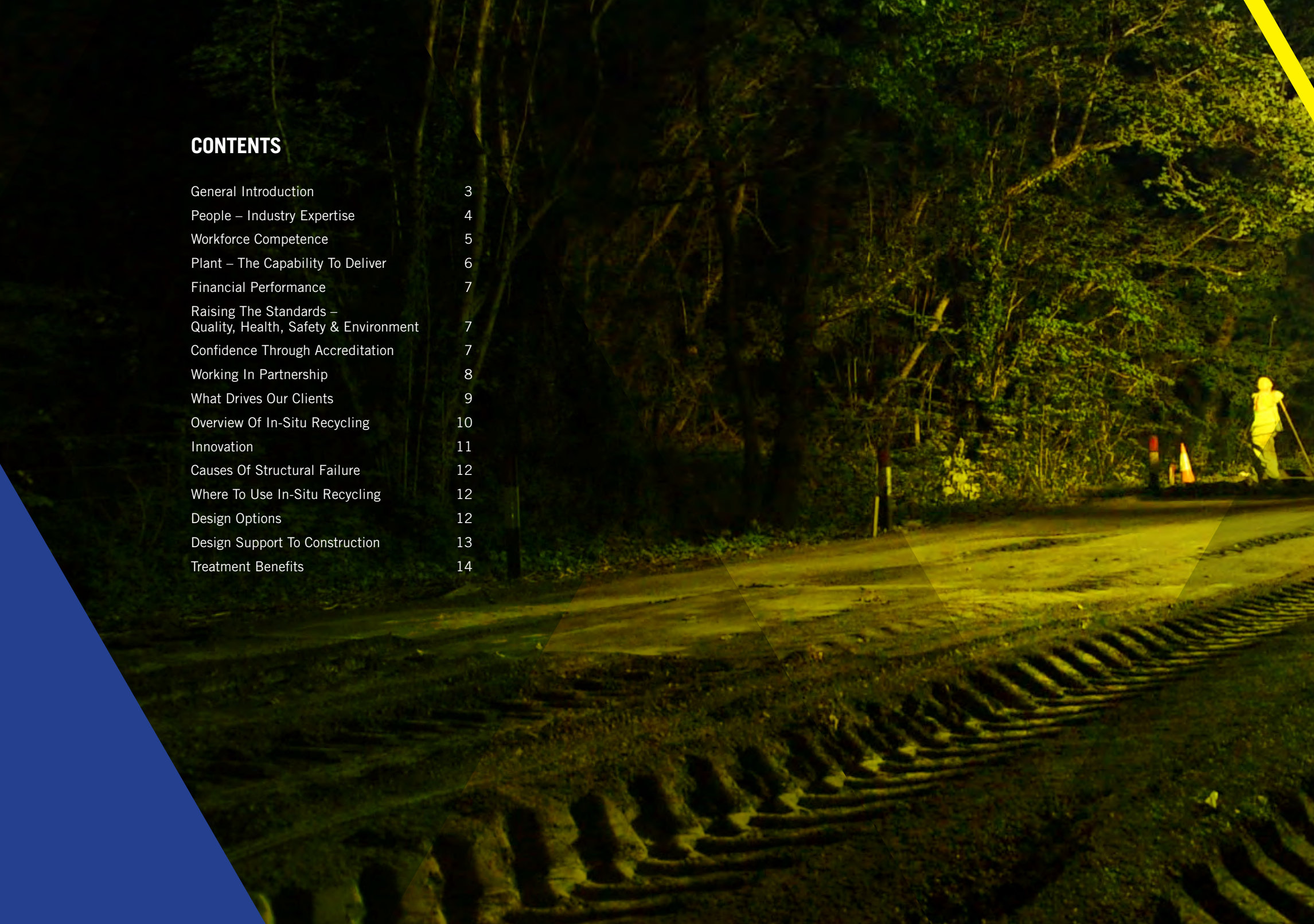
Stabilised Pavements Ltd

IN-SITU RECYCLING

a sustainable future for Britain's roads



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GENERAL INTRODUCTION

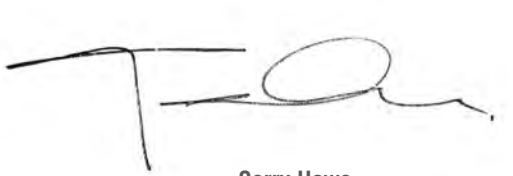
Stabilised Pavements Limited (SPL) is a specialist in-situ road recycling company based in Leicestershire, working with highways clients throughout the UK.

