



BLADEBRIDGE
REPURPOSING BLADES

Dr. Angie Nagle

Climate Action Economic Opportunities Conference

26th April, 2023

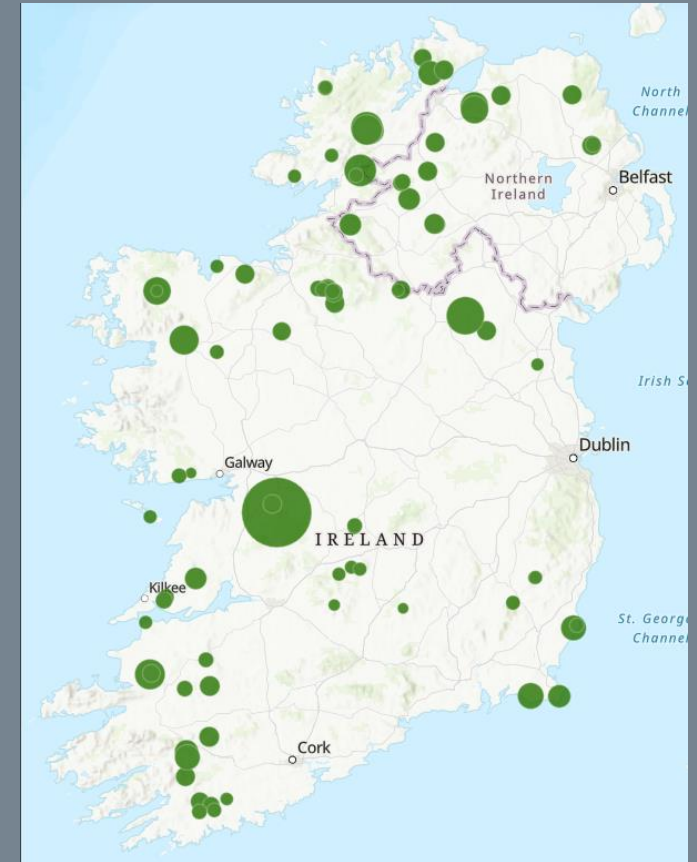
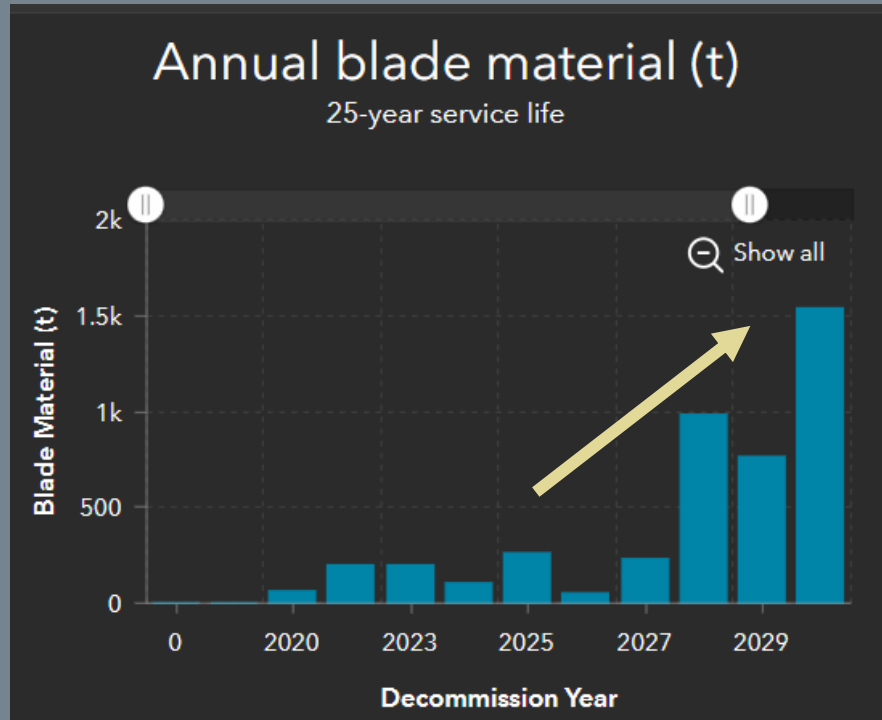
Tullamore Court Hotel



