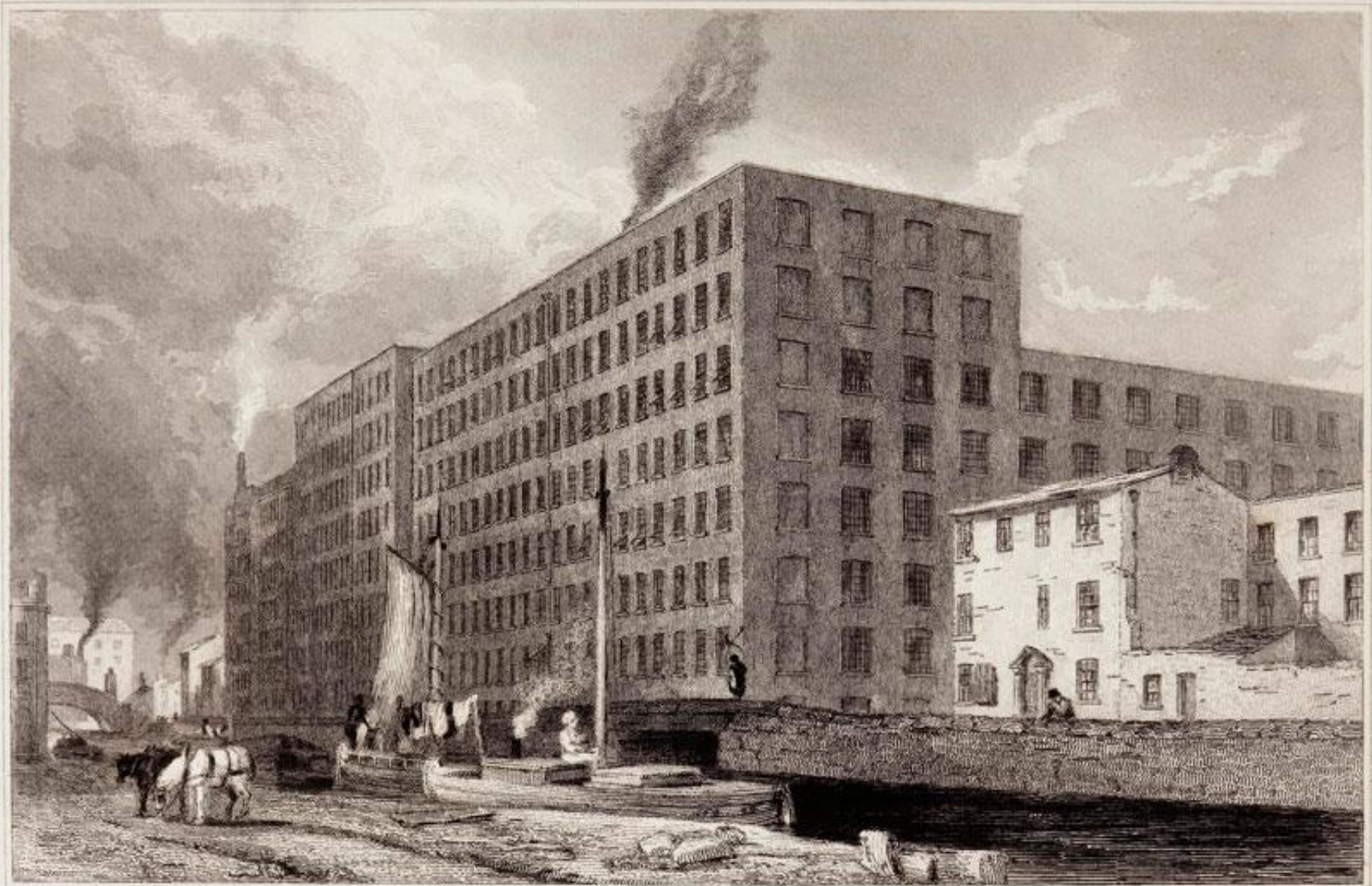
- Ricercatore nell'ambito della sostenibilità
- Consulente aziendale sull'innovazione
- Docente di fabbricazione digitale
- Coordinatore del primo Fab Lab italiano (Fab Lab Italia), di Fab Lab Torino e Fab Lab OpenDot

# LA MANIFATTURA URBANA





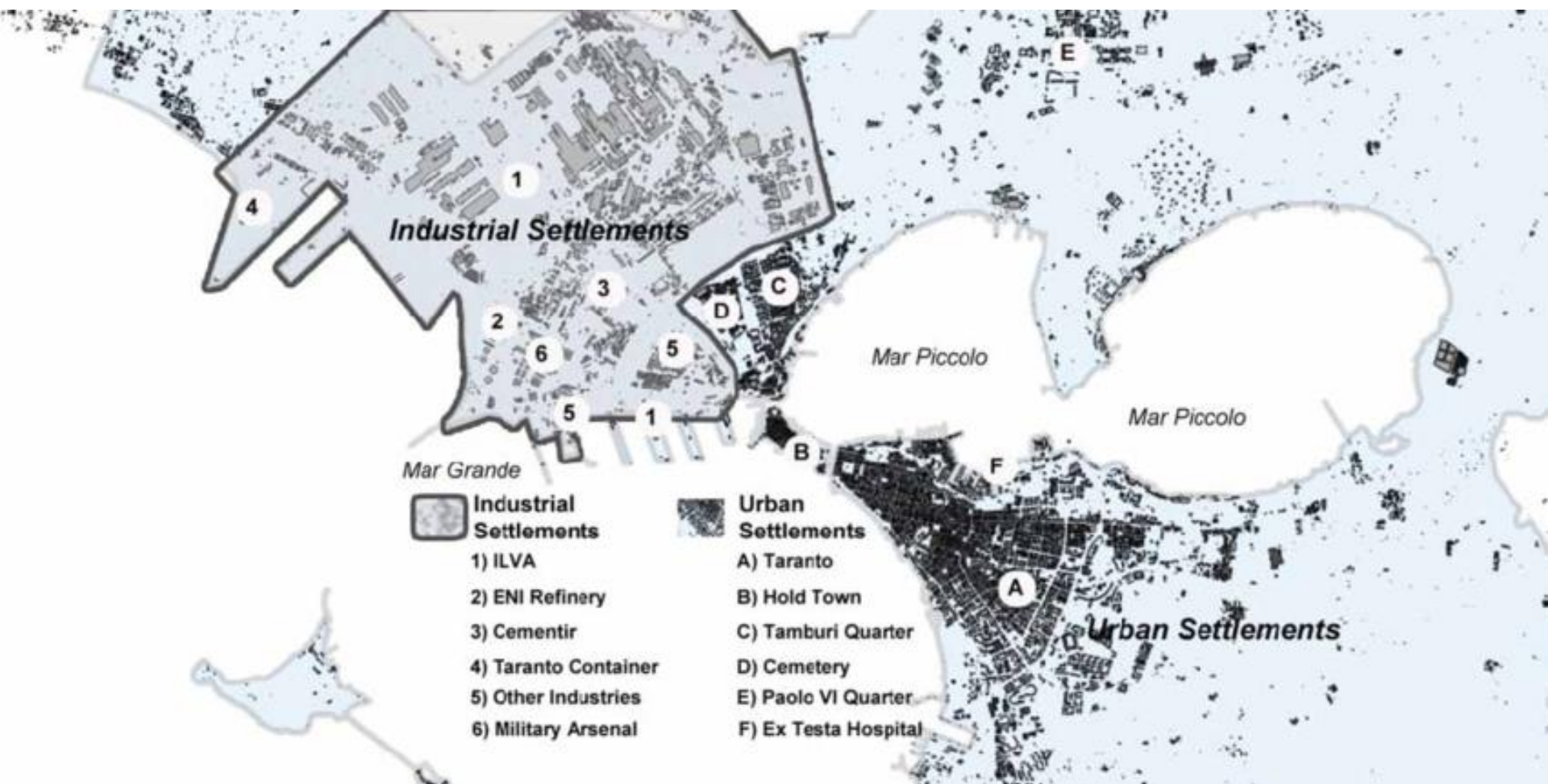




Austin.

M<sup>r</sup> Gabey.

COTTON FACTORIES, UNION STREET, MANCHESTER.



