

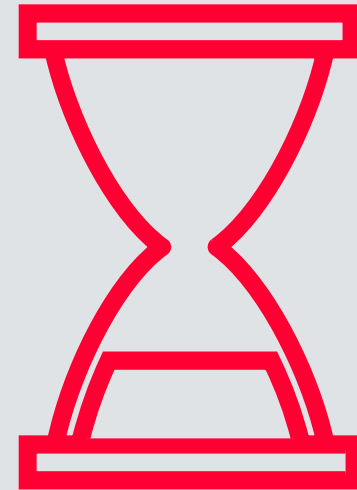


Qflow

Better data for better decision making at
Melton Mowbray Distributor Road

What is the challenge?

- Carbon reporting requirements
- Traditional carbon data capture is laborious, incomplete and inaccurate.
- We want to automate carbon data capture, whilst assuring accuracy and completeness.
- Decision making based on instinct rather than evidence



What is Qflow?

- Digital platform that captures delivery tickets and waste transfer notes across the supply chain.
- Extracts real time data on products, materials and waste across projects.
- Rich dataset can have many uses
- Qflow trialled at the Melton Mowbray Distributor Road since February 2024, and progressive rollout across the whole GT Infrastructure portfolio.



Qflow

“

We are immensely proud to be the first contractor to deploy Qflow on a highways project for the purpose of carbon data capture... accurate and complete data ... allows us to generate data driven insights to feed into our key decision-makers to make the right decisions to decarbonise

David Lowery

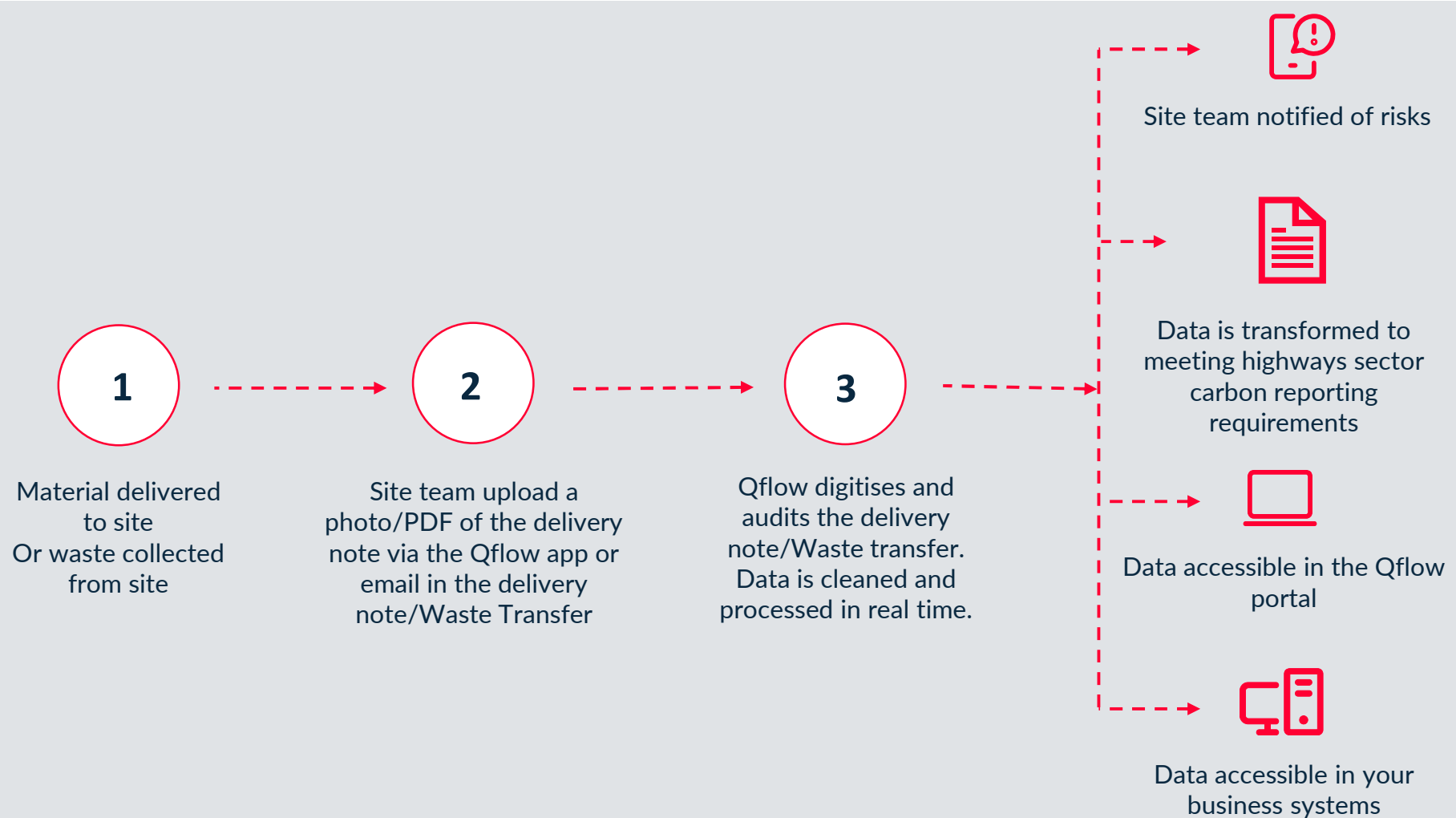
Managing Director of Galliford Try's
Infrastructure business

