



RUGGEDISED

Designing smart,
resilient cities for all

Glasgow's Smart City Journey & H2020 SCC-1-2016 RUGGEDISED Project

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Glasgow City Council, Project Officer





“The smart city can be defined as the integration of data and digital technologies into a strategic approach to sustainability, citizen well-being and economic development.”

Scottish Government, 2014



Glasgow's Smart City

- Glasgow has been working on 'Smart City' projects for many years now
- First funding was secured in 2013 from Innovate UK
- £23 million awarded for the creation of 'Future City Glasgow'
- Aim was to increase safety, liveability and sustainability of Glasgow through use of technology



4 demonstration projects

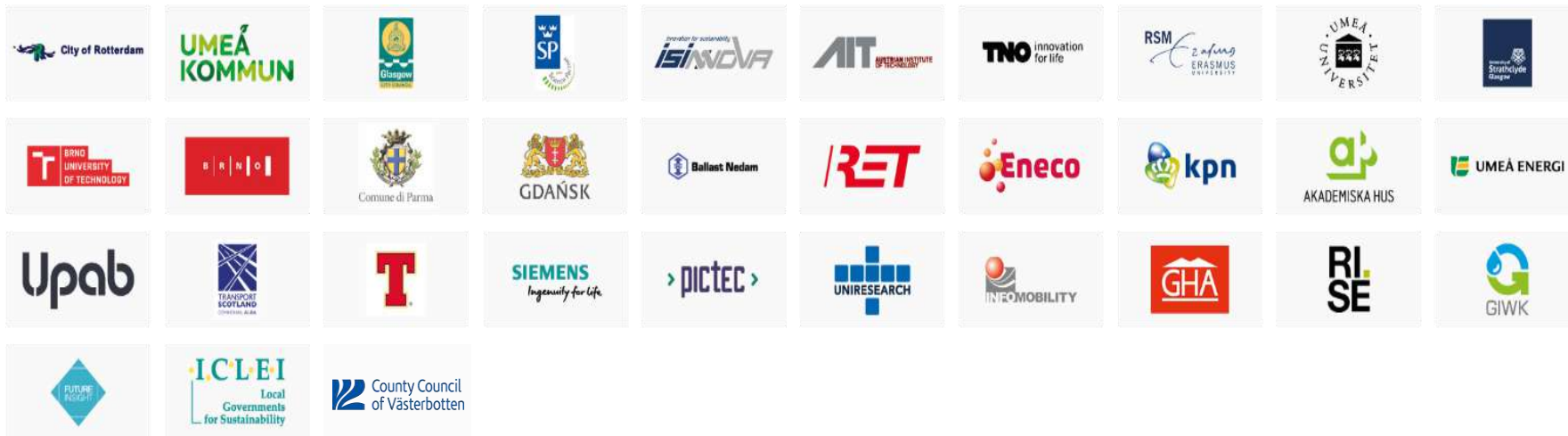
- Intelligent Street Lighting
- Active Travel
- Energy Efficiency
- Integrated Social Transport





ROTTERDAM . UMEÅ . GLASGOW: Generating Exemplar Demonstrations in Sustainable Energy Districts

BRNO . PARMA . GDANSK



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**3 Lighthouse Cities
Developing 32 Smart Solutions**

