




*Keir- Grosvenor St,
Birmingham
Carbon-IQ Report*

WWW.ASPHALT-IQ.COM



The Carbon-IQ System

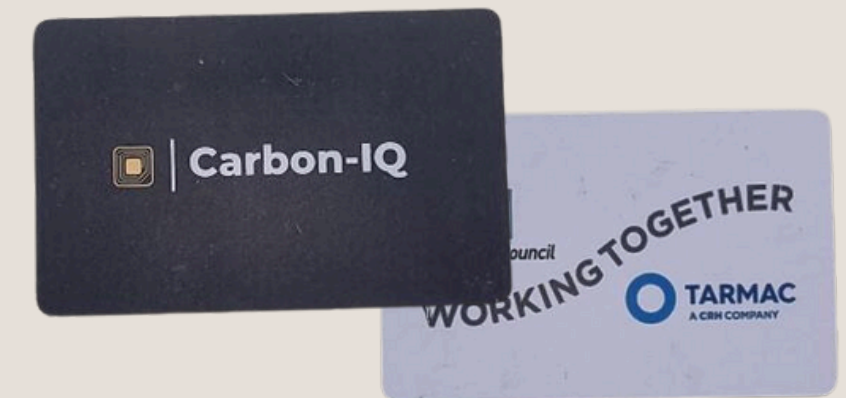


Carbon-IQ



The Smart A-Tag

The patented "Smart A-Tag" enables the road to "Speak for itself with a unique digital identity and GPS location creating the opportunity to calculate the Co2 emissions of the asphalt construction scheme.



The SmartCard

Designed to offer "Tap and Go" Functionality, the Asphalt-IQ SmartCard is primarily aimed at multi location projects such as pothole repair or patch reinstatements. Distances are calculated between each site and a total transportation carbon value is auto generated.

Carbon-IQ

Carbon-IQ is a smartphone app which enables the calculation and GPS recording of carbon emissions from road surfacing works. Activated by the Smart A-Tag and completed in less than 60secs, Carbon-IQ is the fastest and most practical asphalt carbon calculator on the market

Our Technology



Asphalt-IQ's patented technology is state of the art.

NFC enabled Smart A-Tags combine with easy to use smartphone apps to deliver the simplest and most accurate Highways Carbon Calculation solution



What is a "Smart" A-Tag ?

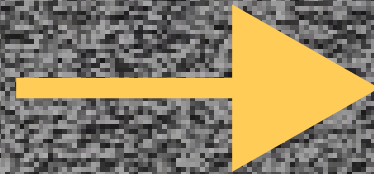
Asphalt IQ's patented "Smart" A-Tag is not just a piece of colored plastic. It contains an NFC enabled smart chip which gives every tag a unique digital identity where all relevant carbon data can be uploaded to. It also geo-locates each tag and provides access to the data simply by tapping a cellphone against the embedded tag



Grosvenor St, Birmingham

A Discreet , Permanent Record - Embedded in the Asphalt

The Road can
Speak for Itself



Grosvenor St, Birmingham

Carbon-IQ State of the Art Carbon Calculation

1

Measure

Evaluate the Carbon Emissions
Establish Carbon Benchmarks

2

Accuracy

Minimise Assumptions
and Remove Guesswork

3

Transparency

Share Calculation
Methodology and Algorithms
Enable Auditing
and Validation
of Carbon Calculations

4

Consistency

Unified Approach and
Standard Data Sources to
Enable Industry Wide Evaluation

5

Practicality

Systems Must be
Operationally Practical
Easy to Use and Minimise
Administrative Time and
Paperwork

Screenshots from Carbon-IQ App for Base/Binder Course on Grosvenor St, Birmingham

←

Input Data

Job Name

Grosvenor St. Birmingham

Job Number

Kier 001

Client

KIER GROUP PLC

→

←

Asphalt Material Details

Asphalt Plant

Aggregate Industries, Bardon Hill

Layer

Base/Binder

Temp

Hot

RAP

0%

Material

AC 20 HDM 40/60

Tonnage of Material (tonnes)

