

Colas Ltd

APSE Presentation

Sustainable Maintenance



Colas Overview



Vision & Mission

Vision:

Growth through Excellent Service and Inspired People

Mission:

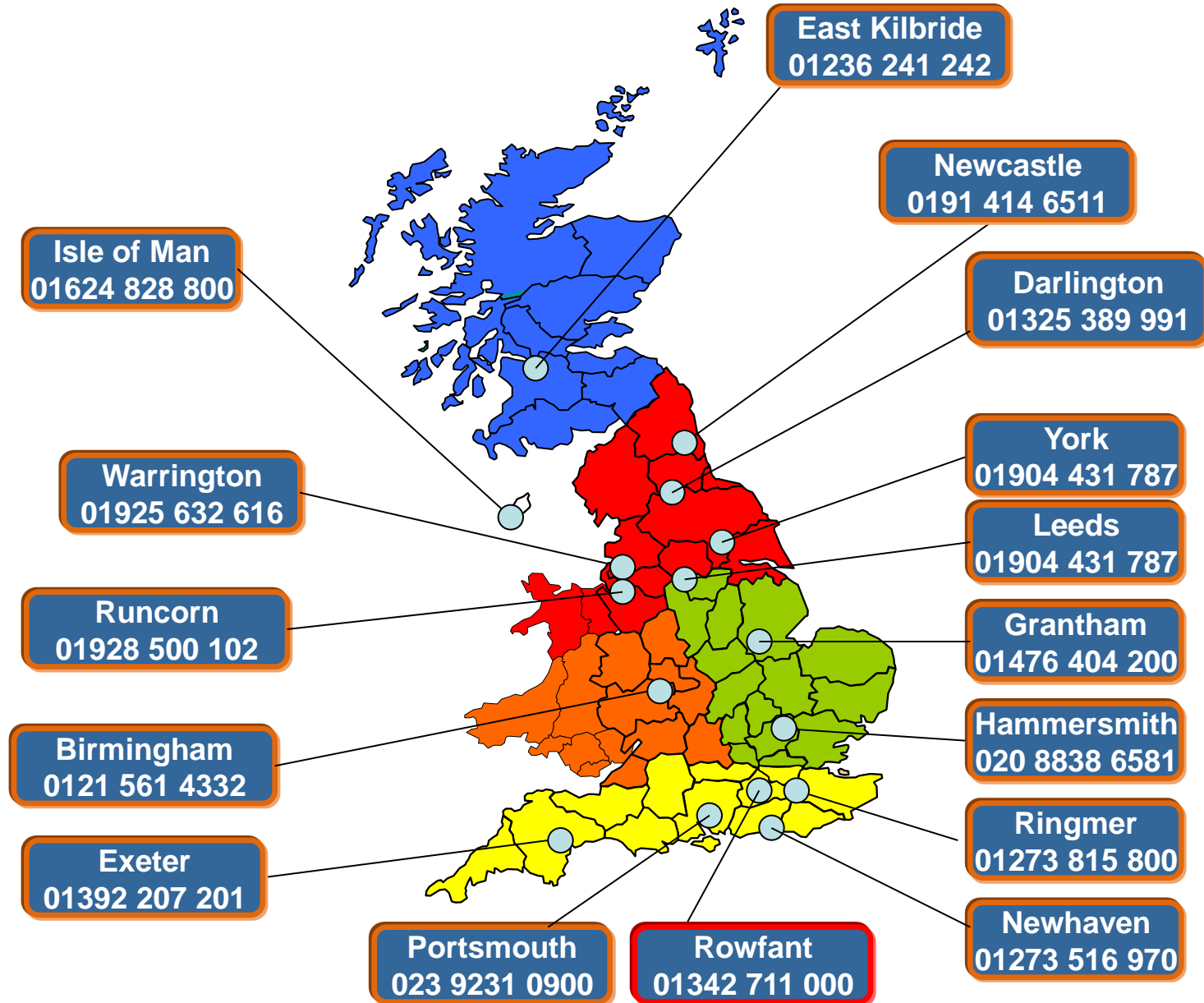
We will provide sustainable solutions for our customers by:

- Understanding their needs
- Working safely
- Developing our people
- Adding value
- Utilising the expertise of the International Colas Group.