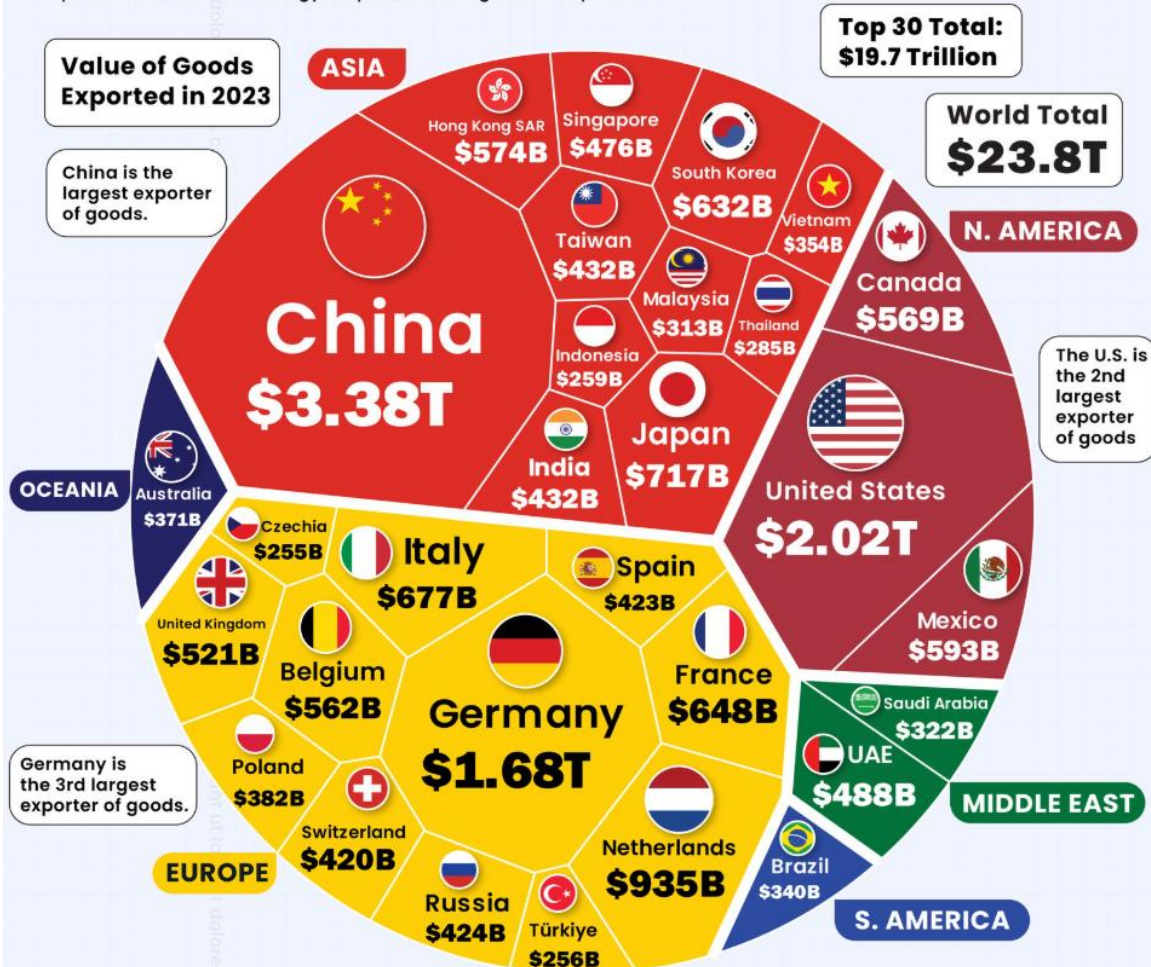






# World's Biggest Exporters

In 2023, global exports of goods hit \$23.8 trillion, down 5% from the previous year. China stayed on top, exporting \$3.4 trillion, nearly \$1.4 trillion more than the U.S. which came second with \$2 trillion. Germany followed at third. Most of the top 30 exporters saw declines, thanks in part to rising trade restrictions, which have jumped fivefold since 2015. Still, China's export volumes held strong, helped by cheaper manufactured goods, while the U.S. posted a \$65 billion energy surplus, boosting its trade position.



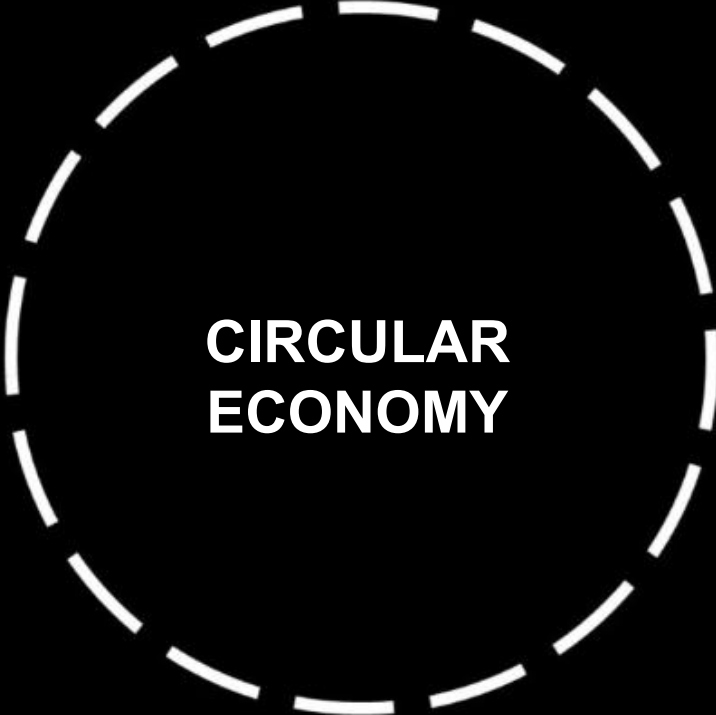
WHAT'S NEXT?

# SOSTENIBILITÀ ED ECONOMIA CIRCOLARE



**SUSTAINABILITY**

Objective

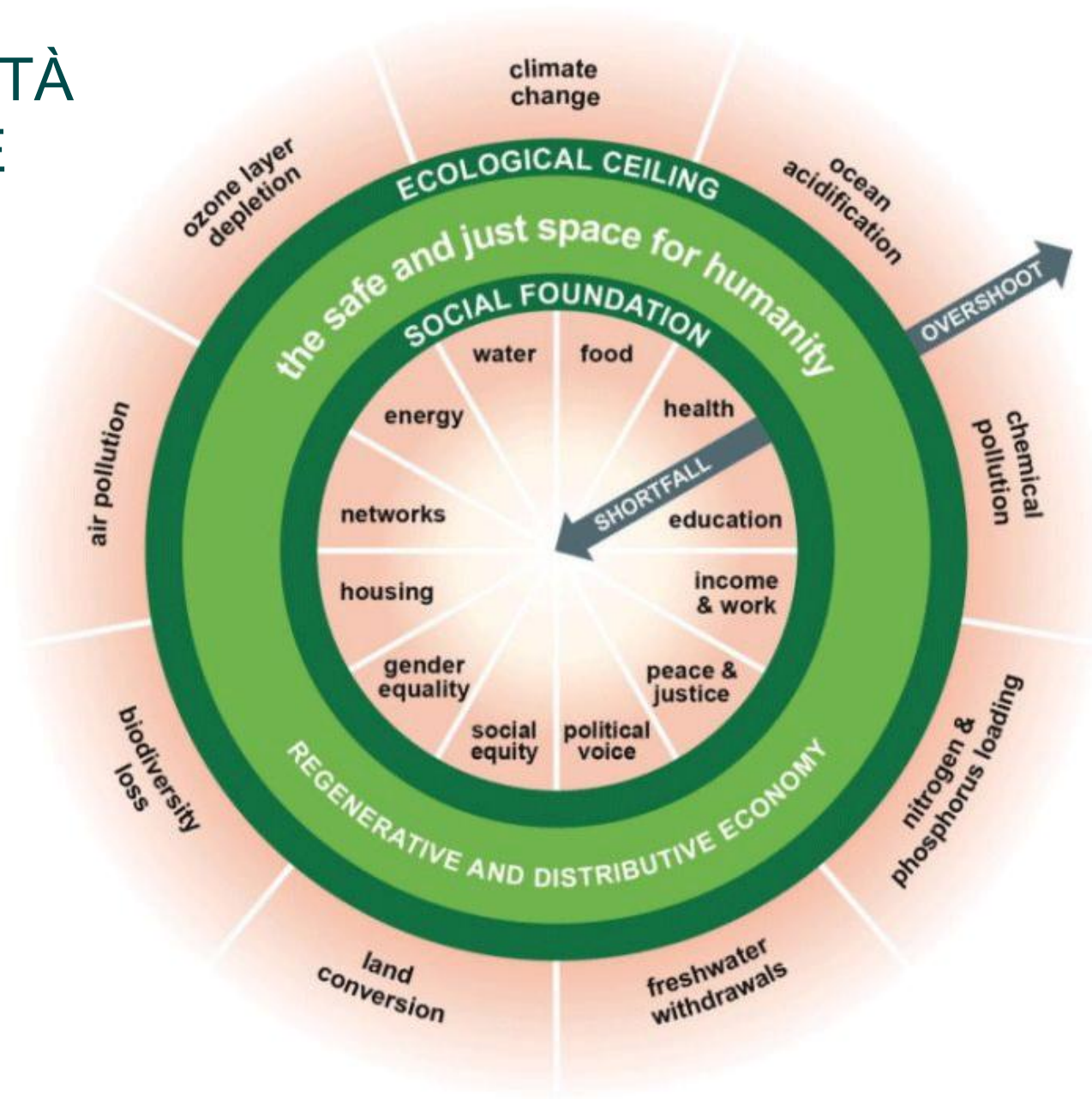


**CIRCULAR  
ECONOMY**

Strategy



# SOSTENIBILITÀ AMBIENTALE

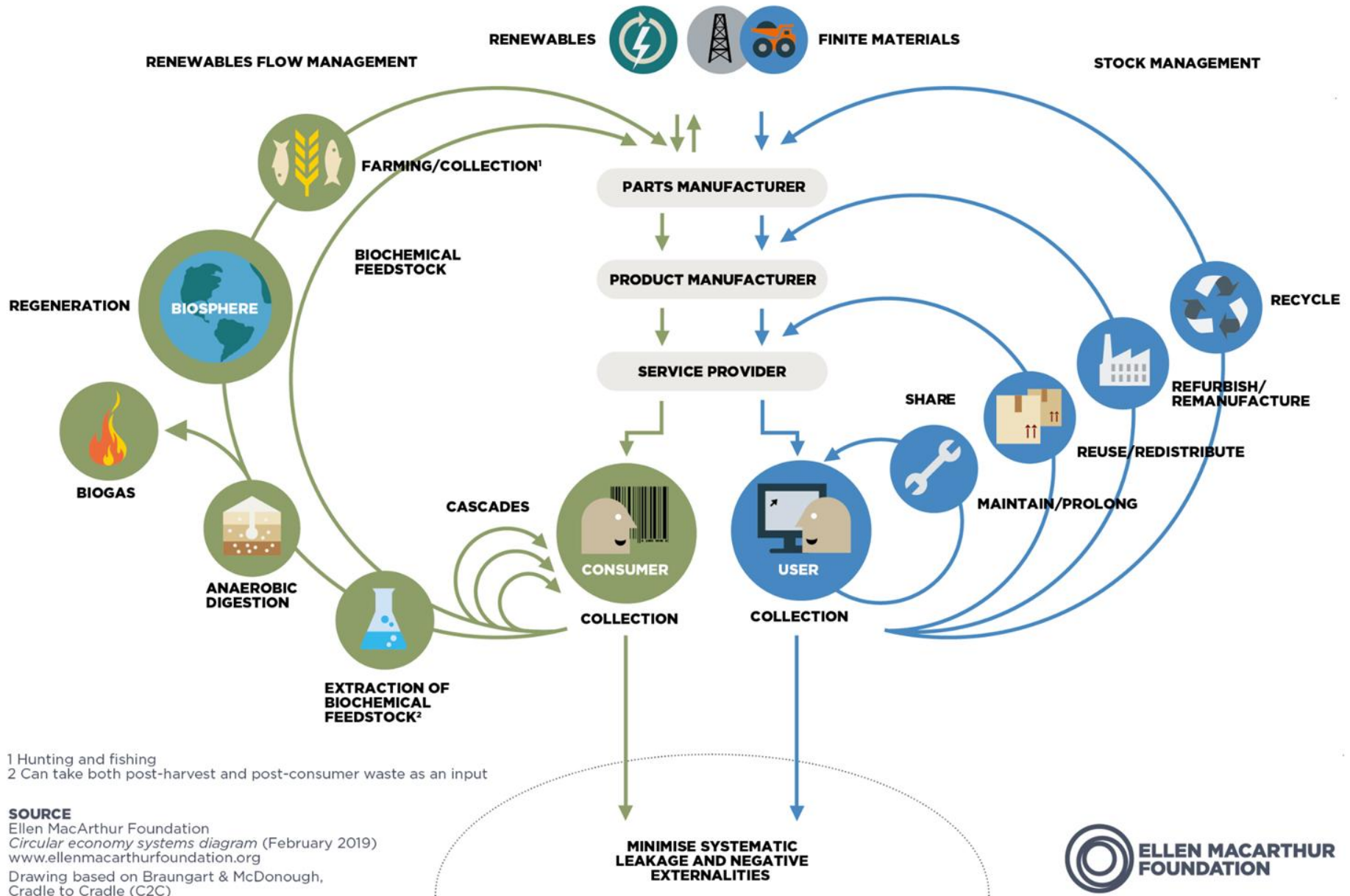


# SOSTENIBILITÀ AMBIENTALE

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

*Brundtland Report*

# CIRCULAR ECONOMY





# COS'È LA CIRCULAR ECONOMY

L'economia circolare è un modello di produzione e consumo che implica condivisione, prestito, riutilizzo, riparazione, ricondizionamento e riciclo dei materiali e prodotti esistenti il più a lungo possibile.