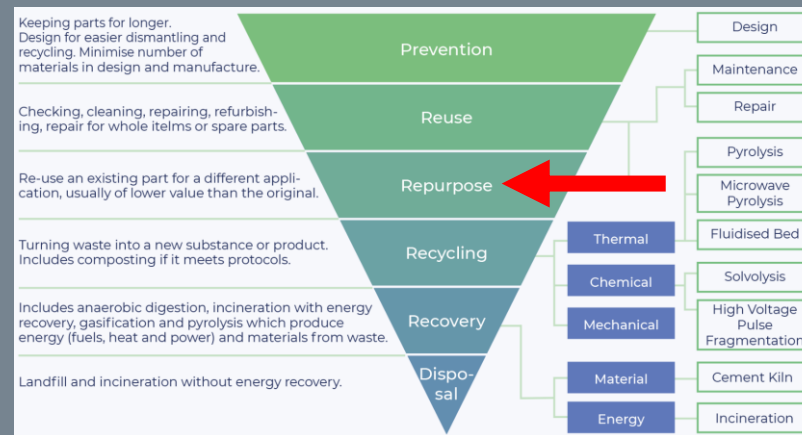
Wind Energy Waste Problem: Blades!



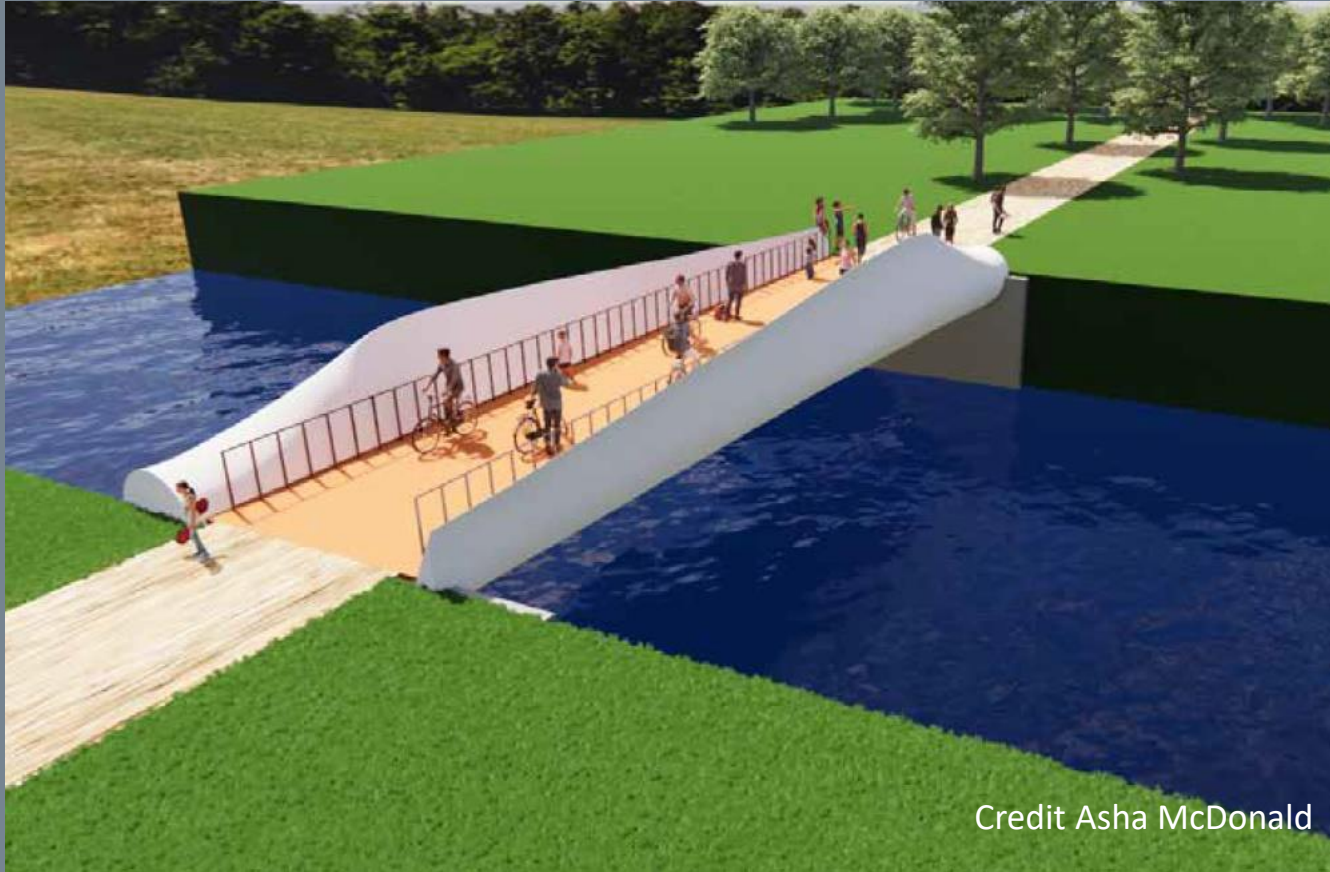
Re-Wind Research: Blade 'Waste' Estimates



