Concrete achievements containing dredged sediment carried out under of the "Sédimatériaux" approach in Nord-Pas de Calais region

Samira Brakni[1], Nor Edine Abriak[2], Pascal Grégoire[3]

[1] CD2E, Rue de Bourgogne Base 11/19, 62750 Loos-en-Gohelle, France Phone: Phone: +33-(0)-2113-0680
[2] Ecole des Mines de Douai, 941, rue Charles Bourseul, B.P. 10838-59508 Douai Cedex E-mail: s.brakni@cd2e.com
[3] GPMD, 2505 Route de l'Écluse Trystram, 59140 Dunkerque, France

Abstract:
With three major strategic harbors and over 600 kilometers of waterways, the Nord-Pas de Calais Region is strongly concerned by the sediment management issue. Since several years, this region leads a large reflection to find sustainable solutions on this issue and is accompanied by scientific and industrial actors. With the State, Nord-Pas de Calais Region incited, encouraged and stimulated research of practical industrial solutions. It is in this context that for 11 years around the cd2e and the expertise of the Ecole des Mines de Douai many actors were mobilized, and that there is 6 years old, collaborative Sédimatériaux approach was initiated. In its content Sédimatériaux includes carrying in a controlled environmental framework, several operational structures to a limited scale but significant, incorporating port and river dredged sediment: embankments, roads, aggregates fight against coastal erosion, concrete, etc. These works (road construction, embankment, blocks, concrete, landscaping ...) demonstrated technical, environmental, economic and societal feasibility of one or more beneficial reuse of sediments and provide essential data for the regulatory evolution of on land dredged sediment management.

In this paper, a chapter will be dedicated to the Sédimatériaux approach presentation and reflection that led to its existence with signing of a charter by the The Ministry of Ecology, Sustainable Development and Energy and by the four other partners (CD2E, Regional council of Nord-Pas de Calais, DREAL, Ecole des Mines de Douai). We will also present the Sédimatériaux methodology developed by the Civil Engineering & Environmental Laboratory of Ecole des Mines de Douai. This methodology allows the reuse of dredged sediment taking into account national regulations. Another chapter will be dedicated to various sectors of reusing dredged sediment following the Sédimatériaux methodology and that have been tested in the Nord-Pas de Calais Region. We will also present the new sectors of beneficial reuse (agricultural amendment, artificial aggregate…) of dredged sediment which are being tested currently.

Key words: dredged sediment, reuse, Sédimatériaux approach, road construction, concrete, landscaping, Sédimatériaux methodology.