In-Situ Network
Palm tree branches for coastal protection, Tarawa Atoll, Kiribati

Main author
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Summary by the jury
Palm tree branches are used as a simple measure to respond to the imminent threat of coastal erosion – due to rising waters and habitat destruction – on Tarawa Atoll. Inserted into the sand, the spoon-shaped branches constitute an ideal barrier, causing sea currents to slow down and deposit sand material into the concave inner surface of the leaf branch. Sand mounds are thus created which gradually elevate coastline embankments, allowing aquatic plants such as mangroves to grow and secure the beach.

Appraisal by the jury
The jury enjoyed the ingenuity and simplicity of the proposal, an ostensibly common solution for the restoration of sandbanks susceptible to the detrimental effects of climate change – a small-scale solution for a large-scale problem. Commended is the intelligent deployment of parametric design to increase the performance of individual branches when combined into groups or swarms of branches, where the whole is greater than the sum of its parts. Furthermore, what was appreciated were the beautiful drawings showing stunning geometric patterns of branch network assemblies, generated from scientific data.

Project data
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Further authors
Ana Abram, architect, Amphibious Lab, London UK
Image 3: “Target issues” for sustainable construction.

Image 4: Tarawa atoll as an indicator for future events around the globe.

Image 5: Photos from construction site, where building material is usually seen as a waste material.

Image 6: Main “spoon-shaped” unit in the network.

Image 7: Structure and performance of the main construction unit.

Image 8: Regular grid for unit organization: The number, density, and orientation depends on specific location.

Image 9: Site-specific grid which forms a site-specific morphology.

Image 10: Resilient coastline.

More at www.holcimawards.org/projects/in-situ-network