1390

→

←

Equipment Mobilisation

Vehicles Mobilised

Leyland daf V3DAF2. Comb ▾

1

+

Scania R500. low loaders : Qty-1

Scania D320 Mechanical Sweeper : Qty-1

Leyland daf V3DAF2. Combi Bond Sprayer : Qty-1

Distance to Site (miles)

20

Number of shifts

7

→

←

Plant and Transport

Distance from Asphalt Plant (miles)

37.2

Truck Capacity (tonnes)

20

Number of Truckloads Required (Conventional Hot Asphalt Repair)

70

Asphalt Gang Selection

General Machine Works (Not HRA)

→

Screenshots from Carbon-IQ App for Surface Course on Grosvenor St, Birmingham

←

Input Data

Job Name

Grosvenor St. Birmingham

Job Number

Kier 001

Client

KIER GROUP PLC

→

←

Asphalt Material Details

Asphalt Plant

Aggregate Industries, Bardon Hill

Layer

Surface Course

Temp

Hot

RAP

0%

Material

SMA 10 PMB Surf

Tonnage of Material (tonnes)

376

→

←

Personnel Mobilisation

Vehicles Mobilised

VW caddy 2.0 diesel

1

+

Mercedes vito : Qty-1

Mercedes vito : Qty-1

+

VW caddy 2.0 diesel : Qty-1

VW caddy 2.0 diesel : Qty-1

+

Distance to Site (miles)

20

Number of shifts

7

→

←

Plant and Transport

Distance from Asphalt Plant (miles)

37.2

Truck Capacity (tonnes)

20

Number of Truckloads Required (Conventional Hot Asphalt Repair)