Operating independently the business prides itself on delivering great customer service built on decades of highway experience, technical expertise and a highly trained workforce operating state of the art plant and equipment.

Industry design guides and the RSTA's Code of Practice safeguard a client's investment by controlling how the treatment is specified and carried out following extensive site investigations, with testing on-site during the work demonstrating compliance.

In-situ recycling has long played a vital Asset Management role for highway authorities and despite budgetary constraints, through early involvement and programming its wider use on both Trunk Roads and rural unclassified roads is increasing.

With a Design Life of 20 years, high recycled content and low carbon footprint, the treatment provides a cost effective and environmentally sustainable highway maintenance technique for clients and supported by SPL's technical expertise and culture of innovation, the technique is increasingly employed to overcome challenges ranging from soft ground conditions through to rapid reconstruction.



Gerry Howe
Managing Director

PEOPLE – INDUSTRY EXPERTISE

MANAGEMENT TEAM

Gerry Howe, Managing Director

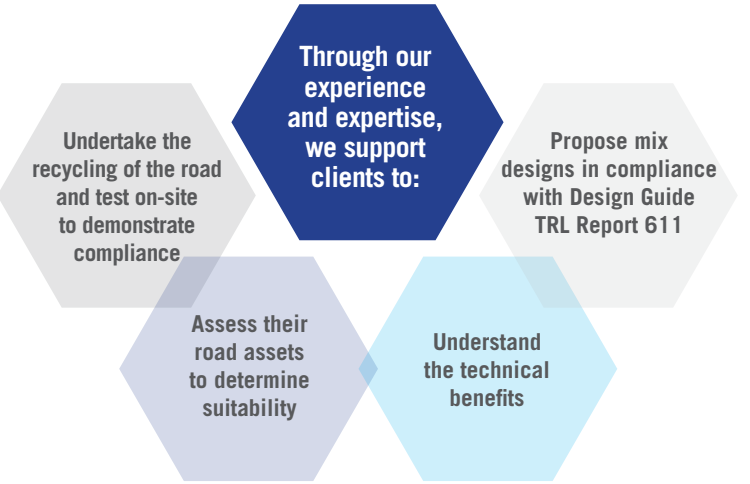
Gerry has been in-situ recycling for nearly 40 years', over a decade of which has been with SPL. He holds several key roles within the industry, including Executive Committee member of the Road Surface Treatment Association (RSTA), membership of the CIHT and IAT. The knowledge Gerry has gained over the years has been used to great effect with him assisting in the development of the TRL 386 Report for Recycled Materials, and establishing an industry CO2 calculator model. He was a member of Steering Committee (CASSST, Greenwich University) writing specifications and guidelines on treating contaminated soils, and was hand selected by the DTI to help gather information on stabilisation and solidification during a mission to the USA.

Andrew Jones, General Manager

Andy has over 20 year's management experience following a start with Tarmac as a Commercial Graduate. During his time with Tarmac he contributed to the development of innovative 'low carbon' and 'recycled' technologies including unbound aggregates, foamed bitumen and porous asphalt systems. Starting with SPL as Commercial Manager, Andy now overseas all aspects of the business, utilising his Management skills and invaluable Technical & Environmental expertise to the full.

Jason Twinn, Operations Manager

Starting as a Machine Operator 12 years ago, Jason now manages all Operational aspects. From planning and programming to account settlement, Jason safeguards the SPL delivery. Jason monitors closely all aspects of site work through our QA reporting and client feedback and develops action plans in SPL's efforts towards continuous improvement. SPL's emphasis on training is facilitated by Jason who understands first-hand the importance of a trained workforce.