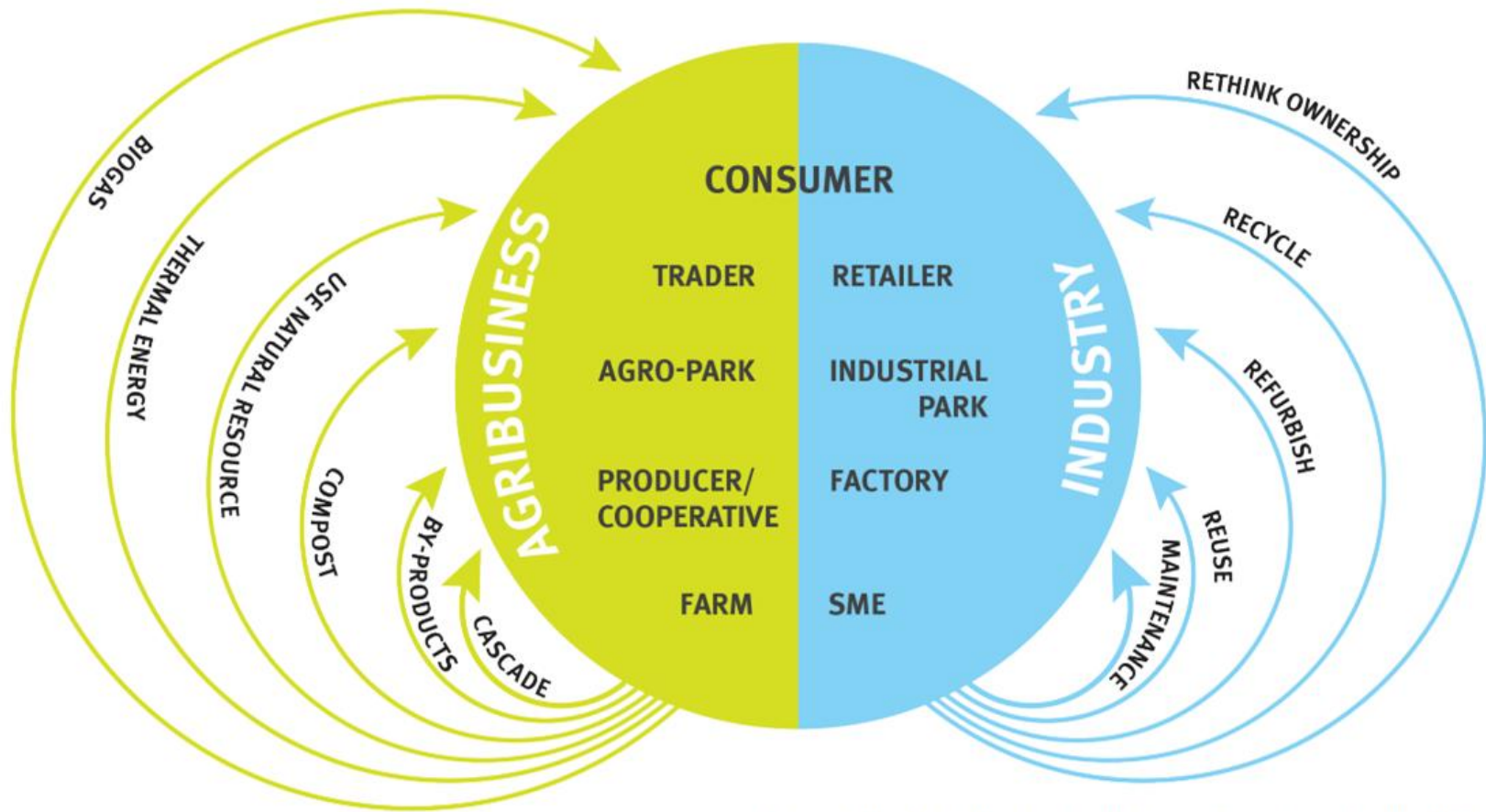
# I CONCETTI CHIAVE

CHIUDERE I CERCHI - ogni flusso di materiale deve essere chiuso (confluire in un altro)

STRATEGIE - Ogni modello propone delle strategie che rendono il sistema circolare

GERARCHIA - le strategie hanno un ordine di priorità, in base a quanto impattanti sono.

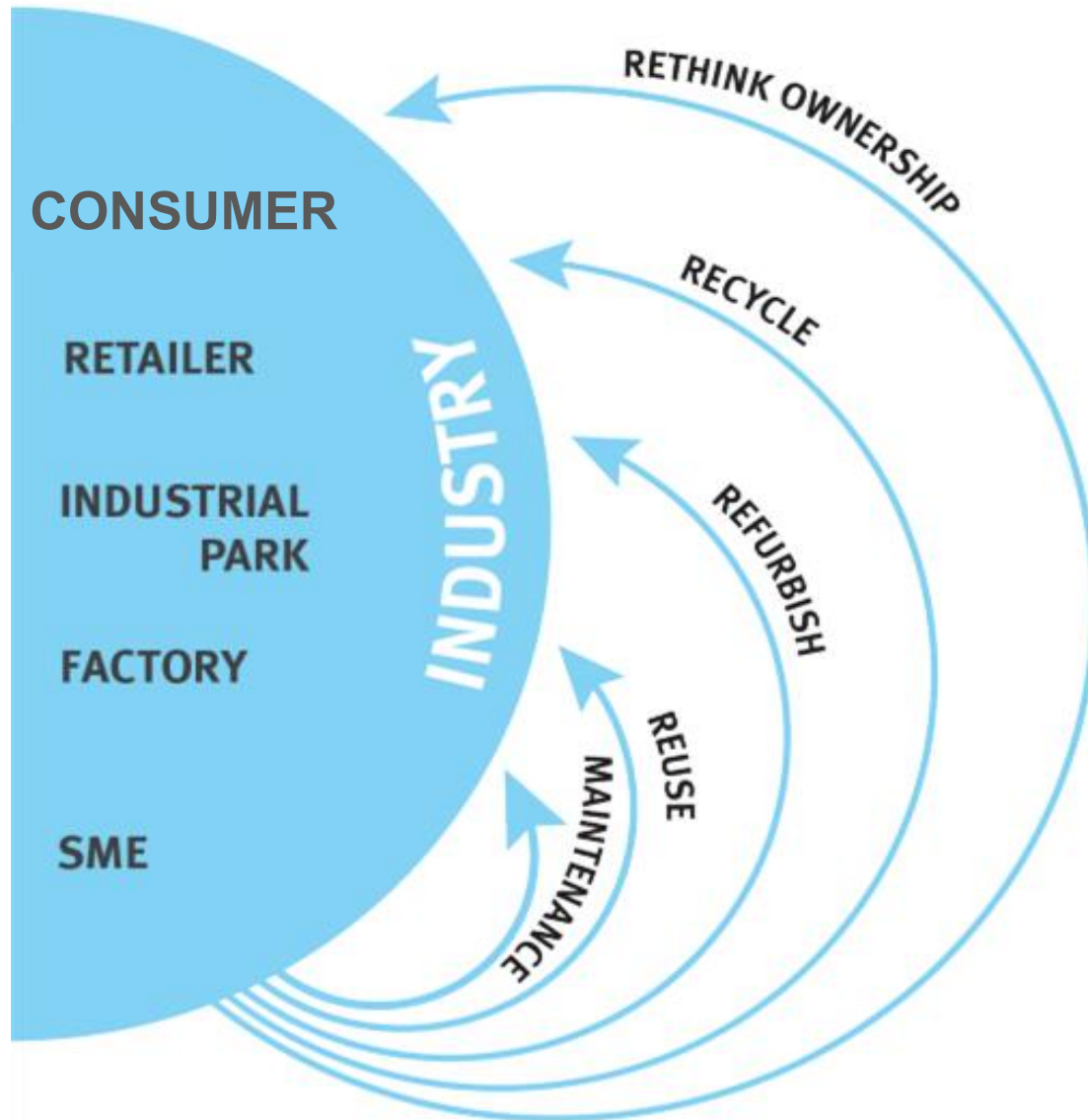
# CIRCULAR ECONOMY



Source: Ellen MacArthur Foundation concept, redesigned by UNIDO



# CIRCULAR ECONOMY



NON SOLO COME, ANCHE  
DOVE E PERCHÉ



Q

T shirt in bamboo Donna con Collo Rotondo

CHF 34,10

Taglia: M

XS

S

M

L

XL

XXL

XXXL

Colore: Azzurro

♡

1

Aggiungi al carrello

Acquista con Pay

Paga con

Tabella Taglie

Contattaci

COD

KTSPXTW017

Categorie

Abbigliamento da barca

Abbigliamento da barca donna

Abbigliamento Donna

Abbigliamento in bambù - Donna

T-Shirt Donna in Fibre Naturali

服装及配饰 > 男装 > 男士T恤

批发有机麻圆领衬衫定制领标签男士白色t恤轻质透气麻t恤

暂无评价 · 男士T恤爆款商品第11名

Jiangxi Boton Garment Co., Ltd. · **Verified** 实力供应商 · 3 yrs · CN

<

>

♡

商品聚焦

功能亮点:

这款有机大麻圆领T恤采用**透气且环保的材料**制成，例如100%大麻、棉麻混纺或其他面料选项。它具有多种定制可能性，包括标志刺绣、多种印刷方式和根据买家喜好定制的尺寸。该产品支持快速交付，样品可在7 - 10天内送达，并提供多种运输方式，包括快递、空运和海运。