18

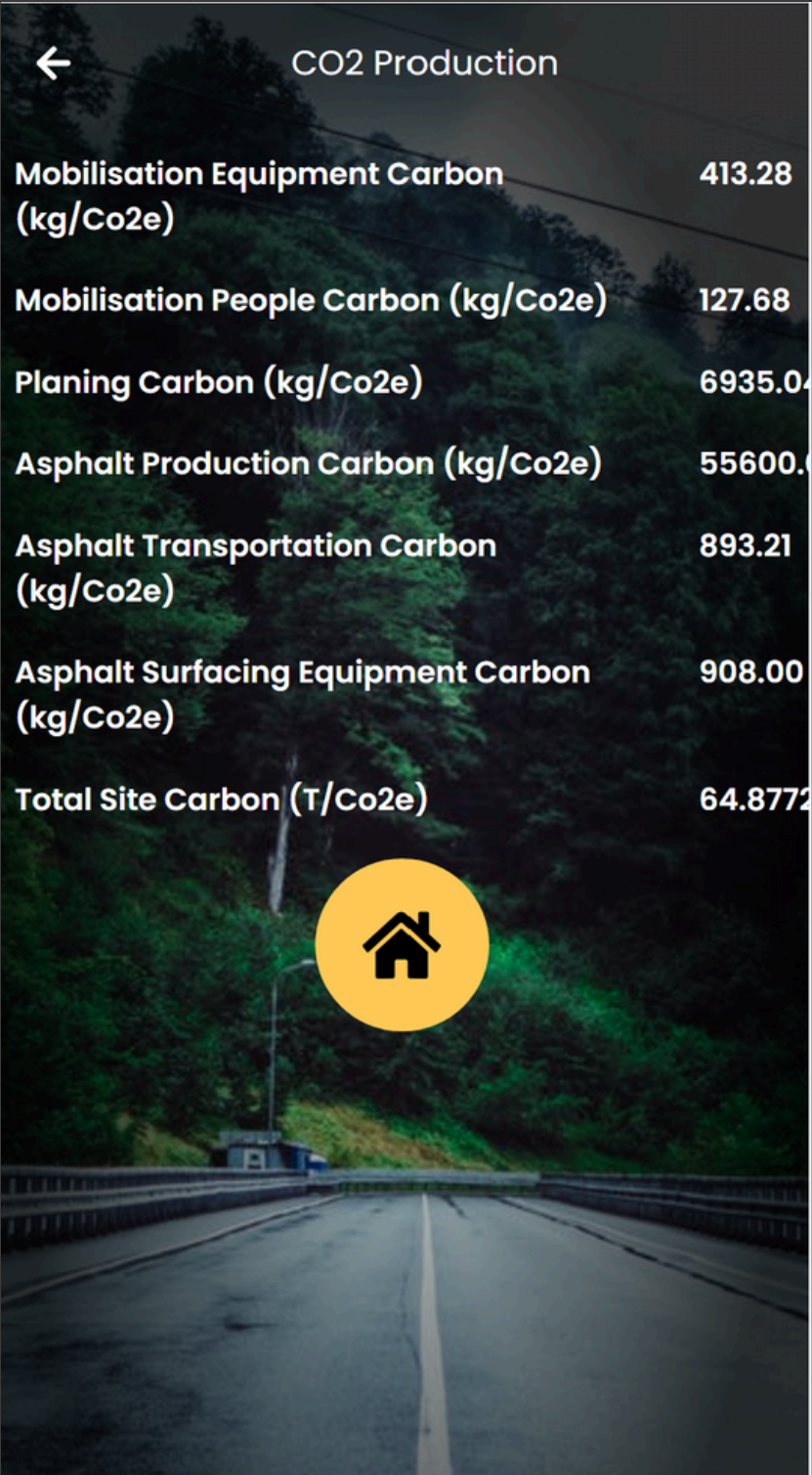
Asphalt Gang Selection

General Machine Works (Not HRA)