Colas World

- Colas UK – 1000+ employees
 - Scotland, SE, SW, NE and NW
 - HQ at Rowfant
- Colas SA – 33,000+ employees
- Colas Worldwide – 66,000+ employees

Main Offices



Colas in Scotland

- Recycling Surfaces
 - Repave, Retread
- Specialist Surfacing
 - Spraygrip (High Friction Surfacing & Heritage Coloured Surfaces)
 - Fibredec (thin strengthening coat)
 - Surface Dressing
 - Microasphalt (thin overlay surfacing)
 - Paveseal
- Conventional Construction
- Civil Engineering
 - Kerbing, Drainage, Barriers & Street Lighting
- Traffic Management

Long Term Partnerships



MAC Partnerships

(Managing Agent Contractor)



Colas in Partnership with:

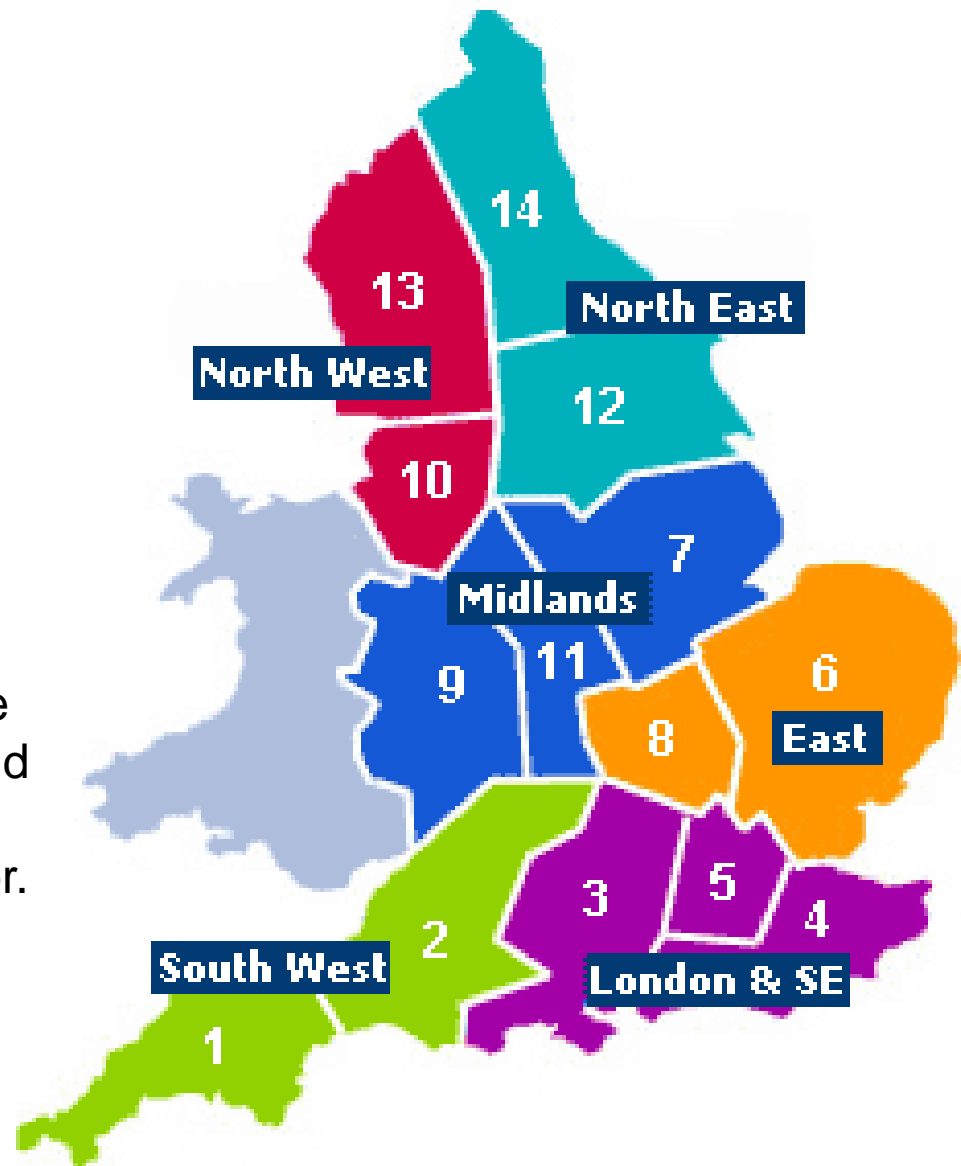
A-One = Colas and Halcrow

A-One+ = Colas, Costain and Halcrow

Now run Highways Agency Areas:

14, 12, 10 and 7.

