

**INDUSTRY
SUMMIT**



CIRC DAY SEMINAR 14.5.

Organized by JHY, the Waste Management association (Finland)

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Circular Economy in the Italian building sector

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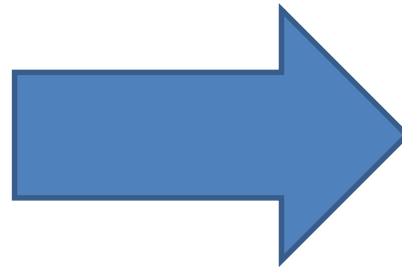
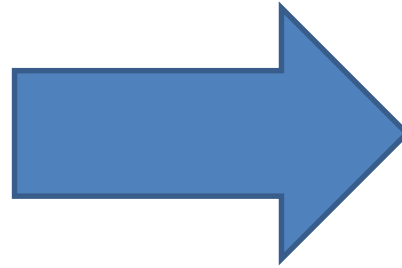
Ing. Giorgio Bressi

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ECOMONDO

Giorgio Bressi's "picture of my life"

From C&D wastes to building products: let's apply the circular economy at the building sector



C&D waste management in Italy (1)

- The most updated public data on waste arising and recycling rates concern year 2016
- It is difficult to collect real data because the small producers have been exempted to declare the quantities
- Italian CDW arising (EWC 17) (given by ISPRA, the Italian environmental agency) = $55 * 10^6$ t (0,9 t/inhabitant/year)
- On the other hand existing data on the treated C&D waste are reliable
- Italy has already reached (76,2%) the recycling targets fixed by the 2008/98/CE Directive (70%), but the total production of C&D waste is estimated by ISPRA and not sure!

C&D waste management in Italy (2)

- C&DW have not been considered by Public Authorities for many years
- Since nineties (Priority Waste Streams Project of the EC) the interest of the Public Authorities increased

In the past:

- Direct recycling of waste in backfilling, landscaping or road construction
- Poor controls
- Treatment only for volumetric reduction
- No data on waste arising
- Not reliable data on disposal or recycling rates

C&D waste management in Italy (3)

- Today environmental legislation pushes for recycling (waste management hierarchy) but there is not a widespread information on C&DWs and on recycled aggregates
- The different PAs (particularly Ministry for Infrastructures and Ministry of the Environment) do not work together
- Many technical and economical barriers exist
- In Italy it should be focused quite better what are recycling and recovery
- We need EOW criteria
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C&D waste management in Italy (4)

- As the recycled aggregates market is local the Commission decided to leave to each MS to define the criteria to cease the waste nature of a secondary product/material
- Some Countries developed a national EoW criteria (A, NL, B and UK), not Italy
- The criteria should include clear specifications on the geotechnical and the environmental performances of the aggregates to be defined as such and to be sure that the market can accept them
- Without EoW criteria who is trying to work seriously can be damaged and who is working badly and saving money will not be stopped

C&D waste management in Italy (5)

- Recycled aggregates are mostly used in road construction
- Technical norms allow the use of recycled aggregates also in concrete, but high resistance concrete should include only recycled aggregates from concrete
- Recycle aggregates can also be used for backfilling operations
- Backfilling should be used as a last resort option as it has drawbacks: it can undermine the incentives to recycle in higher value applications
- C&DWs should be treated before being backfilled, in order to avoid unwanted environmental effects, such as substances leaching into the groundwater

C&D waste management in Italy (6)

- We have to distinguish wastes from materials
- Recycled aggregates should be marked CE since 2007 and should fulfill both technical and environmental specifications
- We have many fixed plants with good technologies (also Italian), but the mobile crushers are mostly used
- Quality assurance schemes are not used but quality management is a crucial step towards increasing the confidence in the C&D waste management processes and the trust in the quality of C&D recycled materials

Market barriers to circularity (1)

- Leaching limits are too tight (organic content and sulphates)
- The market do not ask for CE marking (only for concrete)
- Recycled aggregates often cannot be used because they are not included in the technical specifications of the works
- CEN norms clearly say that aggregates can be natural, recycled or artificial, but the information on the last two are much less
- Since April 2014 the Italian Standardisation Body (UNI) published a national technical norm on road construction, not still in use

Market barriers to circularity (2)

- Technicians and Public controllers should increase their confidence in the CDW management process and their trust in the quality of recycled aggregates
- In some cases the use of recycled aggregates in big works caused environmental problems (heavy metals release or presence of asbestos)
- Natural aggregates excavation should be planned and should take account of the recycled ones
- In some areas where wild excavation exists is nearly impossible to recycle (too low prices)
- High ecotaxes on landfilling or natural aggregates do not work and the existing ones are ineffective

Market barriers to circularity (3)

- In the northern part of Italy the culture and the use of recycled aggregates is widespread
- Some regions (Trentino, Veneto and Lazio) developed specific legislation and guidelines for their use but in the rest of the country the use of recycled aggregates is only optional
- Usually designers do not use updated technical norms and also the Public Contractors specifications are old and should be updated
- GPP is mandatory but not applied

Opportunities (1)

- The market needs to increase confidence in the C&D waste management process and the trust in the quality of C&D recycled materials. This will be achieved by:
 - 1) Improved waste identification, source separation and collection;
 - 2) Improved waste logistics;
 - 3) Improved waste processing;
 - 4) Quality management;
 - 5) Appropriate policy and framework conditions.
- Italy has developed a very stimulating legislation on GPP: the use in public tenders of Environmental Minimum Criteria is mandatory not optional

Opportunities (2)

- Quality management is a crucial step towards increasing the confidence in the C&D waste management processes and the trust in the quality of C&D recycled materials
- Appropriate quality management procedures and protocols allow suppliers to control and secure their processes and the quality of products
- Environmentally sound application of recycled aggregates can be secured by introducing quality management checks and tools at all stages of the recycling process:
 - 1) at demolition sites
 - 2) during waste transportation and transfer
 - 3) at C&D waste recycling sites

Opportunities (3)

- Green products made of recycled aggregates should be fostered in the technical specifications of the GPP tenders
- Public price-lists should include recycled and manufactured aggregates and the green products made of them
- New applications will be developed to meet the growing demand of green products
- A growing market is also represented by the building certification (the rating system promote the use of recycled aggregates)

Conclusions (1)

- The implementation of the circular economy at the building sector could help the recycling sector
- Technical norms (both at European and at local level) support the use of recycled and manufactured aggregates in infrastructures (mainly roads) and concrete, but it is difficult to change the habits of designers and project managers
- GPP should force the system to change but at the moment public tenders often do not include any mandatory use of recycled materials

Conclusions (2)

- ANPAR is working hardly to change the legal norms, the mentality and the behavior of designers and consumers, but it is a long a difficult road
- Some bad experiences in the past make even more difficult to increase the confidence in the quality of C&D recycled materials
- This lack of confidence reduces and restricts the demand for recycled materials, which inhibits the development of C&D waste management and recycling infrastructures in Italy
- EoW criteria and Environmental Minimum Criteria for the designing of infrastructures are needed



Thank you for listening

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