Objectives for Qflow deployment

- Capture all incoming deliveries and waste transfers, both directly procured and procured by sub-contractors
- Reduce data collection time
- Reducing human error
- Standardising and streamlining data collection for carbon reporting
- Identifying tangible carbon reduction opportunities



Workflow with Qflow



Ticket Uploads

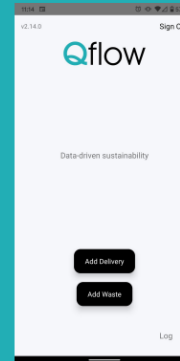
- Delivery tickets and waste transfer notes can be uploaded through an app for use on-site with paper tickets, or via email for scanned and electronic tickets.

Using Qflow

Mobile Login:

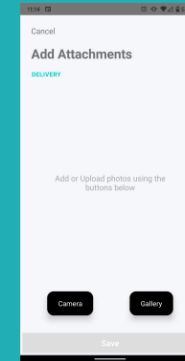
Username: MMDR

Password: 639715



Step 1

Click to add Delivery or Waste Ticket



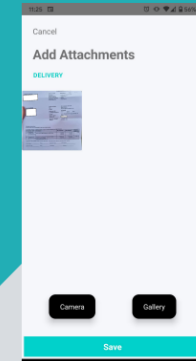
Step 2

Select Camera or Choose a Photo from Gallery



Step 3

After taking a photo click 'Next'



Step 4

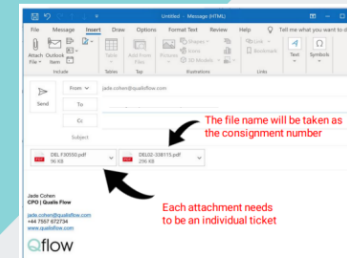
Choose to take another photo for tickets with multiple pages or click Save

Do you have an e-ticket?

You can send them to the following email addresses:

deliveries.mmdr@qualisflow.com

waste.mmdr@qualisflow.com



Dos & Don'ts

- ✓ Get the entire ticket within the photo
- ✓ Keep a steady hand to reduce blurring
- ✓ Take photos of multiple pages for ONE ticket
- ✗ Do not take photos of multiple tickets at a time.

After clicking 'Save' you can add another waste or delivery ticket.

Ticket Records

- Every ticket uploaded creates a new record with extracted data.
- Each record contains original ticket for assurance
- Data can then be exported and further transformed to meet required function.