→

Carbon Results from Carbon-IQ App for Surface Course on Grosvenor St, Birmingham

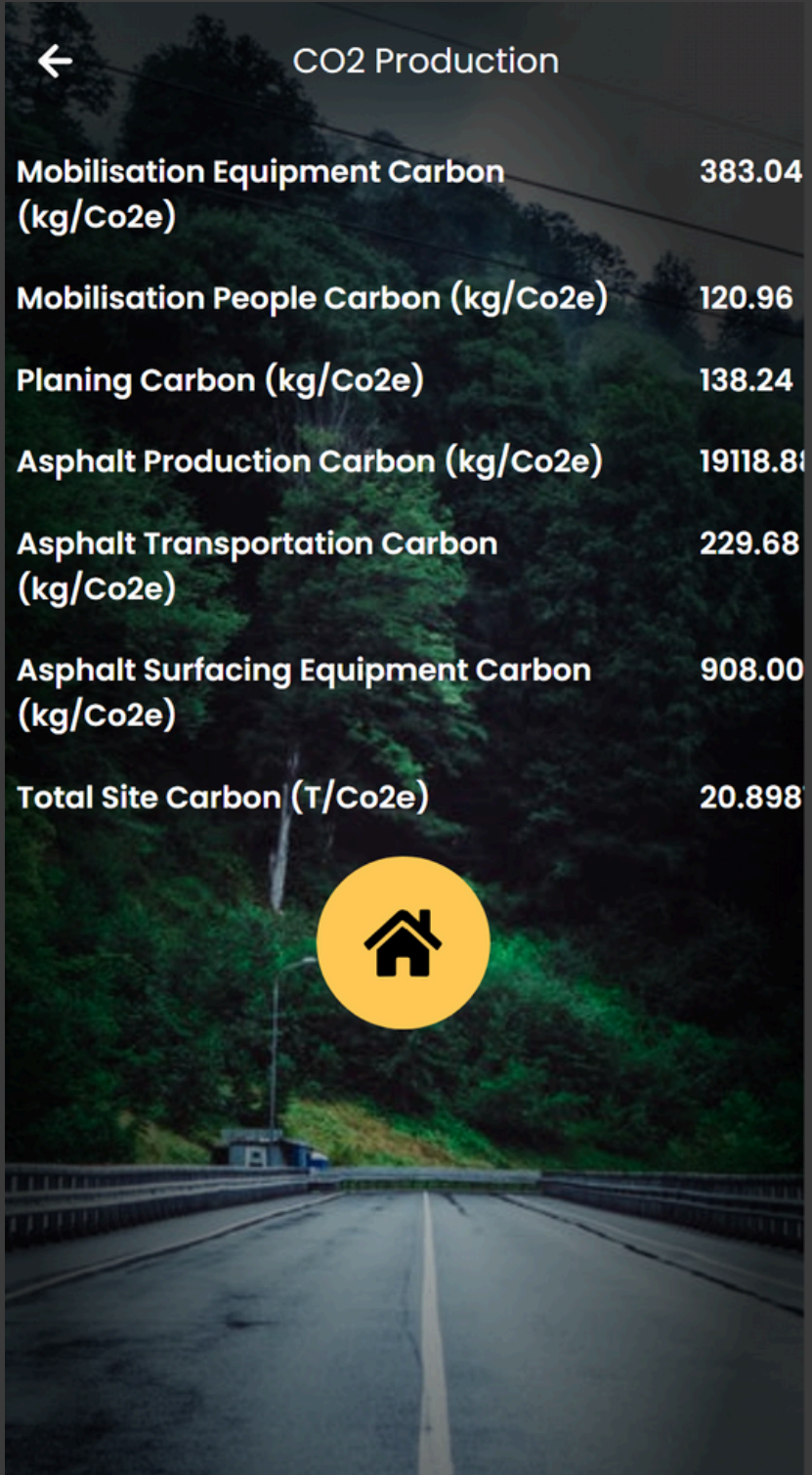
Base/ Binder Course



A screenshot of the Carbon-IQ app interface. The background is a dark image of a road at night with a yellow house icon in the center. The title 'CO2 Production' is at the top. Below it is a list of carbon production items and their values in kg/Co2e or T/Co2e. A yellow house icon is overlaid on the bottom right of the list.

CO2 Production	
Mobilisation Equipment Carbon (kg/Co2e)	413.28
Mobilisation People Carbon (kg/Co2e)	127.68
Planing Carbon (kg/Co2e)	6935.04
Asphalt Production Carbon (kg/Co2e)	55600.0
Asphalt Transportation Carbon (kg/Co2e)	893.21
Asphalt Surfacing Equipment Carbon (kg/Co2e)	908.00
Total Site Carbon (T/Co2e)	64.8772

Surface Course




A screenshot of the Carbon-IQ app interface. The background is a dark image of a road at night with a yellow house icon in the center. The title 'CO2 Production' is at the top. Below it is a list of carbon production items and their values in kg/Co2e or T/Co2e. A yellow house icon is overlaid on the bottom right of the list.

CO2 Production	
Mobilisation Equipment Carbon (kg/Co2e)	383.04
Mobilisation People Carbon (kg/Co2e)	120.96
Planing Carbon (kg/Co2e)	138.24
Asphalt Production Carbon (kg/Co2e)	19118.8
Asphalt Transportation Carbon (kg/Co2e)	229.68
Asphalt Surfacing Equipment Carbon (kg/Co2e)	908.00
Total Site Carbon (T/Co2e)	20.898

Test Reports

As Built Drawings


CERTIFICATION LTD
Technical & Administrative Services for Industry
A subsidiary of Construction Testing Solutions Ltd

TEST REPORT: **Bituminous Materials Laying Record**
 BS EN12697-13:2017 (Temperatures)

REPORT NUMBER: C1080037 / 265461.1.1.1

DATE COMPLETED: 04/08/2023 CLIENT: S & D Paving 2011 Ltd

TESTED BY: Niall Ferguson CLIENT ADDRESS: Artisan's House, 7 Queensbridge, Northampton, Northamptonshire, NN4 7BF