供应商高点:

该供应商主要出口到美国、英国和日本，能够提供**全面定制**和**基于设计的定制服务**，**灵活定制**是其一大优势，客户好评率为80.8%。

无忧退货

10 - 999 pieces 1000 - 4999 pieces

**€7.74** **€4.30**

商品规格

颜色: 蓝色

材质: 氨纶/棉

氨纶/棉

涤纶/棉

氨纶 / 涤纶

尺码

XXS

XS

S

M

L

XL

定制选项

• LOGO定制 (最小订单: 100 pieces)

• 外包装定制 (最小订单: 1000 pieces)

• 图案定制 (最小订单: 100 pieces)

供应商定制能力 **Verified**

• 来图定制

• 来样定制

• 按需定制

物流

首单立减50美元

海运 + 快递 承运商: FLY Logistics

运费: 10 pieces €32.35

运输时间: Est. 45-50天

获取报价



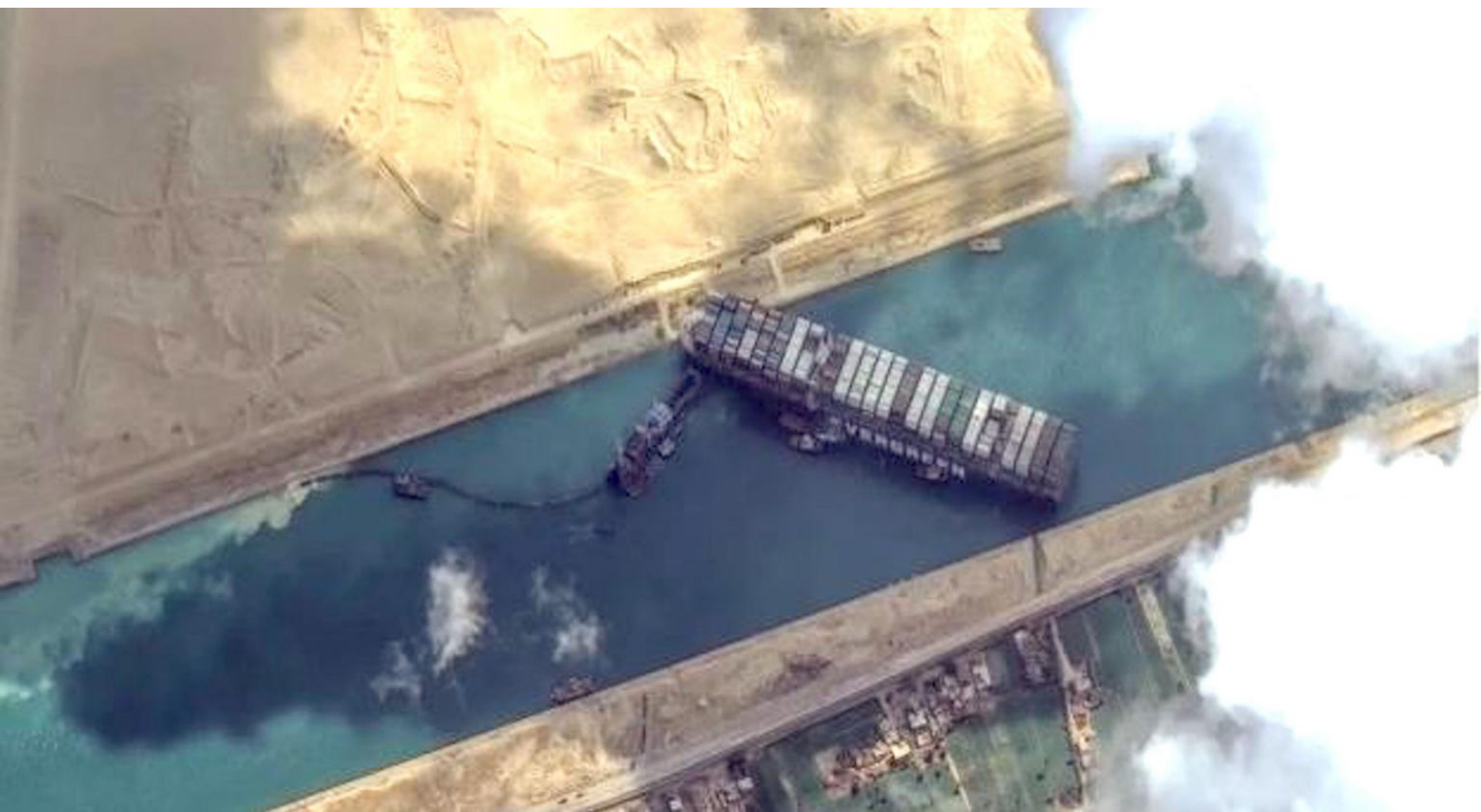




PERCHÉ È COSÌ  
IMPORTANTE?



|  Reciprocal Tariffs |                                                                                  |                                      |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------|
| Country                                                                                              | Tariffs Charged to the U.S.A. including Currency Manipulation and Trade Barriers | U.S.A. Discounted Reciprocal Tariffs |
| China                                                                                                | 67%                                                                              | 34%                                  |
| European Union                                                                                       | 39%                                                                              | 20%                                  |
| Vietnam                                                                                              | 90%                                                                              | 46%                                  |
| Taiwan                                                                                               | 64%                                                                              | 32%                                  |
| Japan                                                                                                | 46%                                                                              | 24%                                  |
| India                                                                                                | 52%                                                                              | 26%                                  |
| South Korea                                                                                          | 50%                                                                              | 25%                                  |
| Thailand                                                                                             | 72%                                                                              | 36%                                  |
| Switzerland                                                                                          | 61%                                                                              | 31%                                  |
| Indonesia                                                                                            | 64%                                                                              | 32%                                  |
| Malaysia                                                                                             | 47%                                                                              | 24%                                  |
| Cambodia                                                                                             | 97%                                                                              | 49%                                  |
| United Kingdom                                                                                       | 10%                                                                              | 10%                                  |
|                                                                                                      | 60%                                                                              | 30%                                  |
|                                                                                                      | 10%                                                                              | 10%                                  |
|                                                                                                      | 74%                                                                              | 37%                                  |
|                                                                                                      | 10%                                                                              | 10%                                  |
|                                                                                                      | 33%                                                                              | 17%                                  |
|                                                                                                      | 34%                                                                              | 17%                                  |
|                                                                                                      | 10%                                                                              | 10%                                  |
|                                                                                                      | 10%                                                                              | 10%                                  |
|                                                                                                      | 58%                                                                              | 29%                                  |
|                                                                                                      | 10%                                                                              | 10%                                  |
|                                                                                                      | 88%                                                                              | 44%                                  |
|                                                                                                      | 10%                                                                              | 10%                                  |







IMMAGINARE UNA  
MANIFATTURA DIVERSA



# LAUDS Factories

## Project overview





# LOCAL

By being local, LAUDS factories **minimise distribution** costs and environmental impact associated with transportation. They also tap into **local resources** and materials, fostering a **sense of community** and supporting the growth of local businesses.

# PRINT FARMS



# ***PRINTING FARM UPDATE***

**PRUSA**  
**RESEARCH**  
by JOSEF PRUSA



<https://youtu.be/qqQzTvvrXo8>







# FULLY 3D PRINTED SHOE “THE CRYPTIDE”



[https://www.youtube.com/watch?v=pqaWg85WgUE&t=1s&ab\\_channel=SINTRATEC](https://www.youtube.com/watch?v=pqaWg85WgUE&t=1s&ab_channel=SINTRATEC)



**Euro visions**  
Netherlands

● This article is more than 1 year old

## 'Repair is the new cool': how Amsterdam started a fashion revolution



**Emma Beddington**

Wed 11 Oct 2023 10.00 CEST

Share



📍 Maryam, of Amsterdam's United Repair Centre, which repairs and upcycles clothes for companies such as Patagonia and Decathlon. Photograph: Jeremy Meek/The Guardian

**A new project in the Netherlands employs skilful refugees to mend much-loved clothes - and the idea is spreading fast**

**T** visit **United Repair Centre** on a quiet day at the tail end of summer, and there's not much happening in the suburban streets of west Amsterdam. Inside, however, this bright workshop generates its own

### Most viewed

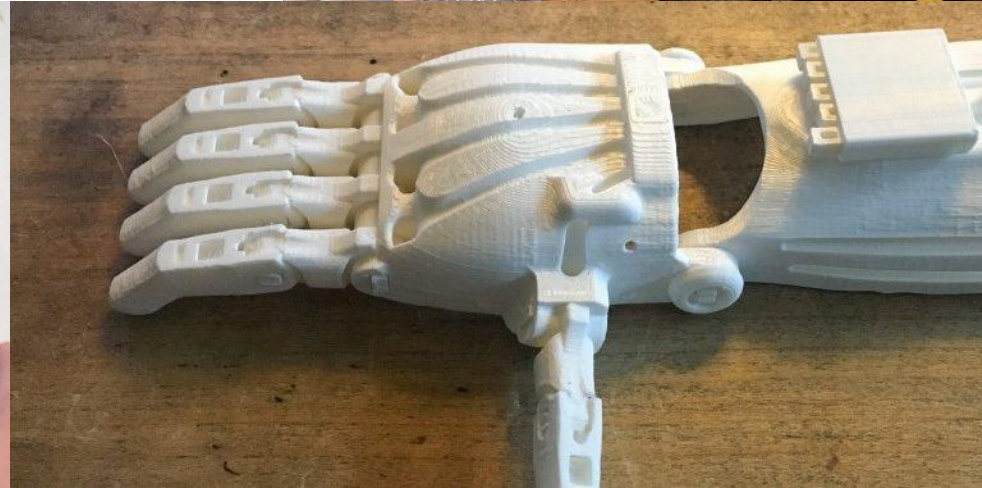
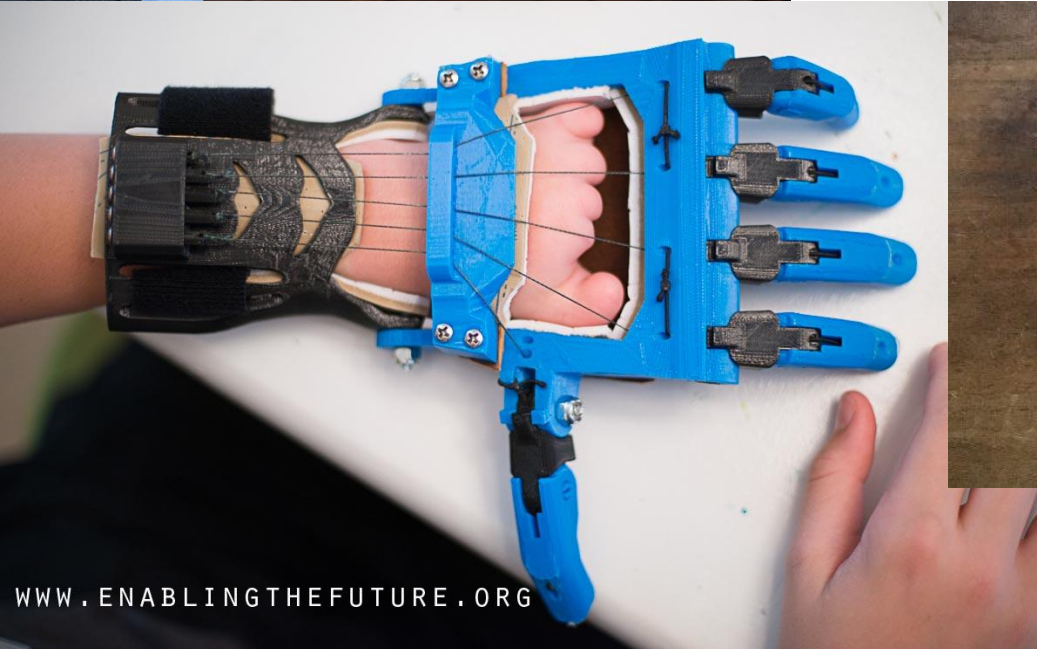