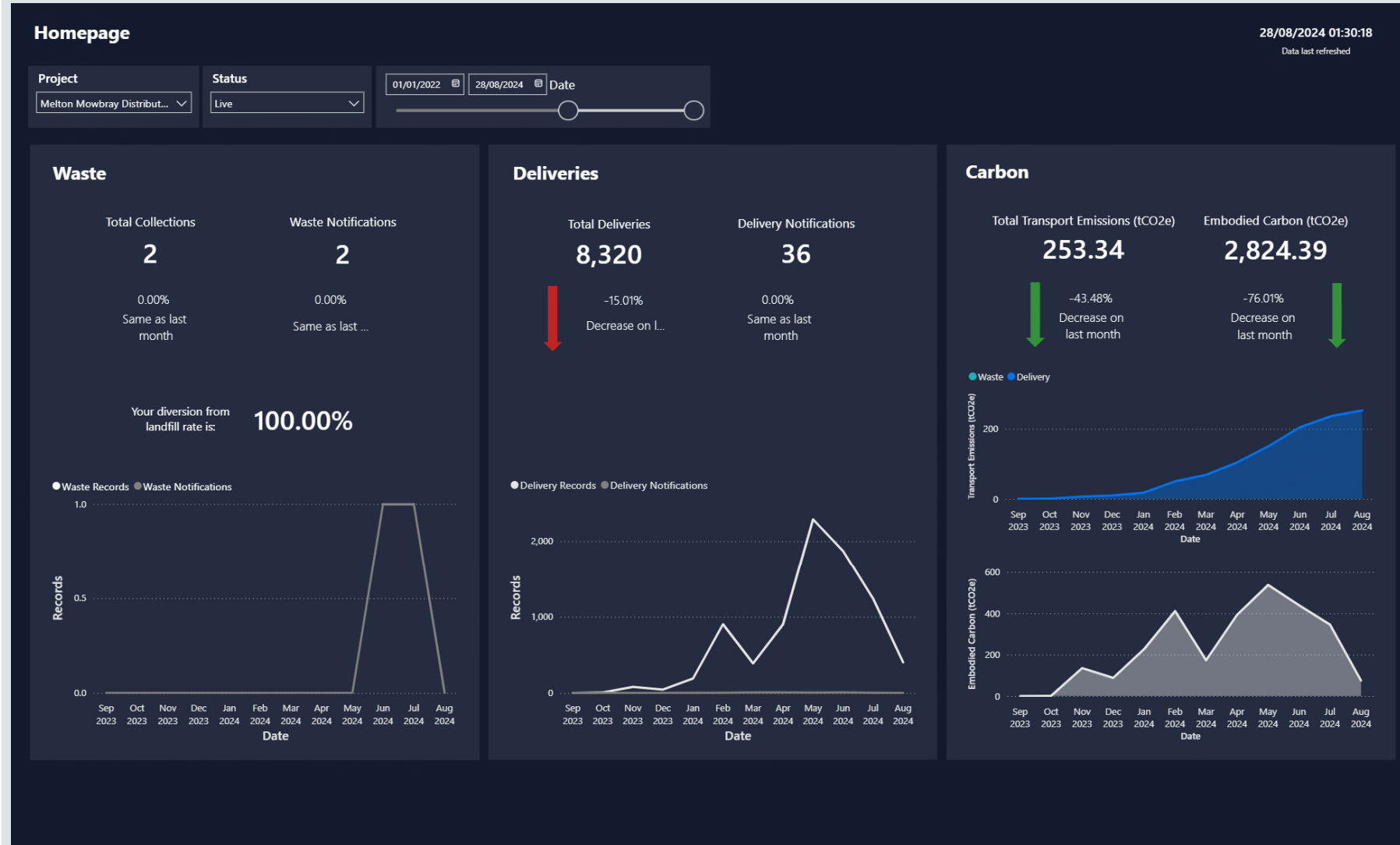
The screenshot shows the Qflow dashboard interface. On the left is a dark sidebar with navigation options: Dashboard, Dashboard PRO, Events, and Records. The main area displays a table of delivery records with columns for Arrival date, Delivery id, Delivery address, Trade contractor, Supplier Company, and Assigned to. A search bar and an 'Export CSV' button are visible at the top of the table. The user profile 'Georgia Sargent Contributor' is shown in the top right corner.

This screenshot shows a detailed view of a delivery record. The top section, 'Delivery Record', lists key information such as Record Created (23/05/2024, 05:33 BST), Delivery Arrival (23/05/2024, 00:08 BST), Delivery ID (88954973), and Delivery Address (Gate 6 - Thorpe Arnold, LE14 4SD, GB). Below this is a 'Notes' section with journey distance (30.315 ml) and emissions data. The 'Attachments' section shows a single PDF document. The 'Products' section lists 'CI 6I Granular Material SHW 600 Granite' with a quantity of 1. At the top right, there are 'Edit' and 'Remove' buttons. The user profile 'Georgia Sargent Contributor' is also visible.