RUGGEDISED
Designing smart, resilient cities for all

**Partnership
between**

ROTTERDAM

13 Smart Solutions

**Heart of South's
New city Center**

Residents / Commuters
Shoppers / Workers

UMEA

9 Smart Solutions

University district

Students / Hospital
users / Commuters /
Workers/ Residents

GLASGOW

10 Smart Solutions

**Glasgow's Smart
Street**

Local residents /
Workers / Commuters /
Students

Cities

Businesses

Research
Community

**Action
Areas**

Smart
Electricity
Grid &

Energy
Management
and ICT

E-Mobility

Smart
Thermal Grid

**Follower Cities
27 Follower Solutions**

BRNO

10 Smart Solutions

PARMA

10 Smart Solutions

GDANSK

7 Smart Solutions





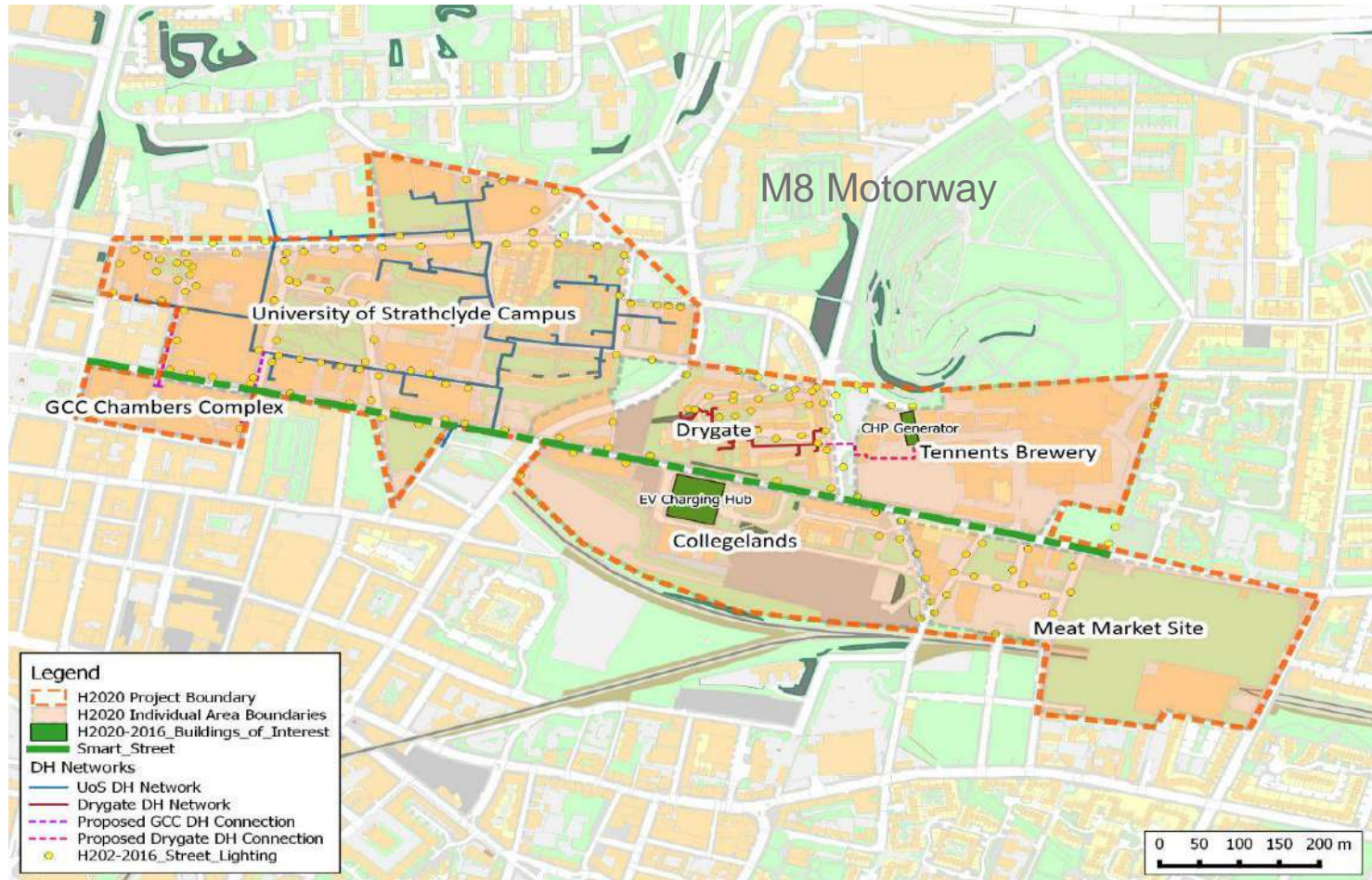
GLASGOW'S SMART STREET

Through **RUGGEDISED**, Glasgow will continue on its journey – transforming from an industrial city to a sustainable, resilient and low carbon city, focused on the future, growing from its past, and delivering a greener and smarter city.





Glasgow's Smart Street.