CLIENT REF: 1080037 SITE: GROSVENOR STREET

MATERIAL DESCRIPTION: Ac32densebase 40/60 SITE ADDRESS: GROSVENOR ST, BHAM, B16 7BU

ENVIRONMENTAL CONDITIONS: Raining MATERIAL SPECIFICATION:

RESULTS

GENERAL MATERIAL LOCATION: Grosvenor St W

THERMOMETER TYPE & SET No: Infrared Thermometer 303


SUPPLIERS: 1. Aggregate industries - Croft Asp Benn Prodn - En13108-1

ARRIVAL TIME	TIME LAID	TONNAGE DELIVERED (Tonnes)	TICKET NUMBER	LORRY REG	RIP / LANE	LAYER	START CHAINAGE	FINISH CHAINAGE	MATERIAL TEMPERATURE		SAMPLE TAKEN	SOURCE
									DELIVERY (Paves)	Rolling		
									Average result to nearest 5°C			
08:40	09:00	19.92	87693271	Gd19 fcz	Left and right	Regulating	330	400	152	122	No	1
09:30	09:50	19.64	87693331	Av65 udf	right	Base	330	345	150	136	No	1
09:45	10:15	19.58	87693357	Ay67 nsj	right	Base	345	360	156	120	No	1
09:45	10:40	19.94	87693394	Ay66 tkd	right	Base	360	375	148	118	No	1
10:25	10:55	19.88	87693418	Ay16 xmr	right	Base	375	385	140	120	No	1
10:40	11:25	19.56	87693428	J25 pbx	right	Base	385	400	144	116	Yes	1
10:55	11:45	19.66	87693482	Ay23 wul	Left	Base	330	350	154	124	No	1
11:25	12:10	19.52	87693489	Nk71 sxj	Left	Base	350	370	146	116	No	1
11:45	12:30	19.84	87693419	V23 ffs	Left	Base	370	390	142	114	No	1
12:15	12:50	19.84	87693494	Ku69 yjh	Left	Base	390	400	152	120	No	1
12:55	13:35	19.84	87693494	Ku69 yjh	Left and right	Base	400	415	152	120	No	1
Total Tonnage		217.22										

Remarks:

Test results reported relate only to the items tested.
 This report shall not be reproduced except in full without approval of the Laboratory.
 The Laboratory does not apply a conformity statement to test reports as standard, unless specifically requested by the customer.

For and on behalf of CTS
 Carl Sandell - Site Manager



Approved Signatory
 Report date 08-08-23

Report Format: BitTemp/TP48/Rep Issue 1 Rev 0 09/22

Unit A10, Unit One Industrial Park,
 George Henry Road,
 Great Bridge, Tipton
 West Midlands DY4 7BU

0348 227 8545
 enquiries@constructiontesting.co.uk
 www.constructiontesting.co.uk
 END OF REPORT

Construction Testing Solutions Ltd
 Registered in England No. 05998333

Report version 1

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(UK) ISO 9001 & MANAGEMENT SERVICES TO INDUSTRY
 A subsidiary of Construction Testing Solutions Ltd

TEST REPORT: Initial Density of Bituminous Material - Non Nuclear Density Gauge (PQI)
 Tested in accordance with: In-House Test Procedure TP91

REPORT NUMBER: C1080057 / 262552.2.1.1

DATE COMPLETED: 13/08/2023
CLIENT: S & D Paving 2011 Ltd

TESTED BY: Michael Arthur
ADDRESS: Artisan's House, 7 Queensbridge, Northampton, Northamptonshire, NN4 7BF