This screenshot shows a preview of an attachment titled 'Attachment 1 Preview'. The document is a 'CONVEYANCE / RECEIPT NOTE: 88954973' from 'AGGREGATE INDUSTRIES'. It contains detailed information about the delivery, including the customer (GALLIFORD TRY INFRASTRUCTURE), delivery address, and various dates and times (Loaded at, Planned on site, Arrived on site, Despatch time, Left Site). It also includes a table for 'Product' details with columns for Product Description, IB, Quantity, UOM, Gross wt, Tare wt, Nett wt, and Cashsale. A 'Signed' section shows a signature and the name 'James'. A 'Download' button is located at the bottom right of the preview window.

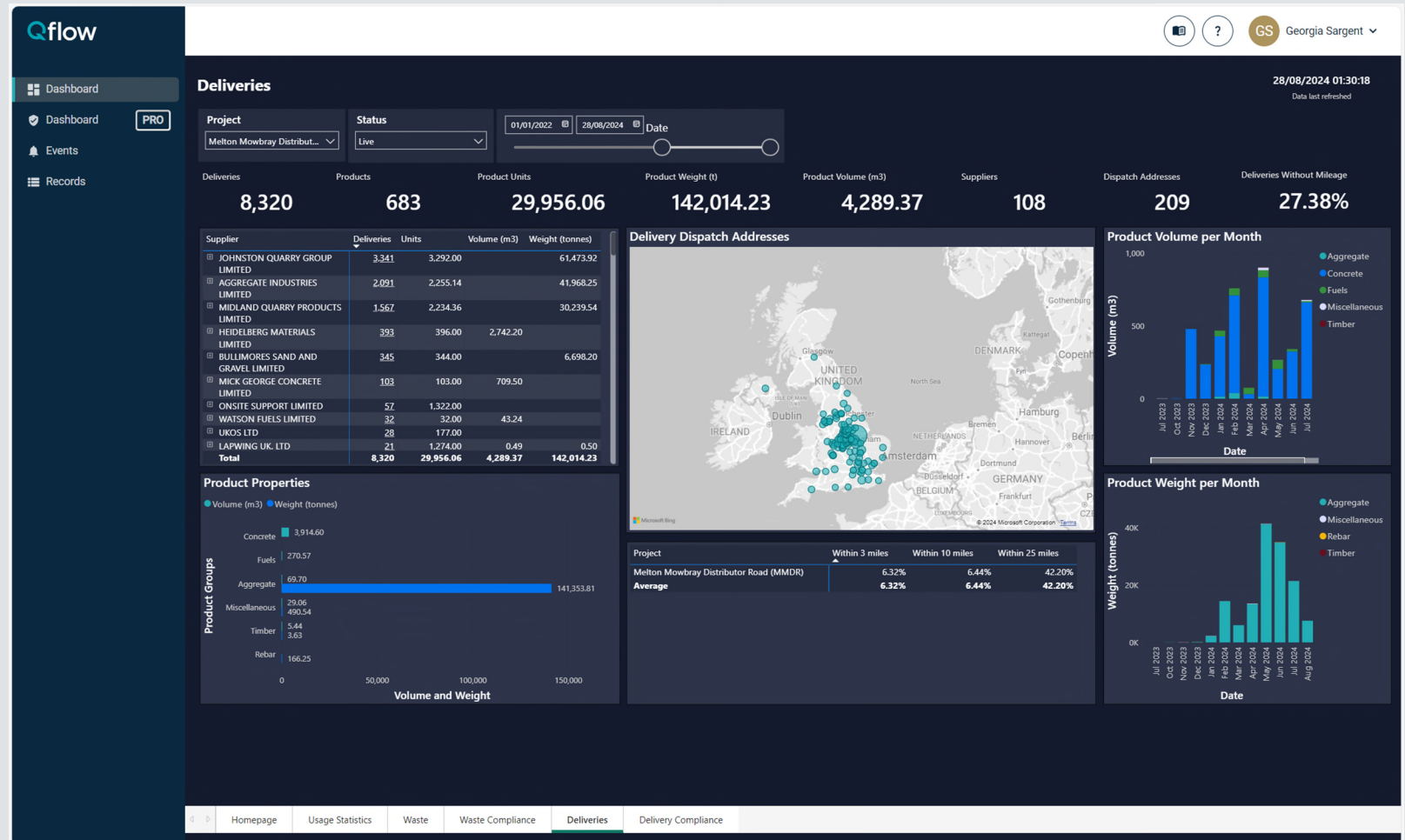
Dashboards

- Qflow provides multiple dashboards visualise deliveries and waste data.



