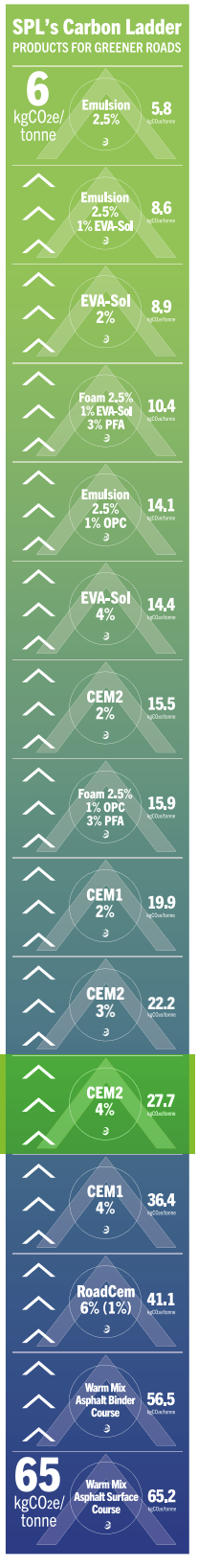
CASE STUDY

A944, Skene Road, Aberdeen - trial low-carbon construction techniques



Scheme:	A944, Skene Road, Aberdeen
Client:	Aberdeen City Council
Date:	March 2025
Area:	4101 m^2
In-Situ Process:	220mm deep in-situ recycling
Recycling Depth:	220mm
Surfacing:	Aberdeen City
CO_2 Saving:	53 tonne (36%)

ABERDEEN CITY COUNCIL

Project Overview

The A944, Skene Road, in Aberdeen City, provided the council an opportunity to trial low-carbon construction techniques while maintaining network performance, safety, and value for money.

The investigation works showed levels of tar contamination, providing an opportunity to treat and encapsulate the contaminated material saving on material going to landfill, and high associated costs.

Stabilised Pavements was appointed to deliver in-situ structural recycling works, aligning directly with the programme's sustainability objectives.

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Project Objectives

1. Reduce embodied carbon associated with traditional road reconstruction
2. Maximise reuse of existing road materials
3. Treatment of tar bound contaminated material
4. Maintain road performance while minimising disruption

Technical Approach

In-situ Recycling

Stabilised Pavements recycled the existing pavement materials in situ, eliminating the need for excavation, disposal, and importation of virgin aggregates. This significantly reduced HGV movements, material extraction, and associated carbon emissions.

The existing carriageway was pulverised, processed, and stabilised on site to form a new bound foundation layer, providing a structurally sound platform for the final surfacing.

The in-situ recycling provided the client with multiple benefits compared to traditional reconstruction techniques:

1. **Reduced CO_2 emissions compared to traditional reconstruction**
2. **Reduction in wagon movements**
3. **Improved material efficiency**
4. **Compatibility with in-situ recycling techniques**
5. **Proven performance in structural pavement layers**
6. **Encapsulation of hazardous materials**

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Surface Course Trials

Following completion of the recycled foundation, the carriageway was surfaced with warm mix asphalt surface course materials. These materials were selected to complement the low-carbon approach of the recycled layer and to support performance evaluation.

Carbon and Sustainability Benefits

1. **100% reuse of existing pavement materials on site**
2. **Reduction in embodied carbon versus traditional reconstruction**
3. **Reduced construction waste and landfill disposal of hazardous materials**
4. **Fewer vehicle movements and reduced site emissions**
5. **Encapsulation of tar bound contaminated materials**
6. **Faster construction times**

This approach directly supports local authority climate targets and the wider ambitions of Transport Scotland and the highways industry as a whole.

Conclusion

The A944, Skene Road scheme successfully demonstrated that low-carbon reconstruction techniques can be integrated into live highway environments without compromising programme delivery or road performance.

The project provided valuable data and learning for Aberdeen City, supporting future decision-making around low-carbon materials, specifications, and delivery models.

This scheme highlights how innovation, collaboration, and proven recycling techniques can deliver meaningful carbon reductions in local road maintenance.

For more information on SPL's sustainable road solutions, contact:
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