Veterans react to Hegseth's 'insulting' address to generals and admirals



# ACCESSIBLE

This model prioritise **small-batch production**, allowing for flexibility and adaptability in manufacturing processes. Making customizable objects allows producers to **involve the final user** and co-design with them.











● ○ ○ ○ ○ ○ ○ ○

What's the name  
of your Glifo?

Alice

Back

Next

● ○ ○ ○ ○ ○ ○ ○

How large are these  
fingers?

Take your measurement from the largest point  
of your knuckle.

Be sure to select  
the right unit of measurement.

cm ☒ in

▲ HOW TO MEASURE

3,6 cm

—  +



Back

Next

● ○ ○ ○ ○ ○ ○ ○

How thick are these  
fingers?

Take your measurement at the largest point  
of the finger.

Be sure to select  
the right unit of measurement.

cm ☒ in

1,6 cm

—  +



Back

Next

▲ HOW TO MEASURE

● ○ ○ ○ ○ ○ ○ ○

What's the inclination of  
the pen compared to the  
fingers?

The aim of Glifo it's to help you to keep the  
pen perpendicular to the table.

We highly recommend you to take a picture of  
the hand that will hold Glifo.

I ALREADY KNOW  
THE INCLINATION

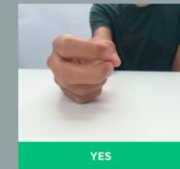
I DON'T KNOW AND I  
CAN TAKE A PICTURE

I DON'T KNOW AND I  
CAN'T TAKE A PICTURE

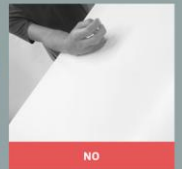
▲ HOW TO TAKE PICTURE

1 of 5

Take a picture of the hand that will hold Glifo: the hand must be  
resting on the table in the position that you are comfortable with.  
The picture must be taken in front of the hand's knuckles.



YES



NO

● ○ ○ ○ ○

# URBAN

By leveraging the cultural richness of urban centers, these factories facilitate collaboration and knowledge-sharing across different disciplines. This collaborative approach **fosters creativity and innovation**, driving forward **solutions to local and global challenges.**



# Fab City Global Initiative

Until cities produce (almost) everything they consume.

28

Years

284

Days

0

Hours

41

Minutes

35

Seconds



## The Fab City Global Initiative: Shaping the Next Decade

The Fab City Global Initiative brings together cities, regions, and communities working to build more resilient, regenerative urban futures. From local manufacturing to bioregional planning, we are rethinking how cities produce, share, and govern.

After a decade of global collaboration, we are now scaling the impact. Join us as we expand the Fab City model and push forward the transformation needed for a thriving 2054.



## Cities and Regions in the Fab City Network

## Global summits

## Global collaborating organisations

## Members in our global community

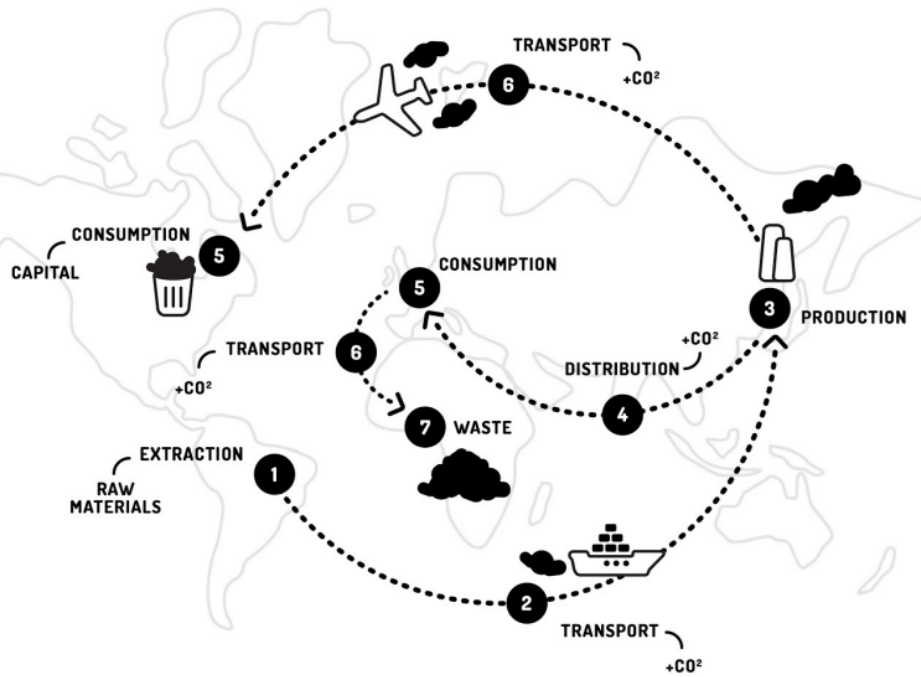








## Industrial revolution after 200 years:



## PITO - Product in / Trash out

Image 1. Where do we make things? Source: Fab City

## The City: a linear trash machine

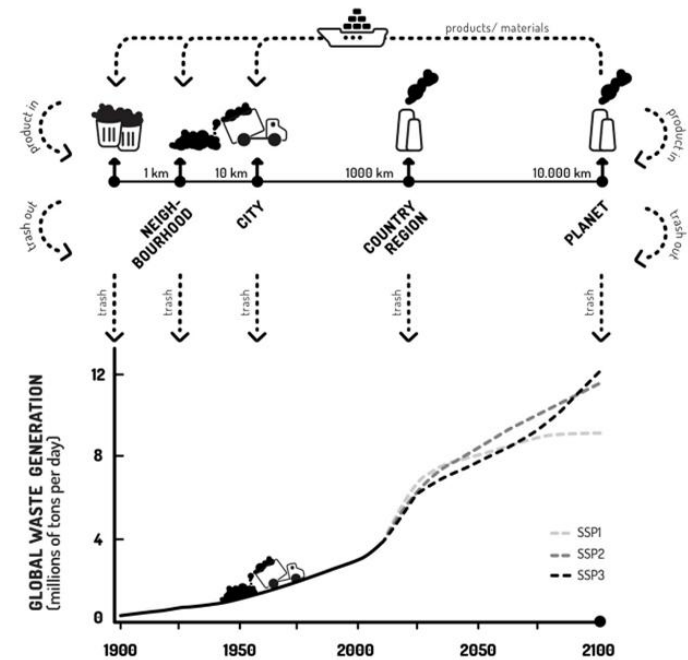


Image 2. "Three projections to 2100 for waste generation spell very different futures. In the first Shared Socioeconomic Pathway scenario (SSP1), the 7-billion population is 90% urbanised, development goals are achieved, fossil fuel consumption is reduced and populations are more environmentally conscious. SSP2 is the 'business-as-usual' forecast, with an estimated population of 9.5 billion and 80% urbanization. In SSP3, 70% of the world's 13.5 billion live in cities and there are pockets of extreme poverty and moderate wealth, and many countries with rapidly growing populations." Graphic source: Fab City. Data source: Organisation for Economic Co-operation and Development / Interpretation by Daniel Hoornweg, Perinaz Bhada-Tata & Chris Kennedy for "Environment: Waste production must peak this century" published in Nature, October 30/2013 at

<http://www.nature.com/news/environment-waste-production-must-peak-this-century-1.14032>