Deliveries Dashboard

- Allows for improved tracking of deliveries to site for better materials management
- Allows for visualisation of material quantities and location of origin



Dashboards

- Qflow flags any delivery tickets which are not compliant.
- Highlights noncompliant materials for rectification on site.

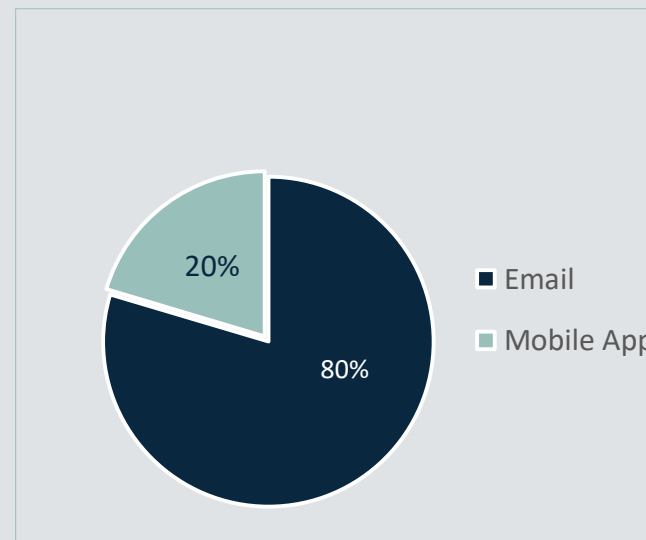


What have we achieved in the past 6 months?

- 6370 tickets digitized
- 91,547 tonnes of aggregate delivered to site
- 212,462 miles travelled to deliver products to site
- 5984 deliveries with 58,062 individual products tracked
- 126 suppliers

Melton Mowbray

Total number of delivery tickets uploaded: **5,873**



Data collected 02/07/24

What is now automated?

- Materials, quantities units
- Transport distances
- Suppliers
- Material compliance
- Waste compliance



Waste Compliance Summary

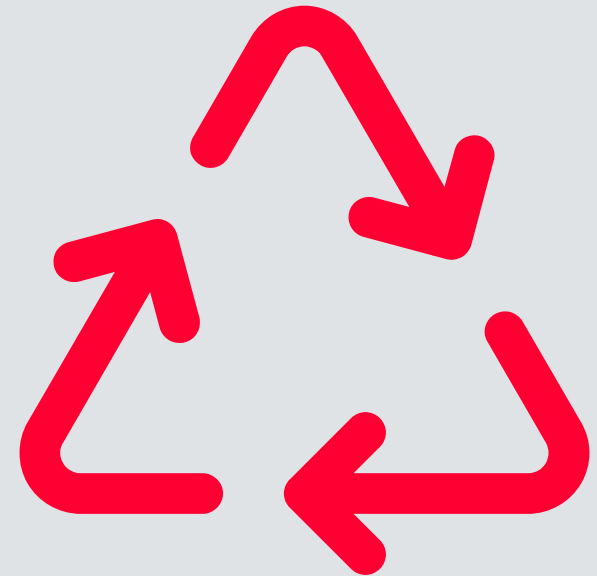
Qflow streamlines the process of managing waste records by automating compliance checks for every uploaded record.

Waste Transfer Notes (WTNs) are a requirement by the Environmental Protection Act 1990 and Duty of Care regulations.

If essential data required by law is absent from the Waste Transfer Note (WTN), Qflow promptly identifies the issue and generates an alert for your attention.

