TECHNOLOGY OF COMPLEX PROCESSING OF SUBSTANDARD CONSTRUCTION MATERIALS IN THE PRODUCTION OF REINFORCED CONCRETE STRUCTURES

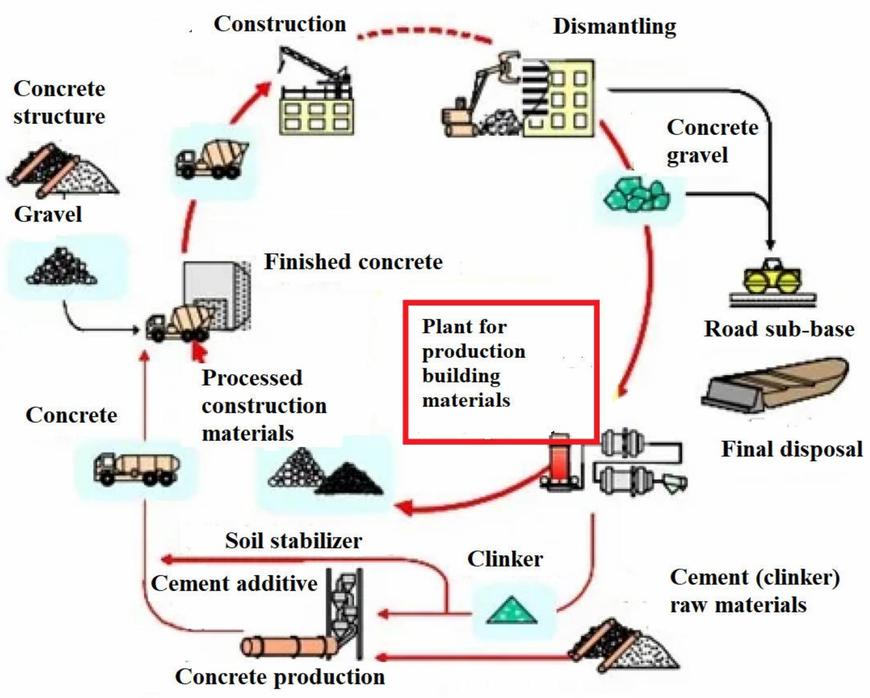
DNIPRO UNIVERSITY of TECHNOLOGY 1899

DEVELOPERS: *ass. prof. Dreshpak O.S., ass. prof. Dreshpak N.S., ass. prof. Berezniak O.O., res. Chechel P.O., res. Berezniak O.O ass. proff. Shutov V.Yu.*

PROJECT ESSENCE

The technology involves the integrated processing of construction materials generated as wastes in the production of reinforced concrete structures and the production of modern secondary products (metal, crushed stone, and sand) that can be reused in production and sold as conditioned products by other construction companies. The technology is implemented using a mobile module for deep enrichment of construction waste

LIFE CYCLE SCHEMATIC DIAGRAM OF BUILDING MATERIALS



APPLICATION AREA

The technology belongs to the category of "green recycling", which deals with deep waste processing, i.e. the extraction of valuable materials that can be reused in various technological processes (including industrial construction). Such technologies are widespread in the EU and form the basis of the sustainable development concept. In addition, they can be offered for the processing of building materials removed during the dismantling of destroyed buildings in the areas of destruction (which are classified as man-made raw materials). A special feature of the material recycling equipment is its mobility, which allows transporting the plant to remote areas (in the Dnipropetrovsk region and beyond) and significantly reducing logistics costs, which is especially important for Ukraine in wartime and post-war conditions.

APPLICATION FEATURES

The waste recycling process removes non-target components from useful products (sand and aggregates) that can be reused. These off-grade materials include clay, metal, rubber, plastics, organics, paper, and polystyrene. Due to the wide variety of construction and demolition waste, each processing plant we design is built to meet the specific requirements of the facility and is a modular design for different tasks and raw materials.

END PRODUCTS

Different contaminant levels and variability of input materials require individualized approach to each processing plant of construction wastes.

- Processed send 0.1-2 mm and 2-4 mm;
- Recycled crushed stone 4-8 mm, 8-11 mm and 10-20 mm
- Removedimetal components;
- Removed lightweight components (plastic, wood, paper).

INFORMATION FOR INVESTORS

The cost of a semi-mobile deep enrichment module starts from 50 thousand EUR. The design work will take 6 months to complete. Manufacturing time - 12 months. The payback period is 5 years.

NTU DNIPRO UNIVERSITY OF TECHNOLOGY
19 D. Yavornytsky av., Dnipro city, Ukraine
Tel./fax:+38(056)744-62-11, +38(056)247-32-09
E-mail: dreshpak.o.s@nmu.one
www.nmu.org.ua www.technology.nmu.org.ua