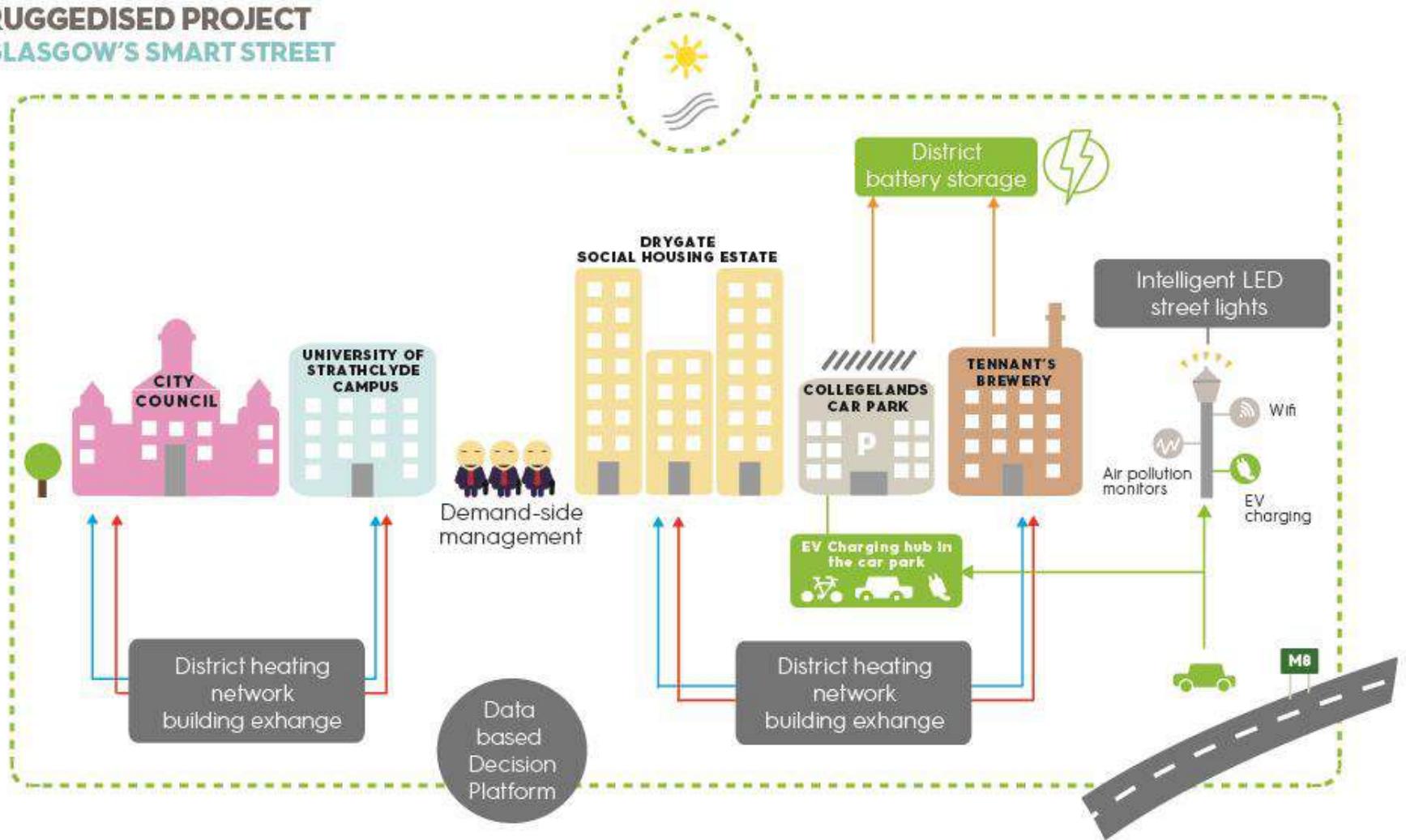


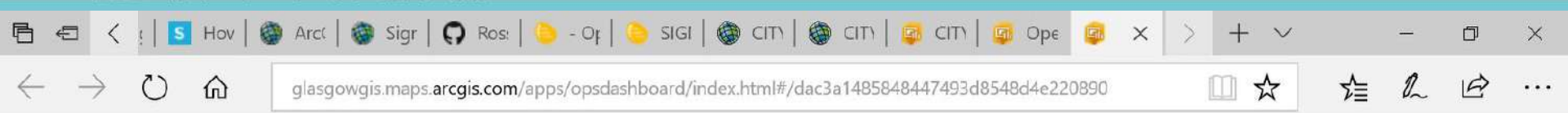
Project Deliverables

Glasgow Deliverables		WP	Owner	Due Date
D4.1	Business Model allowing buildings selling heat	4	GCC	M17
D4.2	Business Model allowing use of battery storage as grid balancing mechanism	4	SIE	M36
D4.3	Business Case allowing power transfer from CHP to battery	4	GCC	M36
D4.4	Plan ready for innovative renewable installation (netting off energy generation against consumption)	4	GCC	M36
D4.5	Decision support Platform (ICT solution) for informing strategy and decision making	4	GCC	M36
D4.6	Implementation Report Glasgow (1/3)	4	GCC	M36
D4.7	Deployment of EV chargers in city centre car park	4	GCC	M40
D4.8	Street lights (70,000) replaced by intelligent LED columns	4	GCC	M40
D4.9	Implemented Management system to integrate domestic properties into a 'smart grid'	4	SIE	M42
D4.10	Implemented Management system to integrate non-domestic properties into a 'smart grid'	4	SIE	M42
D4.11	Analysis tools on LED street lighting implemented (to support demand-side management)	4	SIE	M48
D4.12	Implementation Report Glasgow (2/3)	4	GCC	M48
D4.13	Implementation Report Glasgow (3/3)	4	GCC	M60



RUGGEDISED PROJECT GLASGOW'S SMART STREET





city parking

City Parking (Glasgow) LLP is a wholly-owned subsidiary of Glasgow City Council, formed in June 2007 to manage and develop the off-street public car parks previously operated by the Council. Our status as an autonomous company with its own Board and Managing Director helps us to bring flexibility and innovation to delivering quality parking services to the business community and public alike.