Qflow checks for:

Requirement	Description
EWC Code	An EWC code is a six-digit identifier used to categorize waste according to the classifications listed in the European Waste Catalogue.
SIC Code	A Standard Industrial Classification code (SIC code) is a five-digit business code which describes a company's economic activities and business services.
Carrier License	A waste carrier is an organisation who collects and transports waste as part of a business or for profit. In the UK, holding a waste carrier license is a legal requirement for this activity.
Valid facility permit or exemption	A waste facility permit is a legally required document issued by a regulatory agency, such as the Environment Agency, that grants permission for a facility to conduct activities related to waste treatment, storage, or disposal.



Product Compliance Summary



Qflow streamlines the process of managing delivery tickets by automating compliance checks for every uploaded record.

When Qflow fails to identify any of the following relevant certifications, it generates an issue to notify the user:

Product Group	Certifications checked by Qflow
Timber	FSC/PEFC certificate for the supplier and individual product
Rebar	CARES Sustainable Constructional Steel (SCS) supplier certificate
Concrete	BES6001 certification
Bricks and Blocks	BES6001 certification
Structural Steel	BES6001 certification
Plasterboard	BES6001 certification
Insulation	ISO14001 supplier certification

This compliance summary highlights key product items that are missing certifications on Qflow.

Project	Current Compliance	Number of non-compliant records
Melton Mowbray	99.7%	15/5,873

Melton Mowbray

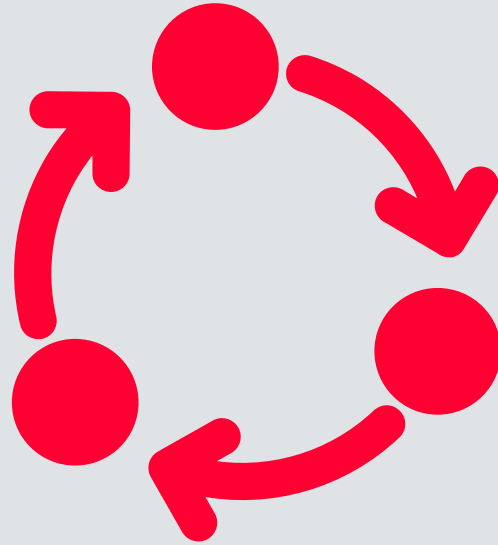
Certificate Compliance	
Timber with FSC or PEFC	47.68%
Concrete with BES6001 or ISO14001	80.33%
Bricks with BES6001 or ISO14001	No data
Structural Steel with BES6001 or ISO14001	No data
Plasterboard with BES6001 or ISO14001	No data
Insulation with ISO14001	No data
Rebar with CARES	95.58%

- Good – compliant / complete
- Incomplete – needs attention
- At risk – needs urgent attention

Data collected 02/07/24

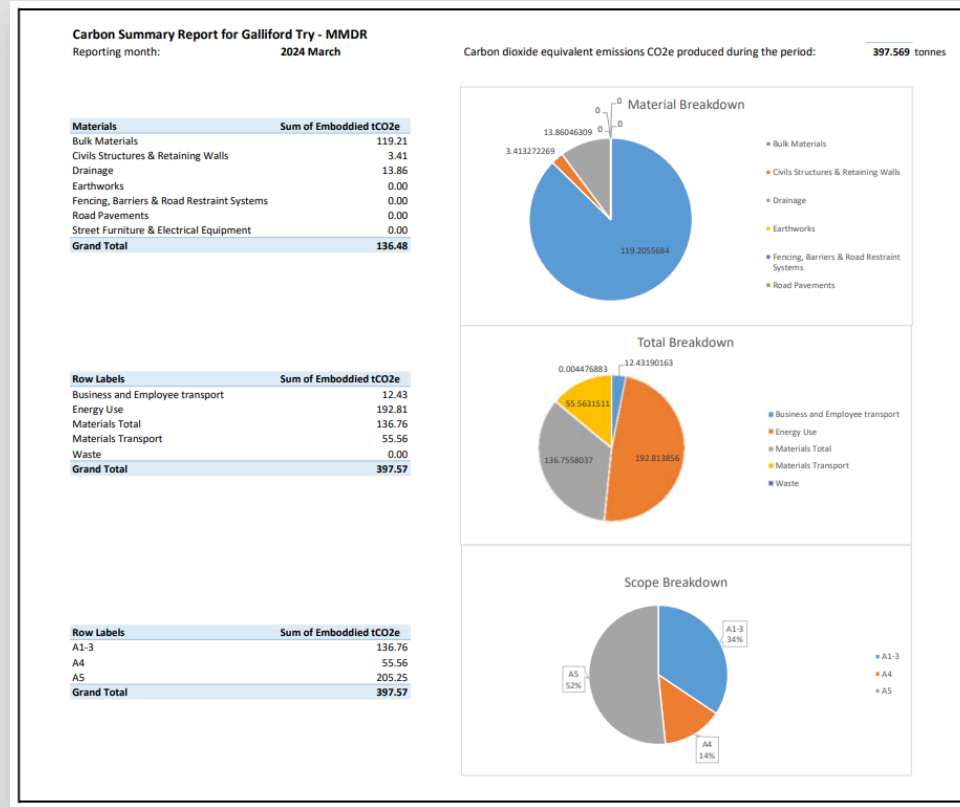
What do we do with the data?

