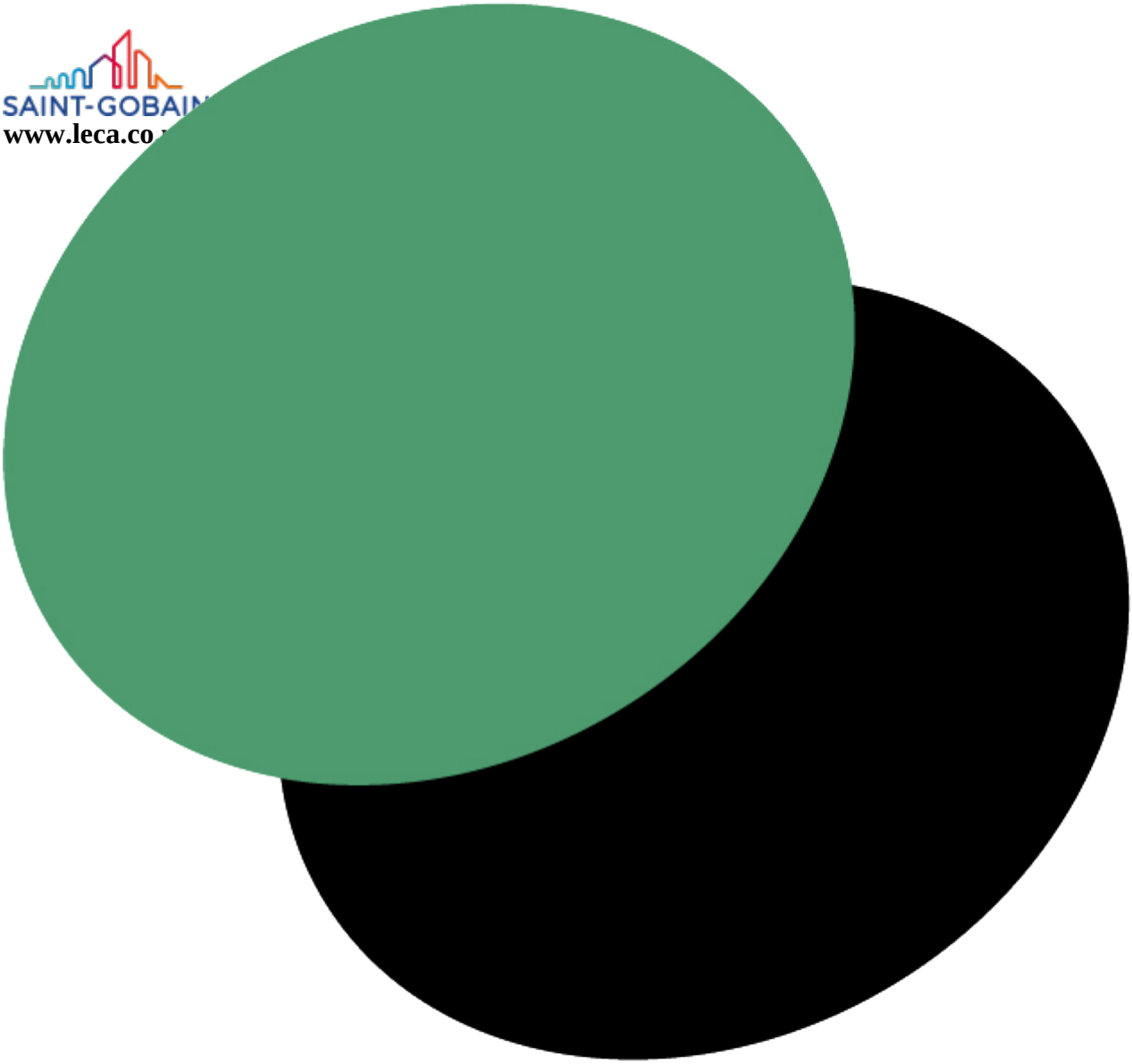

LECA® LWA PROVIDES ALTERNATIVE TO FOAM CONCRETE FOR RAIL PROJECT

A recent rail project near Coventry and Warwick required an innovative solution for a bridge deck formed with precast concrete beams in a trough V shape. This unique structure necessitated a reliable backfill material to protect the structure and fill the voids while accommodating the services running through the

trough. Leca LWA (10-20mm) was specified for this task, providing a lightweight and efficient solution.

Initially, foamed concrete was proposed for filling the voids. However, the slight angle of the bridge structure created engineering issues, making foamed concrete unsuitable. An aggregate backfill solution became crucial to address these challenges effectively.

FACTS

Product: Leca® 10-20mm

Interesting Fact: Initially, foamed concrete was proposed for filling the voids. However, the slight angle of the bridge structure created engineering issues, making foamed concrete unsuitable.

Delivery Method: Pneumatic Delivery

Leca LWA (10-20mm) was chosen for its lightweight nature and ability to be pumped at an accelerated rate, making it an ideal solution for the project.

The use of Leca LWA offered several benefits:
- Protection and Void Filling: Leca LWA effectively filled the voids, providing essential protection to the structure.
- Efficient Delivery: The material's lightweight properties allowed for quick and easy delivery using the Blower facility.

Application Process
1. Material Selection: Over 170m³ of Leca LWA was stockpiled at the site from Bromborough, ensuring a ready supply of material.
2. Blower Facility: The lightweight aggregate was reloaded onto the blower vehicle, enabling rapid delivery and minimizing transport and road miles.
3. Pumping: Leca LWA was pneumatically pumped into the voids of the bridge deck, ensuring efficient and complete filling.

Benefits
- Rapid Delivery: The use of the Blower facility allowed for quick delivery and application of the material, reducing project timelines.
- Minimal Transport: Stockpiling the material at the site minimized the need for additional transport, reducing road miles and associated costs.
- Structural Protection: Leca LWA provided robust protection for the bridge deck, ensuring long-term durability and stability.

Conclusion
The rail project near Coventry/Warwick showcased the effectiveness of Leca LWA (10-20mm) as a lightweight aggregate backfill solution. By addressing the challenges posed by the slight angle of the bridge structure, Leca LWA provided a practical and efficient alternative to foamed concrete. The rapid delivery and application process highlighted the material's suitability for similar infrastructure projects, reinforcing its value in modern construction engineering.