PQI MODEL No: Pg380
SITE: GROSVENOR STREET

PQI SERIAL No: 4334
MATERIAL: Ac 32 HDM base 40/60

DEVIATIONS: None
SUPPLIER / SOURCE: Aggregate Industries / Bardon hill

ENVIRONMENTAL CONDITIONS: Overcast
DATE MATERIAL LAID: 11/08/2023

SAMPLING PLAN: Client Specification

EST JULTS Ant Location: On-Site

MA "IM DP Y: 2) Kg/m³ COMPLIANCE LIMIT: 7.0 % maximum voids
 PQI Co... 00 TEST LOCATION: Grosvenor street, 230-250
 TYP ... STED 90mm METHOD OF TEST: Absolute Tests

Chaining	Lane	Layer	NEARSIDE POSITION			CENTRE POSITION			OFFSIDE POSITION		
			PQI Density (Kg/m³)	Corrected Density (Kg/m³)	Air Voids (%)	PQI Density (Kg/m³)	Corrected Density (Kg/m³)	Air Voids (%)	PQI Density (Kg/m³)	Corrected Density (Kg/m³)	Air Voids (%)
220	1	Base	2035	2385	6.8	-	-	-	-	-	-
240	1	Base	-	-	-	-	-	-	2064	2414	5.7
220	2	Base	2075	2425	5.3	-	-	-	-	-	-
240	2	Base	-	-	-	-	-	-	2070	2420	5.5
300	1	Bin	2086	2436	4.9	-	-	-	-	-	-
280	1	Bin	-	-	-	-	-	-	2078	2428	5.1
260	1	Bin	2088	2438	4.8	-	-	-	-	-	-
240	1	Bin	-	-	-	-	-	-	2085	2435	4.9
220	1	Base	2087	2437	4.8	-	-	-	-	-	-
200	1	Bin	-	-	-	-	-	-	2088	2438	4.8
300	2	Bin	2082	2432	5.0	-	-	-	-	-	-
280	2	Bin	-	-	-	-	-	-	2088	2438	4.8
260	2	Bin	2089	2439	4.7	-	-	-	-	-	-
240	2	Bin	2088	2438	4.8	-	-	-	-	-	-
220	2	Bin	-	-	-	-	-	-	2087	2437	4.8
200	2	Bin	2084	2434	4.9	-	-	-	-	-	-

PQI density readings are only an estimate of actual density.
 If actual density is required the method specified in the contract should be adopted.
 Grey background denotes non-compliance if applicable.

Remarks:
 Test results reported relate only to the items tested.
 This report shall not be reproduced except in full without approval of the Laboratory.
 The laboratory does not apply a conformity statement to test reports as standard, unless specifically requested by the customer.

For and on behalf of CTS
 Carl Sandall - Site Manager

Approved Signatory
 Report date 14-Aug-23

Report Format: PQI/TP91/Rep Issue 1 Rev 0 01/23

Unit A10, Link One Industrial Park,
 Grace Henry Road,
 Great Bridge, Tipton
 West Midlands DY4 7BU

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 enquiries@constructiontesting.co.uk
 www.constructiontesting.co.uk
 END OF REPORT