- Developed post-processing tool to transform the data to meet highways sector reporting requirements
- Analytics to inform decisions during the construction phase and for future projects



Carbon Reporting

- Galliford Try are the first contractor to deploy Qflow on a highways project, MMDR, for the purpose of carbon data capture.
- A Qflow processor has been developed in order to use the data gathered to report on carbon emissions.
- This allows us to report on carbon meeting highways sector requirements, without requiring subcontractors to submit monthly reports.

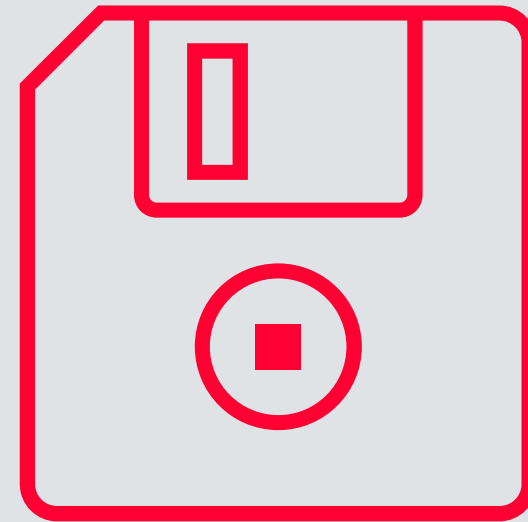


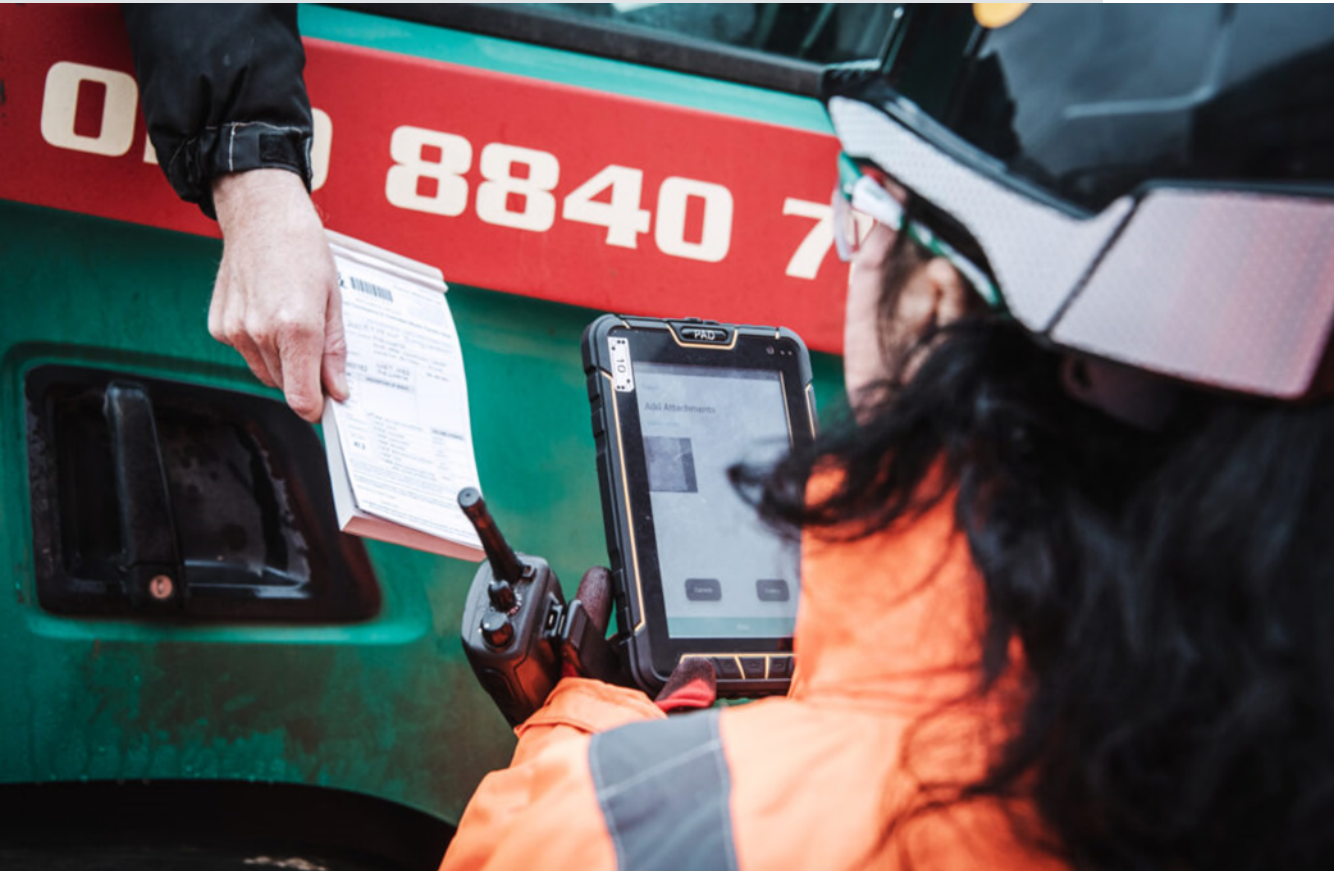
Welcome to GT's QFlow Processor

Sub Category	Material/Product	Input Unit	Quantity	Method of Transport	Distance (km)	Material Type	Carbon Factor	Carbon Factor Units	Conversion Factor	Embodied tCO2e	Laden Transport E	Unladen Transport ECF	Transport CO2e
Bulk Materials													
	Ready mix concrete												
	Cement and binders												
	Reinforcement steel												
	Asphalt												
	Fill, aggregate and sand												
Fill, aggregate and sand	Site-won	tonnes	0.00			#DIV/0!	Inert	0.000	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
Fill, aggregate and sand	General mixture	tonnes	44417.29	HGV	41.78		Inert	0.007	tCO2e/t	331.797	1.04E-04	7.84E-04	387.759
Fill, aggregate and sand	Recycled and secondary mixture	tonnes	0.00			#DIV/0!	Inert	0.014	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