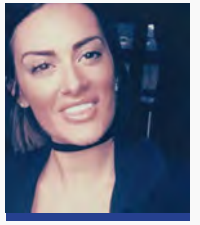


Gary Cork, Technical Co-ordinator

Formerly an Assistant Contracts Manager with Colas, and BDM for Stabilised Pavements. With a wealth of Highways experience. Gary is now performing the role of Technical Co-ordinator; overseeing the Trialling and Testing of potential sites, reporting findings and providing essential input into the validation, design and delivery of the SPL process.

Justin Osborne, Business Development Manager

Former Contracts Manager for a Commercial Paving & Hard Landscaping Contractor. Justin went on to work as a Construction & Project Manager on a number of varied construction projects for a framework provider at Stansted Airport before joining the team 2 years ago. Currently advancing new and existing relationships with local authorities, asset teams, and contractors throughout the UK.



Emily Howe, Marketing & Systems Manager

Having spent time in other industries, Emily develops and implements our marketing activities to ensure we are aligned to the needs of customers, whilst promoting the treatment across the industry. Emily also undertakes a role in auditing and improving our systems and procedures to ensure as a business we continually better our standards and governance.

WORKFORCE COMPETENCE

Expertise and competence is fundamental throughout our workforce with all operatives trained and qualified to the highest standards, many to NVQ Level 2 standard and above, in compliance with the RSTA's minimum threshold requirements.

SPL Operational Workforce - Qualifications/Training

Supervisors

NVQ Level 3
CSCS - Supervisory/Work Supervisor
Occupational Works Supervisor

S2 Qualification for Supervisors

Skilled Operatives

NVQ Level 2
CSCS – Skilled Worker
CPCS – Competent Operator

O2 Qualification for Operatives

Labourers/Trainees

CSCS – Labourer

Each year we invest significantly in training and development to improve the competence of our people.

PLANT – THE CAPABILITY TO DELIVER

SPL continually invests in new plant and equipment which not only reduces the risk of breakdowns and assures quality but has allowed us to increase capacity with this year a third operational crew having been formed.

Our fleet of cold recycling machines has been purchased from the world leader, Wirtgen Group, who provides state of the art equipment which minimises emissions, is increasingly more manoeuvrable on site and drives higher productivity with more accurate depth and mixture control.

On rural schemes this gives SPL capacity to deep recycle: 1.6million m² per annum

SAVING CO_2 WITH IN-SITU RECYCLING

Company owned specialist plant and equipment

FINANCIAL PERFORMANCE

The company's general financial performance and suitability to undertake work has been assessed and certificated by Constructionline with information, correspondence and assessment available online using our registration number listed below:

Constructionline Registration Number: 51159

RAISING THE STANDARDS – QUALITY, HEALTH, SAFETY & ENVIRONMENT

We operate to the independently recognised and audited Quality Standard of ISO 9001 and in 2016 SPL was the UK's first In-Situ Recycling contractor to gain accreditation under National Highways Sector Schemes 13.

The stringent Policies and Procedures we operate can be shown through our CHAS Accreditation which is reviewed annually and as a company we continually seek ways to work safer and have engaged our expanding work force in collaborative Safety Days to encourage feedback.

CONFIDENCE THROUGH ACCREDITATION

RSTA – SPL is one of the founder members of the Road Surface Treatment Association (RSTA) with representation on the executive board. The team have been instrumental in developing the RSTA code of practice for In-Situ Road Recycling, which has been endorsed by ADEPT.

WORKING IN PARTNERSHIP

As the procurement requirements of clients and their supply chain evolves, **SPL** has adapted.

UNDERTAKING A VARIETY OF ROLES – FLEXIBLE AND CAPABLE:

As principal designer and contractor effectively providing a design and build service for clients or as an integrated supply chain partner working as a subcontractor, **SPL** has demonstrated we can deliver.