This equates to approx. 30% of the Trunk Road network in England and the maximum number of areas currently allowed to be tendered for.



MAC Area 14



A-one Integrated Highway Services is a joint venture company between Halcrow Group Limited and Colas Limited, combining the culture and expertise from both companies.

A-one was appointed by the Highways Agency as Managing Agent Contractor (MAC) for the Area 14 network in July 2003. The network covers around 300km of motorway and trunk road in the North East. The contract was extended to 2010 and has an estimated value of £30m per annum.

MAC Area 12

The Area 12 contract, with an overall estimated value of approximately £200m, is due to commence on 1 October 2009, initially for five years, with the hope to extend it by a further two years.



The main routes of the Area 12 network comprise the A1, M1, M62, M18, M180, and A64.

Area 12 encompasses 354km of motorways and 349km of trunk roads in Yorkshire and Lincolnshire from Leeds to Kingston-upon-Hull, Grimsby to Woodall and Scarborough to Saddleworth, the highest motorway in Great Britain.

MAC Area 10



As Managing Agent Contractor for Area 10, we are responsible for the day-to-day operational management and maintenance of the motorway and trunk road network.



Building on the outstanding success of the A-one joint venture company working in Area 14 and enhanced by the expertise of Costain, A-one+ was successfully appointed as the new Managing Agent Contractor (MAC) for the Highways Agency Area 10 in 2007. This contract, which commenced on November 5 2007 and with an overall estimated value of approx. £275m, will run for 5 years with the option for a further 2-year extension.

MAC Area 7

The five-year project – with an overall estimated value of approximately £300m – is due to commence on 1 July 2009.

