



PRIVATE LAW

Legal Perspectives Regarding the Construction and the Demolition Waste Management

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Abstract: *Protecting the environment remains one of the burning desires of our times and people has begun more and more concerned with finding concrete solutions in the direction of identifying, collecting and recycling different types of waste, including construction and demolition waste. All these public policies are based upon a principle in the European Union according to which the polluter is the one who pays, wanting responsibility for all those who generate residues. Therefore, in the framework of this analysis, the identification and the presentation of the main legal regulations regarding the construction and demolition waste management are necessary steps for improving the public awareness on the matter.*

Keywords: *waste; management; construction; demolition; rock materials*

1. Argumentation

Protecting the environment remains one of the burning desires of our times and people has begun more and more concerned with finding concrete solutions in the direction of identifying, collecting and recycling different types of waste, including construction and demolition waste.

All these public policies are based upon a principle in the European Union according to which the polluter is the one who pays, wanting responsibility for all those who generate residues.

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Construction and demolition waste is among these types of debris left over from various construction site activities and many others, emerging the need to collect and recycle them in order to be reused and to successfully replace natural resources. Local public authorities, sanitation operators and economic operators must know the legislation and how to manage construction and demolition waste, so that nature does not suffer.

Construction and demolition waste results from the construction of buildings, roads, from the total or partial demolition of some buildings, but also from the activities of renovation, rehabilitation, repair or consolidation of various civil or industrial constructions or dredging and unclogging activities. The composition of these wastes is heterogeneous (material scraps, chemical products, auxiliary materials). In recent times, there is a growing emphasis on recycling and reuse, because they save the natural resources.

In this context, the concept of circular economy and waste management appears as an opportunity to change the current production and consumption model.

This is where Blockchain technology finds its utility. It initially appeared within electronic payment systems, but currently, the advantages of applying the technology can also be found in other sectors, such as insurance, healthcare, transport and logistics, industry (waste management, product quality, process verification, etc.) and many others, as it can help improve company management and find new business models.

For example, The RockChain is a co-funded project by the European Union that proposes basic training in waste management in the building stone industry, for students, technicians and professionals, through the combined use of new technologies such as Blockchain, Internet of Things (IoT) and Big Data.

In the EU, construction and demolition waste (CDW) represents approximately one third of all waste generated. The situation is exacerbated when this waste is not properly treated and managed, making it impossible to re-enter the value chain. Proper management of CDW and recycled materials, including proper waste handling, can bring major economic benefits, increase quality of life and reduce environmental impact.

2. Types of Construction and Demolition Waste according to Legislation

In order to manage waste as well as possible, it is mandatory to know closely all types of residues that come from constructions and demolitions. Thus, the following types can be highlighted:

A. Materials obtained from the construction and demolition of some buildings: cement, bricks, tiles, ceramics, rocks, plaster, plastic, metal, cast iron, wood, glass, carpentry scraps, cables, lacquering/painting/insulating solutions, construction materials with an expired validity period;

B. Materials resulting from the construction of road infrastructure or its maintenance. The following types of materials can be included in this category: pitch, gravel, bitumen, sand, stone, etc.;

C. Materials that are removed during excavation: vegetable remains, soil, rock, stones;

D. Hazardous waste: asbestos, tar, paint, heavy metals, adhesives, solvents, resins, materials contaminated with hazardous substances, etc..

The construction and demolition waste management (DCD) is a priority in the activity of the authorities responsible for environmental protection. For example, in Romania, there is a complex activity of building both logistics centers, commercial hubs, as well as residential complexes and office buildings.

The field of construction and demolition is intrusive, generates a large amount of hazardous waste and has a significant impact on the environment (dust, smoke, greenhouse gases, harmful substances, high noise level).

That is why there is a need for strict regulation of this industry which pollutes and has negative effects on public health.

Some of these procedures and normative acts must regulate the separate collection of waste from construction, renovation, rehabilitation, repair and consolidation activities, specific to the field. Other large waste-generating operations are the following: demolition of civil and industrial constructions, building structures and transport infrastructure, excavation, dredging, soil clearing.

3. Legal Framework in Romania (Selection)

3.1. Guide from 2023 regarding the specific regulations in the field of waste, as a result of the implementation of the SIPOCA project 394/116097

201. The holder of the construction/demolition authorization issued by the local, central public administration authority or by the institutions empowered to authorize construction works of a special nature has the obligation to have a waste management plan from construction and/or demolition activities, as the case may be, through which sorting systems are established for waste from construction and demolition activities, at least for wood, mineral materials - concrete, brick, sandstone and ceramics, stone, metal, glass, plastic and plaster for their recycling/reuse on the

site, to the extent that it is economically feasible, does not affect the environment and construction safety, as well as to take measures to promote selective demolitions to allow the safe disposal and handling of hazardous substances in order to facilitate reuse and high-quality recycling by eliminating non-recyclable materials.