WHAT DRIVES OUR CLIENTS

Below we list a selection of our clients and their principal drivers:

Company/Client	Principle Drivers
Norfolk County Council	Long Term Structural Solution Fenland Geology (soft) Solution
Lincolnshire Council	Low Cost Structural Remediation Tar Contamination Solution Fenland Geology (soft) Solution
London Borough of Enfield	Underlying Clay Solution Tar Contamination Solution Programme Reduction Reduced Local Disruption
Cambridge County Council	Low Cost Structural Remediation Programme Reduction
East Riding of Yorkshire	Tar Contamination Solution Low Cost Structural Remediation Long Term Structural Solution
Essex County Council	Long Term Structural Solution Low Cost Structural Remediation Programme Reduction Reduced Local Disruption

Company/Client	Principle Drivers
Oxfordshire County Council	20 Year Structural Design Life Low Cost Structural Remediation Reduced Local Disruption CO_2 Benefits
Dorset County Council	Tar Contamination Solution Long Term Structural Solution Reduced Local Disruption
Somerset County Council	Innovative Design Night-work Capability Minimal Impact To Daytime Traffic Cost effective Alternative To Traditional Reconstruction
Cheshire East Council	20 Year Structural Design Life Tar Contamination Solution Fast Delivery CO_2 Savings
Cardiff Council	Design Life Robust Structural Improvement Cost & Programme Benefits Over Traditional Reconstruction
Buckinghamshire County Council	Structural Solution With 20 Year Design Life Programme Reduction - Quicker Delivery

OVERVIEW OF IN-SITU RECYCLING

Working in accordance with the design guide TRL Report 611 and the RSTA's Code of Practice, SPL undertake deep in-situ cold recycling for the treatment of failing carriageways.

The process involves firstly pulverisation of the existing carriageway in-situ and then second, spread and mixing in a cementitious powder to create a Hydraulically Bound Material layer to form a strengthened pavement. Throughout the operation the materials are trimmed, graded and compacted to return the recycled layer back to required finish levels before an asphalt surfacing or surface dressing is applied.

Fundamental is the requirement to undertake extensive site investigations and laboratory testing in advance of works taking place with the findings and resulting treatment proposal presented to clients through a Project Quality Plan.

On a scheme in an urban location or with fixed thresholds, the upper layer of the existing road may need to be planed in advance to provide a sufficient drop in the road level to accommodate the required thickness of asphalt surfacing.

Full Width Carriageway Treatment

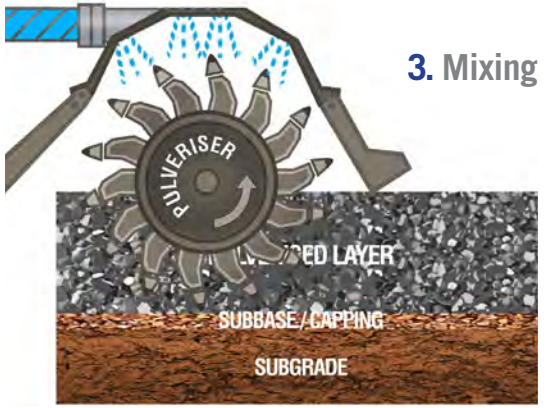
Using TRL 611 a pavement design can be defined with due regards to traffic volume and foundation strength.

It is important to read Table 7.4 with due regard to the Highways Agency design document HD26/06 which reinstates the different permitted HBM material classifications as original allowed in TRL 386 through which lower material classifications can be adopted on lower msa roads.

1. Before:
In-situ process

2. Powder Placement

3. Mixing



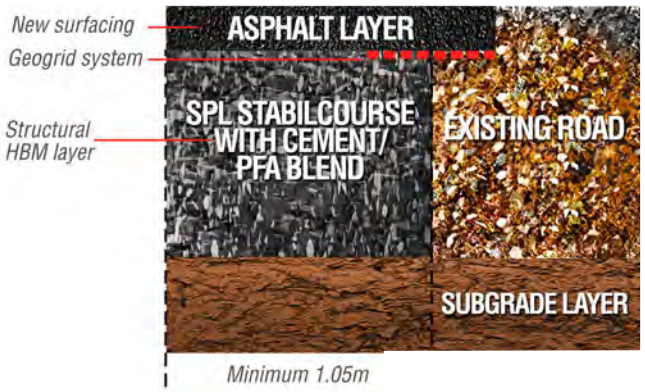
4. After:
In-situ process

INNOVATION

Haunch Treatment

Also in accordance with industry standards a nominal 1.0 metre haunch treatment is available for failing carriageway edges.