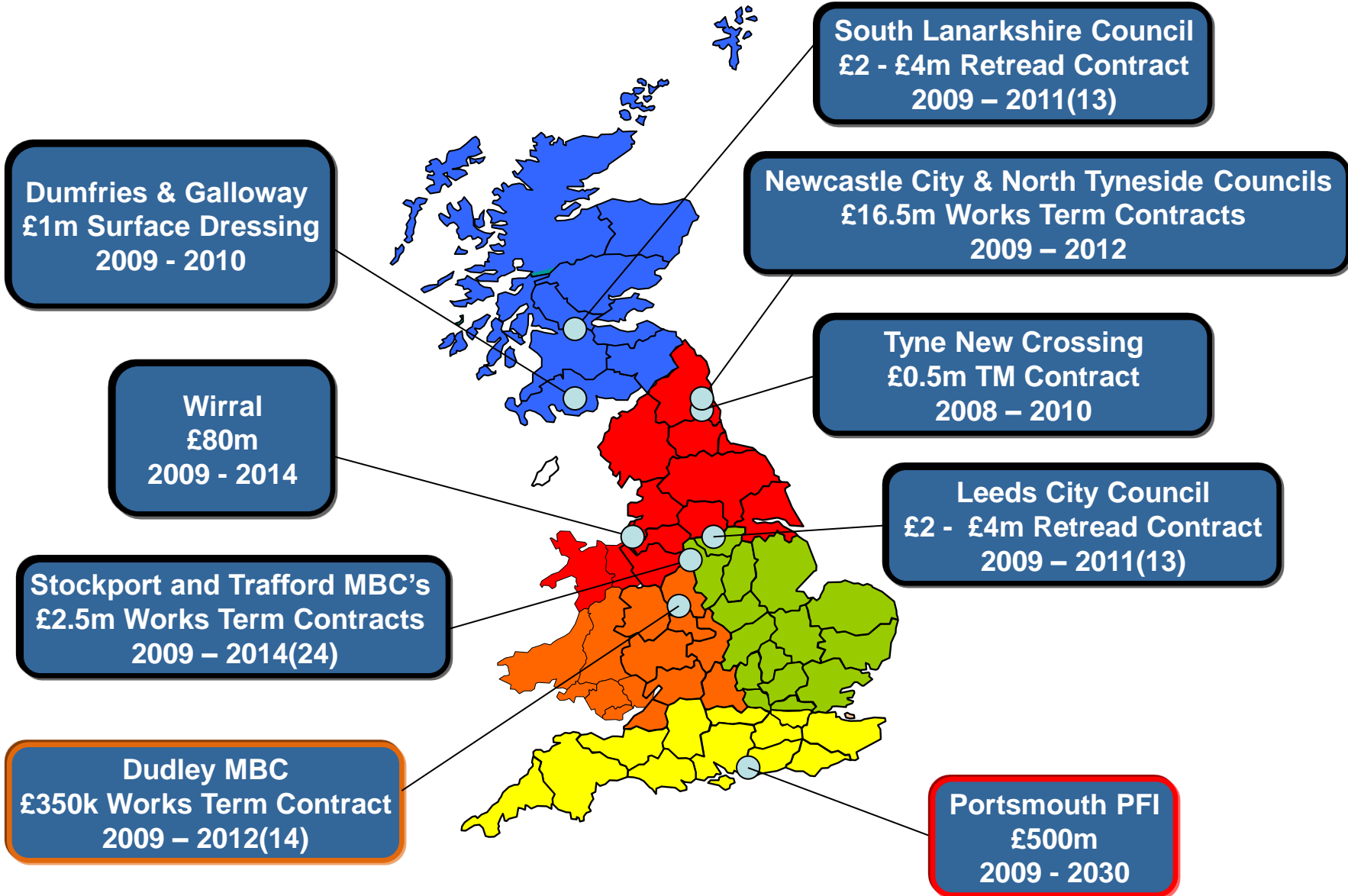


As the Managing Agent Contractor, A-one+ will plan, design and carry out routine maintenance and all capital maintenance schemes up to a value of £500,000 in Area 7. It will also design and supervise motorway and trunk road improvement and renewal projects up to £8 million in value.

Covering Highways Agency roads in Nottinghamshire, Derbyshire, Leicestershire, Lincolnshire, Northamptonshire and Rutland, Area 7 includes stretches of the M1, M69 and M6 motorways as well as key trunk roads for the region, namely the A1, A14, and A46.

LA Partnerships

(>=12 months)



Sustainable Quotes

“...I want Transport Scotland to work with the industry to increase the amount of recycled material that we use in road construction. That may mean taking some calculated risks and even being prepared to pay slightly more for some contracts...”

Jim Barton

(Director of Trunk Roads Network Management) - Transport Scotland

Quotes from Asphalt Professional – May 2007 article on ‘Specifying Sustainability’

Sustainable Quotes

*“We are enthusiasts of the
Repave Process...”*

John Williams

Highways Agency Pavement Team

The Repave Process



Steam Asphalt Pavement Heater Working in Toronto 1916.

(City of Toronto Archives)



Repave 2007



Repave



Case Study Sample

A1 STAMFORD RECTIFICATION OF SLOW LANE RUTTING

Location: A1 Stamford to Grantham

Client: **Area 7 MAC - AMSCOTT**

Value Phase 1: £ 270,000

Phase 2: £260,000

Date Phase 1: 21st - 26th May 05

Phase 2 26th - 27th Nov & 3rd / 4th Dec 05

A1 Stamford-Grantham Slow Lane Rutting

Total Energy Consumption, MJ/m²

Structure	Binder	Aggregates	Manufacture	Transport	Laying	Repave machine	Total
50 mm SMA (pmb)	42.5	6.4	35.6	66.1	6.5		157.1
Repave + 25 mm Colrug (pmb)	15.6	3.2	17.8	36.0	4.1	15.8	92.5

41.1%
Saving

GHG Emission in Equivalent CO₂, kg/m²

Structure	Binder	Aggregates	Manufacture	Transport	Laying	Repave machine	Total
50 mm SMA (pmb)	2.4	0.2	2.7	5.3	0.5		11.1
Repave + 25 mm Colrug (pmb)	0.9	0.1	1.4	2.9	0.2	1.1	6.5

41.36%
Saving

Detailed Case Study

A1 Stamford Lincs		REPAVE (as built) 6 nights	CONVENTIONAL (45mm) 11 nights
Labour & Plant:	Surfacing gang Repave gang Planning gang	£31,200 £42,000 £22,800	£57,200 £0 £41,800
Materials:	Colrug (Repave) or SMA (Conventional)	£86,400	£155,400
Traffic Management:	Provided by MAC	£15,000	£27,500
Marking & studs:	Provided by MAC	£27,000	£49,500
Total cost:		£224,400	£331,400
<u>Savings:</u>		<u>Cost</u> £107,000 (32%) <u>Time</u> 5 nights (45%) <u>Material</u> 3,400 tonnes <u>Waste</u> 3,400 tonnes	Significant savings in Time and Material movements

Repave in-situ recycling

The process is suitable for any class of road. Material is recycled in situ, cutting lorry movements, considerably reducing the use of new aggregates and minimising waste material.

