Municipality of Ferrara Vision

The Municipality of Ferrara has a strategic goal of reducing waste by acting mainly on prevention, reuse and recycling.

The idea was to create the conditions for a circular economy district based on locally produced waste.

The approach was collaborative, through public-private partnerships involving waste operators, small reuse and recycling platforms, artisans and SMEs engaged in the development of materials and manufacturing.
**Context: actors and partners**

The project was developed between 2011 and 2014 and it was co-financed by the European Commission through the Life+ fund.

Project partners:
- Municipality of Ferrara,
- The social cooperative La Città Verde
- Impronta Etica, a network of Italian companies engaged in the promotion of Corporate Social Responsibility
- RREUSE, European network of social enterprises that operate in the recovery and recycling of waste
- Hera Spa, local utility

…and the LOWaste for Action Community…

**The objectives**

1. Limiting the exploitation of resources
2. Reducing the costs of waste disposal
3. Creating new job opportunities
LOWaste the video

Ferrara: the video!

https://www.youtube.com/watch?v=byBuJjiqIPo

Drivers and outcomes

- Local district of waste operators, designers, makers, social enterprises, SMEs engaged in manufacturing with locally recycled materials
- All stakeholders of the chain from waste producers to the processor and dealer are coordinated through public-private partnerships
- The LOWaste value chain aims to maximize the impact in terms of local employment
- The networks of social enterprises and entrepreneurs (designers, manufacturers, fab-labs and similar) are key to the model
- Reuse and recycle of waste categories that actually are disposed
- Enhancement of low value-added sectors
- Eco-design of second life products

Waste intercepted

Jobs created
The governance model

Virtuous model of public-private partnership:

- **Synergies and collaboration** between individuals with divergent visions
- **Integration** between an industrial approach to waste management and local initiatives for innovation
- **Exchange of know-how and technical expertise** alongside the creation of a stable relational assets

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Project steps and milestones

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The Process

1. **LOCAL PARTNERSHIP**
   - Mapping of the subjects
   - Definition of the governance
   - Formalization of the agreement

2. **START-UP OF THE LOWASTE VALUE CHAIN**
   - Identification of the target waste
   - Regulatory constraints assessment

The Process

3. **REALIZATION OF THE LOWASTE VALUE CHAIN**
   - Potential market assessment
   - Feasibility assessment
   - Waste recovery
   - Eco-design and re-products prototyping
   - Production of re-products
   - Marketing of re-products
LOWaste for Action Community

7 scalable projects
- prefabricated panels with recycled inert from building
- engineering prefabricated panels for floors/facade
- semi-finished textiles
- fab-lab low-tech
- training and awareness program
- exhibition design for the marketplace
- ...

13 products prototypes
- carpets
- bags carrier
- first aid cabinets
- curtains for windows/showers
- pocket medical tool bag
- camping kit
- footwear and accessories
- accessories for children
- ...

LOWaste pilot projects

WASTE STREAMS SELECTION → PRODUCTS IDENTIFICATION → SECOND LIFE PRODUCTS PROTOTYPES → MARKET

- TEXTILE FROM HOSPITALS
- OIL AND FOOD WASTE
- AGGREGATES FROM DEMOLITION
- STREET FURNITURE AND PLAYGROUND EQUIPMENT
- REUSE CENTER
An example of pilot: hospital textile

STARTING WASTE MATERIAL:
Textile from the operating room

SUBJECTS INVOLVED:
Servizi Ospedalieri Spa
Social cooperative La Piccola Carovana
Social cooperative La Città Verde

REPRODUCTS:
gadget for fairs
bags, cases and pouches, furniture (chairs and cushions), technical clothing (sea and mountain)

Shoes by Cartavetrata

The number of the value chain
- 32 projects identified and 24 prototyped;
- 23 designers and makers involved in the design;
- 90 tons per year of medical textile savable from disposal,
- up to 67 tons of CO2eq saved for the non-disposal;
- 90 tons of raw material avoided for the production of new products;
- up to 2.159 tons of CO2eq saved using secondary raw materials
An example of pilot: aggregates from demolition

STARTING WASTE MATERIAL
Materials resulting from the demolition and construction of buildings

SUBJECTS INVOLVED:
Various Construction Companies
Social cooperative la Città Verde

REPRODUCTS:
Road foundations fills
Panels for cladding facades

An example of pilot: aggregates from demolition

The number of the value chain

2 projects and 1 prototype of cladding panel
1 project for communication, training and awareness creation related to specific targets
1 project for the creation of an information platform for the supply of recycled aggregates
11 designers and makers involved in the design
1 pilot test made by the Municipality of Ferrara 1,5 km of roads made amounting to 4,090 cubic meters of aggregates
11,200 tons of potential recycled aggregates per year up to 107 tonnes of CO2eq avoided preventing landfill up to 466 tonnes of CO2eq avoided by not using aggregates produced in quarries.
LOWaste requirements

LEGAL COMPLIANCE
• End-of-waste
• Certified requirements for marketing

RATE OF RECYCLING / REUSE
• Typology and % of recycled materials
• Typology and method of reuse

IMPACTS ON THE ENVIRONMENT
• Waste prevention (e.g. kg of waste intercepted)
• Resource saving (e.g. CO2 emissions avoided)

SOCIAL IMPACTS
• Territorial scale (e.g. Km of transports)
• Employment benefits

Technical Requirements

Thank you!
www.lowaste.it
lowaste@indicanet.it