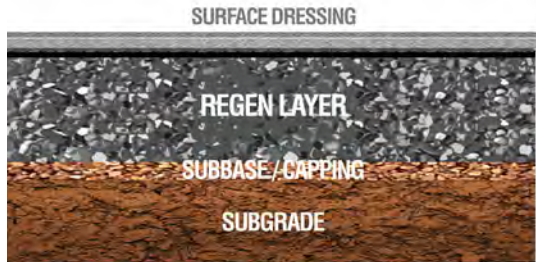
Figure below illustrates the final pavement construction when an asphalt surface course is applied, along with the recommended incorporation of a geotextile to bridge the construction joint. In essence, a two phase operation, the technique involves a thicker layer of recycling with the upper 40-50mm then planed out to permit inlay of the asphalt surfacing and geotextile.



Regen Roads

Working to a depth of no more than 150mm, SPL pulverise and stabilise in situ, using a low percentage of blended cement powder – typically around 2% in order to bind the recycled material prior to surfacing. On occasion, these evolved roads may not have sufficient depth of material to recycle, in this instance planings have been imported to provide additional integrity.

Immediately following the recycling - Surface Dressing using a double application of 12mm and 6mm stone is utilised, for cost, function and speed of completion. The result is a re-shaped, structurally sound road, protected against water ingress with restored surface characteristics at a cost appropriate to use.

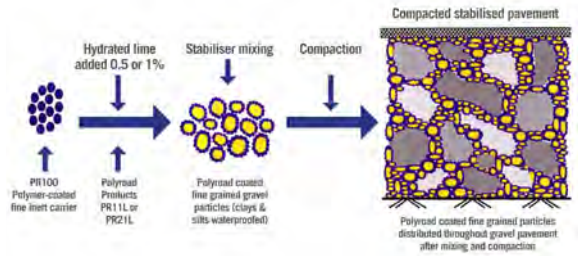


POLYROAD

Polyroad is an insoluble dry powdered polymer (IDPP) used as a stabilising additive for rehabilitation of flexible pavements and new pavement construction.

Polyroad effectively waterproofs granular materials that would otherwise lose significant strength when subject to moisture ingress.

During mixing and compaction of the soil, the Polyroad coated fine grained particles, which now repel water, fill the voids between and adhere to the larger soil particles thereby limiting the impact of water on the entire structure.

