

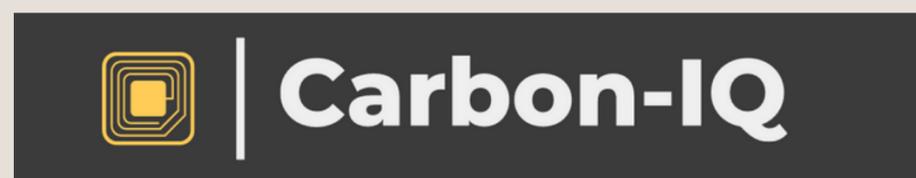


Asphalt-IQ

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

WWW.ASPHALT-IQ.COM

The Carbon-IQ System



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

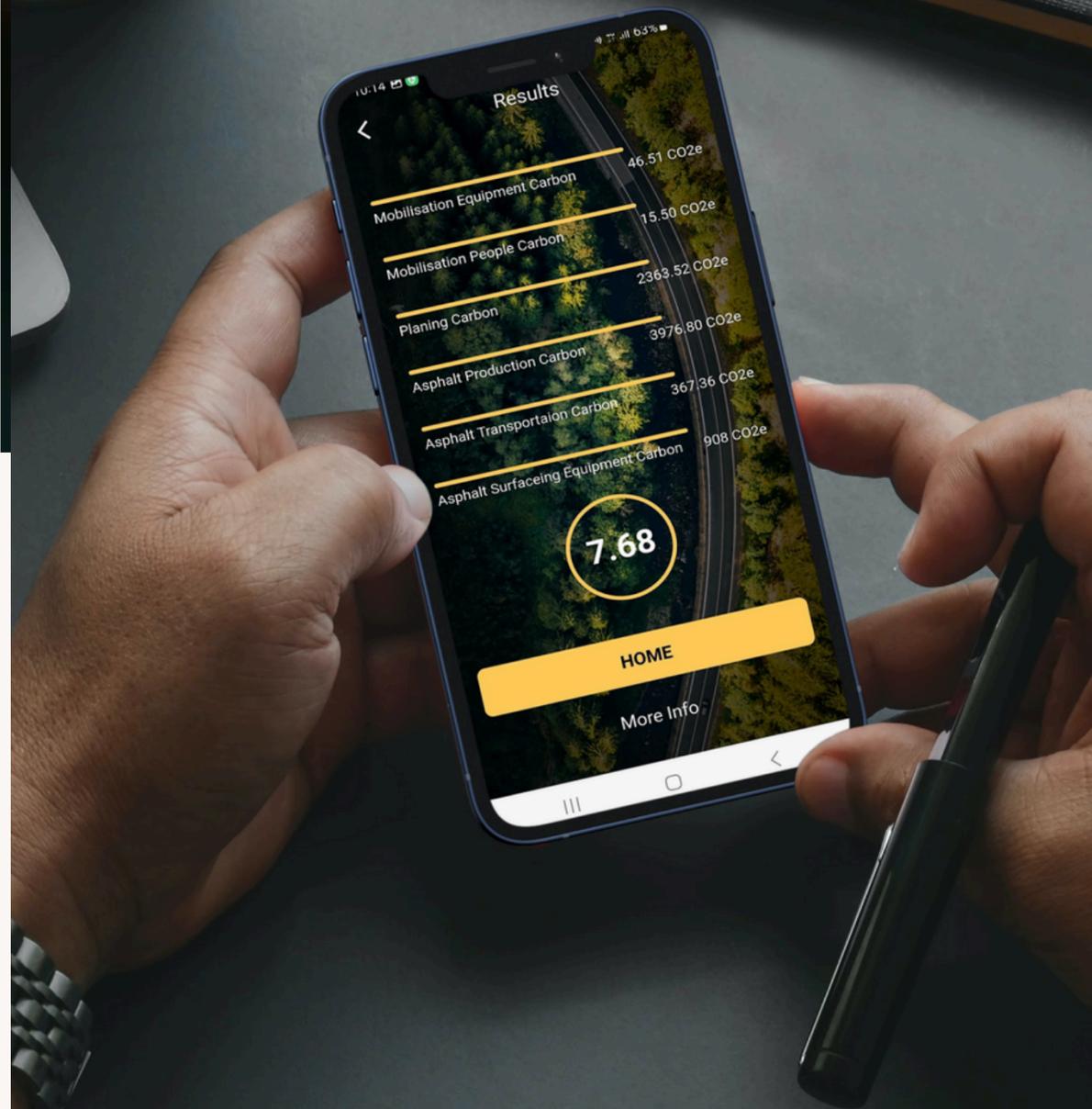
The Smart A-Tag

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.

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 ?