~70 blades/year until 2025
 ~250 blades/year by 2028
 ~450 blades/year by 2030



Re-Wind Concepts: BladeBridge & BladePole



Bridge Concept Exploration

- 3500 km greenways planned through the proposed National Cycling Network
- A bridge every 3 to 4 km = **1000 additional bridges**
- Substitution of steel girders and parapets offers **20-30% lower carbon** than conventional bridge
- Use of blades in bridges is **environmentally superior to incineration**, & more publicly acceptable
- **Public repurposing** of waste material is excellent PR for wind farms and public authorities



Can the bridge concept offer improvements in Irish Performance against the SDGs?



12.7 Promote public procurement practices that are sustainable, accordance with national policies & priorities



17.14 Enhance policy coherence for sustainable development

BladeBridge allows renewable energy to become cleaner and more circular, thereby improving SDG 7 & 13 while preventing a negative knock-on effect on SDG 12.

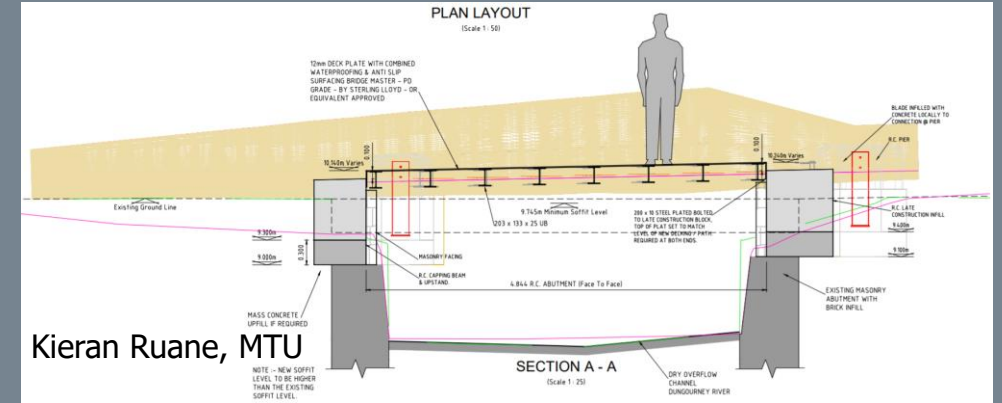
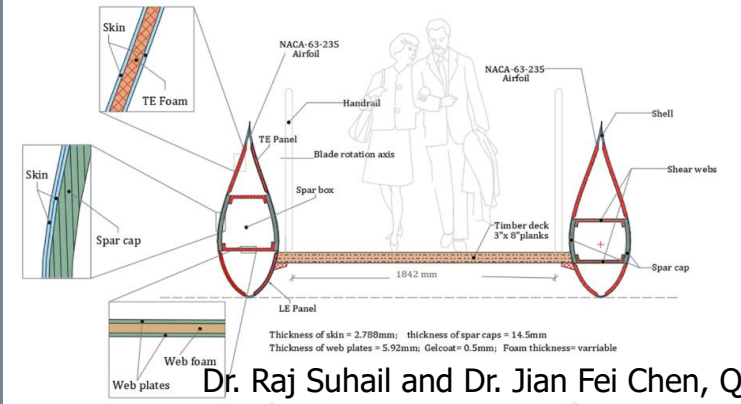


