



**“Gheorghe Asachi” Technical University of Iasi, Romania**



---

**CIRCULAR ECONOMY AND UPCYCLING OF WASTE  
AND PRE-CONSUMER SCRAPS IN CONSTRUCTION SECTOR.  
THE ROLE OF INFORMATION TO FACILITATE THE EXCHANGE  
OF RESOURCES THROUGH A VIRTUAL MARKETPLACE**

**Marco Migliore**

*Department of Architecture, Building Environment and Construction Engineering (ABC), Politecnico di Milano,  
via Ponzio 31, 20133 Milano, Italy, e-mail: marco.migliore@polimi.it*

---

**Abstract**

The activities connected with the construction sector are responsible for several environmental impacts, both in the construction sector, and in the many manufacturing sectors involved in the supply chain of materials and products (mining sector, manufacturing sector, waste treatment etc.). The building products have a marked cross-sectorial connotation, according to the ANCE 2016 report, 31 economic sectors out of 36 are suppliers in the construction sector. One of the possibilities to reduce the environmental impacts of this sector is the limitation of the impacts of extraction, supply and production of materials, enhancing the possibility of using secondary raw materials from various sectors. From a circular economy perspective, the possibility of exchanging recyclable waste materials is crucial. In this regard, the paper presented, deals with the theme of strategies for the activation of waste inter-sectorial recycling scenarios. The hypothesis is the creation of a virtual marketplace, structured in an organized network, where the different users (producers or potential users of scraps/waste, industrial process planners, territorial administrators, etc.), can identify and locate scraps/waste usable for recycling. The use of the marketplace requires the profiling of companies that can offer resources and/or search for them, using specific search keys. The research can be conducted identifying: the secondary raw material obtainable (through the CER code and/or Omniclass 41), the origin or destination supply chains (through the NACE, UNI8290 and Omniclass 21 coding) and the georeferencing (through GIS). The work presented is the result of a post-doctoral research project funded by the Fondazione Fratelli Confalonieri of Milan, which had as its central theme, the systems for the exchange of recyclable waste and scraps.

*Keywords:* waste, recycle, circular economy, environment

*Received: August, 2019; Revised final: September, 2019; Accepted: October, 2019; Published in final edited form: October, 2019*

---