Construction Testing Solutions Ltd.
 Registered in England No. 05998333

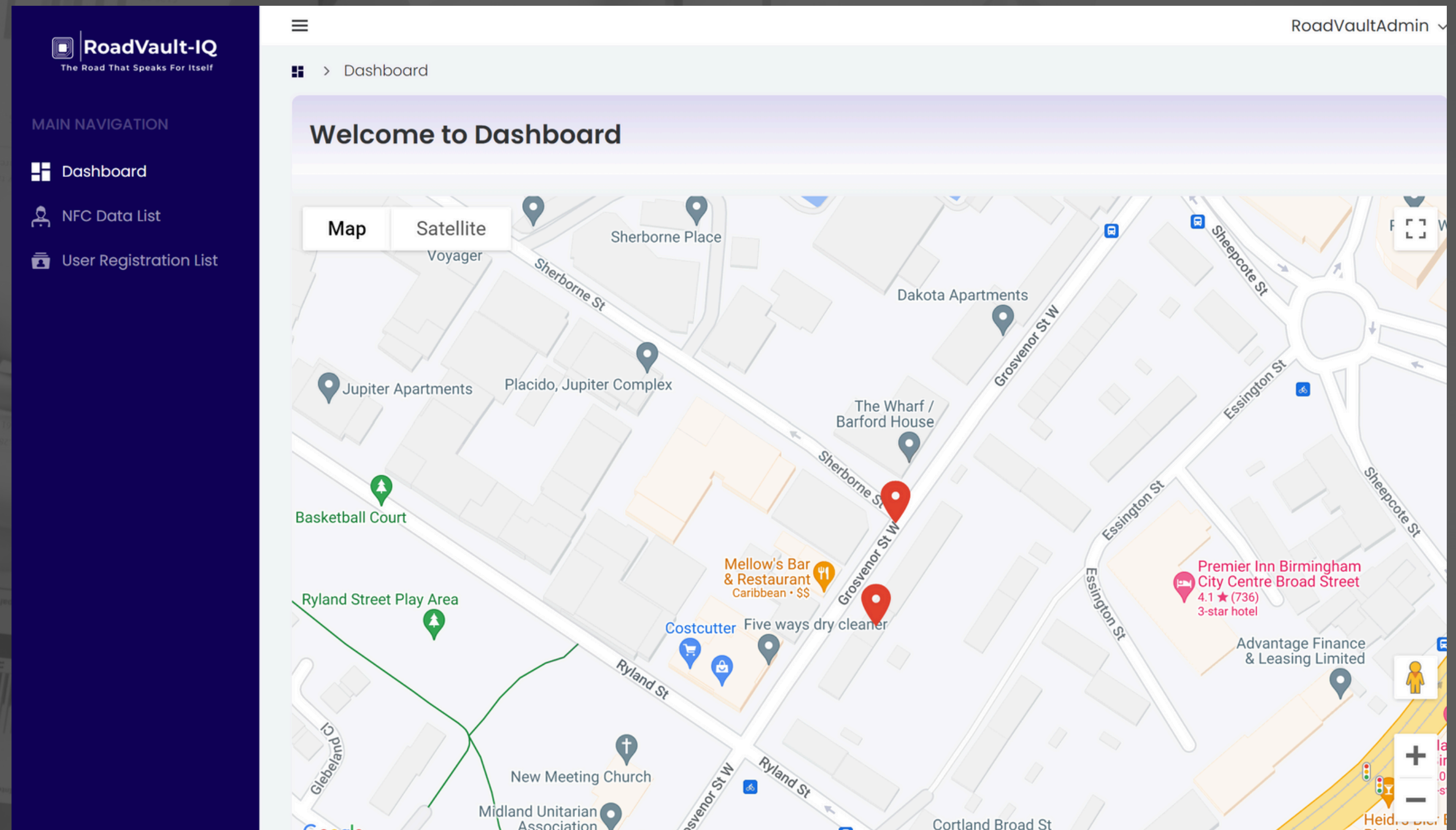
Report version 1

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All Highways Works Carbon Data is Accessible by Desktop or Smartphone Dashboard

The complete carbon footprint of the road repair at your fingertips.....In an easy to understand format