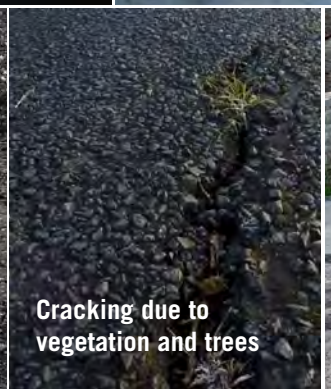


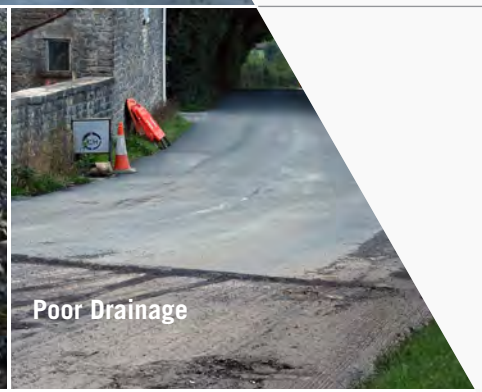
CAUSES OF STRUCTURAL FAILURE


Increased levels of traffic beyond original design capability

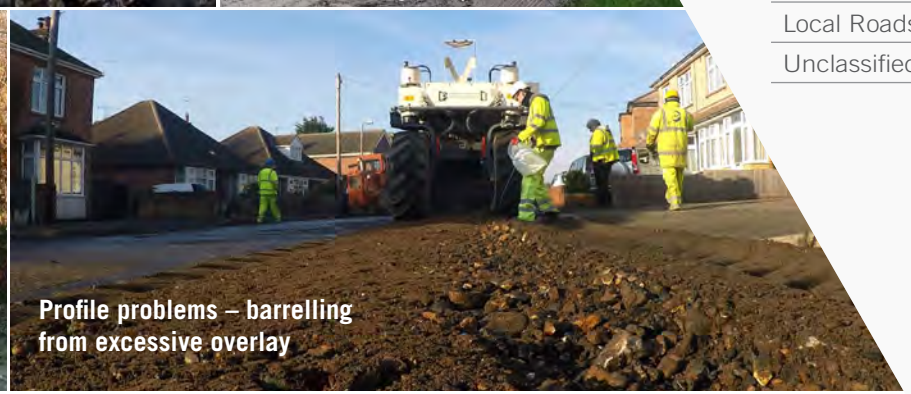

Lack of foundation, No formal construction (evolved road)


Surfacing neglect – potholes allowing deeper damage


Cracking due to vegetation and trees

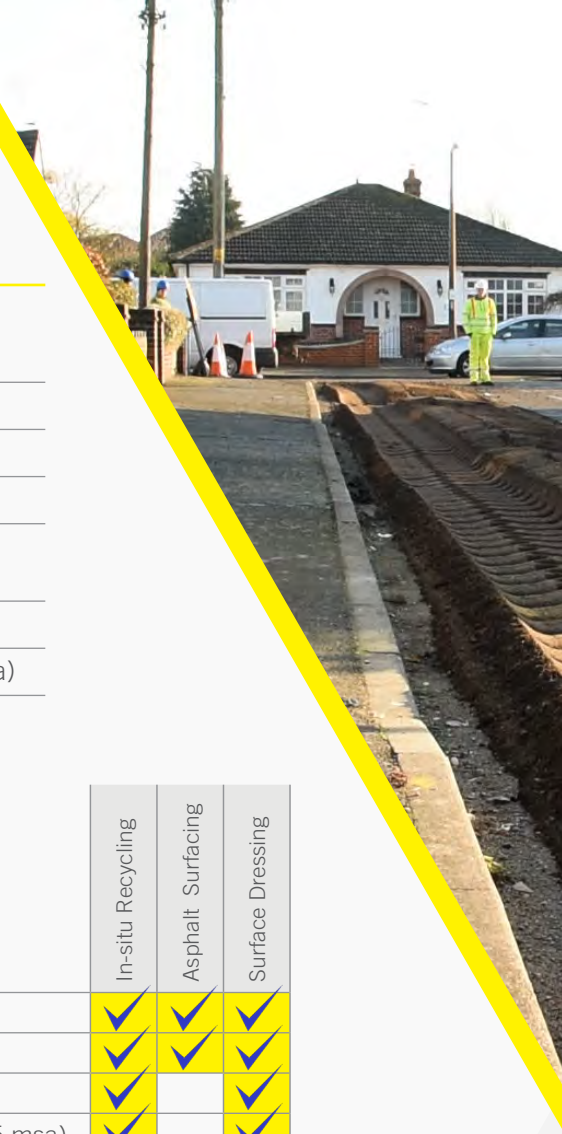

Poor Drainage


Utilities issues – leaks and subsequent repairs


Profile problems – barrelling from excessive overlay

WHERE TO USE IN-SITU RECYCLING

Failed Roads Requiring:	Formal reconstruction (150-350mm deep)
	50mm or deeper plane out and replacement
	Patching and overlay
	Edge repair: haunching
Types of Roads:	Rural
	Urban
	Road Type Categories: 1, 2, 3, 4 (up to 30msa)



DESIGN OPTIONS

	In-situ Recycling	Asphalt Surfacing	Surface Dressing
Major A roads 10-30 msa)	✓	✓	✓
Trunk A/B roads (2.5-10 msa)	✓	✓	✓
Local Roads (0.5-2.5 msa)	✓		✓
Unclassified Rural Roads (up to 0.5 msa)	✓		✓

DESIGN SUPPORT TO CONSTRUCTION

TREATMENT BENEFITS

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