Comhairle Contae Chorcaí
Cork County Council



BLADEBRIDGE
REPURPOSING BLADES

Pilot Bridge Project: Concept to Installation



[Watch video of installation here](#)

Demonstrating Technical Feasibility

K. Ruane et al., (2022) "[Experimental Investigation of an FRP Wind Turbine Blade for use as a Bridge Girder](#)"

The Institution of **StructuralEngineers**


Find an Engineer My Account Log In

Events Resources + Membership + Training and development + Become a Structural Engineer + Get Involved + Shop


Structural analysis and design with decommissioned wind turbine blades
Author: Lawrence Bank and Kieran Ruane

Date published
4 January 2022


Price
Free




BladeHousing



BladeBridge



BladePole



BladeBarrier

RE-WIND NETWORK

-1:24:42



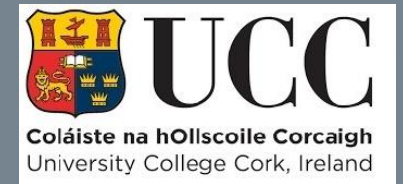
Our Team



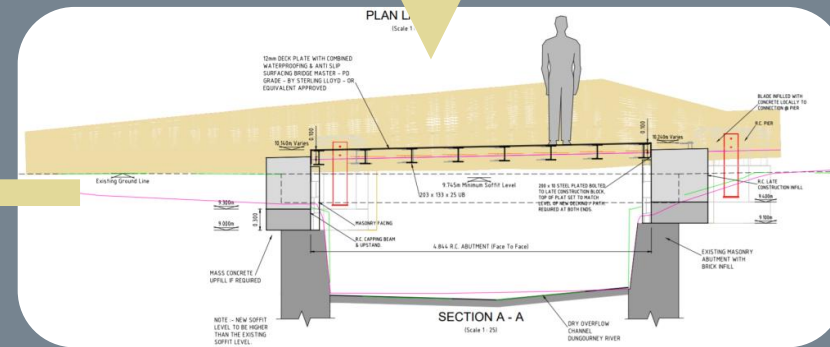
Kieran Ruane: CTO
Bridge Designer 25 years

Dr. Angie Nagle: CEO
Life Cycle Assessment

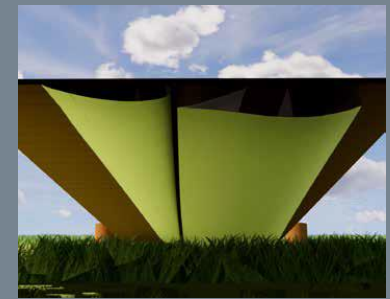
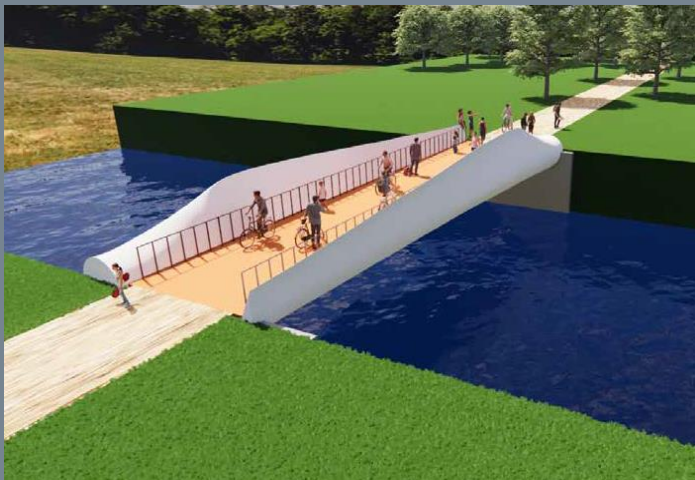
Dr. Paul Leahy: R&D
Lecturer Wind Energy