## RESCALING GLOBAL MANUFACTURING

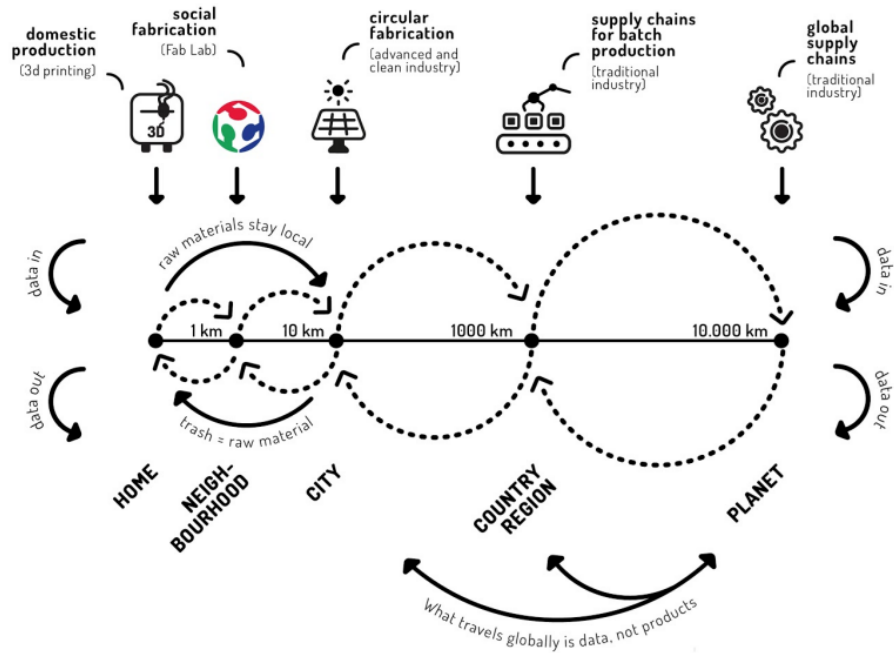


Image 3. A multiscalar and complementary fabrication ecosystem. Source: Fab City

## From linear to spiral production ecosystems:

↳ **DIDO - Data in / Data out**

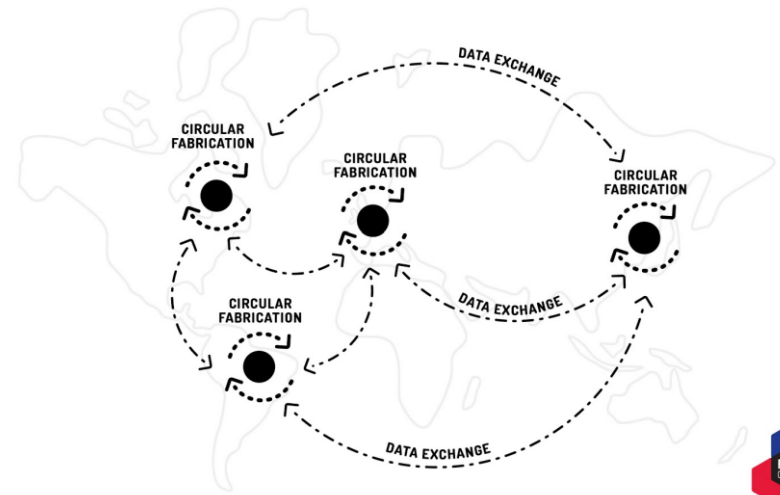


Image 4. Global connected production. Materials stay within accepted distances in cities and regions, information travels on how things are made. We share the recipes of how to construct our world. Source: Fab City



# THE FULL STACK

The approach is applied across multiple levels in a full-stack approach to change the urban paradigm from the top-down and bottom-up

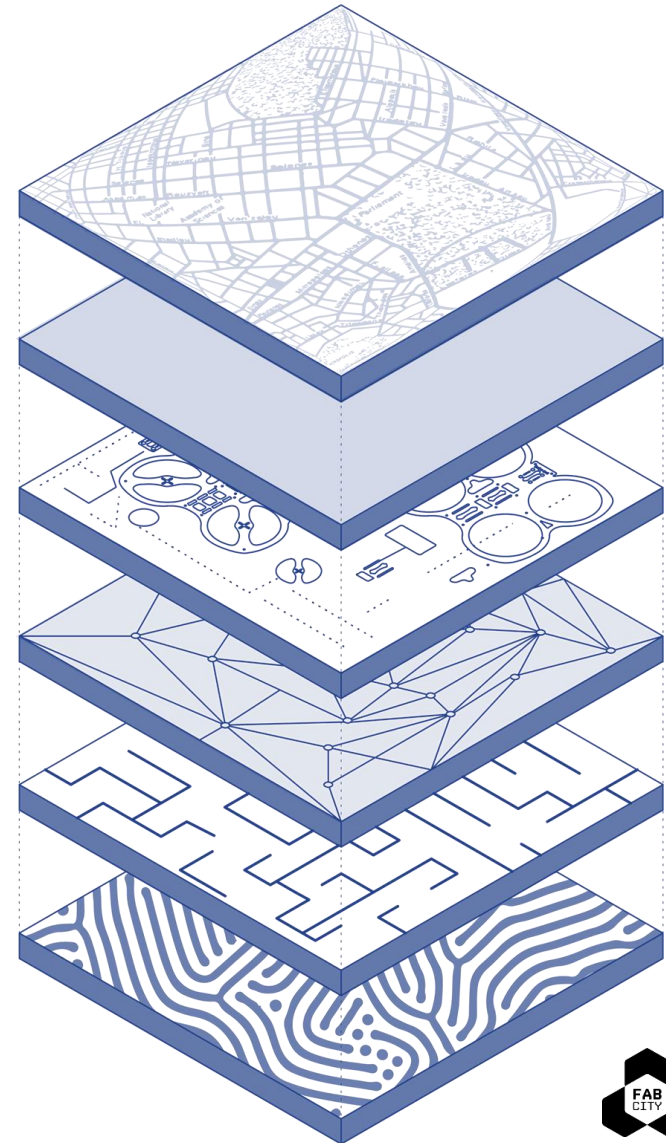
**Cities Network**  
**Platform ecosystem for knowledge sharing**

**Shared strategies, adapted to local needs**

**Distributed incubation for urban innovation**

**New forms of learning**

**Distributed infrastructure for innovation of digital fabrication**





# PROTOTYPE APPROACH



The Fab City strategy is unique in that it addresses a range of environmental, social and economic objectives (carbon reduction, waste minimisation, relocalisation of manufacturing and work) in a systems approach by harnessing new technology and production approaches.



It extends the Fab Lab ideology to the city level, merging rapid prototyping and open-source documentation with connectivity, culture and creativity.

## Barcelona

Barcelona / Catalonia / Spain

### Resilience index

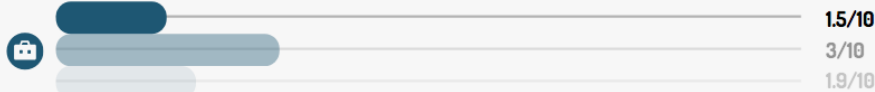
#### Education

Value at regional level  
Value at country level



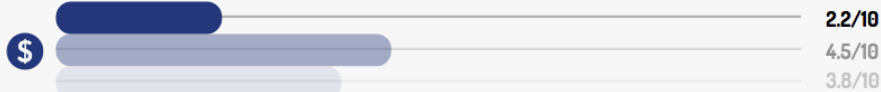
#### Jobs

Value at regional level  
Value at country level



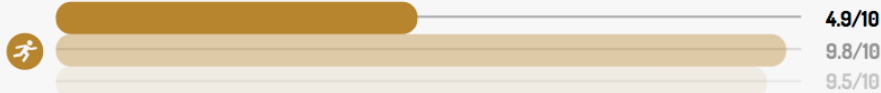
#### Income

Value at regional level  
Value at country level



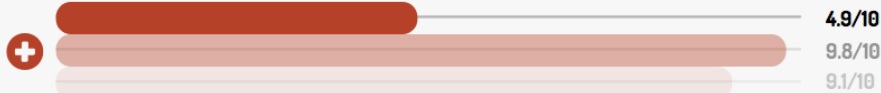
#### Safety

Value at regional level  
Value at country level



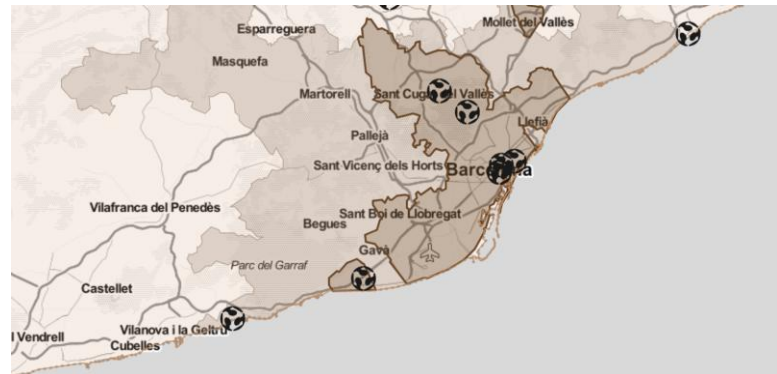
#### Health

Value at regional level  
Value at country level

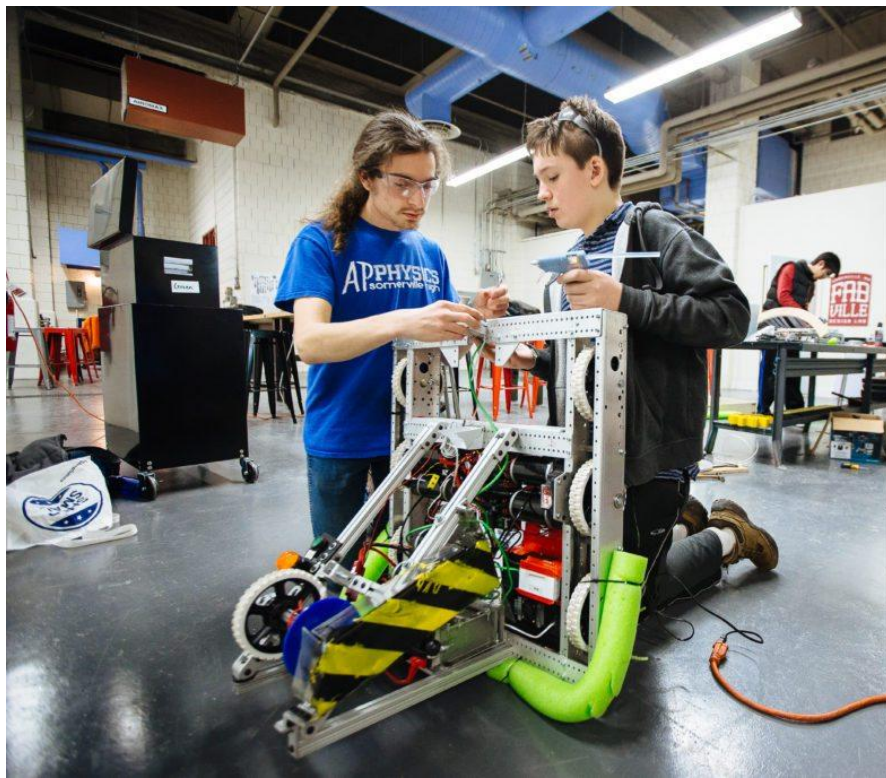


Shared policy on open data about city metrics, will help to build the common infrastructure among cities: the Fab City Dashboard. This is achieved by collaborating on the defining and developing such metrics with network members and by cities providing data for such metrics as open data. (Examples from Fab City Dashboard data visualiser)

# OPEN DATA SETS







# SMART CITIES to SMART CITIZENS

Fab City engages city users in reimagining the possibilities of urban infrastructure that takes advantage of technology for the benefit of people. New approaches to education including life-long learning and STEAM present new employment opportunities in a democratic manner





# DIGITAL

LAUDS factories leverage **digital innovations** to enhance the collaboration process. This digital infrastructure supports **efficient production** and promotes innovation in manufacturing processes.



# Found Objects

by [Fiction Factory](#)

Collected2

Follow13

 Overview

 Files

 Tasks

Found Objects uses software to dynamically create objects from left-over sheet material in CNC production.