Fill, aggregate and sand	Virgin mixture of land won and marine	tonnes	0.00			#DIV/0!	Inert	0.005	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
Fill, aggregate and sand	Virgin land won resources	tonnes	1634.62	HGV	39.52		Inert	0.004	tCO2e/t	7.167	1.04E-04	7.84E-04	13.498
Fill, aggregate and sand	Virgin marine resources	tonnes	0.00			#DIV/0!	Inert	0.009	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
Fill, aggregate and sand	Recycled resources, no heat treatment	tonnes	0.00			#DIV/0!	Inert	0.006	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
Fill, aggregate and sand	Recycled resources, with heat treatment	tonnes	0.00			#DIV/0!	Inert	0.119	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
Fill, aggregate and sand	Expanded clay	tonnes	0.00			#DIV/0!	Inert	0.393	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
Fill, aggregate and sand	Expanded foamed glass	tonnes	0.00			#DIV/0!	Inert	0.278	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
Fill, aggregate and sand	Secondary resources	tonnes	0.00			#DIV/0!	Inert	0.063	tCO2e/t	0.000	0.00E+00	0.00E+00	0.000
	Road salt/grit												

What else can we do with the data?

- Carbon management
- Commercial reconciliation
- Logistics and material management
- Quality assurance
- Waste compliance





Highlights of Qflow

- Automated data capture and transforming
- Insights to inform decision-making
- Rich dataset to improve performance across many functions