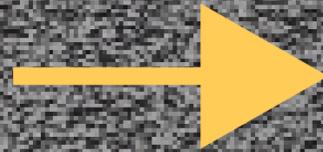
Asphalt IQ's patented "Smart" A-Tag is not just a piece of colored plastic. It contains an NFC enabled smart chip which gives every tag a unique digital identity where all relevant carbon data can be uploaded to. It also geo-locates each tag and provides access to the data simply by tapping a cellphone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

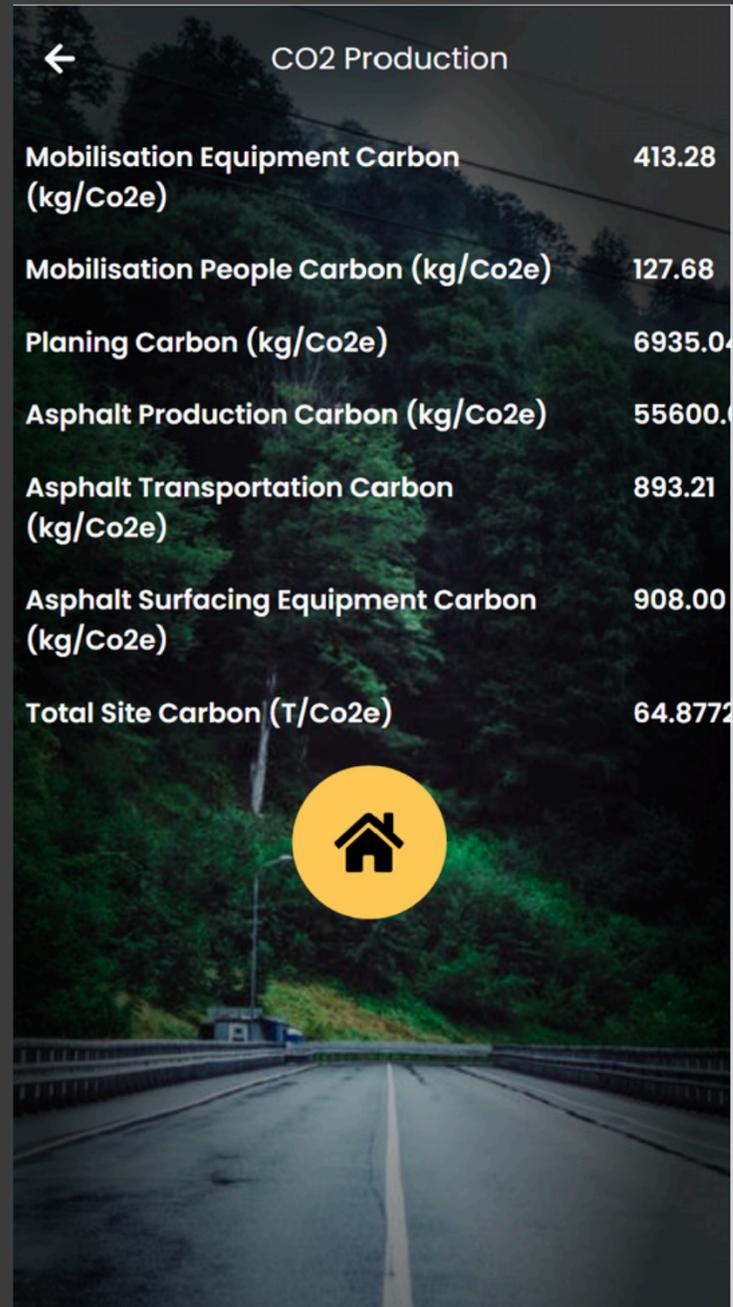
Number of Truckloads Required (Conventional Hot Asphalt Repair)
18

Asphalt Gang Selection
General Machine Works (Not HRA)

