



Make cities and human settlements inclusive, safe, resilient and sustainable

Ambassador of SDG 11:
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The Tunis El Manar University: A city that wants to be sustainable in a city that we want to be sustainable.



Approach

Optimization of the City in terms of Flows, Networks, Materials and Infrastructures for a sustainability objective. Our approach is an integrated approach called "Urbistics" which considers the city as a system that must be treated in a holistic way: do not improve one side to damage another.

Urbistics

And of course $H_i = g_i$
(Materials)



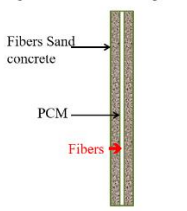





$$\left\{ \begin{array}{l} H_1 = g_1 \text{ (Energy)} \\ H_2 = g_2 \text{ (Traffic)} \\ H_3 = g_3 \text{ (Land)} \\ H_4 = g_4 \text{ (Pollution)} \\ \cdot \\ \cdot \\ H_n = g_n \text{ (Durability)} \end{array} \right.$$

Our work is to Find the optimal vector H of Rn to reach sustainability.

Activities and objectives

We work to develop and optimize innovative products in the field of construction with a perspective of sustainability and a circular economy strategy. The added value is manifested in the high biodegradability, the natural origin, the valorization of alternative resources, the bio-functionality, the energy saving or the technological added value.

Some results

<p>Valorization of different sands and construction and demolition waste (CDC) in hydraulic and hydrocarbon concretes. Case of marine dredging sands in compacted concrete</p>	<p style="text-align: center;">Sands</p> 
<p>Recycling of crushed brick waste in hydraulic concrete</p>	
<p>Development of new concretes incorporating Phase Change Materials (PCM)</p> <p>Proposal of Sandwiches panel</p>   	<p style="text-align: center;">URBISTIC Solutions</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1</p> <p>New PCM based on</p> <p>↓</p> <p>Vegetable waxes and natural fibers</p>  </div> <div style="text-align: center;"> <p>2</p> <p>Recycling</p> <p>↓</p> <p>Abundant Crushing sand</p>  </div> <div style="text-align: center;"> <p>3</p> <p>Ecological sanitati</p> <p>↓</p> <p>Insulation product with natural sea fibers (Aegagropil « Sea ball »</p>  </div> </div>

Recycling of asphalt spoil (RAP) in new concrete and innovative asphalt mixes



RAP



Waste