Recent case studies have realised the potential saving in:

- Material Usage 40%
- Vehicle Movements 50%
- Project Cost and Time 20%

Repave in-situ recycling

The heat from the Repave machine welds the new materials removing the need for a tack coat. Repave can be combined with any 25mm HRA or SMA surfacing material.

This process was used in HA Area 8 on the A421 near Bedford in early 2006.

Snow, rain and temperatures down to -5C only extended the 15 night programme by one night.

Repave complies with Department of Transport Specification for Highway Works Clause 926.

Helensburgh 2009



The Retread Process



History of Retread

- During WWII bitumen emulsions were established
- Immediately after WWII, Robert Carnegie started Retread in Devon
- 1956 Lion Emulsion was formed to promote bitumen emulsion
- 1963 contracting company Retread Road was created
- 1973 1M m² of Retread carried out by Retread Road
- 1978 Retread Road was incorporated into Colas (UK) Ltd
- 2009 In May Mal Lewis (Retread Supervisor) - 40yrs of service with Colas

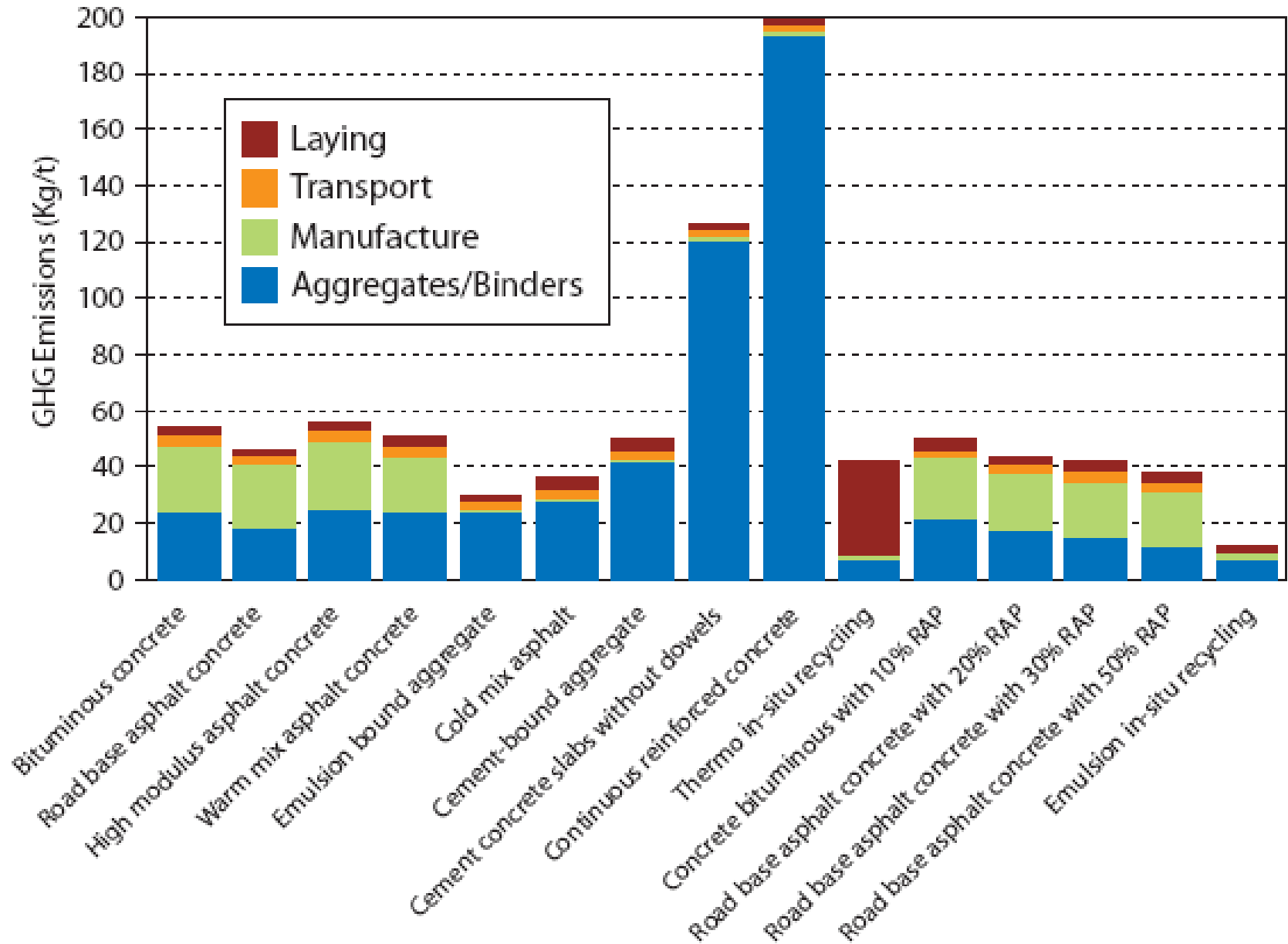
Retread in early years



Retread in early years



GREENHOUSE GAS EMISSIONS

























Outstanding advantages

- Most sustainable process in construction industry
- Up to 65% less energy consumption and CO₂ emission
- Up to 75% less waste
- Up to 75% less transport
- Significant savings in time and costs
- Minimal disruption during construction
- Re-profiling of pavement
- Flexibility of layer
- Choice of sealing layer

Retread at Colas

- Experience in Retread for more than 30 years
- Very experienced operators with long service at Colas
- Specialist plant adopted to process
- Regular investment in new plant
- Always “step ahead”, e.g. Vegecol

Case Studies

Carriageway Retread South Lanarkshire

- Colas won tender 2009/2010
- Possible 2 yrs extension
- Annual volume to exceed 200,000m²
- Programme grew from trial of 15,000m² since 2001
- Country lanes allowing high output
- S.L. to surface dress after 12 months

Footway Retread Amey London and TfL

A 1400 Woodford

- 2,000 m² of footway
- Difficult circumstances due to adjacent dual carriageway
- Restricted working hours

Total Energy Consumption MJ/m²

Structure	Binder	Aggregates	Manufacture	Transport	Laying	Retread equipment	Total
75 mm conv	40.7	9.6	48.0	25.5	9.5		133.2