→

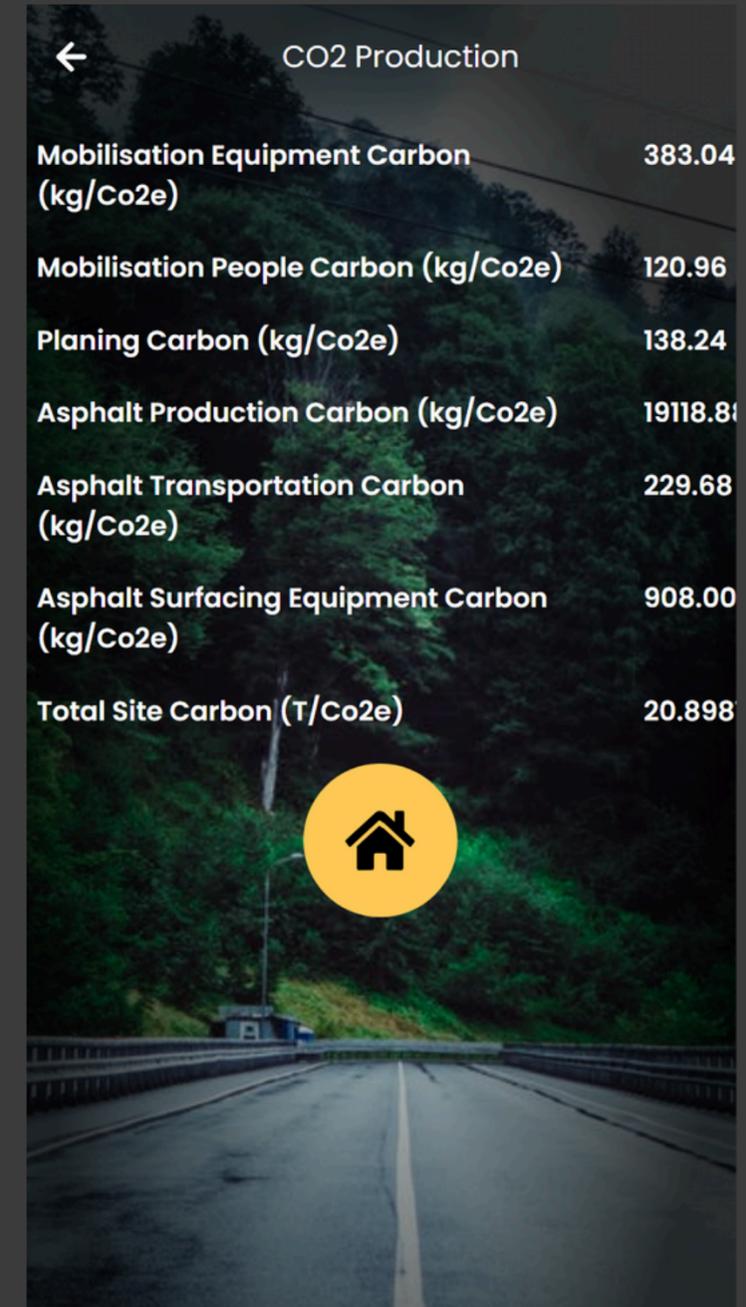
Carbon Results from Carbon-IQ App for Surface Course on Grosvenor St, Birmingham

Base/ Binder Course



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)	55600.1
Asphalt Transportation Carbon (kg/Co2e)	893.21
Asphalt Surfacing Equipment Carbon (kg/Co2e)	908.00
Total Site Carbon (T/Co2e)	64.8772

Surface Course



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

Other Site Data Held by Carbon-IQ, Grosvenor St, Birmingham

Delivery Tickets

Test Reports

IGT CERTIFICATION LTD
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 8HU

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 (Paver)	Rolling		
08:40	09:00	19.92	87693271	Gd19 fzz	Left and right	Regulating	330	400	152	122	No	1
09:30	09:50	19.64	87693331	Av65 ubf	right	Base	330	345	150	136	No	1
09:45	10:15	19.58	87693357	Ay67 mjj	right	Base	345	360	156	120	No	1
09:45	10:40	19.94	87693394	Ay66 ttd	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	Nx71 sjj	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 Sandall - Site Manager
C.S.

Approved Signatory
Report date 08-Aug-23

Report Form: BtTemp/TP48/Rep Issue 1 Rev 0 09/22
Unit A10, Link One Industrial Park, George Henry Road, Great Bridge, Tipton West Midlands DY4 7BU
0343 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

As Built Drawing

RESIDUAL DESIGN HAZARDS

PAVEMENT TREATMENT TYPES

LOCATION PLAN

KEY PLAN

VP1 SCALE 1:100

VP2 SCALE 1:100

AS-BUILT

PAVEMENT TREATMENT PLAN

IGT CERTIFICATION LTD
A subsidiary of Construction Testing Solutions Ltd

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

REPORT NUMBER: C1080037 / 266251.2.1.1

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: Pq380 **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

TEST RESULTS

Location: On-Site
COMPLIANCE LIMIT: 7.0% maximum voids
TEST LOCATION: Grosvenor street, 210-250
METHOD OF TEST: Absolute Tests

Chainage	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	Bin	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
C.S.