231. Holders in whose names construction and/or demolition authorizations were issued according to the provisions of Law no. 50/1991 regarding the authorization of the execution of construction works, republished, with subsequent amendments and additions, have the obligation to manage construction and demolition waste, so as to reach a level of preparation for reuse, recycling and other material recovery operations, including operations of backfilling that uses waste to replace other materials, of at least 70% of the mass of non-hazardous waste from construction and demolition activities, with the exception of natural geological materials defined in category 17 05 04 of the annex to the Commission Decision of December 18, 2014 amending the Decision 2000/532/EC establishing a list of waste under Directive 2008/98/EC of the European Parliament and of the Council.

794. The operational and technical requirements and measures for the storage of waste in order to prevent or reduce as much as possible the negative effects on the environment and human health, generated by the storage of waste, throughout the duration of the exploitation of a warehouse, are included in the Technical Regulations on the storage of waste, approved by the Order of the Minister of Environment and Water Management no. 757/2004, with subsequent amendments and additions, which is revised depending on the changes in national and European legislative provisions and technical-economic conditions.

795. The provisions of the technical regulation provided for in point 794 apply to inert, non-hazardous and hazardous waste deposits for all stages of design, construction, operation, closure and post-closure monitoring of a waste deposit.

3.2. Technical regulations of 2023 Guide on remedial methods in existing buildings to reduce the level of exposure to radon, indicative RTC 6-2022

The Act date: 13-Oct-2023

Issuer: Ministry of Development, Public Works and Administration

Entered into force: October 25, 2023

5.7. Remediation of existing buildings to reduce the concentration of radon from building materials

Building site radon index (RI): an index that gives information on the level of radon risk released from soil, bedrock or building material.

3.3. Order 6005/2023 on the amendment and completion of the Scheme of State aid and de minimis measures for the financing of investments for the development of SMEs that support sustainable growth and job creation within the Just Transition Program 2021-2027, approved by the Order of the Minister of Investments and Projects European no. 3.996/2023

081 Extraction of stone, sand and clay

0811 Quarrying of ornamental and building stone, quarrying of limestone, gypsum, chalk and slate

0812 Extraction of gravel and sand; clay and kaolin extraction

3.4. Classification of waste according to European and national Romanian transposed regulations

01 04 07* waste containing hazardous substances from the physical and chemical processing of non-metallic ores

01 04 08 waste gravel and stone chips, other than those specified in 01 04 07

10 12 waste from the manufacture of ceramic materials, bricks, tiles and construction materials

10 12 08 waste ceramics, bricks, tiles or construction materials (after heat treatment)

17 - Waste From Construction And Demolition (Including Soil Excavated From Contaminated Sites)

17 01 concrete, bricks, tiles and ceramic materials

17 01 01 concrete

17 01 02 bricks

17 01 03 tiles and ceramic materials

17 01 06* mixtures or separate fractions of concrete, bricks, tiles or ceramic materials containing dangerous substances

17 01 07 concrete mixtures, bricks, tiles and ceramic materials, other than those specified in 17 01 06

17 02 wood, glass and plastic materials

17 02 01 wood

17 02 02 glass

17 02 03 plastic materials

17 02 04* glass, plastic materials or wood containing or contaminated with dangerous substances

17 03 bituminous mixtures, coal tar and tarred products

17 03 01* asphalts containing coal tar

17 03 02 asphalts, other than those specified in 17 03 01

17 03 03* coal tar and tar products

17 04 metals (including their alloys)

17 04 01 copper, bronze, brass

17 04 02 aluminium

17 04 03 lead

17 04 04 zinc

17 04 05 iron and steel

17 04 06 tin

17 04 07 metallic mixtures

17 04 09* metal waste contaminated with dangerous substances

17 04 10* cables containing oil, tar or other dangerous substances

17 04 11 cables, other than those specified in 17 04 10

17 05 soil (including excavated from contaminated sites), stones and dredging waste

17 05 03* earth and stones containing dangerous substances

17 05 04 earth and stones, other than those specified in 17 05 03

17 05 05* dredging waste containing hazardous substances

17 05 06 dredging wastes other than those specified in 17 05 05

17 05 07* ballast residues containing dangerous substances

17 05 08 ballast residues, other than those specified in 17 05 07

17 06 insulating materials and construction materials containing asbestos

17 06 01* insulating materials containing asbestos

17 06 03* other insulating materials consisting of or containing dangerous substances

17 06 04 insulating materials, other than those specified in 17 06 01 and 17 06 03

- 17 06 05* construction materials containing asbestos
- 17 08 construction materials based on gypsum
- 17 08 01* gypsum-based construction materials contaminated with dangerous substances
- 17 08 02 gypsum-based construction materials, other than those specified in 17 08 01
- 17 09 other construction and demolition waste
- 17 09 01* construction and demolition waste containing mercury
- 17 09 02* PCB-containing construction and demolition waste (eg: PCB-containing glues, PCB-containing resin floors, PCB-containing glaze glue elements, PCB-containing capacitors)
- 17 09 03* other construction and demolition waste (including waste mixtures) containing hazardous substances
- 17 09 04 mixtures of construction and demolition waste, other than those specified in 17 09 01, 17 09 02 and 17 09 03
- (...)