Find out more at <http://www.cityparkingglasgow.co.uk/>



EV Charging

Dashboards under the theme of EV charging.

EV Charger Data
Real Time Traffic Analysis across Glasgow of EBV Charger Data. Currently uses only data from Duke Street.

Analysis

Analytical environment.

Spatial Analysis
Spatial analysis of a dataset.

Pollution Traffic Analysis
Analysis of pollution with traffic data in Glasgow City Centre.

Transport

Dashboards under the theme of transport.

Traffic Congestion around Car Parks
Real Time Traffic Analysis across Glasgow. Looks at congestion, flow and a view over time.

Energy & Environment

Dashboards under the theme of the environment.

PV Potential
Analysis of potential to deploy PV across City Parking estate.

Battery Storage Potential
Analysis of potential to deploy Battery Storage across City Parking estate.

Public - Parking / EV Charging Availability

Dashboards that could be used to display information to the public.

Parking & EV Charger Availability
Map showing current parking & EV charger availability.

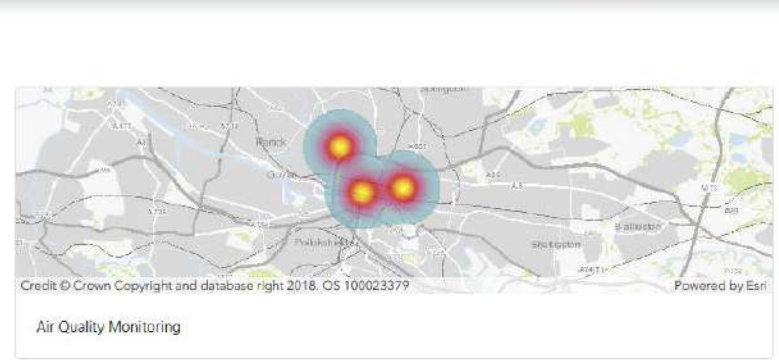
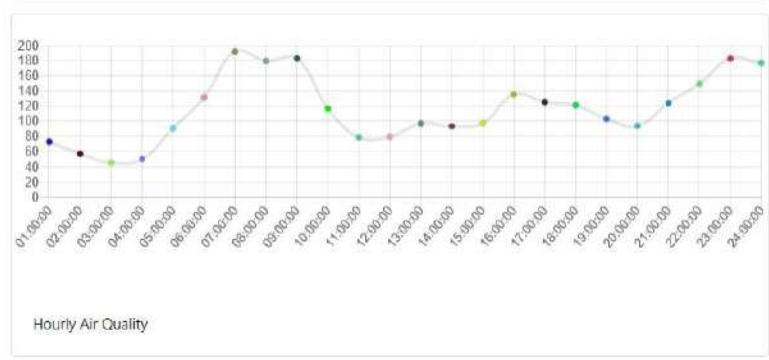
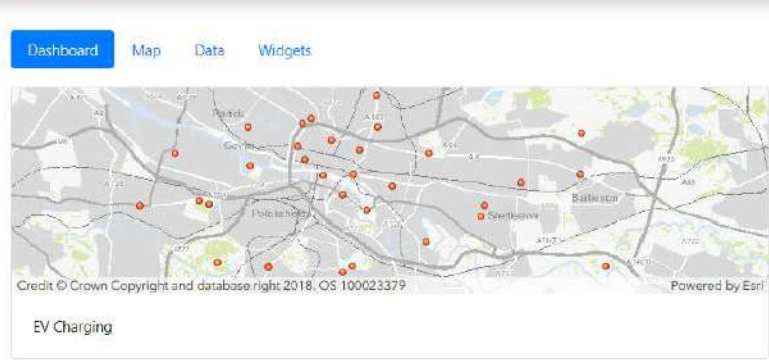
Charge Place Scotland
A link to Charge Place Scotland (Transport Scotland EV resource).



Browser navigation bar showing the URL <https://ruggedisedwebstaging.azurewebsites.net/dashboard> and standard navigation icons.

Dashboard header with a search box labeled 'Find Data', navigation links for Home, Dashboard, Places, and Help, and a user profile for 'Hello Garán Higgins' with a 'Sign out' link.

Navigation sidebar with sections for 'YOUR DASHBOARDS' (Traffic, Multi-Organisation Layers Example, Dashboard Example for Presentation) and 'SHARED DASHBOARDS'. Includes the RUGGEDISED logo at the bottom.





Innovation Platform : Setting up an

insti
part
with

ders





- All smart solutions and technologies should be able to be up-scaled across the city and also other cities
- When thinking of new solutions, consider whether it is possible to develop them within your organisation, instead of buying ‘off the shelf’ products
- Collaboration is the key to success

Thank You





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