Approved Signatory
Report date 14-Aug-23

Report Form: PQI/TP91/Rep Issue 1 Rev 0 01/23
Unit A10, Link One Industrial Park, George Henry Road, Great Bridge, Tipton West Midlands DY4 7BU
0343 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

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

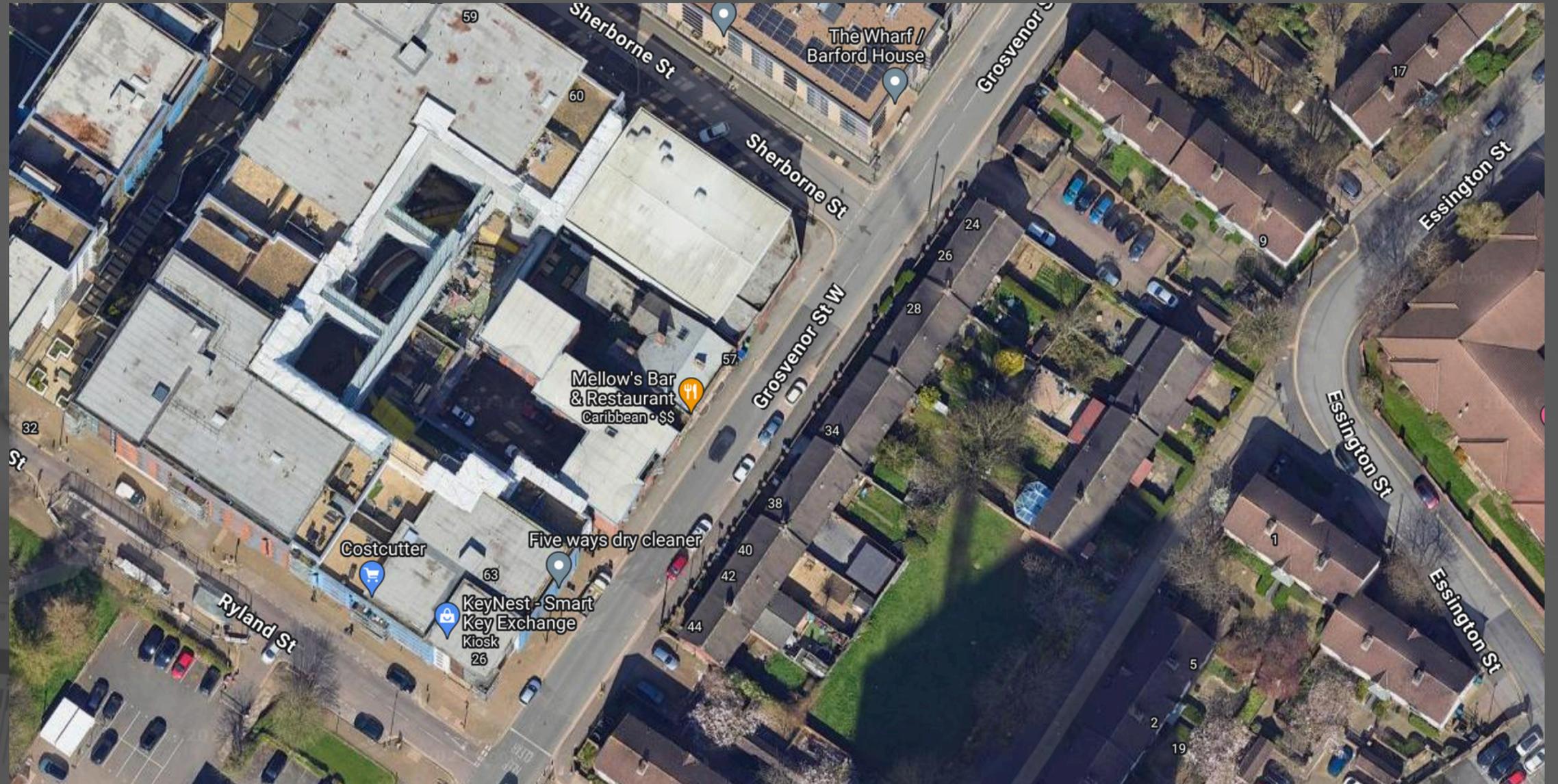
Dashboard View

The screenshot displays the RoadVault-IQ dashboard interface. On the left is a dark blue sidebar with the logo 'RoadVault-IQ The Road That Speaks For Itself' and a 'MAIN NAVIGATION' menu containing 'Dashboard', 'NFC Data List', and 'User Registration List'. The main content area is titled 'Welcome to Dashboard' and features a map of a city street grid. The map includes several location markers: a red pin on Grosvenor St W, a blue pin at the intersection of Ryland St and Grosvenor St W, and a green pin at Ryland St. Other labeled locations include Sherborne Place, Dakota Apartments, Jupiter Apartments, Placido, Jupiter Complex, The Wharf / Barford House, Mellow's Bar & Restaurant, Costcutter, Five ways dry cleaner, Ryland Street Play Area, New Meeting Church, Midland Unitarian Association, Premier Inn Birmingham City Centre Broad Street, and Advantage Finance & Leasing Limited. The map interface includes 'Map' and 'Satellite' view options, a 'Voyager' label, and standard map navigation controls like zoom in/out and location search.

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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