1.1.2.1.2. Checking the location of a warehouse takes into account:

b) positioning in relation to existing or planned residential areas; the protective distance from the body of the warehouse must be at least 1,000 m for non-hazardous and hazardous waste warehouses; individual constructions will be considered separately.

For example, in 2005, the EU banned asbestos but it didn't get rid of the problem. Now, the European Green Deal and the EU's Beating Cancer provide a new impetus to finally remove asbestos from all buildings. The European Parliament is the only parliament in the world that cannot propose laws.

3.5. Legal Framework in EU (selection)

3.5.1. Regulation 2772/31-iul-2023 supplementing Directive 2013/34/EU of the European Parliament and of the Council regarding sustainability reporting standards

Regarding point 29, the company describes:

(a) the processes by which they identify the necessary and appropriate actions in response to a certain actual or potential negative impact on the affected communities;

(b) its approach to taking action in relation to specific significant adverse impacts on communities, including any action relating to its land acquisition, planning and construction practices, operating or closure practices, and if a wider action at sector level or collaboration with other relevant parties will be necessary and

(c) how to ensure that processes for providing or facilitating remedial measures for significant adverse impacts are available and effective in terms of their implementation and outcomes.

29. If the enterprise cannot present the information requested above because it has not adopted a channel for expressing concerns and/or does not support the availability of such a channel through its business relationships, it specifies this. It may present a time frame in which it intends to establish such a channel or process.

3.5.2. Decision 2463/03-nov-2023 regarding the publication of the user's guide that establishes the steps necessary to participate in the EU environmental management and audit system (EMAS) pursuant to Regulation (EC) no. 1221/2009 of the European Parliament and of the Council

In the Basque Country, organizations in the construction sector that are registered in EMAS are exempt from paying a guarantee imposed by the legal framework of 2012 for the production and management of construction and demolition waste. Therefore, 10% of the entities in the Basque Country registered in EMAS are active in the construction sector, and the number of registrations is constantly increasing.

Table 1. Examples of environmental aspects and their impact on the environment

Activity	Environmental Aspects	Impact on the environment
Traffic	<ul style="list-style-type: none">- used car oils, fuel consumption,- vehicle emissions- tire abrasion (fine dust)	<ul style="list-style-type: none">- soil, water, air pollution- greenhouse effect, noise
Constructions	<ul style="list-style-type: none">- consumption of main raw materials (resources)- atmospheric emissions, noise, vibrations, etc. from construction machinery- land consumption	<ul style="list-style-type: none">- availability of raw materials- noise, soil, water, air pollution- the destruction of the vegetal carpet- the decline of biodiversity

The Treaty on the Functioning of the EU, Article 173, related to industry, promotes that the Union's action should be aimed at fostering better exploitation of the industrial potential of policies on innovation, research and technological

development. According to the New Action Plan for the Circular Economy of the EU (Brussels, 11th March 2020), the current legislation on waste has brought improvements since its implementation, but it must be constantly modernized to adapt it to the circular economy and the digital era.

The increase in waste generation rates is leading to problems in finding suitable destinations to manage waste properly. Introducing technological tools that help to obtain more data does not ensure correct data handling. The massive growth of data requires credibility and security in the exchange of information between the agents involved. And this is where the role of Blockchain appears.

In the last years a lot of utilities has found the Blockchain technology being useful.

One of the most remarkable is its application in environmental sustainability, where it will play a very important role in strategic planning improvements, environmental planning, logistics or sustainable supply chain.

Its involvement in the Circular Economy of cities will guarantee the security and reliability of the data obtained in the Smart Cities.

4. Objects of the European project "RockChain - Transversal technological skills for the ornamental rock industry focusing on the applicability of Blockchain in a Circular Economy"

The project educates about Blockchain technology and begin to raise interest in it among students and professionals.

It provides technicians and workers in the stone sector tools for the management of waste derived from the industry, including proper technical or procedural regulations, in order to determine its traceability for greater control of its management and value enhancement;

It encourages professionals and students to become entrepreneurs in the field of waste management and Blockchain technology, showing the potential that blockchain has in this aspect;

The project makes students and professionals in the stone and construction sector aware of the importance of construction waste management and its reintroduction into the value chain, in the search for meeting the Sustainable Development objectives that the European Union has set as a goal.

5. Conclusion

Builders, individuals or legal entities, must be guided to know and apply the legal regulations regarding the management of waste from constructions and demolitions. We note that Romania has implemented the European legislation on the matter, but it must improve its application by developing procedures for builders, in order to indicate the steps they must follow. Identifying the transposition of European legislation in the national legislation of the other member states that are participating to the project needs to be analyzed.

6. Acknowledgement

RockChain - Transversal technological skills for the ornamental rock industry focusing on the applicability of Blockchain in a Circular Economy, KA220-HED 2023-1-DE-02-KA220-ADU-000166863, <http://rockchain.eu/>

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