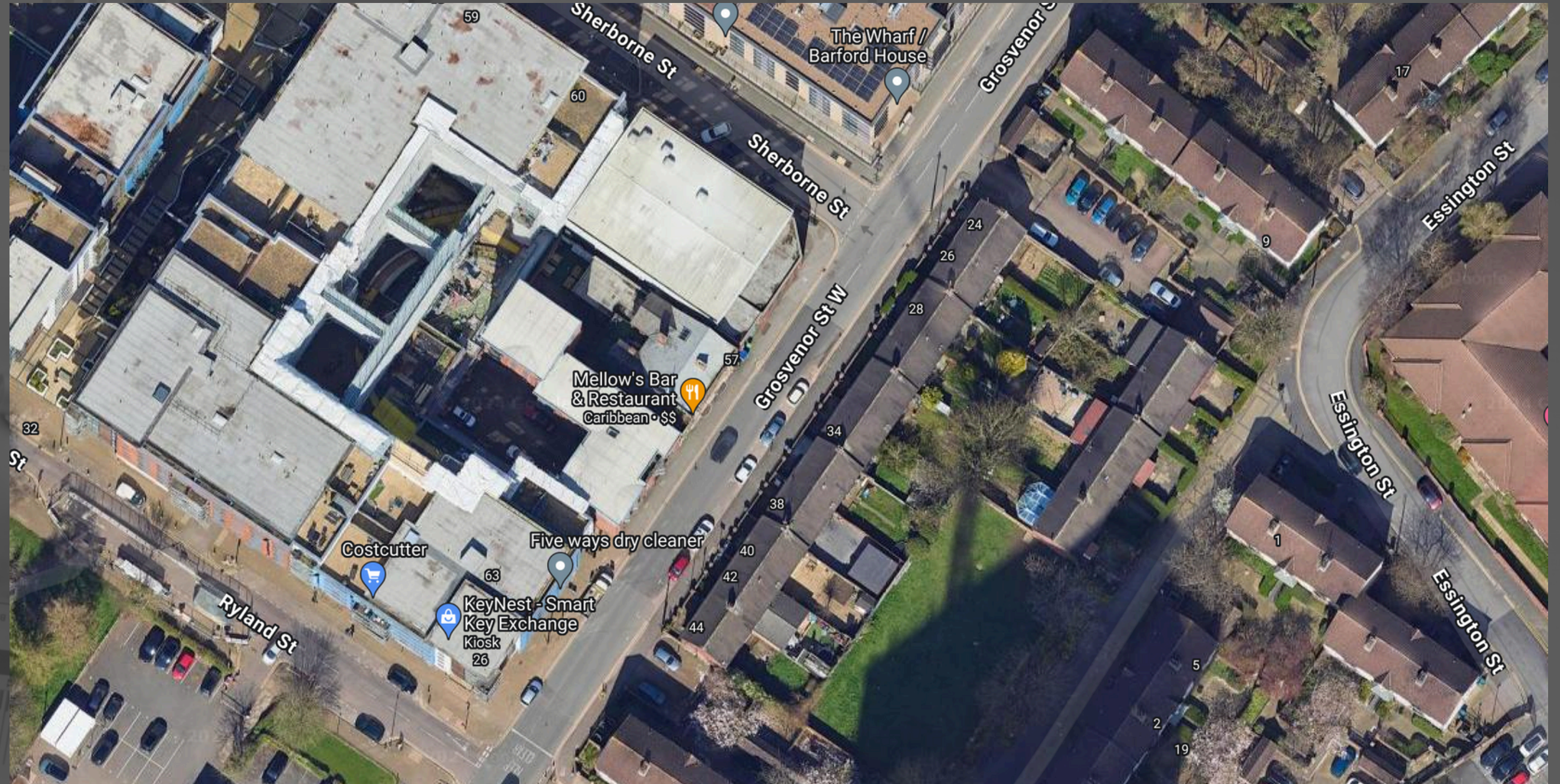
Dashboard View



A Fully Auditable, GPS located Carbon Record of the Surfacing Works

The complete carbon footprint of the road repair at your fingertips.....In an easy to understand format

Map View





Carbon-IQ

Features

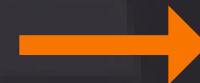
✓ The most accurate calculation system available

✓ Carbon recorded directly from the jobsite

✓ Intuitive - no training required

✓ All records generated in less than 60 secs

✓ Single licence - unlimited users



Benefits

✓ Immediate compliance with PAS 2080:2023

✓ For every project - motorways to pothole repairs

✓ Instant Start

✓ Fully customised - plants, mixes, equipment

✓ Exact transportation distances calculated



Contact

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