Last activity4th Dec 2024 

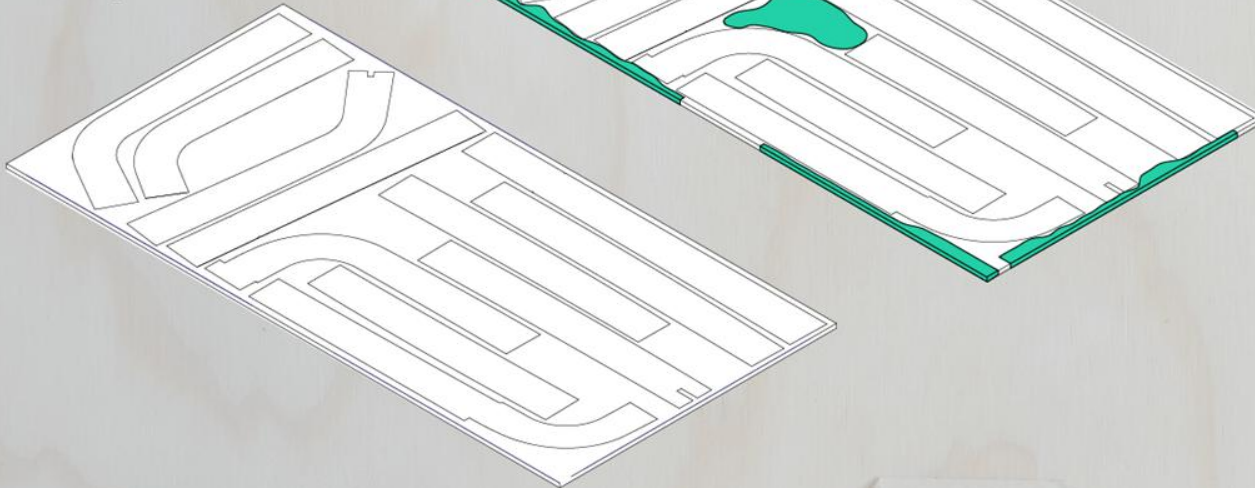
Contributions6

Licensen/A

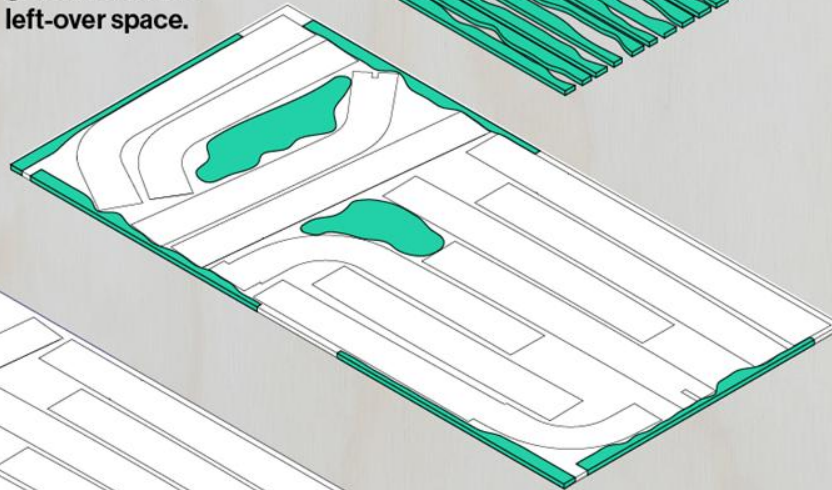




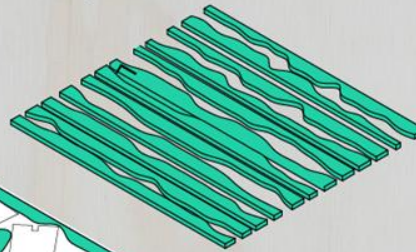
1. Sheets are nested with designed components



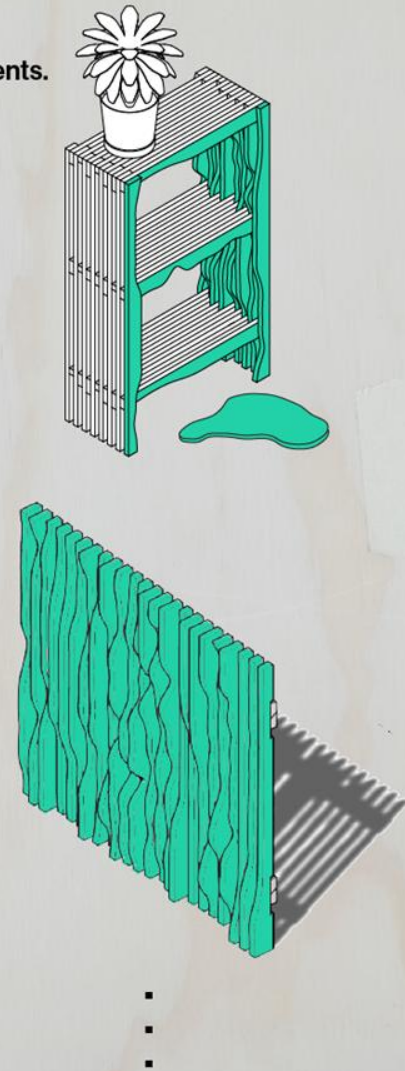
2. Shapes are generated in the left-over space.



3. Generated shapes are produced as new components.



4. New objects are created from the generated components.



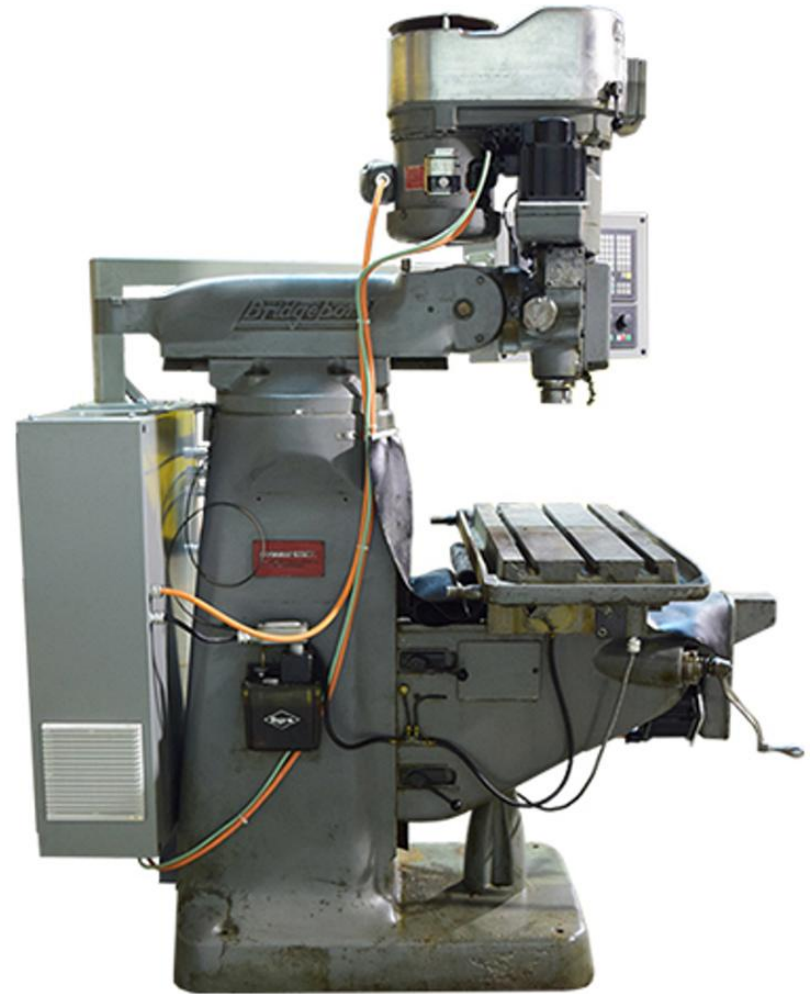


# Transforming the future of building together

Lead the way in circular construction with Madaster. Seamlessly track and manage all materials, ensuring your real estate and infrastructure are built to last.

[Book a demo](#)[Register now](#)



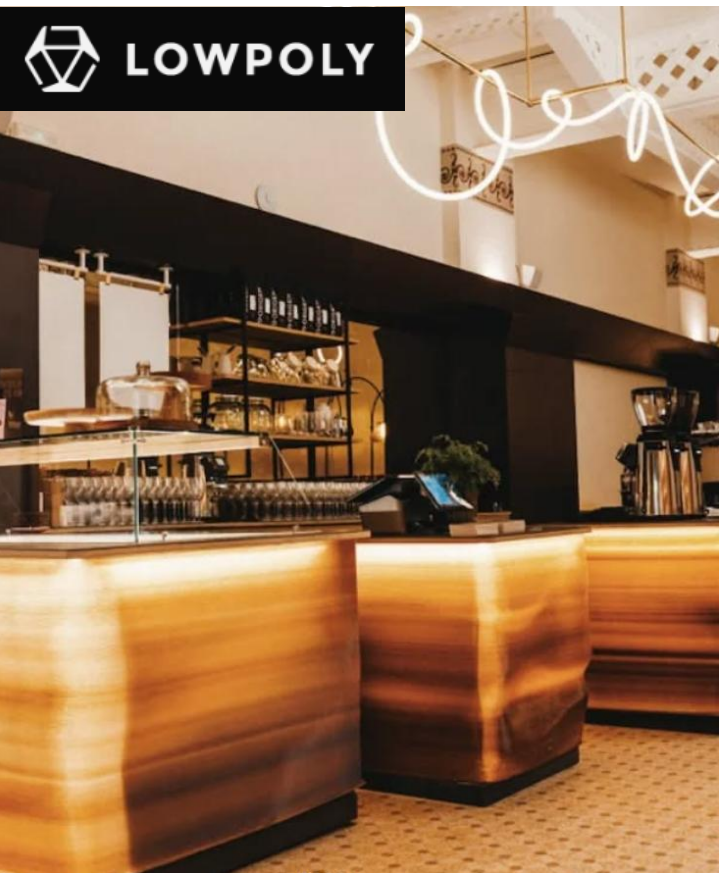


*\*Latest kit includes side mount main enclosure with upgraded arm (shown in image 1)*

<https://www.machinetoolproducts.com/siemens-sinumerik-808d-low-cost-cnc-retrofit-kit-for-3-axis-milling/>

# SUSTAINABLE

LAUDS promotes circular transformation by utilising **local raw materials** and embracing principles such as **recycling, remanufacturing, and the use of secondary materials**. By adopting sustainable practices, LAUDS factories minimise their environmental footprint.