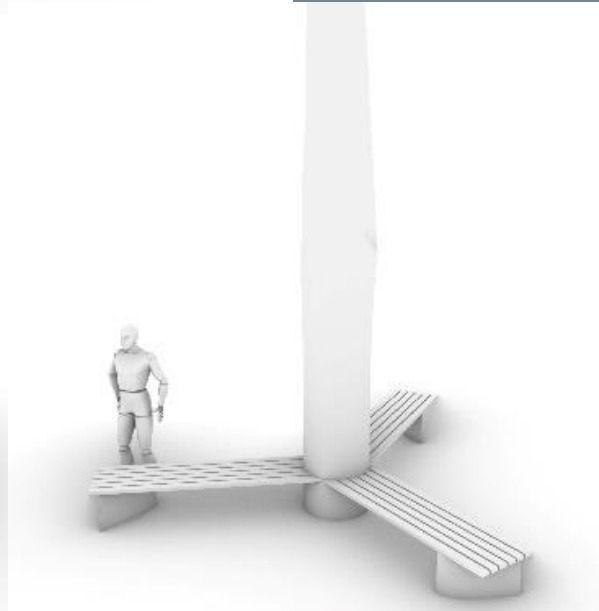
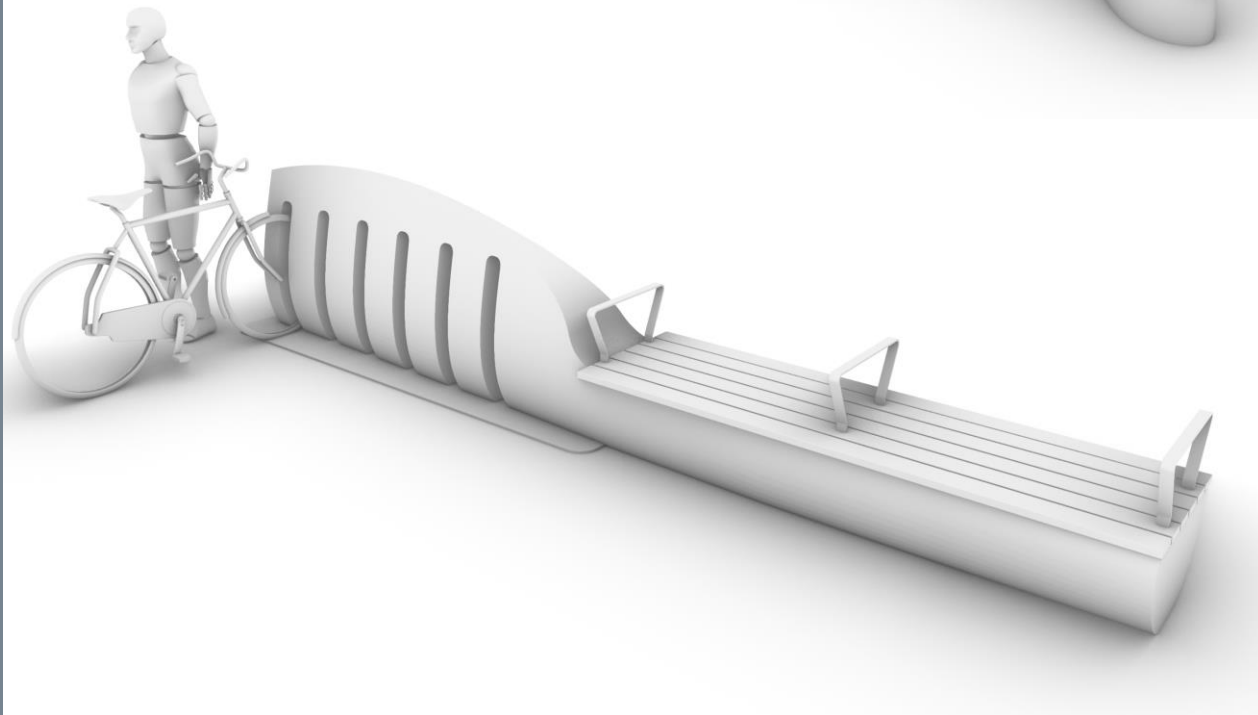
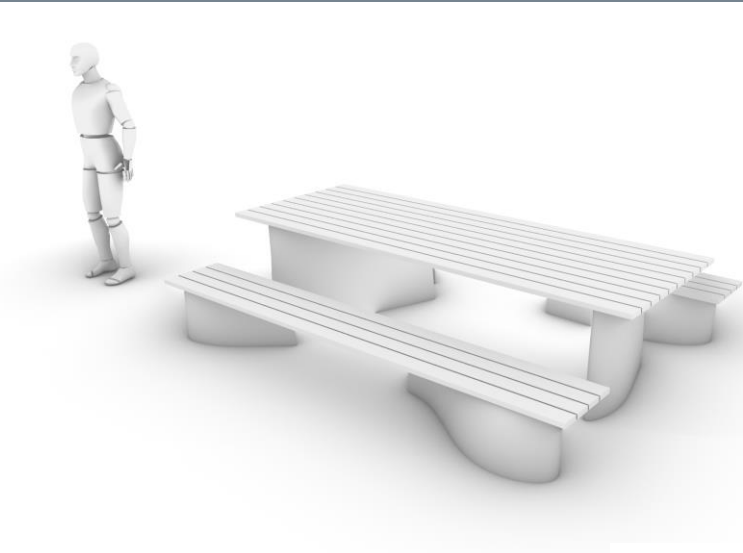
How BladeBridge Works