Retread + 20 mm W/C	31.0	3.2	13.0	10.1	6.7	16.4	80.5

Energy savings total

52.7

Savings

39.6 %

HG Emission in Equivalent CO₂, kg/m²

Structure	Binder	Aggregates	Manufacture	Transport	Laying	Retread equipment	Total
75 mm conv	2.39	0.35	3.69	1.07	0.73		8.23
Retread + 20 mm W/C	1.74	0.12	1.00	0.36	0.43	1.23	4.87

CO2 savings total

6720 kg

Savings

40.8 %

Environmental Savings

		Conventional	Retread	Savings	
Waste on binder course	Tonnage	209	0	209	
Waste on wearing course	Tonnage	76	76	0	
Total waste	Tonnage	285	76	209	73%
Import of binder course material	Tonnage	248	23	225	
Import of wearing course	Tonnage	102	102	0	
Total material import	Tonnage	350	125	225	64%

Lorry movements for waste	no of 8 wheeler	15	4	11	
Lorry movements for import	no of 8 wheeler	18	6	12	
Total lorry movements	no of 8 wheeler	33	10	23	70%

Time comparison:

Assumptions for conventional reconstruction:

Footpath to be at least at binder course level each night due to H&S

Digging out, disposing off and laying binder course per day: 285m² = 95 lm

Wearing course: hand laid

		Conventio nal	Retread	Savings	
Reconstruction of binder course	day	7	4	3	
Laying wearing course	day	3	2	1	
Total construction time	day	10	6	4	40%

B. Case Study for Carriageway Retread for Amey, Bedford, Area: 11,765 m²

Conventional – Plane out 75 mm & lay 75 mm DBM binder course

Retread – Pulverize 75 mm & retread

Total Energy Consumption, MJ/m²

Structure	Binder	Aggregates	Manufacture	Transport	Laying	Retread equipment	Total
75 mm DBM	37.4	9.5	42.9	21.8	6.9		118.5
Retread	24.3	1.4		2.0	2.9	25.9	56.5
						Total energy savings	52.3 %

GHG Emission in Equivalent CO₂, kg/m²

Structure	Binder	Aggregates	Manufacture	Transport	Laying	Retread equipment	Total
75 mm DBM	2.20	0.35	3.30	1.70	0.53		8.08
Retread	1.31	0.05		0.16	0.23	1.98	3.73
						CO₂ savings total	51,178 kg
						Savings	53.8 %

Traffic Management



Colas are fully BSEN 9001:2000 accredited and a specialist traffic management supplier providing temporary traffic management services for highway maintenance and civil engineering projects nationwide.

Established in February 2001 our reputation for providing a safe, quality and cost effective service has grown from strength to strength. We work closely with our clients providing a design, install and maintenance service to meet performance targets and develop long term partnerships.



Questions?