## FOOD WASTE







Open Tools

Workshops

Services

Case Studies

News



Get in Touch

EW

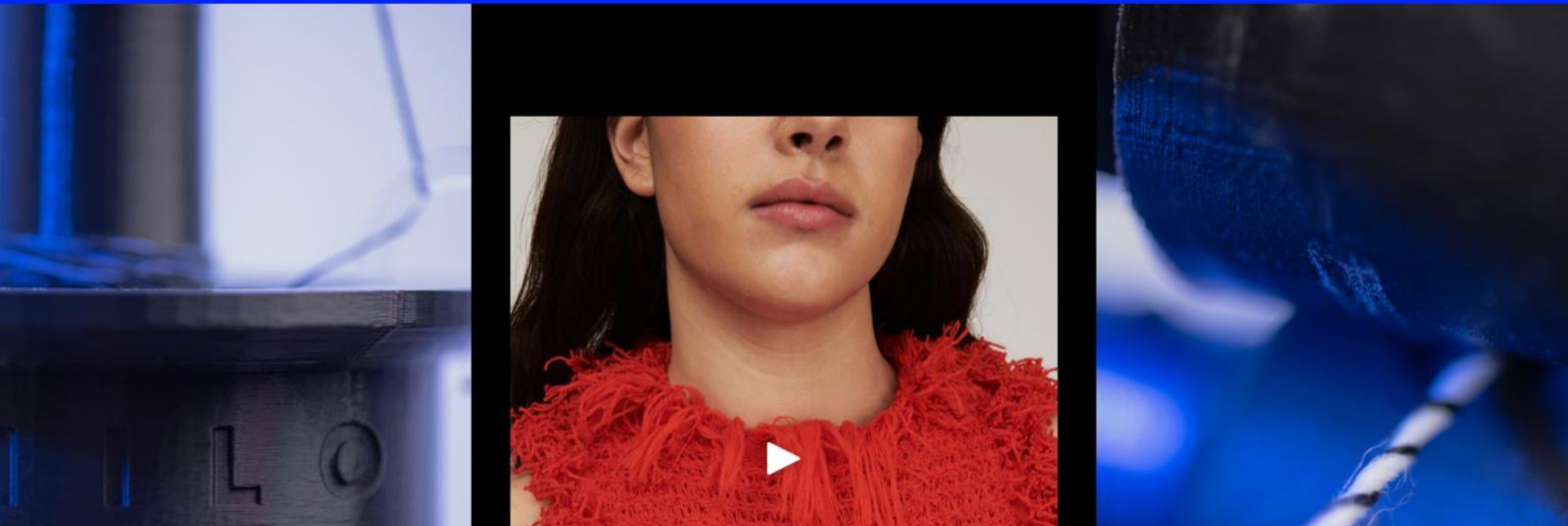
HILO SPINNING MACHINE 3.0+

NEW

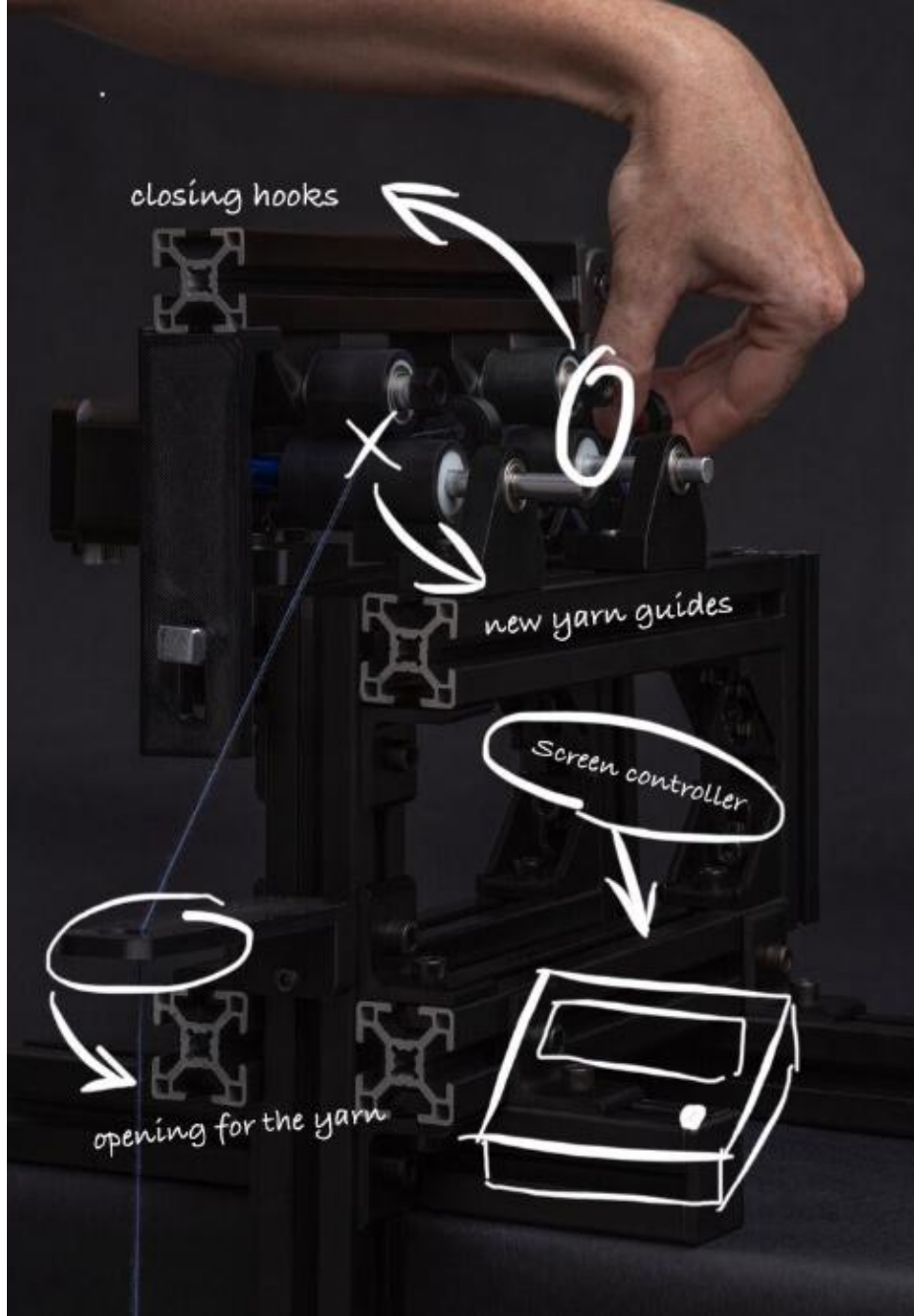
HILO SPINNING MACHINE 3.0+

NEW

HILO SPINNING MACHINE



<https://www.hilotextiles.com/>





[https://youtu.be/mAnyve6h8LA?si=uynRbK\\_b7-fdwox6](https://youtu.be/mAnyve6h8LA?si=uynRbK_b7-fdwox6)



PERCHÉ DOVREMMO



## Resilient Jobs

## Cos'è Su la Cler?

**Su la Cler è un progetto sperimentale per sostenere l'economia locale a Milano.  
La missione di Su la Cler è far incontrare:**



### Negozi, botteghe e servizi di vicinato

Piccolo commercio, artigianato, imprese sociali e culturali

### Spazi commerciali sfitti

ai piani terra nei quartieri periferici e semi periferici di Milano

Vai alla mappa

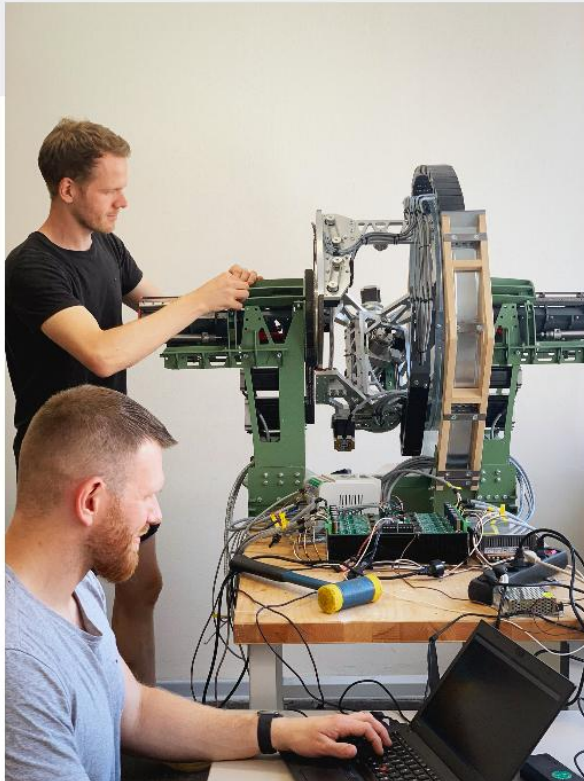
<https://www.sulacler.it/>

# Resilient Jobs





streev connects.



## The Studio

### INTERPLAY OF MATERIALS AND PRODUCTION TECHNOLOGY

At STREEV Studio, we combine natural materials with cutting-edge production technology. Our mission is to create a positive impact on social and ecological contexts through production. Our approach is grounded in practical research, and we translate these insights into intuitive and locally valuable design. We use our expertise in software development, electrical engineering, mechanics and industrial design to develop tools and products for a diverse future.

The duo behind STREEV are co-founders and brothers Max and Kay Boll.

<https://www.streev.de/>

# New Technologies



<https://www.streev.de/>

# New Technologies





Local Communities



RICAPITOLANDO...

- È fondamentale riportare la produzione in città per poter “chiudere i cerchi” della Circular Economy
- Una nuova manifattura urbana può esistere ed essere sinergica con la produzione industriale attuale
- Per essere davvero trasformativa, deve essere Locale, Accessibile, Urbana, Digitale e Sostenibile
- Questa trasformazione può accadere solo lavorando sullo sviluppo di nuove tecnologie e nuovi macchinari
- La manifattura urbana genera lavori più connessi al territorio e più resilienti
- Crea inoltre maggiori connessioni con le comunità locali
- Un grande ruolo può essere giocato dalla pubblica amministrazione nel supportare lo start-up delle realtà di manifattura urbana
- Anche realtà di manifattura tradizionale esistenti possono formarsi per prepararsi ai cambiamenti ed essere più proattivi

# GRAZIE!

**Enrico Bassi**

[enrico@enricobassi.com](mailto:enrico@enricobassi.com)

<https://www.linkedin.com/in/enricobassi/>