Bridge Options



Street Furniture



Support & Traction

WED, 15 MAR, 2023 - 08:05

Meet the Cork-based woman turning old wind turbines into bridges

Dr Angela Nagle is co-founder of a company who are turning old wind turbines into bridges. LINDA KENNY chats to her, as she continues her series of interviews with female entrepreneurs undertaking the New Frontiers programme



Dr Angela Nagle with Kieran Ruane and Paul Leahy, of BladeBridge.



SCIENCE / ENVIRONMENT / ENERGY

Engineers are building bridges with recycled wind turbine blades



Repurposing the blades help solve a major waste challenge

By MADDIE STONE Feb 11, 2022, 5:30 PM GMT | 0 Comments | 0 New

Construction workers install a new pedestrian bridge made with recycled wind turbine blades in County Cork, Ireland. Andrew

SHARE



READ NEXT

- > JEC World 2023 preview
- > Natural fiber composites: Growing to fit sustainability needs
- > The return of trade show season

Wind also recently published a catalog of design concepts to highlight how it thinks blades can be deployed in a second life.



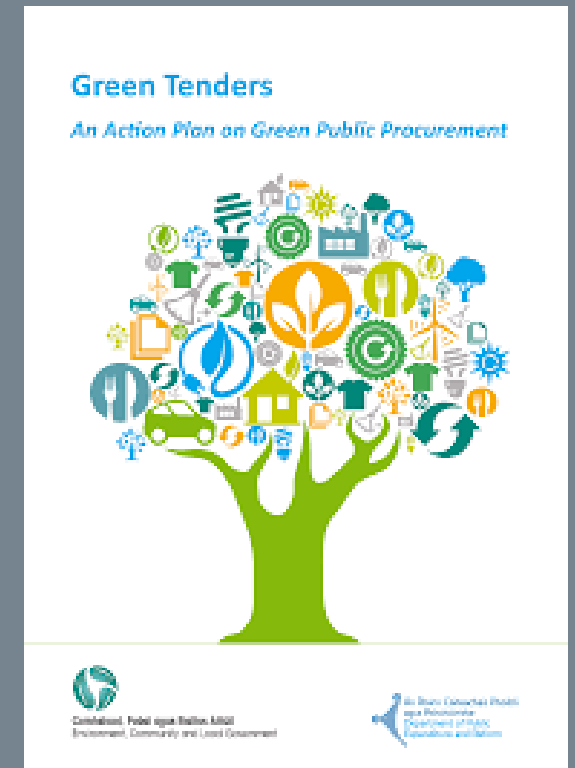
Walking on wind blades. Re-Wind Network's first BladeBridge pedestrian bridge was installed in Cork, Ireland in Jan. 2022. Photo Credit: Re-Wind Network.

Current Status: Abundance of Blades



Ask from Local Authorities

- GPP specifications for Infrastructure
- Invite us to bid on contracts for street furniture
- Talk to us if you have a Greenway or Active Travel scheme at planning or procurement stage



Come Visit our Bridge on the Midleton to Youghal Greenway!

Thank you!

angie@bladebridge.ie

www.bladebridge.ie

